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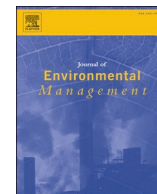
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# Catalytic and structural factors behind advancements of co-management in protected areas: Contributions for its evaluation

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## ABSTRACT

Over the past few decades, the literature has pointed out pathways to success in co-management processes based on key conditions. Rather than offering prescriptive conclusions for successful co-management in protected areas, in this article, we highlight the importance of the “process” and certain elements that contribute to advancements of formal and informal co-management. We analyzed the trajectory of two protected areas for sustainable use in coastal Brazil - Extractive Reserves of Prainha do Canto Verde and São João da Ponta. Advancements of co-management were understood as processes of shared environmental and territorial governance, with levels of community participation and/or social control. Advancements were observed in both formal co-management arenas, such as deliberative boards for protected area management, and informal spheres, such as the implementation of projects and other actions involving traditional populations and partners. Drawing on Grounded Theory, the advancements were explained based on two categories of inter-related factors: (i) catalytic factors – crises, threats and other factors of social mobilization, emancipatory partnerships, and political identity, and (ii) structural factors, based on resources of community power and citizenship. Beyond diagnoses or rankings of success, the explanatory dimension of these phenomena highlights their inherent complexity.

## 1. Introduction

Recognition of the importance of collaborative environmental governance in recent decades – especially since the 1990s – has culminated in the creation of territorial-management models based on decentralization and a stronger role played by civil society (Castro, 2012). Combining normative structures with social justice and environmental conservation, local and traditional populations have set up partnerships with government institutions and/or other organizations in new arrangements for protected areas that also integrate their livelihoods and land rights. In Brazil, Extractive Reserves (Resex) can be considered a model of environmental conservation and socioeconomic inclusion of traditional peoples – in forest and coastal-marine environments – that fits Castro (2012) definition of territorial-environmental governance.

In co-management, decision-making and responsibilities should be essentially shared, to some extent, between government and

communities, potentially involving other stakeholders, such as universities, non-governmental organizations (NGOs) and the private sector (Jentoft, 2003; Carlsson and Berkes, 2005; Armitage et al., 2007). Effective co-management requires a favorable environment that promotes equitable distribution of power and recognizes the knowledge and practice of local communities in the interaction with the government and other actors involved (Njaya, 2007).

Analyzing co-management cases is not an easy task. There is extensive literature pointing out pathways to success in co-management processes based on key conditions or checklists (e.g. Pinkerton, 1989; Pomeroy et al., 2001; Mcconney et al., 2003; Plummer and Fitzgibbon, 2004; Sandström et al., 2014; Williams and Tai, 2016). Some of these factors are already well known, such as social capital, qualified leadership, legal institutional arrangements, multilevel networks and partnerships, government support for co-management, evaluation and monitoring processes, among others. Besides indicators, many studies emphasize the barriers and difficulties of shared management or

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qualified social participation, especially in co-management cases in the Global South (Seixas, 2006; Njaya, 2007; Seixas et al., 2011 and 2019; Vokou et al., 2014; Cormier-Salem, 2014; Trimble et al., 2014; Haambiya et al., 2015; Trimble and Plummer, 2019).

In this article we aim to take a different approach. Rather than analyzing the presence of preconditions or criteria that contribute to co-management based on a single explanatory model or analytical framework, we are interested in exploring co-management processes in depth and looking for explanatory factors that contribute to advancements in co-management. Considering that co-management processes have been progressing in Brazil, although with numerous problems and challenges, our goals are to analyze the trajectory of two Resex (Prainha do Canto Verde and São João da Ponta), identify co-management advancements, and identify the factors that explain those advancements. Resex in Brazil are defined as protected areas that ensure the livelihood and culture of traditional populations, as well as the sustainable use of natural resources (SNUC 2000). The national agency Chico Mendes Institute for Biodiversity and Conservation (hereafter ICMBio) is in charge of federal Resex. The governance of these areas is based on the premise of co-management, with various instruments composing its normative and institutional framework: instruments of recognition of the land, seascape, and its beneficiaries; instruments of land-use planning; bodies of discussion and deliberation, especially the Resex deliberative board; and public programs and policies aimed at these protected areas (Prado, 2019).

By “advancements” we refer to evidence (initiatives or processes) of shared environmental and land/sea governance, with levels of community participation and/or social control, which contribute to the co-management and goals of the Resex. In other words, such initiatives and processes are evidence that co-management is not only a legal framework implemented to maintain the status quo of government-led environmental management.

Given that co-management necessarily requires interaction among actors, advancements can occur in both formal and informal spheres. The main formal arena for discussion and deliberation within the normative framework of Resex governance is the deliberative board, which, among other duties, should collaboratively build and deliberate on all co-management instruments associated with the protected area, ensuring the full participation of traditional populations alongside the public sector and other civil society stakeholders. Informal spheres consist of possibilities of interaction outside the deliberative board meetings, such as the implementation of projects and other actions of land governance (complementing seascape governance) involving traditional populations and other social actors.

