

Co-management processes and advances involving new Commons: Marine Extractive Reserves in Brazil

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1. Introduction

The complexity of coastal governance has been understood as a wicked problem, involving multiple dimensions, as technical, institutional, political, and even philosophical (Jentoft and Chuenpagdee 2009). To approach the wicked problems of coastal governance it is important to address not just the institutional framework in which the systems are governed, but also the social context and how this interaction occurs among different stakeholders (Jentoft et al. 2007). One strategic and central node of this process are the local managers, key stakeholders that are not always investigated, but offers relevant information about the complexity of coastal governance. In most of the cases, local managers are the bridge between central government and communities, dealing with the implementation of the institutional framework in a reality of cross-level dramas: from local, to institutional and structural ones.

Marine protected areas (MPAs) are considered an important tool for coastal governance in many countries. In practice, MPAs are not just a technical management measure, but also a complex socio-political enterprise (Chuenpagdee et al. 2012), that may be implemented by different approaches, including those based on co-management. This is the case of the Brazilian Marine Extractive Reserves (hereafter MERs) which may encompass both land and water surfaces. MERs have been considered important initiatives for environmental conservation, able to promote social and economic inclusion of people directly affected by MPAs. The implementation of MERs in Brazil have evolved to a robust institutional framework of legal co-management instruments, arrangements and procedures.

In this paper, we describe and analyze the institutional framework that allows the participation of users in the management of MERs, and present the dramas of its implementation from the local manager's perspective. We are considering the institutional framework of MERs as a set of management instruments formalized by the government and expressed into administrative laws and procedures. The interaction of local and government rules will be addressed in another publication (Prado et al. *in prep*). We are not dealing with local rules and how they interact with governmental rules. We are analyzing its formalization, how the legal institutional framework incorporates community participation, the legalistic emphasis that exists on the implementation of these instruments and the managers' dramas in their praxis.

In the following two sections, we describe the MERs in the context of Brazilian protected areas system and our research methods. Next, we present the institutional framework of MERs, and explores the various dramas to its implementation according to the local managers. Our results and analysis regards the structure of management and how the managers deal with the dramas looking for reconcile sustainability and social justice in the coastal governance.

2. MERs in the context of Brazilian protected areas system

Brazil has a very large coastal zone with multiple uses, high diversity of ecosystems, cultures and a great socio-economic complexity. It encompasses an extension of more than 10.000 km, 17 states, almost four hundred municipalities and around 50 million of people living on the coast (IBGE, 2011). In the context of coastal zone, managing the commons is strategic in face of the pressures from different economic sectors, such as industrial fishing, oil and gas, unplanned real estate development and mass tourism. In the middle of this complex scenario, Brazil have at least 336 coastal and marine PAs (Schiavetti et al. 2013) under responsibility of Federal, State or Municipal government agencies. The categories of these PAs vary according to the degree of resources protection and conservation objectives. MERs allow for sustainable use, often emerged in traditional commons territory and may be considered as *new commons* (Hess 2008). In face of encroachment, threat of enclosure, or other environmental threats, these commons territories have been institutionalized as protected areas, in which resource needs to be monitored, protected, and managed sustainability by a group of people (Hess 2008).

The first Extractive Reserve was created in the Amazon forest in 1990, as part of the land struggle carried out by Amazonian rubber tappers (*seringueiros*), claiming for socioenvironmental justice and resisting to the encroachment of their lands by cattle ranchers and loggers during 1970s and 1980s (Ruiz-Pérez et al. 2005). The institutionalization of this concept coincided with an important period of democratization in Brazil, in the late 1990s, in which mechanisms to ensure citizenship were strengthened in many sectors (Avritzer, 2000; Gohn 2011). Since then, the concept of extractive reserves started to be also applied into marine areas and coastal contexts – MERs.

Since 2000, Extractive Reserve, including MER, is a category under the Brazilian federal law for protected areas, the so-called National System of Conservation Units (SNUC). SNUC offered a legal mechanism for designation and implementation of several categories of protected areas (Gerhardinger et al. 2010). MER is classified under the sustainable-use PAs typology, which allows human settlements and the direct use of natural resources in sustainable means. To be established, all MERs require to be a demand by local people, and the areas to be managed in a collaborative and inclusive way, to protect both the traditional coastal people and marine resources upon which their livelihoods depends on (Pinto da Silva 2004).

The management of Federal MERs is under the responsibility of Chico Mendes Institute for Biodiversity Conservation (hereafter ICMBio), which was created in 2007 as the National Protected Areas agency under the Ministry of Environment. The headquarter of ICMBio is located in the capital, Brasília, where are also the higher level of coordination and divisions of Brazilian protected areas. In the last 10 years, ICMBio has increased the SNUC legal basis with various administrative rules, structuring management procedures in all protected areas. These regulations and the implementation of management instruments are officially published in the government register, and only then are legally recognized by the government and society.

There are 25 Federal MERs under the responsibility of ICMBio, and also other three MERs under the responsibility of State Agencies in São Paulo and Rio de Janeiro State. We chose to analyze in this paper just the Federal MERs, considering in the research the same institutional variables of the environmental PA agency (ICMBio). The 25 Federal MERs occupy 931.054 hectares in the Brazilian coast (including terrestrial and marine areas until April 2017), especially in estuaries and mangroves sites. The reserves are distributed along the coast (Figure 1), in large number at north and northeastern areas.

