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Conservation and governance in protected areas of Pernambuco Brazil[*].

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R E S U M O

As áreas protegidas são criadas e geridas com o objetivo de garantir a conservação da natureza. No cenário do Estado de Pernambuco, o ecossistema Mata Atlântica recebe reconhecimento internacional como área prioritária para as ações de conservação, pela sua grande riqueza natural e elevada biodiversidade. Estas áreas naturais tem o enorme desafio de compatibilizar interesses divergentes face a fortes ameaças e condições de vulnerabilidade social, política e econômica. Este trabalho objetivou analisar de que forma a gestão de áreas protegidas tem contribuído para a conservação ambiental no Estado de Pernambuco, considerando a governança nos espaços de decisão. Uma pesquisa exploratória e descritiva foi realizada, adotando-se os procedimentos metodológicos (leitura de documentos e bibliografias). Para coletar os dados foi utilizada a pesquisa de campo com observação sistemática, entrevista não estruturada focalizada e reuniões projetivas, além da participação em reuniões de conselhos gestores. Para análise e discussão dos resultados, foi utilizada uma abordagem qualitativa com enfoque interdisciplinar através da triangulação de métodos e Análise Multicritério à Decisão – AMD. Como resultado, observa-se que ainda é muito frágil a capacidade de governabilidade e governança pública na conservação dos recursos naturais no estado de Pernambuco. O fortalecimento da governança é indispensável ao processo de elaboração e implantação das políticas construídas em simbiose com os diversos atores envolvidos com a temática, em meio a intensas e variadas ameaças e vulnerabilidades inerentes a esse processo antagônico e dialético de construção da sustentabilidade.

Palavras-chaves: Áreas protegidas, conservação ambiental, governança pública.

A B S T R A C T

Protected areas are created and managed with the aim of ensuring the conservation of nature. In the state of Pernambuco, the Atlantic Forest ecosystem has received international recognition as a priority area for conservation actions, due to its great natural wealth and rich biodiversity. These natural areas have the enormous challenge of reconciling divergent interests in the face of strong threats and conditions of social, political and economic vulnerability. In view of the above, this work aimed to analyze how the management of protected areas has contributed to environmental conservation in the State of Pernambuco, considering governance in decision spaces. An exploratory and descriptive research was carried out, with the adoption of methodological procedures (reading of documents and bibliographies). For data collection, field research was used with systematic observation, interview and projective unstructured focused meetings, as well as participation in meetings of management councils. For results analysis and discussion, a qualitative approach with an interdisciplinary focus was used through the triangulation of methods and Multicriteria Decision Analysis-AMD. As a result, it was observed that the capacity for governance and public governance in the conservation of natural resources in the state of Pernambuco is still very fragile. The strengthening of governance is indispensable to the process of elaboration and implementation of policies built in symbiosis with the various actors involved in the theme, amidst the intense and varied threats as well as the vulnerabilities inherent to this antagonistic and dialectical process of sustainability construction.

Key words: Protected areas, environmental conservation, public governance.

Introduction

Throughout the history of mankind, nature has received several definitions, migrating from a sacred, divine vision to an exploitative and degrading vision that endures to the present day, making the relationship between man and nature to be marked by divergent interests. Even with all the existing academic knowledge in the contemporary world, human rationality is still guided by a system based on disorderly capitalist

production, which moves in the opposite direction to the principles of sustainability.

Science and technology came up with the idea of promoting a new type of well-being to society, but on the other hand ended up building new risks and global crises, producing "risk society" as a result of the intensification and multiplication of uncertainties and threats that permeate all parts of the society, especially the most vulnerable populations socially and economically (Beck, 1998).

The logic of the exploration of nature has intensified in the last decades of the 20th century, driven by economic globalization and reordering of the capitalist system. Thus, the State came to be seen as a field of divergent interests; a space or arena where conflicts of society are established. In this sense, the State is not an abstract entity, but takes place by means of institutions, becoming the main agent of public policies, but "open" to the participation of society (Poulantzas, 1977; Cardoso, 2007; Muller, 2009). With the crisis of the models of State intervention in the economy, the State was influenced to adopt neoliberal ideology for the development of public policies, not only as a factor regulating economic relations, but with the adoption of new functions: Planner, funder and Manager of the development process, which led to several projects of State reform and redefinition of the roles of Governments, the market and the civil society (Cardoso, 2007).

In this way, the State is part of the constitutive nucleus formed by the Tripod: capital, labor and State. These three fundamental dimensions are materially constituted and interrelated, and are impossible to overcome without eliminating all elements that understand this system. The capital is therefore, a powerful and comprehensive system, known as a sociometabolism capital system such that with uncontrollable logic, the capital system becomes essentially destructive, which causes the destruction and/or loss of strength of human work and the increasing degradation of the environment (Mészáros, 2011).

Based on the utilitarian logic of nature, influenced by environmental problems and the possibility of a shortage of natural resources, the idea arises of reserving protected natural areas, regarded as a paradise, an uninhabited area, where nature must be maintained untouched and free of any pressure from mankind. This was the initial idea of natural conservation, however this myth is faced with other myths and symbols which exist in the local populations living in protected areas (for example, indigenous, and artisanal fishermen). This confrontation is perceived through the production of knowledge of these local populations that developed through this inter-relationship with the environment; the systems of fauna and flora management, enable the conservation of diversity (Diegues, 2001). The idea of preserving nature is not always attended by human intervention logic of natural resources (Bensusam, 2006). Thus, it is not an easy task to reconcile the divergent interests in pursuit of the conservation of natural resources and improve the quality of life of the population.