A contextualized evaluation of participatory processes is key to understanding what can and cannot be expected from such processes, and whether and how they can be integrated with existing institutions (Conley and Moote, 2003). There is no perfect or static governance arrangement over time. Participation can be influenced by factors that operate at multiple levels (Gurney et al., 2016). A contextualized analysis shows that the agency of subjects involved in co-management is influenced by its structural conditions and mediated (not determined) by institutions (as rules in use), which both offer opportunities and impose restrictions (Cleaver, 1999; Cleaver and de Koning, 2015). Recent research on collaborative governance of social-ecological systems found that contextual and mechanism variables interact and have an effect on collaborative outcomes, highlighting the importance of the context (the milieu and history) in which the collaboration takes place (Schoon et al., 2021).

We claim the importance of contextualizing the advancements, as well as the challenges, so that the non-fulfillment of one of the key-factors or preconditions, will not necessarily jeopardize co-management processes. The procedural perspective (Conley and Moote, 2003) can be useful to analyze contexts and outline governance strategies in protected areas worldwide. In what follows, we first introduce the two case studies in coastal Brazil, after which we present

the research methods. Next, the results and discussion address the main advancements of formal and informal co-management in the two Resex, which are explained based on two categories of factors that emerged from the analyzed processes: catalytic and structural factors.

## 2. Case studies in coastal Brazil

Prainha do Canto Verde Resex and São João da Ponta Resex, located in the Northeastern and Northern regions of Brazil, respectively (Fig. 1), were the case studies we selected based on a set of semi-structured interviews with ICMBio agents from 21 out of the 25 Brazilian Marine Resex and other national fishing leaders, in 2016 (See Prado, 2019 for details). Both Resex were recognized as protected areas with communities that have been actively participating in governance processes. These two cases were also considered valuable for comparative purposes since they illustrate different ecosystems, resource types, creation processes, and distinct political, cultural, and social variables.

The background of the creation of a Resex, or the stages prior to the establishment of co-management (the step-zero *sensus* Chuenpagdee and Jentoft, 2007), can be decisive for a community to take ownership of the new governance arrangement and, consequently, for its implementation time. Although the normative framework is the same for all Resex, the observation of different contexts shows that these Resex have unique characteristics and are under pressure and threats from countless economic sectors (Prado et al., 2021). More information on the case studies is presented below, and a summary can be seen in Table 1.

### 2.1. Prainha do Canto Verde Extractive Reserve, Ceará

The Prainha do Canto Verde (PCV) Resex is in the state of Ceará, Northeastern Brazil. There are about 1000 residents and 389 families in the community, whose main economic activity is fishing. Tourism, handicraft, floodplain agriculture and plant gathering are additional sources of income and/or livelihood. From 1979 to 2006, the community of PCV resisted the pressures of land grabbing and real estate speculation, legally facing adverse possession by land grabbers, in addition to continuous cases of threats and violence against residents. In 2006, a court order granted possession of the land to the community, which had already requested the creation of a Resex in the area. The Resex was created in 2009, initiating a new governance arrangement for the land and the marine environment. Unfortunately, the Resex has not excluded new land grabbers and real estate speculation in its land area, accounting for approximately 600 ha. Due to new land disputes, especially with a businessman who claims ownership of more than half of the Resex area, the community has not yet obtained their Concession for Use Rights (a document that bestows user rights to a community-based association, generally for a period of 20 years) and the uncertainty about the governance roles related to land use and occupation has been the main conflict in PCV.

### 2.2. São João da Ponta Extractive Reserve, Pará

The municipality of São João da Ponta (SJP) is situated in Pará state, Northern Brazil. With a population of 6059 inhabitants (IBGE, 2018), there are approximately 460 families who use the reserve's resources, living in both urban and rural areas. The reserve is demarcated at the municipality's boundaries, partly by an estuary and largely by mangrove areas. The background of the creation of the SJP Resex in 2002 relates to an opportunity for international cooperation and funding by the Pilot Program to Protect Brazilian Rainforests, known as PPG7. The creation of these Resex did not stem from local demands, but from work coordinated by the federal environmental agency with local municipal governments, community organizations and other stakeholders. In SJP, the Resex was created with the goal of protecting the artisanal fishers' territory. Some families also extract *acaí* berry and practice small-scale farming, but the main economic activity is crab (*Ucides cordatus*)