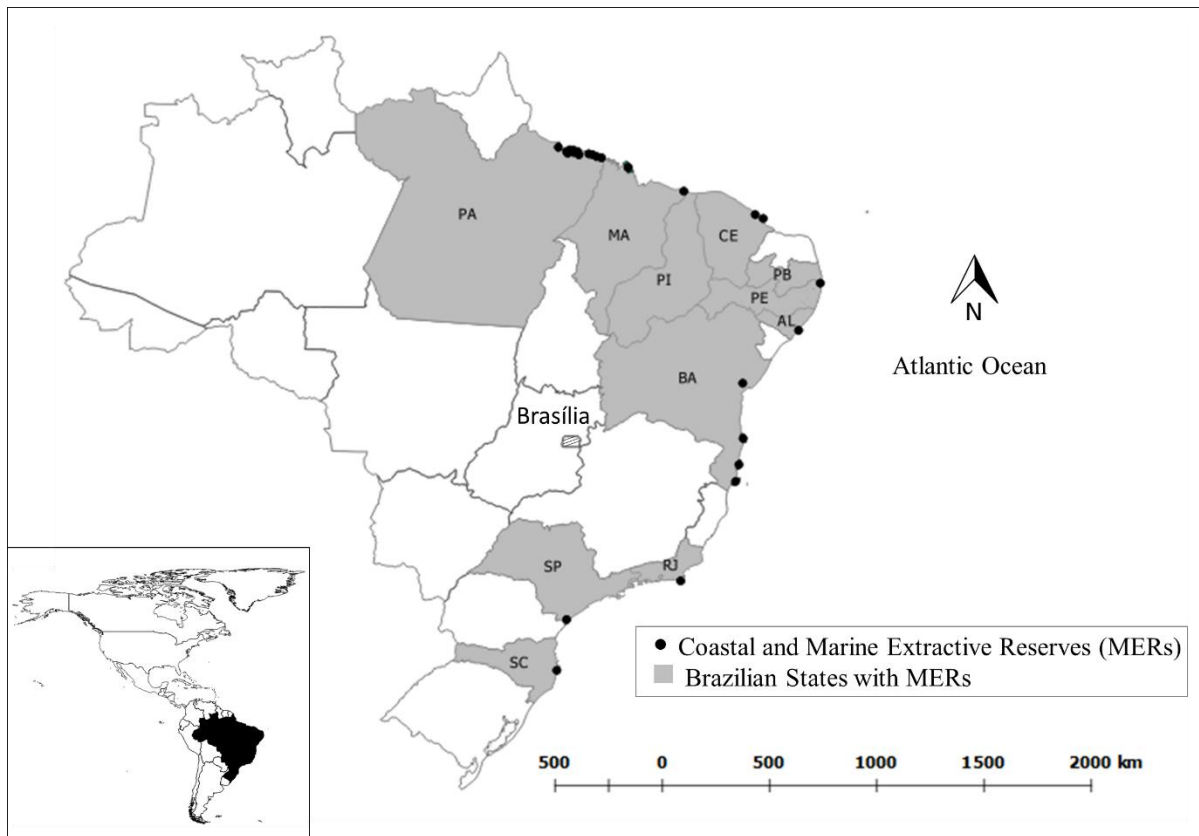


Fig. 1. The location of Federal Coastal and Marine Extractive Reserves (MERs) along the Brazilian coastal zone (n=25). In the map is possible to see that 11 states (in a total of 17) have at least one MER in their territory. In the middle of Brazil is located Brasília, where is also the headquarter of ICMBio, the Federal PA agency, in charge of MERs.

3. Data Collection

Data collection included the analysis of 16 environmental legislation, official documents, secondary data, as well as 21 semi-structured interviews. The semi-structured interviews were carried out between September and November of 2016, with the leading managers of 21 MERs. The interviews took one hour on average and were conducted by telephone in the majority of the cases (n=18) and face-to-face (n=3) when it was possible. The remote interviews, adopted due to the great extension of Brazilian coast, presented no significant limitations.

From the 25 existing Federal MERs (Table 1), we excluded from analysis three created recently, in 2014, which were in the beginning of its implementation. Additionally, we were not able to schedule the interview with one manager due to her

time constraint. Hence, our results and analysis regards 21 MERs¹. The interviews aimed to identify the institutional framework of MERs, concerning the management instruments, their phase of implementation in each area and the perception of managers about these instruments. The interviews also aimed to address the daily work challenges that the managers face.

Table 1. General characteristics of Brazilian Federal Marine Extractive Reserves (n=25). The number of staff and the estimation of beneficiary households are based on the interviews carried out with managers. (Source: CNUC/ICMBIO, 2017)

	Federal MERs	Year of Creation	State	Area (ha)	n° of Staff	n° of beneficiary households (estimated)
1	Pirajubaé	1992	SC	1.712,1	6	96
2	Arraial do Cabo	1997	RJ	51.601,5	4	1600
3	Baia de Iguape	2000	BA	10.082,5	11 ¹	5.000
4	Corumbau	2000	BA	89.596,8	2	850
5	Lagoa do Jequiá	2001	AL	10.203,8	3	1800
6	Soure	2001	PA	27.464	3	1300
7	Chocoaré- Mato Grosso	2002	PA	2.783,16	1	760
8	Maracanã	2002	PA	30.179,2	3	1413
9	Mandira	2002	SP	1.177,8	2	18
10	Mãe Grande de Curuça	2002	PA	36.678,2	1	6.000
11	São João da Ponta	2002	PA	3.409,44	2	400
12	Batoque	2003	CE	601,4	4	263
13	Cururupu	2004	MA	186.053,87	2	1200
14	Tracuateua	2005	PA	27.864,08	0	2300
15	Gurupi-Piriá	2005	PA	727,9	1	4000
16	Araí Peroba	2005	PA	11.549,7	2	1500 ²
17	Caeté-Taperaçu	2005	PA	42.489,2	2	4500
18	Canavieiras	2006	BA	100.726,4	2	2100
19	Acaú-Goiana	2007	PE/PB	6.676,7	4	1350
20	Cassurubá	2009	BA	100.767,6	3	1600
21	Praia do Canto Verde	2009	CE	29.804,99	6	389
22	Delta do Parnaíba*	2000	PI/MA	27.021,65	-	-
23	Cuinarana*	2014	PA	11.037	-	-
24	Mestre Lucindo*	2014	PA	21.027,8	-	-
25	Mocapajuba*	2014	PA	26.464,8	-	-
	Total			931.054,81	53	38.439

¹ 8 employees from other public agencies working at MER through local partnerships at that time.