In the contemporary world, the first academic references and policies related to conservation units (UCs) came from the International Union for the conservation of nature – IUCN, whose role was to systematize and evaluate data and experiences for the proposition of indicative guidelines to help countries achieve the conservation of biodiversity. Such UCs are known as "*Protected Areas"* (protected areas), and are specifically dedicated to the protection and conservation of biological diversity, and of associated natural and cultural resources that should be managed by legal provisions and other effective means (IUCN, 1994).

In Brazil, the nature protection model is practically centered on the following legal provisions: forest code (Law 4771/1965) and national environmental Policy (Law 6,938/81) incorporated in the Federal Constitution of 1988. Only in 2000, a regulatory framework was established to implement environmental protection and conservation of natural resources through the National System of conservation units (SNUC) – (Law 9,985/2000) (Brazil, 2000).

According to the SNUC, various areas are defined as priorities for environmental conservation and so should receive special categories for management, defined as units of conservation – UCs. The Atlantic forest is among the priority ecosystems for conservation. This humid tropical forest is considered one of the five most important areas of the planet for biodiversity conservation, known as "biodiversity hotspots", that is, places with great natural richness and high biodiversity, as opposed to high levels of threats to their environments (Myers et al., 2000; Tabarelli et al., 2005; Laurance, 2009).

With a view to protect natural areas as the remnants of the Atlantic forest in the State of Pernambuco, specially protected areas were created (UCs) based on federal law and defined by a System of protected areas of nature-SEUC (13,787 Law /2009) that serve as important instruments for environmental conservation (Pernambuco, 2009). These areas are under strong

threats and are vulnerable from the social, political and economic points of view.

However, for the implementation of this protection, the legal definition of protected areas requires the adoption of participatory management practices inspired by the CF-1988. Participatory management is required in these spaces, since it is impossible to have economic development and sustainable living conditions without the use of natural resources (Loureiro and Cunha, 2008). The challenges inherent in the management of conservation units reflect the governance and governance potential of our society, which should be used as complementary concepts in line with the new State concept. These are distinct aspects, but interlinked by State action. This condition is reflected in our political system, in the form of Government, in relations between powers in the party systems and the system of interest intermediation. Thus, governance is embodied in the capacity for governmental action in the implementation of policies and in the achievement of collective goals (Pasquino, 1998). Governance refers to the general conditions given by the State system under which power is exercised in a given society. Governance is characterized by expanding and improving the means of communication and management of conflicts of interest, favoring the strengthening of mechanisms that ensure the public accountability of the government. Therefore, governance refers to the ability of the State in society to deconstruct the tradition of closed Government and high-centered government bureaucracy (O'Connor, 1998; Pasquino, 1998). In the last decade, the term governance has gained importance and has been used in many contexts, including protected areas. The richness of this concept was considered in this study, according to the definition of Borrini-Feyerabend et al. (2014), which conceptualizes governance as the interactions among structures, processes and traditions that will determine how power and responsibilities will be exercised, as well as the decisions that will be taken, considering all stakeholders. This governance can be analyzed considering its key actors (right holders and actors); according to instruments and powers; and at different levels of decision-making.

For IUCN, governance is a key component to the achievement of the management of protected areas, and describe four types of governance, namely: 1) Governance by the Government: Ministry or national or federal agency responsible or delegated management by the Government (for example: an NGO); 2) shared governance: Government partnership (various forms of pluralist influence); joint governance (plural decision-making bodies); border management (multiple levels across international borders); 3) private governance: conservation areas established by private owners or by non-profit organizations (e.g., NGOs, universities, cooperatives); and 4) Governance of indigenous people and local communities: territories and areas preserved by indigenous citizens declared and managed by indigenous people; territories and areas maintained or managed by local communities (ibid., 2014).

Therefore, the management of protected areas involves different actors, instruments and powers and are configured in several instances of decision making, involving frequent international political agreements for national budgetary frameworks, from regional land use plans for daily decisions that affect the livelihoods of people living in or around protected areas (ibid., 2014). For this reason, the management of conservation units in general is a political issue, and has not appeared in their public agenda, and probably never will (Strapazzon and Mello, 2015). In the face of the threats and the risks built by our model of society, there is unsustainable environmental conservation of natural spaces and it is a fact that increasingly grows to political, economic and social vulnerability. Therefore, it is necessary to expand our reflection on risk management in protected areas.

It is not a simple task to associate protected areas with risk management. This is because it is popularly imagined that a protected area from a legal standpoint is already "protected" and therefore out of "danger". However, the simple legal guarantee to any right is guaranteed not to set an absolute truth and even more so when this same law is an instrument of contrasting conflicts of interest.

From the conceptual point of view, this study will adopt the concepts of threat, vulnerability, risk, management of disaster risk reduction, defined by the United Nations international strategy, which has received important contributions from social studies network Disaster prevention in Latin America-LARED (UNISDR, 2009; La Red, 2017; MMA, 2009).

The concept of threat can be described as "a phenomenon, substance, human activity or dangerous condition that can cause death, injuries or other health impacts, such as damage to property, loss of livelihoods and services, social and economic disturbances, or environmental damage "(ibid., 2009).

Vulnerability is expressed "under conditions determined by physical, social, economic and environmental factors or processes that increase the susceptibility of a community to the impacts of hazards, including degradation and desertification" (ibid., 2009; Ibid., 2009).