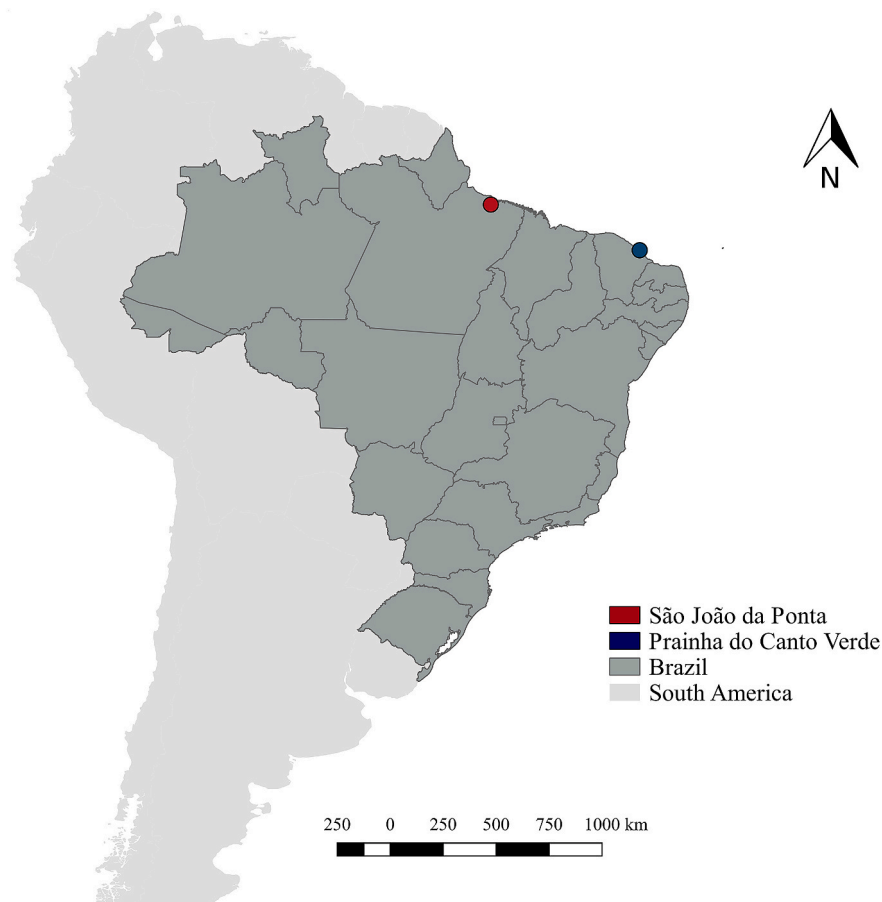


Fig. 1. Location of the Extractive Reserves of Prainha do Canto Verde (Ceará State) and São João da Ponta (Pará State), in Brazil.

harvesting. An average of 260 crab harvesters and their families depend on this resource. In 2004, the São João da Ponta Extractive Reserve Users' Association (MOCAJUIM) was created; it is the main community organization and land use concessionaire. There are 18 communities distributed within the Resex area (including the urban area) and grouped by geographical proximity in five neighborhoods, which have representatives in the Resex deliberative board.

### 3. Research methods

This research drew on Grounded Theory (Glaser and Strauss, 1967) to understand the trajectory of the two Resex and identify which factors explain advancements in co-management processes, concerning community participation in governance and decision-making. Grounded theory is aligned with the explanatory goals of this research, as the methodology emphasizes that theoretical categories emerge from the complex reality analyzed by the researcher; it is not based on preconceived hypothesis, concepts, or categories (Bryant and Charmaz, 2007).

We conducted document analysis of technical reports, legislation, and minutes of 29 meetings; direct observation of eight community meetings and community activities; and 86 open and semi-structured interviews during continuous fieldwork from September to December 2017. In PCV, we carried out 46 interviews (38 with community leaders, five with external partners, and three with ICMBio managers), and in SJP we carried out 40 interviews (29 with community leaders, eight with external partners, and three with ICMBio managers). External partners were considered all agents operating in the area who do not qualify as ICMBio managers or community representatives, therefore including individuals linked to NGOs, universities, and other government agencies. Except for managers, all other participants were

identified using snowball sampling (Bernard, 2006). The participation of interviewees was conditional on giving free, prior, and informed consent.<sup>2</sup>

Semi-structured interviews with ICMBio managers and external partners aimed to reconstruct the history of the Resex based on its performance, its main co-management advancements, and the factors that explain such advancements from their perspective. For the community leaders, the open-ended Life History interview method was used (Atkinson, 1998), which made it possible to (i) reconstruct the respondents' life history and relationship with the Resex; (ii) identify the main episodes/events that are considered relevant in their life history and in their relationship with the Resex; (iii) understand how and when the respondents participated in the management of, or actions related to, the Resex, the "positive aspects" of such interaction and why they occurred (from their perspective); and (iv) the reasons that motivated them to become involved in Resex activities. Based on Grounded Theory, we carried out systematic coding (Bryant and Charmaz, 2007). Quotes were sorted and coded according to explanatory elements for community participation and/or social control, which contributed to the co-management and goals of the Resex (open coding). All quotes selected were clustered into emergent categories. The final integration of emergent concepts was theoretically saturated into Structural and Catalytic factors.

<sup>2</sup> Approved by the Research Ethics Committee (51738715.2.0000.5404) and the Brazilian National Biodiversity Authorization and Information System - SISBIO/ICMBio (numbers 50519–1; 60,564–1; 59,787–1).

**Table 1**

Characteristics of São João da Ponta and Prainha do Canto Verde Extractive Reserves. Source: Research data.