² Number underestimated, considering that the MER area was expanded and the registration of the new families had not been carried out yet. *MERs not assessed in this paper.

Our methodological approach was based on the Grounded Theory (Glaser and Strauss, 1967; Charmaz, 2009), including organizing, coding and categorizing data

¹ MERs not assessed in this paper: Cuinarana, Mestre Lucindo, Mocapajuba and Delta do Parnaíba.

obtained by interviews and document analysis. In this sense, our source of data is divided in: (i) *factual information*, that includes data from official documents and legislation analysis, as well as interviews questions regarding the current organizational structures and procedures; and (ii) *emic information*, addressing the main conflicts and difficulties of management, as well as the implications and an evaluation of the instruments, exclusively from the managers' narratives. The emic information reveals the personal viewpoint of local managers and do not represent an official government position.

4. Institutional Complexity of MERs

The results reveal a high institutional complexity in terms of management instruments available. The institutional framework that evolved at MERs shows a greater governmental formalization in channels of participation at the management processes. It is extremely important to highlight the legal guarantee of participatory procedures in the scope of protected areas, which should be well recognized, as the result of innovative and systematic efforts by socio-environmental sectors within ICMBio. As the establishment of governmental procedures are always built in face of many internal conflicts, this framework demonstrates important actions searching for an inclusive management of people directly affected by the protected areas. As addressed by Araujo et al. (2017 *in press*), Brazil has an innovative social mobilization and institutional instruments to produce knowledge and seek solutions to social and environmental issues.

We found out eight management instruments that constitute the institutional framework of MERs. These instruments were categorized in four groups, addressing important themes for planning and implementation of protected areas in general:

(1) **Instruments for land/sea tenure and beneficiaries recognition:** Concession of Real Use Right (*Contrato de Concessão de Direito Real de Uso*) and Household Profile Register (*perfil da família beneficiária*);

(2) **Instruments for territorial use planning:** Management Plan (*Plano de Manejo*), Management Accords (*Acordo de Gestão*), and Fishing Accords (*Acordos de Pesca*);

(3) **Institutional arenas for discussion and deliberation:** Deliberative Management Council (*Conselhos Deliberativos*) and Community Committees (*Comitês de Gestão/Comunitários*); and finally

(4) **Public Policies and Programs in MERs:** An incentive program for poor communities who help to protect the environment (*Programa Bolsa Verde*).

All the management instruments are described in the following paragraphs, as well as their status of implementation (Table 2) and the main dramas faced by managers in its implementation.

4.1.1 Instruments for land/sea tenure and beneficiaries recognition

The Concession of Real Use Right

The process of territorial tenure at all MERs requires the Concession of Real Use Right which grants to its beneficiaries the exclusive right to use a protected area. Such concession is formalized in a contract that conveys for a community-based association (CBO) the right to use the territory, generally for a period of 20 years. The administrative steps involve at first the concession from a public agency to another, usually from the Union Heritage Agency (*Secretaria de Patrimônio da União*) to the Federal PA agency (ICMBio). Secondly, the concession from ICMBio to a community-based association, that becomes the concessionaire of the area. The concessionaire has a series of clauses to be fulfilled in the contract, and may be submitted to inspections, assessments, and even closure of the concession (if breaches the contract). In the cases of private properties inside the terrestrial boundaries of MERs, it involves expropriation proceedings, which can take a long time and varies according to governmental budget and legal bureaucracies.

The Concession of Real Use Rights had not occurred in 6 MERs until November 2016, especially because of legal proceedings of expropriation in progress and/or problems with the CBO able to be the concessionaire and legally regulated. According to Viana and Sales (2008), on one hand the associations may have a fundamental role in consolidating reserves, since the occurrence of formal local organizations may favor the communitarian work, the establishment of agreements for resources management and the obtaining of credits and financing. On the other hand, the requirement of one representative association may increase conflicts among other different local associations in the territories, which in turn, also express the desire to be the concessionaire holding the Real Use Right (Milano 2011). In the case of more than one local association, communities are advised to set up a new umbrella association (*associação-mãe*), including representatives of all CBOs in the territory. This process does not always work. According to some managers, there are local conflicts, and problems of legitimacy of some associations, as well as various administrative constraints and limitations that are imposed by the contract on them. Paradoxes can be raised about how to legitimize

institutions that already exist locally, without creating the obligation of new institutions that fit into "packages" previously built and standardized. In addition to the creation of associations, its maintenance in the long term goes through several difficulties, which may compromise the Concession itself.

Household Profile Register (perfil da família beneficiária)

In 2013, ICMBio established the guidelines and procedures for building the Household Profile of MERs beneficiaries and other sustainable use PAs, describing criteria and features of beneficiary households. The relevance of this instrument regards the access to the benefits of PAs in the form of public policies related to these territories. It is important to mention that the rules for the elaboration of the Household profile Register came from a specific demand: the implementation of the *Bolsa Verde* Program (a public policy to be described in the sequence), that required a clearly criteria about were the real beneficiaries of the area. Before this demand, most of MERs had just a survey of households living in the area, without established criteria about their relationship with the territory.

As stated by Apoloni and others (2014), one of the great gaps in the elaboration and implementation of public policies for rural communities is the lack of data about their social and economic condition. In this case, management instruments involving territorial recognition and its users are fundamental, increasing the visibility of this population to the State. The formal procedures include a participatory profile definition, with discussions held in the communities. The process should also be reported and evaluated by the Traditional Populations Coordination from ICMBio, and officially published in the government register. Until 2016, 5 MERs had not their Household Profile Register published, although the managers interviewed reported to be elaborating it and registered the households. In these cases (not published Profile Registers), managers attribute this fact to a mismatch between the decision-making process of the MER Deliberative Council and the ICMBio juridical support regarding the local criteria established. According to one manager:

It took so long because the bureaucracy inside the institute is no joke. We did the meetings in 2009, we decided with the community and since then the administration body was always changing. Each time they changed, they reinvented the wheel concerning the beneficiary profile. It was up to be ready already in 2009, before the management plan. But, that's it, the state is such a mess [...] change the director, change the coordinator, the guys want to reinvent everything. Then you are here at the end of the process [...] So it's hard. (Manager n.20).