The risk may be regarded as "the combination of the probability of a dangerous event (a disaster) and their negative consequences" (UNISDR, 2009; La Red, 2017). In this context, the management of disaster risk reduction through a systematic process of administrative decisions, policies, strategies and coping capacities of the society have contributed to reduce the impacts of natural disasters, environmental and technological effects as well as adverse effects of risks, thereby promoting reduction (Ibid, 2009; Ibid., 2009). Until recently there was talk of "disaster risk management", but it is not possible to manage something abstract, such as risk, but rather its reduction, by working the vulnerabilities of individuals and their structures.

Therefore, as regards the arguments presented, two challenges surrounding the current society are: environmental crisis and governance in protected areas. The disorderly growth of the cities, the lack of planning, and public policies that bring about a problematic reconfiguration of the territory, produce the weaknesses and susceptibilities of environmental systems in the social production of the place, resulting in disasters. The solution to this logic is to improve the instruments of governance and state governance to direct public policies that guarantee de facto and direct environmental conservation, with intense articulation between the different social actors in their development and implementation.

In this context, a question is asked: what has been going on in the management of protected areas in the State of Pernambuco? How has this management contributed to the conservation of legally established natural spaces?And how is governance in the Councils of State conservation units?

The goal of this article was to analyze how the management of protected areas has contributed to environmental conservation in the State of Pernambuco – Brazil, considering the governance in decision-making spaces. For this, it is necessary to consider the structure and management of State conservation units, as well as the main challenges against the improvement of the governance of these natural and socially constructed spaces.

Materials and methods

Characterization of the object of study

According to IBGE, Pernambuco is one of the 27 Brazilian States, with 98,311 km² and is located in the eastern center of the Northeast Region, and its coast is bordered by the Atlantic Ocean. According to the Atlas Brazil 2013, Pernambuco is among the nine Brazilian states considered to have an average status among the other states, with a Human IDHM of 0.673. Chandra (2010) mentioned that the State is one of the regions with the greatest economic potential in the Northeast, judging by the available natural resources (water, soil, etc.), with reasonable economic infrastructure (roads, seaports, airports) and abundant work. Contrary to developmental potential, this scenario is also potentiating immense pressure on natural resources.

Following the idea of preservation, in 1987 the "Ecological Reserves of the Metropolitan Region of Recife - RMR" were instituted by State Law No. 9,989, with the objective of protecting 40 remnants of the Atlantic Forest of Pernambuco (CPRH, 2004). In 2009 alone, these natural spaces were recategorized from State Law no. 13,787 / 2009, with the establishment of the State System of Nature Conservation Units - SEUC and in accordance with Law 9.985 / 2000 of the National System of Units of Conservation - SNUC, now being called Conservation Units (Brazil, 2000; Pernambuco, 2009). These areas constitute the main tool for the conservation and management of biodiversity, since they include natural resources relevant to the maintenance of life (CPRH, 2017).

Currently, the protected areas are divided into: Integral protection units and units of sustainable use. The Integral protection units are those which maintain ecosystems free of the changes caused by human interference, admitting only the indirect use. Sustainable Use units already allow the use of a portion of their natural resources in order to ensure the sustainability of the renewable and environmental resources of ecological processes.

This study considered the management of managers of five integral protection UCs (Refúgio de Vida Silvestre Mata do Sistema Gurjaú – RVS Gurjaú, Refúgio de Vida Silvestre Mata do Engº Salgadinho, Refúgio de Vida Silvestre Mata do Bom Jardim, Refúgio de Vida Silvestre Mata de Caraúna e Refúgio de Vida Silvestre Mata de Contra Açude), located between the municipalities of Cabo de Santo Agostinho, Jaboatão dos Guararapes and Moreno, all in the metropolitan region of Recife, as shown in Figure 01.