	Prainha do Canto Verde (PCV)	São João da Ponta (SJP)
Resex Year of Creation	2009 (local demands)	2002 (Pilot Program to Protect Brazilian Rainforests)
Resex area (hectares)	29,804.99	3,409.44
Protected environments	Marine ecosystem, beach, dunes	Mangrove and estuary
Main harvested resources	Fish and lobster	Crab and fish
Number of beneficiary families in the Resex*	389	460
N° of communities	1 community	18 communities
Deliberative Board - year of creation	2010	2007
Composition of Deliberative Board in 2017	<p>PUBLIC AGENCIES</p> <p>1- Federal environmental agency.</p> <p>2- State Development Department.</p> <p>3- City Hall. 4 - Brazilian Navy.</p> <p>5- National Institute of Colonization and Land Reform. 6- State Fishing Agency. 7- Federal University of Ceará</p> <p>CIVIL SOCIETY</p> <p>1- Regional NGO</p> <p>2- Fishers' Union</p> <p>3-Regional Fishers' grassroots organization</p> <p>TRADITIONAL POPULATIONS</p> <p>1-2 Residents' Associations.</p> <p>3-10 Fisher's community groups (Fishers, Women's, Youth, Handicraft and Culture, Education, Floodplain farmers, Health and Tourism)</p>	<p>PUBLIC AGENCIES</p> <p>1- State Agriculture and Fishing Department. 2- City Council.</p> <p>3- City Hall. 4- Port Authority of Eastern Amazonia. 5- Brazilian Technical Assistance and Rural Extension. 6- State Forestry and Biodiversity Institute.</p> <p>7-8 Federal Universities of Pará and Rural of Amazonia.</p> <p>CIVIL SOCIETY</p> <p>1- Regional Fishers' grassroots organization. 2- National Fishers' grassroots organization. 3- Fishers' Union. 4- Rural Workers' Union.</p> <p>5- Catholic and Evangelical Churches</p> <p>TRADITIONAL POPULATIONS</p> <p>1- SJP Resex Users' Association</p> <p>2- Mãe Grande de Curuçá Resex Users' Association</p> <p>3-7 Artisanal Fishers' Associations (one for each neighborhood)</p>

\* Data provided by the Resex managers

#### 4. Co-management processes and their advancements

In both cases, advancements of co-management processes were observed both in the formal arena of the deliberative board and outside this body, in the community interaction with the environmental agency and external partners. In what follows, we present the most prominent advancements of each case, from the creation of the Resex under analysis. A more robust document analysis was possible in PCV, enabling the triangulation of information obtained in interviews and a detailed reconstruction of the activities of its deliberative board. In SJP, the interaction with community members in the implementation of projects and/or public policy for the Resex was more expressive. Thus, in this section we describe the performance of the PCV deliberative board and the implementation of some projects in SJP. In section 5, we discuss structural and catalytic factors as explanatory for co-management. Findings are illustrated with quotations from interviewees of each Resex (being P - outside partners, M - ICMBio local managers, and C - community leaders).

##### 4.1. Advancements of formal co-management: performance of the PCV deliberative board

The PCV deliberative board was officially formed in 2010, only a year and a half after the Resex creation, while the average time for forming boards in marine Resex created until 2009 was five years (Prado and Seixas, 2018). This was possible because the community leaders and external partners (such as NGOs and other advisers) were well acquainted with this co-management arrangement for the protected area. Also, there was previous community experience of social organization, through meetings, assemblies and other mobilization strategies related to the struggle of the local social movement in defense of its land. The composition of the deliberative board (Table 1) was based on previous local dynamics. The PCV community has had self-organized groups since the 1990s, such as committees on health, land, fishing, education and tourism, which have been addressing demands and issues related to their respective areas. The seats on the deliberative board for external institutions were occupied based on relationships with the community, which included several long-standing partnerships such as researchers and non-governmental organizations.

Another sign of advancement is the creation of working groups (WGs), temporary groups created to support the board on specific issues (Abirached et al., 2014). At least 10 WGs were created over seven years in PCV, discussing subjects such as 'Development of land-use planning' and 'Fishing regulation'. Each WG commonly included a ICMBio staff member, community representatives and an external partner, such as an NGO or university. During the first two mandates of the board (2011–2014), 29 meetings were held - a significant number compared to other Resex (Prado et al., 2020) - which demonstrates the active performance of the board members.

Asymmetrical power structures in protected area bodies counteract equitable management, even despite a formal ascertained co-management framework (Gorris, 2019). Other studies addressing boards of protected areas in Brazil have identified difficulties for the community to be truly represented and take on responsibilities in co-management process (Vivacqua and Rodrigues, 2012; Nobre and Schiavetti, 2018; Tebet and Trimble, 2019). In PVC Resex, on the other hand, it is striking that, along the years analyzed of the board activity, many demands and questions were built collaboratively and the PCV community played an active role in management.

Two resolutions were created by the Resex board: one establishing administrative procedures to authorize the building of houses and storage facilities for fishing gear, and the other establishing administrative procedures for the control, regulation, and ordering of artisanal fishing. Both resolutions were based on customary rules that existed locally. Although there is no formal Management Plan approved, the PCV residents are aware of the land and sea use rules.

The community fishing rules agreed upon by local fishers have been updated over the years, in local assemblies (not the Resex board), a sign of the adaptive dimension of co-management. Locally, the agreements also establish progressive sanctions imposed by the fishers themselves for noncompliance with rules (such as suspension of fishing for 15 or 30 days). The interviews showed that all fishers have taken ownership of the rules, and some even reported having been suspended at some point for failing to comply with agreed rules.

As a process that changes and reconfigures itself, co-management of the PCV Resex still faces several challenges, some of which are intensified by the land dispute over the Resex. Lima (2014) reports that there have been difficulties in planning and complying with the defined agenda of the board, besides the lethargy and poor infrastructure of the environmental agency to meet the demands of the population, such as marine surveillance and managing the land ownership conflict. Over seven years, five different officials were at the head of the PCV Resex, and the staff varied in quantity, reaching the expressive number of six civil servants in 2015, above the national average. See suppl. material to other advancements of the implementation of the PCV Extractive



Reserve and its formal co-management between 2009 and 2017.