4.1.2 Instruments for territorial use planning

Management Plan

The Management Plan establishes the rules of use and management of natural resources, the zoning and physical structures of any PA, according to their objectives. The participation of the users in the elaboration of the MERs plan is ensured by law, but the elaboration and the execution of this instrument has had a wide demand of research and, consequently, significant financial resources requirement and a long time for their finalization. In practice, this logic has turn the management plan difficult to be elaborated and useful as well.

Although the Management Plans of any Brazilian PA should be elaborated in a period of five years from its creation and revised in every 5 years, only two MERs had their Management Plan concluded. Six managers stated that the process for its elaboration had already been started, but was interrupted at some point, especially by the withdraw of consulting companies that had been contracted to make the Plan. Gerhardinger and others (2010) also found this situation in others Brazilian MPAs, where substantial effort and money was invested to make the Management Plan, but it was never officially published nor implemented.

The managers presented reasons related to the historic priorities of ICMBio to conclude the Management Plans of no-take areas first, and to the financial cuts and human resources lack. The regular procedures require that the Plan also needs to be approved by a related coordination, located in the ICMBio headquarter at Brasília, which in the view of managers implies a longer processing time and distance from the local level. There is also a conceptual and methodological fragility about Management Plan, which requires a clear institutional position of ICMBio about this instrument in sustainable-use PAs. In the case of the two MERs with the Plan officially published, the managers reported that was extremely difficult to meet the goals established and to carry out all the planned programs, since there are no resources or sufficient staff. Other MERs were in the process of elaboration or with an expectation of beginning it in 2017.

Management Accords

The Management Accords were institutionalized in 2012 as an instrument containing the rules defined by the users and the government collaboratively, regarding

the use activities, management practices, the occupation of the area, and the actions for environmental conservation (Brazil, 2012). These accords replaced the first management tool created for all the Extractive Reserves in 1990s, called the Utilization Plan (existing until 2000 in legislation, with the same objectives). The creation of Management Accords may be related to a demand for the improvement of the previous Utilization Plans (Brusnello, 2015). As the management plans were not being implemented as well, there was also a need to recover to a more practical instrument. Other possible reason for the regulation of Management Accords in 2012 was related to the need for greater robustness and normative protection in surveillance periods.

Management Accords regards the rules more in operational level than Management Plans. This instrument supports the management of MERs, keeping the focus on the institutionalization of local rules. The rules need to be built and defined by the local population regarding their activities traditionally practiced, the management of natural resources, the use and occupation of the area, and considering the current legislation (Brusnello, 2015).

From the 21 MERs analyzed, 13 had already elaborated their Management Accord, although not all of them had been officially published, and were waiting for a response from their related Coordination in Brasilia and from the ICMBio juridical support for legal analysis. This bureaucratic process brings some difficulties pointed out by the managers. As stated by one interviewee, *“this is a big problem. It was all very active, then you have a delay of 2 years to publish, I believe it was lost. The management agreement is dynamic, in two years you should already be revising, redefining and not publishing what they decided two years ago”* (Manager n° 1). Besides that, there is not a consensus if the Accords should be an independent instrument, as was designed at first, or if it should be published as a part of the Management Plan of the reserve. Some managers pointed out that this doubt is related to the necessity of giving a more normative or legal weight to the Management Accord at surveillance actions. In the moment of data collection, four MERs had not started their Accord, three were elaborating it, and just one of them had its Accord officially published.

Fishing Accords

The Fishing Accords were created in the context of community-lake fishing in Brazilian Amazon, based on community initiatives for regulate fishing practices (Castro

and McGrath 2003). The Fishing Accords were legally recognized by the government in the end of 1990's, into the formal institutional framework for fisheries management. Over the years, this management instrument started to be applied in other geographical contexts as coastal zone and MERs. It is based on the negotiation of specific rules among various stakeholders for fisheries management, considering the interests of the fishers in a participatory manner, through mobilization, community meetings and assemblies.

According to Brusnelo (2015), in the years following the SNUC, when the utilization plans were not included in the legal institutional framework anymore (the current Management Accords described above), there was a standstill in the publication of instruments regulating the use of resources. Because of that, the Federal Environmental Agency in charge of PAs in that period (IBAMA) recognized the Fishing Accords as an instrument of fisheries regulation and management. Although to a lesser extent than the Management Plans and Management Accords, four MERs mentioned having Fishing Accords, in addition to another MER that had elaborated but not officially published it.

It is important to consider that part of the successful implementation of these agreements is also linked to the periodic adjustments in the rules, according to parameters defined in the monitoring, as well as to the enforcement actions (Ruffino 2005). These both aspects emerged from the interviews as problematic points for governance, especially because of budget restrictions and of human resources scarcity.

4.1.3 Institutional arenas for discussion and deliberation

Deliberative Councils

Deliberative Management Councils are head by ICMBio, and are composed by representatives of public agencies, civil society organizations, universities and traditional populations living in the area (SNUC, 2000), who negotiate and deliberate the access and the use of natural resources. Deliberative Councils are institutionalized as arenas for co-management. They were regulated by the 1988 Brazilian Federal Constitution, as an instrument of expression, representation and participation of the population (Gohn, 2011). The Councils in Brazil have the role of mediating the relationship between society and the State (Avritzer, 2000) not just in PAs, but also for health, education and other public subjects. In the case of MERs, the Councils are deliberative, so they are able to make decisions on matters related to governance. Their composition must necessarily guarantee

the majority of the traditional populations representatives, but also involves other stakeholders as NGO's, universities, the private sector and other public agencies.