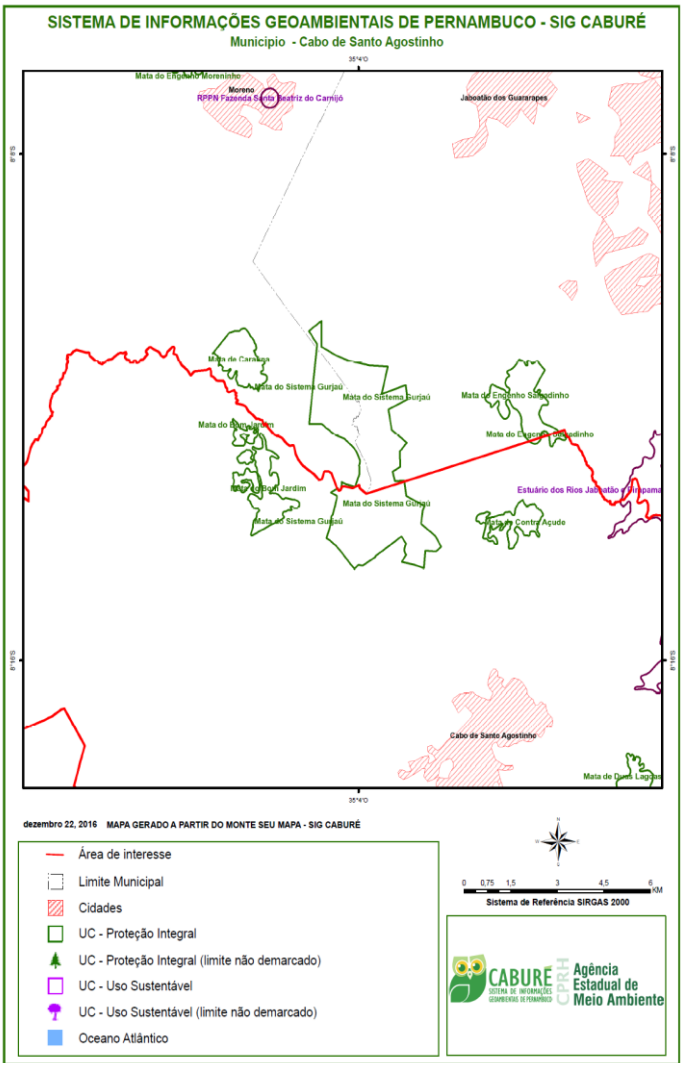

Figure 1. Location of the five studied Conservation Units (Refúgio de Vida Silvestre Mata do Sistema Gurjaú – RVS Gurjaú, Refúgio de Vida Silvestre Mata do Engenho Salgadinho, Refúgio de Vida Silvestre Mata do Bom Jardim, Refúgio de Vida Silvestre Mata de Caraúna e Refúgio de Vida Silvestre Mata de Contra Açude) located between the municipalities Cabo de Santo Agostinho, Jaboatão dos Guararapes e Moreno in the Metropolitan Region of Recife, Pernambuco, Brazil. Fonte: http://sigcabure.cprh.pe.gov.br/.

These natural spaces provide essential and worthy environmental services to the ecosystem, an example of the great water potential (more than 200 springs and 02 dams) responsible for the water supply of the population of major urban centres, such as the 14 municipalities in the metropolitan region of Recife. However, these areas are still very vulnerable to many threats to conservation, such as the indiscriminate exploitation of land by squatters or agrarian reform settlements (Moreno and Garden Settlement Canzanza Settlement), who use the area for Agriculture, fruit-growing and removal of wood with traditional agricultural practices.

Methodological procedures

For the development of the present study, a combination of methods was used. The deductive method whose goal is to explain the contents of the premises and through a logical construction from two premises, a chain of reasoning in descending order, from analysis of the general to the particular, to withdraw a third logically arising from the first two, called completion (Marconi and Lakatos, 2010).

The historical-dialectic method contributed to a dynamic interpretation and totalizing of reality, in which the contradictions transcend each other giving rise to new contradictions which require a solution. It should be considered that the facts cannot be considered outside of a social, political, economic context etc; being employed in qualitative research (ibid., 2010).

This study was conducted as a descriptive and exploratory research. Exploratory research

has the characteristics of seeking greater familiarity with the topic and improving ideas, discovering intuitions of the authors' insights and creating hypothesis; while descriptive research aims to describe facts or phenomena considering the links between various elements, being a mark of this kind of research using data collection techniques previously organized and standardized, the example of the questionnaire and systematic observation (Gil, 2002). As a methodological procedure, the documents and bibliographies linked to the central theme of the work were first read. In order to collect the data, field research with systematic observation, questionnaires and focused unstructured interview were used, because Marconi and Lakatos (2010) advised that this technique gives the interviewer the freedom to explore the situation widely and can provide clarification when required.

The literature search included bibliographic references of books, as well as articles of scientific journals made available online by the main academic search sites (Scielo, Google Scholar and Capes Journal Portal). For the documentary research data were selected such as by-laws, minutes of meetings, letters of Convocation and other related files, linked to the management organs of the State conservation units and the Management Councils for five full protection UCs.

In the field research, the participation of the councilors in the itinerant meetings of the managing councils of the protected areas was considered, as well as unstructured interviews and projective meetings held from September 2014 to January 2017 in the most representative communities of the area (São Salvador, Pau Santo and Porteira Preta), located in the vicinity of RVS Gurjaú, according to a previously systematized itinerary. A questionnaire was also sent via e-mail, in person or by phone, to the members of the Management Councils of the said conservation units.

In relation to the research methodology, Triangulation of methods was performed, where established qualitative approaches with interdisciplinary focus were applied in the analysis and discussion of the results. Triangulation is a term used in qualitative approaches to indicate the simultaneous use of several techniques of approaches, various modes of analysis, several informants and observation points of view, focusing on the verification and validation of research (Minayo, 2005). For data analysis, multi-criteria analysis was used to decide (AMD), since it is a qualitative-quantitative technique, which allows the separation of purely exploratory approaches and little structured decision-making process of quantitative models tightly structured in a linear logic. Otherwise the techniques mentioned, in seeking an optimal solution for a specific goal, AMD seeks a solution based on commitment, consensus solution (Jannuzzi et al., 2009).

For this purpose the MACBETH approach will be used for multicriteria and decision support. This methodology has been widely employed for the qualitative judgments of different attractions for the construction of sets of trials in a multi-criteria evaluation model that measures the relative attractiveness of the numerical options to the evaluator who made the trials with a view to help the decision maker, or an Advisory Group of decision-makers, to quantify the relative value of listed options during an interactive discussion between the various actors involved with the problems concerned. The approach is based on the value model and is additive, therefore it aims to support interactive learning about the problems of evaluation and elaboration of recommendations for prioritizing and selecting options in individual and group decision making (Bana e Costa et al., 2012). According to some reports of experiments using this methodology, this approach has been very useful because it provides a more consistent assessment, where the alternatives are much more objective and robust, contributing to substantiate and support decision-making. It is a tool that can be very useful in decision-making in public policy, in a situation where decisions need to be guided by technical criteria and transparent objectives, as well as also to incorporate the judgments of policy and the subjective nature of the public administrators involved (ibid., 2009).

Results and discussion

As a result, the State of Pernambuco currently has 81 State conservation units (full protection 40 and 41 of sustainable use). Between the Integral protection units are 03 ecological stations (ESEC), 05 state parks (PE), 31 Wildlife Refuges (RVS) and 01 Natural Monument (MONA). Sustainable Use units include 18 environmental protection areas (EPAs), 08 urban forest reserves (FURBs), 14 private reserves of Natural patrimony (RPNNs) and Relevant ecological interest area 01 (ARIE) (CPRH, 2017).