#### 4.2. Advancements of informal co-management: projects in the SJP Resex

Co-management advancements of protected areas may stem from public policies that reach these areas and joint action for project development involving community, government, and external partners. In the case of SJP, we noted that the introduction of projects related to the Resex brought many advancements of capacity building among leaders and, consequently, for more qualified participation of the community in governance.

The governance framework of Resex also includes public policies (Prado, 2019), for instance with policy instruments regarding settlement and development loans, and/or financial incentives to families living in protected areas and in extreme poverty (*Bolsa Verde*), suspended by the federal government in 2018. Public policies for income distribution and minimum material conditions were identified as positive aspects of the Resex framework by most leaders. The implementation of policy instruments and projects is a stimulus for participating in meetings and for the emergence of many leaders with no history of engagement prior to the creation of the Resex.

In addition to public policies for social welfare, SJP experienced the implementation of some external projects and the arrival of organizations in the area in recent years, especially due to the influence of the local ICMBio manager in charge of the Resex in 2009–2017. According to reports by community leaders and the partners themselves, the manager was very active in attracting partnerships and coordinating projects (See suppl material to the projects executed in partnership with the communities of SJP up to 2017). One of these projects, for instance, directly impacted the fishers' way of production with the development of a new packaging technique for crab transportation to reduce mortality. At the same time, this capacity building initiative encouraged the community to give more value to their product, and to improve their working conditions, with the participation in fairs for direct sales.

The public policies and projects implemented since the creation of the SJP Resex are examples of co-management advancements of informal spheres (i.e. outside the deliberative board), as most of them have enabled access to previously non-existent basic citizenship rights (such as brick houses or significant monetary contributions to fishers' income), and/or catalyzed capacity building among leaders and stronger community participation in management, also strengthening the local production chain.

The relationship between "Resex and its benefits" is relevant for community engagement while controversial at the same time. There is still some misperception on the part of SJP residents regarding the real purpose of an extractive reserve, often associated with settlement and development loans – a general misperception present in most Resex in the state of Pará (Partelow et al., 2018). In SJP, there are also complaints regarding users who were not considered eligible for benefits and

benefitted families that had nothing to do with fishing. As a process, such issues will possibly be addressed by the new generations of leaders, who are already showing signs of grasping the real goal of the Resex.

#### 5. Advancements from a procedural perspective: explanatory factors for co-management

To avoid simplifying complex realities and homogenizing the particularities of the co-management systems, we described two protected areas with distinct creation backgrounds, ecosystemic and socio-economic realities, power disputes, and cultural aspects, with specific co-management processes and advancements, both in the formal arena of the deliberative board, and informally, through the implementation of governance projects or actions outside its domain. Although several advancements have been presented, what factors have contributed to them? What lessons can we draw from these cases to extrapolate to other co-management systems elsewhere in the world, going beyond a checklist of key conditions?

The coding results suggest two types or categories of factors that explain the elements that contribute to advancements in co-management processes: **catalytic factors and structural factors** (Table 2). The catalytic factors can be divided into three subcategories: (i) crises, threats, and social mobilization; (ii) political identity; and (iii) emancipatory partnerships. The structural factors, in turn, relate to citizen empowerment (i.e., guarantees of minimum rights for a more dignified quality of life), without which the costs of community participation and engagement tend to outweigh the benefits of participating in governance. Co-management processes involving local communities may exist without the presence of one of these factors, but they seem to be key to the community engagement in sharing governance in the long run, especially in the Global South. In what follows, we analyze these factors based on the case studies and the literature.

##### 5.1. Catalytic factors for co-management

###### 5.1.1. Crises, threats, and social mobilization

Episodes of crises and threats appear to be triggering events or explanatory factors for social mobilization and engagement in co-management processes (Pinkerton, 1989; Plummer and Fitzgibbon, 2004; Seixas and Davy, 2008). The literature on social-ecological resilience and capacity building also highlights crises as opportunities for pathway changes and for social organization (Olsson et al., 2006). At the PCV Resex, threats to land ownership have always been the driving force for local social organization. This includes not only the land disputes with land grabbers prior to the creation of the Resex, but also more recent internal conflicts and threats from the businessman who lays claim to half of the reserve area. Illegal lobster fishing by outside fishers using air compressors also triggered a process of local organization that transcended the limits of the Resex, influencing the organization of the

**Table 2**

Explanatory factors for co-management: catalytic and structural factors in Prainha do Canto Verde (PCV) and São João da Ponta (SJP) extractive reserves.

Explanatory Factors for Co-management	Features	PCV	SJP
<b>CATALYTIC FACTORS</b>	(i) Crises, threats, and social mobilization	Threats to land ownership, illegal lobster fishing.	Threats on new fishing rules and prohibition of fishing gears.
	(ii) political identity	Distinct aspects of political identity within a process of struggle for rights.	Collective identity and awareness of the oppressive character of fishers' dependence on intermediaries.
	(iii) emancipatory partnerships triggering the community engagement in co-management	External agents (mainly the Catholic Church, two NGOs, a university, and others) over the last 40 years.	External agents (public officers, NGOs, and universities) involved in multiple projects more recently.
<b>STRUCTURAL FACTORS</b>	Guarantees of minimum material conditions and rights for a more dignified quality of life, citizen empowerment and social justice	Several local development projects (1984–2008), addressing issues of production, income, health, youth, and education.	Projects aiming at strengthening the production chain and training young leaders; Resex economic incentives ensuring more dignified material conditions for communities.

social movement for artisanal fishing in the region. In the 1980s and 1990s such threats may have triggered local organization but considering the co-management arrangement already in place in the Resex, crises and threats are catalytic factors that feed local engagement processes, explaining the growth of community organization and consequently the ongoing social mobilization for participation in managing the area.