By November 2016, all MERs had a Deliberative Council. Considering only the MERs created after 2000, the average time for the establishment of the Council was approximately 5 years. After creation, Councils must be renewed every two years. Besides that, many operational rules are flexible in the law, allowing each Council to build its own regiment. For instance, the frequency of meetings of each Council and its composition is established in its internal rules and vary, according to the interviewees, from biannual meetings to monthly meetings.

Cunha and Loureiro (2009) states some divergences about the role of Deliberative Councils in Extractive Reserves. According to them (op.cit) while there is a dilution of the community power, which begins to divide the decision-making with other entities, there is a possibility of joining forces and opening the dialogue with other stakeholders. The Council can be more or less participatory depending on the way in which community participates and the empowerment is presented, in order to reduce the existing power asymmetries. It is important to recognize that along the years there was an investment and the strengthening of the rules regulating the Management Councils of all PAs. The mechanisms of participation and representation were reinforced, such as the principle of parity between State and civil society and the full participation of all the stakeholders in building the structure and regiment of the Councils (Prado et al., 2015).

A critical point mentioned by managers was the active role of ICMBio in the heading of the Councils. As stated by a manager, *“the problem of the Council in my opinion, is that the ICMBio is always in the head of the council. I think it gives some difficulty in the process. Alternating would strengthen the communities' power”* (Manager n° 20). The formalization of procedures concern a paradox, since on the one hand it ensures that all managers follow the norms and guarantee the representativeness and the participatory procedures. On the other hand, it may have a disciplining role, favoring the environmental agency interests, which not necessarily guarantee a superior quality of participation (Prado et al 2015).

Although the managers acknowledge the importance of this instrument, addressing many progresses made in the exercise of citizenship and decision-making, the representativeness was mentioned as a critical point to the performance of the Councils. As stated by a manager *“[...] representativeness is still very limited. From the counselor to an active community representative we have a very big leap. Not only the community*

representative, but the other entities as well, NGO's, or State, whatever. The counselor goes, says for himself and the distance between the representative in the chair and the people represented is great” (Manager n° 04). As another interviewed analyzed, “as a manager, I realized that when I used to go the communities and had a non-formal meeting, direct with the users, we could understand the local demands, have a better dialogue, and could solve it right there” (Manager n° 14).

Community Committees

In addition to the councils, other instances of community participation and organization were identified. Community Committees (*polos* or *comitês de gestão/comitês comunitários*) has been observed in some MERs in the north and northeastern of Brazil. According to one manager interviewed, this initiative came specifically in the State of Pará, northern Brazil, because of the large number of communities inserted in the territory of each of these MERs. As stated by him:

“If I arrived in a municipality that had 50, 100 communities I was not going to give a lecture or none of that, we used to divide communities in sectors, the so-called Polos [...] This system is not in SNUC, it is nowhere, it is a system used for those who have little, but desire to work with many and sectorially. Geopolitically it is an arm, a very good appendix [of MERs], when it is strengthened in the representation of community committees and with the interface of the deliberative council, as a forum of social control and participation (Manager n° 11).

Each committee represents one local community (*comitê de gestão/comitê comunitário*). The committees, by turn, also can be an arena for discussion and deliberation and have the aims to listen and systematize the local wishes of the users for the presentation in the Council. A number of committees are generally grouped by geographical proximity in the so-called *polos*. In general, each *polo* has a chair in the Deliberative Council of MER, and the representative of each polo (councilor) respond for such communities. In other cases, the committees seem to function more independently of the Council, in a more direct relationship between ICMBio and communities. Santos and Schmitz (2016) presented some limitations to the Community Committees, more related to the lack of financial support to local leaders to mobilize actions that are able to support MERs co-management. In any case, it can be thought as an interesting arrangement that increases the spaces of participation, potentially reducing the limitations of the representative system in the councils.

4.1.4 Public Policies and Programs in MERs

Bolsa Verde Program

The *Bolsa Verde* program was created by the Brazilian federal government in 2011. It is an economic incentive program for poor communities who help to protect the environment, especially rural and traditional populations living in areas of great environmental relevance (MMA, 2011), not just MERs. The program offers an amount of R\$300 *reais* in every three months (about \$30 dollars per month) for households that are supposed to be within the income profile of R\$ 77 *reais* (about \$23 dollars) per month per person. The households are committed to give a counterpart, protecting the environment and following the management instruments regarding the resources use resources in their area.

According to the Brazilian Environmental Ministry information (data updated on 05/31/17), 12.788 households were beneficiaries of the *Bolsa Verde* Program in all MERs analyzed. The managers of MERs are responsible to register the households in the program, provide information and manage the conservation actions that come from the program as well.

Regarding the perception about the role or potential of the *Bolsa Verde* as a management instrument, there is no consensus among the managers interviewed. In general, many respondents complain that the program promote a high demand of work, which brings many difficulties for the reduced teams of officers in MERs. For instance, *“for me it's something we should not be managing. It takes a lot of time. It is very complicated. Imagine how many families we have to be solving the problems of the Bolsa Verde?”* (Manager nº 15). In the other side, the relevance of the program concerning the mobilization of communities was also highlighted, making possible that many families came to know MERs and understand its objectives. At the same time, the confusion about the roles of the program and those of MERs as a protected area were also mentioned.

“I see both positive and negative aspects. As positive I see the improvement in community income, it serves as mobilization [...] people are seeking more the MPA management, they become more involved in meetings, they go looking for the financial resource and they get involved with other subjects. Therefore, it turns out that the program serves as an instrument of mobilization. The reverse, the negative, is that the other management instruments are confused with the Bolsa Verde. To you have an idea people calls us asking if here is the office of the Bolsa Verde. We walk on the streets and people ask us if we are the people from Bolsa Verde, so they end up confusing a detail of management, which is a program, and the Bolsa Verde ends up being the most important feature of MER for some people” (Manager nº 02).

Table 2. The institutional framework of Brazilian MERs. Management instruments, their objectives and status of implementation until of 2016. The published status regards the instrument that was already published in the government register and have a legal basis.