For approximately four months (29 February to 09 June 2012), the Executive Committee for the implementation of UCs of Pernambuco (established by Decree No. 36,627 of 8 June 2011), toured the State with the aim of structuring the advice imposed by conservation managers. Seventeen (17) mobilization meetings

were held, with more than 300 shares, involving both governmental bodies and civil society entities, 23 managers formed councils to be established by the order of the State Agency of Middle Environment (CPRH) with respective drafts of Ordinances drawn up and approved by the Legal Coordination, ready for publication and outstanding managers advice 19.

It is important to highlight that in these meetings of mobilization for the composition of the Board of UCs, managers were held by the State environmental agency CPRH in conjunction with the Department of environment and sustainability – without the State Government and the surrounding communities of UCs were not contemplated so wide, despite the presence of representative leaders of the populations concerned in meetings and other processes.From a legal standpoint, the participation of civil society is guaranteed by the National Environmental Policy-PNMA (Law 6,938/81) built in military dictatorship and later incorporated into the Federal Constitution of 1988, with the aim of:

> "the preservation, enhancement and restoration of environmental quality conducive for life, to ensure, in the country, conditions for socio-economic development, the interests of national security and the protection of the dignity of human life" (article 2 of Law 6,938/81 PNMA).

And it is specified in art. 4, item I, which seeks to "reconcile the compatibility of economic and social development with the preservation of the quality of the environment and ecological balance".

In this way, the term Conservation Units emerges as spatially defined areas, which aim at the conservation of biodiversity and in situ landscape, as well as the maintenance of living beings in the environment, so that they can exist without suffering the major impacts of human actions.

The Brazilian legislation considers the Conservation Area the territorial space and its environmental resources, with relevant natural characteristics, that is legally established by the public power, with conservation objectives, with defined limits, under special regime of administration, to which adequate guarantees are applied protected by the National System of Conservation Units - SNUC - Law 9.985 / 2000 (Brazil, 2000). The SNUC represented an innovation, especially for the management of conservation units with active civil society participation through management councils of UCs.

In accordance with article 25, the State Law No. 13,787/09, 08 June 2009, which created the State System of protected areas of nature-SEUC "*all categories of conservation units shall have a Managing Council...*" and so the Executive Committee for implementation of the UCs of Pernambuco came through the formation of only 26 advice managers established by the Ordinance of the CPRH and published in the Official Gazette of the State – DOE in June 2012, 26 of 81 UCs have currently been established in the State, leaving 55 UCs still without managers' advice.

It is noteworthy that the advice managers contribute to the effective implementation and fulfilment of the objectives of creation and implementation of UCs, and require management plans to direct conservation actions of the UCs. However, from 2012 to 2014, only nine plans were developed and are being implemented (CPRH, 2017).

Also, the SEUC recommendation (State Law No. 13,787/09) fits the responsibility of the CPRH for Administration and environmental management of the conservation units (UCs) State, being among its attributions: a) subsidizing technical proposals for the creation of UCs; b) implement system UCs; c) forward proposals for the creation of UCs; d) administer and supervise the public State UCs; e) recognize Private UCs; f) draw up management plans for the UCs and g) formulate, implement, maintain and disseminate the updated State record of UCs (Ibid, 2017).

Currently, only 11 of the 26 management councils of State UCs are in operation, which means that, in practice, in contrast to the creation of management councils, the deficit in the state scenario around protected areas is still large. There are so far 81 created UCs and only 11 CUs in operation, while 70 UCs exist only from the point of view of the law and not of fact.

Although this management model seeks to establish a rationality of "social participation" or "political democratization" in an instrumental way (councils, forums, round tables, participatory budgeting, etc.), it is far from a "democratization of economic relations" strongly marked by the class struggle, which arises in the problematic of social control as a necessity to be discussed and put into practice (Dowbor, 2008).

The 11 managers in councils currently operating include the five conservation units of full protection (wildlife refuge system Kills Gurjaú-Gurjaú RVS, Kills wildlife refuge of Eng. Snacks, Kill the wildlife refuge BOM Jardim,

Kills wildlife refuge of white-faced Ibis and wildlife refuge Against forest Dam) located in the metropolitan region of Recife, imposed by the State law in 14,324/11, all with Council and Manager spanning the Atlantic forest ecosystem, listed in Table 1.

Table 1. State conservation units under study. These areas have management councils in operation registered until December 2016, Pernambuco-Brazil. Source: Prepared by the authors based on CPRH (2017).

	State Conservation Units	Municipalities	Geographic Coordinates	UC area (ha)	Council of Directors
1.	Refúgio de Vida Silvestre Mata do Sistema Gurjaú	Cabo/ Jaboatão dos Guararapes/ Moreno	25L 273000 9089450	1077,1	Municipal ordinance CPRH Nº51/2012 (DOE 26.06.12)
2.	Refúgio de Vida Silvestre Mata do Engº Salgadinho	Jaboatão dos Guararapes	25L 277800 9092800	257	Municipal ordinance CPRH Nº52/2012 (DOE 26.06.12)
3.	Refúgio de Vida Silvestre Mata do Bom Jardim	Cabo	25L 269350 9090900	245,28	Municipal ordinance CPRH Nº54/2012 (DOE 26.06.12)
4.	Refúgio de Vida Silvestre Mata de Caraúna	Moreno	25L 268000 9095000	169,32	Municipal ordinance CPRH Nº53/2012 (DOE 26.06.12)
5.	Refúgio de Vida Silvestre Mata de Contra Açude	Cabo	25L 277550 9089749	114,56	Municipal ordinance CPRH Nº55/2012 (DOE 26.06.12)

The efforts of different stakeholders for the conservation of the units are noticeable, especially for housing the largest environmental biodiversities of the planet, like the tropical forests. Therefore, international conservation strategies consider priority areas for hiring efforts in conservation actions.