The history of SJP, in Pará, does not include such striking episodes as those in PCV regarding threats to the land and livelihoods of the population by external drivers. Nevertheless, a remarkable episode reported by most SJP leaders when asked about their participation in the development of local rules shows crises and threats as catalysts of co-management. After an agreement was reached within the scope of the Resex board to set the minimum mesh size of fishing nets at 35 mm, fishers claimed they needed to use a 25 mm mesh to catch mullet (*Mugil gaimardicus*). Although their claim was initially disregarded, the seizure of a few fishing nets by surveillance teams led to fishers' reaction, and a new agreement to use the 25-mm mesh between May and September for mullet fishing was reached. This showed not only their capacity for social mobilization in the face of a threat, but also the possibility of sharing decision-making within the deliberative board. Other fishing rules have been adapted to the context of the SJP Resex over time after fishers demands and negotiation as well, such as the use of the snare (a trap) to catch crab, which is prohibited by national legislation.

### 5.1.2. Political identity

In view of the polysemic set of terms pertaining to the subject of participation and collective action, we found out that it is important to qualify identity and its role in the process of ongoing social mobilization of communities in co-management processes. Identity has been analyzed from the viewpoint of "multiple senses and meanings, ranging from legal identity to cultural identity, from identity formed by actors' traits to identities stimulated by public policies that regulate rules of belonging" (Gohn, 2014 p.45-46). Identity issues are on the list of discussions on social movements and collective action in local or traditional communities and have even guided many external interventions that aim to "re-establish" the identity of social groups.

In the literature of co-management and environmental governance it is common to find, for instance, that sense of place (Masterson et al., 2017), values and beliefs (Berkes and Ross, 2013) and other similar variables are preconditions to collaborative success. Due to this plurality of discussions about identity, we understand that the role of identity as an explanatory factor for advancements of co-management seems to be close to the idea of "political identity," which is different from "identity politics", a recurrent feature of new social movements in Latin America in the last twenty years (Gohn, 2014).

This does not mean that the institutionalization of the Resex has not instigated identity politics in several communities linked to environmental politics, i.e., the set of new actions and obligations guided either by the protection of their territory or by the discourse of sustainable development. However, qualifying identity as political, based on Gohn (2014), is justified by stating that a social movement with a certain level of permanence is one that creates its own identity from its needs and desires (i.e., political identity), and not on that "dons" a pre-built identity just because it has a specific ethnicity, gender, or age (i.e. identity politics).

The creation of the PCV Resex was a State response to a social demand from the community for legal recognition or the formal construction of a right. The recognition of PCV's political identity occurred within a process of struggle; it was not granted, donated, or included in a top-down manner with the creation of the protected area. This largely explains the community's engagement and performance based on the new governance arrangement introduced in their territory and differentiates it from other cases in which such engagement started from identity politics (e.g., Yashar, 2007), or from the extractive reserve, as is

the case of SJP.

Political identity emerged in the narratives of the interviewed leaders and fit three distinct aspects (sensu Prado, 2002: p.65-66): (i) collective identity and the sense of belonging stemming from social relationships and the sharing of values and beliefs that define a group's political culture; (ii) awareness of the oppressive character of some social relationships rather than mere subordination; and (iii) the demarcation of borders, which creates reciprocity and recognition among local social agents, thus separating "us" from "them." These three elements emerged in the narratives of the PCV and SJP leadership with varying intensity. Firstly, collective identity was widely highlighted in statements that refer to the motivations for engagement and the struggle for the common good, for life and community practices: "To preserve, the aim to continue as we were [ ...] giving our children the right to have what we had, which is the freedom we have, to eat the food we eat, to have the free space to live, so this is already a lot" (PCV, C18). Secondly, awareness of the oppressive character of some social relationships, such as fishers' dependence on intermediaries, also justifies the motivation for collective action in SJP: "I participate because I want to get to the middleman, I want him to realize that he can lose the crab supplier if he doesn't pay a better price, I don't want only a few, but everyone in the community to be better paid for the crabs" (SJP, C1). Finally, acknowledgement of injustices regarding land grabbing in PCV is another example that relates to the aspect of social awareness and non-subordination acquired over time, as well as their self-recognition. As one fisher pointed out "I started feeling that I also had this duty, and as native we feel it" (PCV, C10).

Relational and symbolic dimensions have been appreciated in the most recent institutional analyses of governance processes of the commons (Bennett et al., 2018). It is important to understand that the factors associated with identity issues and social and symbolic community relationships (for instance their values, beliefs and kinship relations) catalyze co-management processes but are not static. These factors are in constant transformation, renegotiated, structured based on power relations and according to the balance between structure and agency (Cleaver and Whaley, 2018).