Management instrument		Objectives	Status of implementation process (n=21)
Concession of Real Use Right	<i>Land/sea tenure</i>	Document that conceives for a community-based association the right to use the territory, generally for a period of 20 years.	Published (n=15) In process (n=6)
Household Profile Register	<i>Beneficiaries recognition</i>	A participatory profile definition describing criteria and features of beneficiary households.	Published (n=16) Concluded but not published (n=5)
Management Plan	<i>Territorial use planning</i>	Technical document containing the zoning and biophysical description, the rules of use and management of natural resources.	Published (n=2) Started at some point or in process (n=8) Not initiated (n=10) Concluded but not published (n=1)
Management Accord	<i>Territorial use planning</i>	Rules defined collaboratively, regarding the use, management practices, the occupation of the area, and actions for environmental conservation in a language and content less complex than Management Plan	Published (n=1) Started at some point or in process (n=3) Not initiated (n= 4) Concluded but not published (n=13)
Fishing Accord	<i>Territorial use planning</i>	Rules defined collaboratively, regarding the fisheries, taking into account the interests of the fishermen in a participatory manner, through mobilization, community meetings and assemblies.	Published (n=4) Concluded but not published (n=1)
Deliberative Council	<i>Spaces for discussion and deliberation</i>	Composed by representatives of other public agencies, civil society organizations and traditional populations living in the area who negotiate and deliberate the access and use of natural resources. and other issues regarding management	All MERs with Councils established
Communities Committee	<i>Spaces for discussion and deliberation</i>	Instances of community participation and organization, mobilized by local leaders with the aims to listen and systematize the local wishes. In most of cases the local leaders are also counselors of Deliberative Council	Existing in North and Northeastern areas
<i>Bolsa Verde</i> Program	<i>Public Policy</i>	An economic incentive program for poor households who lives in areas of great environmental relevance such MERs	Total of 12.788 beneficiaries households in MERs analyzed*

*Source of data: Ministry of Environment in 05/31/17

It is undeniable that the program has had a relevant socioeconomic impact, especially in the visibility of this population by the public power. As addressed by Apoloni et al. (2014), the poor rural population is even more marginalized than urban population, in terms of access to public policies when both are in extreme poverty. Few

advances were mentioned by the managers in terms of the environmental impact of the Program until this moment. In only one MER, it was possible to observe the monitoring of conservation actions in a systematic way, resulting directly from the program.

5. The drama of managing MERs: The voice of local managers

The complexity of the institutional framework of MERs presented above reveals many challenges for its fully implementation, along with several other issues that are directly relate to the role of public managers acting in these territories. In other words, it reveals a diversity of real dramas experienced by managers in their daily work, who acts many times as bridging stakeholders between community's practices and State bureaucracy. A total of 182 conflicts, problems or difficulties were raised from the narratives of the 21 managers interviewed, and varied according to the level of spatial/institutional scale in which it was experienced and/or originated.

To explore these dramas, we categorized them as *local*, *institutional* and *structural*, understanding them in a "cross level" interaction, so many of the local conflicts are directly related to institutional problems of ICMBio, which in turn are totally connected to structural problems, that concerns, ultimately, the Brazilian national government priorities on socio-environmental issues.

Local Dramas

We found out 91 interviewing quotes regarding conflicts, problems and difficulties that officers deal in MERs territories, and varies according to the context of each MER. Most of managers' complains, for example, the lack of social organization and engagement of communities in issues regarding MERs. In their opinion, it makes harder the co-management and the implementation of the institutional framework. Part of managers also pointed out a concern that the social organization and empowerment of fishing communities being not restricted to leaders, but that more people get more involved in the issues regarding MERs.

The second drama that officers deal more is related to the local conflicts over resources use. In general, the conflicts are among local fishers using different gears, or, more frequently, between beneficiaries and outsiders. It requires the managers working as true mediators of the conflicts, among the several other assignments that need to be

carried out by them. Besides the conflicts over the fisheries resources, there are many other pressures and threats reaching MERs, which are enhanced by the context of the coastal zone. These dramas involve real state pressures, land tenure conflicts and the large companies impacts from different sectors, the latter either by direct impacts on environmental degradation, or by the excess of managers work in evaluating licensing processes. In the same sense, local politics are another source of problems for several managers. Political decisions and interests may often influence licensing processes, as well as, the spaces for discussion and deliberation of MERs, sometimes occupied by local politicians to get votes, or to co-opt leaders.

Another local drama raised by some managers addressed the confusion about institutional allocation to deal with the diversity of subjects regarding MERs territories. It means that many times ICMBio, represented by the local team, is requested to solve problems that are not from their attribution, but rather from other local public agencies, as city halls, or even police issues. This is because in many places the closest presence of State is the environmental agency. Several narratives reveal the stress and overworking the managers are facing, especially due the low number of staff and the amount of subjects they need to deal with. It can be clear illustrated by the following quote:

In a month and a half I am going to leave the MER, I will change my position. I cannot stay here much longer, I have no personal life. Between Christmas and New Year, on a Sunday they called me saying that a tank from a nearby shrimp farm had exploded, and there was cultivated shrimp going through the estuary. I had to go there to register and everything, because of the importance. This also happened several times later. I need to choose whether I will live my life or I will live the MER. Either if I am going to marry my wife, or I am going to marry the MER. It is impossible [...] the manager from a personal and professional perspective, he has the option to say no, not answer the phone and everything. But the level of commitment that I assumed at the beginning, there is no way out [...] it's a permanent personal exercise (Manager n° 5).

Institutional Dramas

We understand the institutional dramas as those raised by managers more directly related to the organization and functioning of ICMBio. We found out 43 quotes regarding institutional problems and most of them addressed the lack of a clear institutional position about many subjects, especially including the management instruments, their aims and implementation. When questioned about the implementation of the instruments we described above, managers often attributed the problems of implementation to the lack of

understanding, especially on how the head coordination in Brasília conducted what was decided at the local level.