Studies have shown that about 44% are not used of all vascular plant species and 35% of all species in four vertebrate groups are confined to 25 hotspots in the world, which amounts to just 1.4% of the Earth's surface. Based on this information, it was defined as a strategy of action focusing on these hotspots in proportion to participation in the species at risk in the world (Myers et al., 2000).

From then on, priority areas were set for the conservation of large numbers of low cost species, known as "biodiversity hotspots" where exceptional concentrations of endemic species are undergoing exceptional loss of habitat. Thus, the establishment and expansion of hotsposts of biodiversity offers a big step to prevent the depletion of the Earth's biodiversity (Ibid, 2000). The Brazilian Atlantic Forest is a "biodiversity hotspot" due to its great wealth. This was noticed since the discovery and beginning of the first settlements that settled around the rivers and the areas of forest, considering the importance of natural resources as indispensable for human survival.

The destruction of the Atlantic forest stands out from other Brazilian biomes, with 93% of the area of this biome drastically changed. More than 40% of the species of trees and shrubs are threatened with extinction, and seems to have been the rule in the last 500 years. Due to this disorderly exploitation of natural resources, Brazil is among the five countries with the largest number of endangered species, known as the country of great biodiversity and also the country of "megaameaça" (Tabarelli et al., 2002).

Thus, the five conservation units of full protection study mentioned earlier, are of immense biological wealth and cradle considered extremely important biological areas (Figure 2). Even being priority areas for conservation, these UCs do not yet have management plans, document essential to direct the actions of the conservation area, as guides to legislation. All activities are currently directed by spontaneous demand, within the framework of the meetings of the Councils of these units managers.

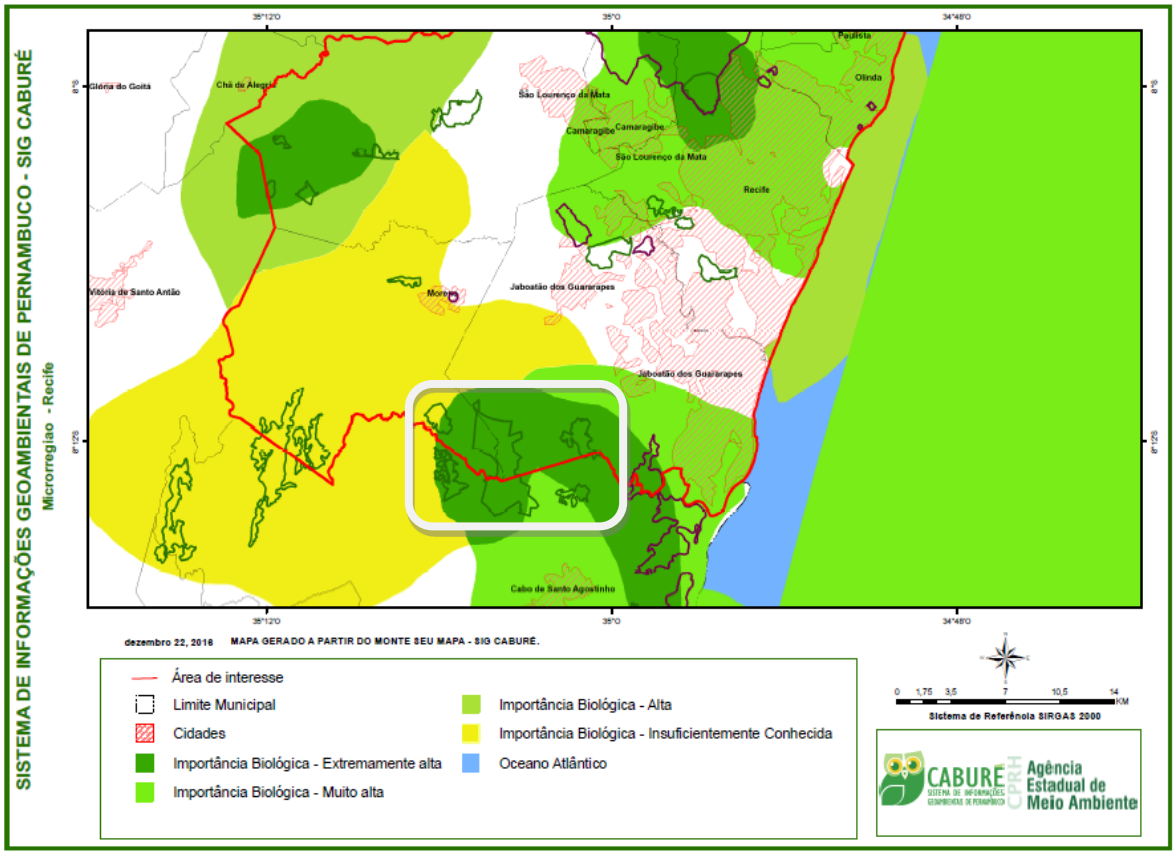

Figure 2. Illustrative map of the biological importance of the Conservation Units of the micro region of Recife, Pernambuco, Brazil. The highlight is that the study area has extreme biological importance for conservation. Source: http://sigcabure.cprh.pe.gov.br/

The advice of managers UCs (wildlife refuge system Gurjaú Forests – RVS Gurjaú, Kills wildlife refuge of Eng. Snacks, Kill wildlife refuge of the Bom Jardim, Kills wildlife refuge of white-faced Ibis and wildlife refuge Against forest Dam) has s and gathered in an integrated manner and roving ordinarily every two months, and on emergency demand, through meetings of extraordinary character, having the purpose to contribute to the effective implementation and fulfilment of the objectives of the creation and deployment of Refuges Wildlife listed as defined in law.