### 5.1.3. Emancipatory partnerships

Partnerships have already been identified in the literature on environmental governance and co-management as essential to inclusive arrangements involving local communities (e.g. Bockstael et al., 2016; Seixas et al., 2019). A number of studies have also emphasized the importance of bridging organizations (Berkes, 2009; Stewart and Tyler, 2019) and social networks to collaborative governance (Bodin and Crona, 2009; Bodin et al., 2020). Partnerships can be understood as cross-scale, vertical or horizontal institutional interactions, formal (when offering funding, legal support, training, etc.) or informal (such as exchange of information and knowledge). Different partnerships are necessary to meet different demands, and the latter change over time, influencing the evolution of the co-management process (Seixas and Berkes, 2010). However, the way partnerships develop and sustain themselves over time is not so well understood (Dodson, 2014). In fact, such partnerships, or the collaboration of external agents, are commonly questioned regarding their long-term effectiveness in improving the conditions of the most vulnerable populations, or as a strategy for social change (Cleaver, 1999).

Our findings suggest the need for qualifying these partnerships, which we will call *emancipatory* to differentiate them from countless other forms of recurrent, one-off external interventions in traditional communities (Prado, 2020). Emancipatory partnerships intervene in actions that contribute to increasing the individuals' capacity to improve their own lives, and are politically oriented towards the exercise of agency by local individuals, seeking to transform structures of subordination (Cleaver, 1999). Non-emancipatory partnerships generally limit the participants' influence on the broader components, methods and goals that shape the projects. Such partnerships, based on

specific projects and oriented towards top-down capacity building detached from local demands, may have results that do not catalyze elements of autonomy, engagement, and political organization (Bockstael, 2017), but rather inhibit the interest of the populations about the 'people who come from outside'.

We found that the history of PCV's socio-political organization has always been marked by partnerships in different cycles. The most significant partnerships for the community had common features: continuity and political orientation towards the pursuit of citizenship rights, environmental conservation, and social transformation through enhanced participatory democracy. As emancipatory partnerships, they went beyond specific assistance, philanthropic projects or conservationist initiatives disconnected from a political project demanded by the community (Prado, 2020). They contributed to community autonomy and power, which was reflected in the qualified participation in the collaborative governance processes of their territory, later institutionalized as a Resex.

Countless partners were identified in PCV, but some are more significant precisely for their emancipatory trait which truly contributed to strengthening the community social organization and, consequently, the co-management processes. Among these are the Catholic Church, represented especially by the Center for the Defense and Promotion of Human Rights (CDPDH), two non-governmental organizations (Terramar Institute and Prainha do Canto Verde Friends' Association), and the Federal University of Ceará.

CDPDH was the first external partner of the community, responsible for the initial social organization that was essential in the struggle against land grabbing beginning in the late 1980s. CDPDH was also very important for strengthening the political identity of PCV, guiding the community's relationship with future partners. The center's actions reported by the leaders also involved legal advice and the development of political education strategies, significantly guided by the agrarian reform agenda, and based on the Theology of Liberation.<sup>3</sup> The emancipatory partnerships of PCV acted in synergy and built collective action that was continued with the new governance arrangement consolidated with the extractive reserve, occupying seats in its deliberative board.

Despite its shorter history compared to PCV, SJP also has benefitted from partnerships, represented by external agents that take part in multiple projects. The Young Protagonists Project, for example, was built, theoretically and methodologically, based on the demands and interests of the young people. The capacity building was connected to their reality, which comes close to the idea of emancipatory partnership.

In both protected areas, our findings showed the role of universities and technical advisors that have generated knowledge and provided extremely relevant outreach activities. Both communities have been drawing on scientific knowledge to support their struggles, along with their local/traditional knowledge. In the case of PCV, this was key to defending their permanence on the land. In the case of SJP, technical information about the sustainability of the "snare" technique to harvest crabs, provided by external partners, substantiated the deferred prosecution agreement signed in 2011.

## 5.2. Structural factors for co-management

For a more democratic and inclusive model of environmental governance, communities must have adequate power resources

(technical and communication skills, time, authority) access to important partnerships or networks (local, professional, political) and confidence in the decision-making process (Pearson and Dare, 2019). It is no news that all these elements contribute to enhanced governance involving local communities, originally marginalized from decision-making processes (Gupta et al., 2015). However, to explain the presence of these elements, or advancements of these processes, structural factors seem to be essential, especially in the socioeconomic context of Brazil, and other countries in the Global South. As long as structural, material and citizenship conditions are not seriously discussed, participatory processes, essential for the co-management of protected areas, can transform environmental justice policies into injustice.

It is important to emphasize the need to tackle material inequalities, which hinder the fulfilment of formal rights guaranteed to these citizens (Nobre 2004). Such inequalities influence, for example, the material resources required to personally attend the meetings and deliberation forums, as we see in the following quotation:

For us here the transportation problem is very difficult. Sometimes we want to go, do work [in the countryside], but we can't because we need money to pay to go. Sometimes we are required to attend meetings, but we don't always have the money. The motorcycle taxi charges 15, up to 25 *reais* [Brazilian currency] depending on the time it will take. Sometimes they [rural leaderships] want to come from there to the meeting, but there's no way (SJP, C23).

The poor legitimacy and the impact of certain conservation policies are also explained by the absence of structural factors, such as minimum material conditions for survival. The issue of crab closed season in SJP illustrates this dilemma, since there is no insurance, material compensation or other sources of income for the fishers during the closure. A great surveillance effort is deployed during the crab breeding season, on dates established by the environmental body that many times do not correspond to the actual reproductive period according to fishers. The legitimacy of conservation policies in these areas requires incorporating traditional knowledge in governance and ensuring the material survival (in food, health, education, and transportation) of the population involved.