“We need to provoke our house to establish this. What, after all, what does the Institute [ICMBio] understand that it is a deliberative council, the Concession of Use Right, where they are related and where they are not? The participation of society through the Council goes until where? I think we still need to advance in conceptualization, in leveling the understanding, because I think it is still far from having a unity within the Chico Mendes Institute itself” (Manager n° 21)

Along with the lack of leveling the objectives, the roles, the process of management and its instruments, were the great bureaucracy and workflow issues at ICMBio, including their juridical support. As stated by Gerhardinger et al. (2010), “every single management measure has to undergo a bureaucratic evaluation process by several higher levels of ICMBio, until it is published as a new legislation and finally implemented” (p.11). As mentioned by most of managers, the hierarchical structure within the ICMBio reveals many obstacles. The bureaucracy and the centralized work at the headquarter in Brasilia often lead to procedural overcrowding and slow management, which is supposed to be dynamic and adaptive, especially in MERs, where the premise is to be directly inclusive of traditional users populations.

Despite the fact that ICMBio had created regional coordination offices as a way of providing a closer support to protected areas and decentralizing the work that had historically been concentrated at the headquarter in Brasília, several managers complain about the centralized work in headquarter, the distance and a mismatch with realities in local level. As pointed by many narratives, the changes in the team and/or in the head of coordination, generates some misunderstandings about the instruments role and the bureaucratic procedures to deal with them, promoting many delays in completing many of the processes. Besides that, internal divergences are another drama to face, sometimes more complex, and more related to the world vision and personal values of individuals, who in turn form the Institute.

A divergent point from interviews in 9 other Brazilian MPAs, found out by Gerhardinger et al. (2010), was the lack of training and a pessimistic atmosphere presented during interviews. Despite the MERs managers expose their innumerable dramas, and some of them demonstrate more clearly their revolt, most of interviewees brought encouragement feelings about MERs. It reveals, in most of the cases a compatibility of the manager's personal profile with the objectives of MERs, in combining the protection of the environment and also the livelihoods of traditional

population. It seems an interesting aspect against the problem of preservationist principles rooted in Brazilian no-take PAs (Araujo et al 2017).

Different from Gerhardinger and others (2010), the lack of training was not revealed as a substantial drama in the narrative of managers. More than half of managers had already done specific capacity building on socio-environmental management. ICMBio has been offering a year of training on this subject since 2010, with theoretical and practical approaches on co-management, environmental education and conflict mediation. The course is offered by other trained officers and constitutes an important institutional advance. As sometimes the course runs the risk of not existing by financial cuts, it is extremely necessary to keep it as a priority.

Structural Dramas

We considered the problems regarding infrastructure, financial and human resources as structural dramas, especially because it encompasses institutional issues concerning not just only ICMBio, but also political priorities of the Ministry of Environment and ultimately of the Brazilian Federal government on socio-environmental issues. It is based, for example, on the budget available for investing in the management of each protected areas. The structural dramas appeared in 48 quotes.

The lack of infrastructure appears to be a chronic problem for most of MERs. As MPAs, almost none of the areas had vessels. In those that have, few are suitable for navigating in open sea areas. Sometimes the lack of physical structure for a local office is also mentioned as a serious problem in many MERs, that makes managers distant from the territories and consequently distant from the communities and local demands. As stated by a manager:

We have a boat and two vans that only give us trouble. We have this boat, but it is only for inland waters and we have a part of the area that is coastal. Inside the river navigation is possible, but outside, on the coast, is very complicated with a motorboat 40. The biggest claim we have is in terms of structure. The building is falling apart, the roof has already fallen. We have been in reform for the last 6 months, so we have been working at home for 6 months, but we are doing things, we can't stop (Manager n° 17).

According to most of managers, the regular annual budget available to each MER is not enough to all needs of management. Alternatives sources have been used to address the financial gap for the implementation of protected areas. A significant amount of revenue may come from international cooperation projects. Funding programs from the Global Environmental Facility (GEF) to Ocean and Mangroves, or the Amazon Region

Protected Areas Program² (ARPA) were mentioned by some managers as decisive to their work in managing MERs. Otherwise, the structural drama would be even worse. Because of that, it is possible to see great financial asymmetries among MERs. As stated by a manager, “*there are some units [PAs] that are “eyes” and others that are very poor indeed* (Manager n°1). According to the interviews, and complemented by official data, from 21 MERs analyzed, 8 had at least part of its funding coming from GEF or ARPA, especially those localized at the north, in the Amazon region, and some others at northeastern.

The lack of human resources is sometimes even more dramatic, since even with financial resources, managers are unable to carry out all their tasks and local demands, such as accountability, licensing process evaluation, surveillance, *bolsa verde* management, conflict mediation, logistics of office operations and co-management processes. There were on average 2 staff from ICMBio per MER at the end of 2016, which means 1 officer per each 18.788 hectares approximately. Sometimes just the head of the MER, who is usually an environmental analyst, compose the MER team and deal with all the tasks, including those that are supposed to be done by technicians, such as logistical issues. Gerhardinger et al. (2010) found out similar dramas when analyzing several types of Brazilian MPAs, not only MERs. It also involved an overly bureaucratic management in the administrative system, MPAs understaffed and underfunded as well. Government budgets reflect the priorities for public policies. Although they have a strong technical component, public budgets in Brazil are a result from political processes and political contexts (Godoy and Leuzinger 2015).

6. Institutional Dilemmas: Instruments of legalism or social emancipation?

The history of MERs institutional framework and its evolution reinforces the argument that local institutions have not been fully legitimized by the State, often losing their relevance. According to Cunha and Loureiro (2012), there is re-signification about the concept of participation, originally proposed by the rubber tapers in 80's. Within the state apparatus, a moral, private and an individualistic realm, favoring an institutionalized and technocratic participation reshaped it. From this trap, we ask: what is or should be

² ARPA is the largest cooperation initiative focused on protected areas in Brazil. It was created to expand and strengthen the management of protected areas in the Amazon.

the "weight of the law" in the use and management of new commons, as the case of Extractive Reserves?