These boards are divided equally between managers by eight government agencies, including State and local government bodies, and eight civil society entities and their respective substitute members, related and/or with interest in the UCs, totaling sixteen organizations that are common to the five managing councils listed in Table 2.

Government Entities	Civil society entities
1. Secretary of environment and sustainability – SEMES	1. Faculty of Humanities of the cable-FACHUCA
2. Pernambuco sanitation Company – COMPESA	2. Union of rural workers of Cabo de Santo Agostinho
3. State Agency of Environment-CPRH	3. Eleven Black Quilombola community
4. Independent company of policing the Environment-CIPOMA	4. Association Sport Club Plant Bom Jesus
5. CONDEPE/FIDEM	5. Gurjaú Baptist Church
6. Municipal Secretary of Environment of Cabo de Santo Agostinho	6. Plant Bom Jesus
7. Municipal Secretary of Environment of Jaboatão dos Guararapes	7. Environmental Defense network of Cabo de Santo Agostinho
8. Municipal Secretary of Environment of Moreno	8. Municipal school Eudes Sobral

Table 2. Composition of the entities that hold the management councils of the Wildlife Refuges (Matos do Sistema Gurjaú - RVS Gurjaú, Salgadinho, Mata do Bom Jardim, Mata de Caraúna and Mata de Contra Açude), Pernambuco - Brazil. Source: Prepared by the authors based on the Internal Regulation of the Management Councils of the Conservation Units cited, 2017.

The activities of the managers of the abovementioned conservation units (protected areas) began on 30 January 2013. During the four-year period of operation (2013-2016) 26 plenary sessions were held, the internal regulations of the councils was established and revised, by creating two working groups (GT transmission lines and GT residual solid) to meet the demands of the conservation units, congratulations to the office of the Environment Attorney - Cabo de Santo Agostinho County. In addition to the monitoring and strengthening of fundamental activities for the management of the units, including environmental monitoring and enforcement actions (with three visits of recognition of the area), early registration of land area (still unfinished), training and improvement courses (fauna management course and environmental surveillance course) and environmental education activities with communities and other local actors directly or indirectly involved with UCs, such as the permanent Environmental Education Project "Atlantic forest: I know, I want to Study well." were conducted by the Manager (BRAZ et al., 2011).Based on the observations made at the meetings of the management councils and questionnaires applied to advisors, it can be said that the participation and performance of Councillors has been satisfactory, since there is a high degree of commitment from participants as citizens, which is not necessarily directly related to the priorities of public managers, evidenced in the frequency records with assiduous presence of more than half of the institutions in ordinary meetings.

In the first year of operation of the management councils there was a low frequency of attendance and / or absence of advisory institutions in the plenary sessions, which even had sections suspended by quorum below the Internal Rules for holding meetings (simple majority of institutions / members). After convening at the Public Prosecutor's Office - Cabo de Santo Agostinho District, many institutions started to participate more actively, especially government entities. It is worth noting that municipalities have a legal obligation to collaborate with the management of these areas, receiving financial resources (ICMS) for this purpose because they have areas of ecological importance for conservation in their territories.

The majority of Councillors have a higher education level (82.4%) and have an average age of 44 years, 59% of the members being male and 41% female. Only three organizations that were members of the management councils studied did not respond to the questionnaire of the survey. The questionnaire was forwarded to Board members via e-mail, but was also applied in person or by phone call. The semi-structured interviews and projective meetings with the communities (Porteira Preta, Pau Santo and São Salvador) have shown that the goals of wildlife refuges and the understanding of what is a UC are

not entirely clear, as described in the legal view, the brazilian educational issue is an important social vulnerability factor in several impacts, especially on environmental issues. Among residents of related communities, there is the understanding that UCs are important for protecting the forest's natural resources, especially water. There is a strong awareness about the protection of natural resources, especially the forest, where most of the respondents demonstrated their willingness to take care of the area with the adoption of sustainable agricultural practices and to supervise to avoid deforestation, burning and hunting, especially the community of Porteira Preta where a preliminary study showed that in this area are the most preserved springs of the Gurjaú Wildlife Refuge - RVS Gurjaú.

The dominant ideology of the exploration of nature highlighted through the capitalist mode of production for centuries, was marked by the influence of various chains such as Christianity, Anthropocentrism, Enlightenment and Positivism, which inspired the philosophers of that period, such as Descartes who said that "*it's the duty of the man to become Lord and master of nature*" and Francis Bacon who preached that the right attitude towards nature was to exploit it, using the knowledge gained to his domain (*dominus*), this is a purely economic understanding and with no future perspective (Passmore, 1975). Even influenced by these ideas, there is still a need for humans to be in tune with the natural, as evidenced in the posture adopted by the communities under study. The indigenous vision brings nature as "natural", that is, the essential idea of nature linked to the sacred, to the divine and therefore the respect of the "savages" with everything that comes from it, so the concept of nature presents a narrow sense, and includes everything that designates what is not human, neither by itself nor by its origin, leaving aside the supernatural (Ibid., 1975).