Incentives such as socio-economic benefits to local people have been associated with positive outcomes of co-management elsewhere (Soliku and Schraml, 2020). It is worth reflecting that although there are contradictions in public policies and income transfer programs implemented via Extractive Reserves in general (Partelow et al., 2018), they have been crucial to ensure more dignified material conditions for the traditional populations (i.e economic incentives for poor households, settlements - such as brick houses, and credits applied to production - such as fishing gears, vessels, etc.) Obviously, the State still needs to fill several gaps which affect their socioeconomic condition and quality of life, so that the effective exercise of democracy is finally achieved. Co-management instruments are not mere tools of assistance, protection, or transference of responsibility for conservation, but of community ownership and emancipation. It is important that co-management evaluations consider that political apathy is not merely an individual issue or a result of psychological factors but stems from the actual unequal structure of society (Vitullo, 1999). Co-management arrangements should not be analyzed only from a micro and specific perspective of their efficiency and effectiveness, but from a complex and contextualized view of political and economic dynamics at other levels.

The two case studies show that advancements of community participation, in the co-management processes of these protected areas, must also be considered in terms of an expanded and radicalized understanding of citizenship (Hickey and Mohan, 2005). This means that policies for participation must be based on a broader political project that addresses structural inequalities, involving cultural identity, material redistribution and social justice. It is essential to challenge existing

<sup>3</sup> Briefly, and based on SANTOS, 1980-2000, the Theology of Liberation defends biblical reflection added to the historical process, with liberation understood in three senses: liberation from economic and social situations of oppression and marginalization, ethical personal transformation through interaction between politics and religion, and liberation from sin. The theologians sought to unite faith and politics in a popular version, capable of creating conditions for effective change in society through awareness and analysis of social structures.



power asymmetries rather than addressing the issue indirectly in search of “successful” and more technically efficient results.

As proof of the importance and magnitude of structural factors, several local development projects were executed with emancipatory partners in PCV before the creation of the Resex (1984–2008) and explain many of the advancements reported in this article. The projects had a direct impact on citizenship, addressing issues of production, income, health, youth and education (Prado, 2020). The educational actions included formal and professional education, technical training, literacy of young people and adults applied to the fishing calendar, and interaction and exchange of experiences with other traditional communities, all of them structural factors behind the co-management advancements observed in PCV. In SJP, some projects aiming at strengthening the production chain and training young leaders, albeit more recent, also influence aspects of citizenship and explain advancements of co-management in the reserve.

The emancipatory partnerships discussed earlier, responsible for catalytic co-management processes, can be associated with structural factors when their performance goes beyond the discourse that communities need to be trained or develop skills to adjust to a previously established and generally unfair structure (Bockstael, 2017). The structural factors achieved over the years in PCV and which have been strengthened more recently in SJP show that “citizenship” does not only relate to a set of legal duties and rights, but also to practices through which individuals and groups formulate and demand new rights or struggle to expand and maintain existing rights (Isin and Wood 1999 apud Hickey and Mohan, 2005), critically challenging current social structures or the status quo.

## 6. Conclusion

There are no static preconditions for co-management of protected areas. There are factors of different orders applicable to particular contexts, and they interact with one another. Depending on the conjuncture, the process goes one way or the other, turning the co-management initiative more or less democratic. As obvious as this may seem, much of the existing knowledge about the factors that contribute to advancements of co-management in protected areas is based on overcoming the barriers and difficulties found in empirical studies to achieve “successful” co-management.

In this article we focused on a previous step, that is, on the factors that can explain advancements, from a procedural and explanatory perspective, i.e., of non-linear and complex change. To conduct a contextualized analysis or evaluation, it is important to keep in mind appropriate methods that allow, for example, the triangulation of data from interviews, secondary sources, and/or direct and participant observation. This allowed us to identify that co-management takes place simultaneously both in formal/institutionalized arenas and in informal ones. Since formal and informal co-management processes coexist, it is relevant to observe both to evaluate the advancements of collaborative management. The Grounded Theory approach favored the identification of explanatory factors for co-management in a procedural perspective.

Our case studies show that the environmental governance processes are in transformation, and depending on the approach or historical sample analyzed, and the criteria chosen, they will be imbued with more or less progress. It is not possible to categorize a co-management process according to the levels of shared power and responsibility in a linear and cumulative logic, simply because there is no linearity. Beyond diagnoses or rankings of success, the explanatory dimension of these phenomena highlights their inherent complexity. Catalytic factors (such as crises and threats, political identity, and emancipatory partnerships) and structural factors (material conditions and citizenship) are inter-related and may be important to explain advancements of co-management processes in other protected areas, particularly but not restricted to the Global South. Fostering catalytic and structural factors in the long term may be more advantageous than following “good governance” manuals that are

prescriptive and politically decontextualized. These factors can catalyze the process of social engagement and collective action, whether through crises and threats, community identity and belonging, or interaction with emancipatory partnerships, and can also be structural and crucial for society to demand more citizenship and, consequently, greater participation and decision-making power.

## Author statement

**Deborah Prado:** Conceptualization, Investigation, Formal analysis, Writing – original draft.; **Cristiana Seixas:** Conceptualization, Funding acquisition, Writing – review & editing, Supervision.; **Micaela Trimble:** Writing – review & editing.

## Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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## Appendix A. Supplementary data

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