As Nobre (2004) states, this process of inclusion and participation can be reinforced through the Law. Nevertheless, in the search for equality, citizenship and social rights it may have undesirable effects that are accompanied by a broad process of 'juridification' in social relations, or by 'a progressive extension of the life domain regulated by legal norms'. When the State assumes the responsibility for guaranteeing rights, stimulating participation and not limiting itself to a State-client relationship, there is undoubtedly an institutional advance in the paradigm of the welfare State. Paradoxically, however, there is a risk that the official governmental model of participation will suffocate, or fail to legitimize endogenous forms of community's participation, often reducing, even controversially, customary law over those territories.

It's also important to alert about the supremacy of positive law over customary law. As Curi (2012) address, "the current positive law gives customs a secondary value, placing customary law as inferior or delayed, comparing to the constitution of the positive normative law emanated by the State" (Curi, 2012, p.231). That is, although the recognition of these communities by the State has been extremely relevant, there remains the paradoxical effect of weakening local institutions. These issues are also raised by the legal pluralism perspective. Jentoft et al (2009) considers the legal pluralism as a common phenomenon in fisheries and coastal communities and that co-management must be designed with legal pluralism in mind. The authors (op.cit) states that legal systems should never be closed, but permeable and dynamic.

The challenges revealed by our results are related to the implementation process of this institutional framework that still follows a technocratic logic, and a legalist logic. It happens, for instance with the bureaucracies and workflow drama experienced by the managers. All the efforts in establishing official mechanisms of managing collective rights may configure as a way of disciplining the process and not creating spaces of exchange, participation and deliberation in an emancipation meaning. As stated by Araujo et al (2017 *in press*), there is a national trend involving fisheries governance and inclusive development in Brazil: (i) a technocratization of participatory mechanisms; (ii) a limited capacity of state agencies and (iii) clashes between marginalized and elite groups (including conservationists groups)" (p.8-9).

Strengthening only the legalism does not promote the social emancipation *per se*. Managers complain about the low involvement of the users group as a whole, many times

restricted to the participation of leaders, in the scope of the Deliberative Council. We understand that the practice of co-management should not strictly being done by the official management instruments that involve "deliberative moments", as it happens in the Councils. In this case, it is important, for other researches on this subject, as well as for strengthening the co-management practices, to consider other instruments, understanding empowerment and participation as a process, that overtime implement democratic roots in MERs territories.

The particular cultural components to each case of MERs provides facilities for the active participation of resource users, which is influenced, for instance, by the local political organization and/or the degree of paternalistic customs generated throughout the social history of each region (Seixas et al. 2011). Moreover, we argue that it is also important to emphasize the need to tackle the material inequalities that impede the implementation of the participatory formal rights guaranteed to these citizens (Nobre, 2004). It means that the Brazilian State still needs to look after several gaps concerning public policies that affect the well-being of traditional populations. Otherwise, the democratic exercise is not able to be achieved, and the management instruments can be at the risk of being instruments of a mere legalism and not of social emancipation.

It does not diminish the recognition of MERs as a strategic model and a demand for the biodiversity and socio-cultural protection, which is totally valid and has also been recognized by many fisheries communities. Even so, this problem is alarming and have a direct effect on the application of the management instruments that we seek to map in this paper. It is important to consider that political apathy is not merely an individual issue or a result of psychological factors, but has its basis in the very unequal structure of society as well (Vitullo, 1999). The effectiveness of management instruments should not only be analyzed under a specific micro-perspective, but should be contextualized in a cross-level governance policies dynamics and its complexity. As stated by a manager, in a context of urban pressure on a community of fishermen:

"They are marginalized [...]. Their level of poverty is depressing [...] how am I going to ask her to go to a meeting? Discuss about MER? They are on a very large level of human degradation, for loss of territory, loss of identity and resources. How am I going to resolve this with a management plan, or a management agreement? I have to understand that the fundamental problem here is not the public environmental management "(Manager n° 19).

7. Conclusions

In this paper, we aimed to present the evolution and a current panorama of management instruments regarding Marine Extractive Reserves. For this purpose, we analyzed the official institutional framework of MERs and presented the voice of local managers, who face not a tragedy, but in the words of Dietz and collaborators (2012), a drama of these new commons in their day to day praxis. This drama has local, institutional and structural dimensions, and are worsened by the complexity of the coastal zone and by the assumption that co-management is the best arrangement for these settings.

In our analysis, we grouped management instruments of MERs into (i) instruments for land/sea tenure and beneficiaries' recognition, (ii) instruments for territorial use planning, (iii) institutional arenas for discussion and deliberation, as well as a public policy and program. The MERs' institutional framework has become robust over time, although it still needs to be improved. Alternatives are needed for reducing procedural steps for approval and formal recognition of the instruments. Opening a discussion channel involving ICMBio staff from different levels may be an interesting option to build a common understanding and/or reasonable positioning about several controversial issues that touch on the use and management of natural resources by traditional populations.

Co-management instruments must be the means and not the ends, i.e., they should increase governance and enable adaptive capacity. Such common understanding may lead to a greater recognition of local decisions and a greater legitimacy and autonomy of community institutions. The paradoxes between legalism and social emancipation are especially related to when customary norms leave their customary form and become, progressively, codified law (Curi, 2012), in a technocratic logic with an insufficient structure of the State to guarantee its effectiveness.

We do not pretend to have a solution to these dramas or paradoxes, but we raised some important issues to be considered when involving communities in state-mediated management processes is required. As Armitage et al. (2007) point out, in the search for a collaborative and adaptive management of common resources, a diverse of interests and values is the norm, and conflict is a frequent operating condition. A relevant starting point would be to recognize with great clarity the role of each player in the management of new commons as MERs, including the local managers who often act semi-formally between

the legalism of State and the reality of users. It means to recognize when and where the State plays a fundamental role and when and where the communities need to have more legitimacy and autonomy to act.

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