Another important aspect that shows this well can be found in the literature. Records of protected natural areas long before the famous Yellowstone National Park, designed by the U.S. President Theodore Roosevelt in 1872. One of these examples is given by the Emperor Ashoka of India who in 252 BC banned hunting, fishing and the cutting of trees in a large area of his Empire. There are still many indigenous peoples in Latin America who have preserved large areas of forest even with extreme measures that even went to the death of their offenders, among others (MacKinnon et al., 1986; Bonjour, 1996 apud Dourojeanni and Pádua, 2007).

The communities studied know about the permanent presence of the state government in the management of the area (CPRH and COMPESA), but they do not understand how this management is given through management councils, nor its objective nor how it happens to the activities of this area of participation, recognizing the area as the property of COMPESA and the efforts and constant presence of the environmental agency (CPRH) for the protection of the forest and water and its benefits to the community. The UCs still lack a management plan, an important document for management in the area. Meanwhile, the management councils continue their activities to meet the most urgent and routine demands for UC conservation.

There are several schools of thought about the impact that traditional populations or local communities bring to a protected area. Interviews with the communities regarding the intention in conserving the resources of the area in question, showed that their practices can, yes, assist in this maintenance. Bensusam (2006) argued that the exclusion of communities can benefit the conservation of ecosystems, however "*areas of use are also key, because they preserve traditional management practices, experience and extend sustainable use alternatives to the possibilities of* conservation [...] " (p. 114). There is a consensus among all actors involved in the management of UCs of the need for a greater support of resources (human and financial), as well as more environmental education, training and information on participatory management and knowledge of the importance of a management council for the conservation of the natural resources of the area, as well as the role of each citizen in the conservation of the area. Borrini-Feyerabend et al. (2014) pointed out that governance is fundamental to the achievement of the management of protected areas, and in this case it is important to develop and enhance Government governance and governance by local communities. It is evident from the difficulties and obstacles to the development of good governance and governance that the social vulnerability of the UCs under study is very high (UNISDR, 2009). It can be said that there are many innovative governance experiences in Brazil, over the past few decades, which shows a high degree of efficiency in the deprivatization of public power, in the democratization of the decision-making process or in the reversal of clientelistic practices. In the international scenario, high centrality in political, economic, social and cultural life of the respective countries is still common. Local governments, under the eminent conditions of resource scarcity,

rising unemployment and a drop in fundraising, have formulated new strategies and took the initiative to attract investment, create jobs and renew the productive base, breaking with old development practices, heavily taxed of state intervention in the different domains of economic and social life (Diniz, 1999).Diegues (2001) and the National Policy for the Sustainable Development of Traditional Peoples and Communities (Brazil, 2007), characterized traditional groups by their own form of organization and culture, production system focused on self-consumption, cultural and territorial identity and the extreme connection with the territory.

Modifying the way of life of an individual or community brings profound social impacts that can also impact the natural environment. For example, when a person's dwelling is broken down, it is affected by significant emotional and psychic instability, because it happened in its territory. It is in the place where the life stories are drawn, which are established of the relation of the individual with the space (Tuan, 2012). In it are constituted meanings, individual and collective identities (such as the very notion of community). Ahmed (1999) stated that the real and systematic involvement of traditional populations in the management of protected areas is something that should be prioritized as a matter of urgency by the Brazilian environmental policy, which is in danger of sinking in failure if this is not done. After all, it is these populations that for several generations have been managing natural areas and contributing to their maintenance.

Brazilian legislation (PNMA Law 6,938/81) guarantees a space for the participation of society in the management of protected areas, so the advice of Managers Conservation Units are indispensable instruments for strengthening the democratic management of natural resources. However, there are still difficulties with social vulnerability, which are related to the risk of degradation of the natural environment.

Threats to the management of UCs are basically due to the political action of public authorities in directing and executing from the legal point of view its institutional role in the formalization of the democratic spaces of UCs management (advice), remembering that not always the legal basis established works as a requirement for environmental conservation, since often the same legislation works as an instrument of conflict of interest between the actors involved directly or indirectly with the management of protected areas. Another aspect is the political discontinuity of the State and municipal public management that brings significant interference and impacts on the activities of the management councils that are chaired by the state environmental agency (CPRH). The example of several activities that were hampered or canceled due to lack of financial resources for the displacement of the managing body and other councilors, which evidences the low priority of the state public management with the management of protected areas.

Another threat is the disregard by Government lawmakers of the historical, economic and cultural factors of the region most often during the drafting of legislation for environmental conservation. It is clear that the majority of Brazilian legislation is basically based on the market laws of a neoliberal capitalist system of exploitation, regardless of local historical, social and cultural reality, which only corroborates the increased social vulnerability of the populations living in and around the protected areas (La Red, 2017, Mészáros, 2011).

Within the current perspective of neo-liberal State, the creation of integral protected areas is one of the main strategies for the conservation of nature, especially in third world countries, with the objective of preserving ecologically important spaces. These areas are created, so that their natural and aesthetic attributes can be enjoyed by visitors, but not for the permanence of local populations within them. In Brazil, the exclusion of these populations from these areas can be contentious, because in our country there is a diversity of lifestyles and cultures which are considered local, traditional or totally dependent on these areas for survival (Diegues, 2001). Given this scenario, the model of space occupation and use of natural resources is in itself environmental degradation and of enormous social costs. Therefore, the need for the participation of traditional communities in the conservation process of UCs is indisputable, since most of the areas still preserved in the Brazilian territory are inhabited with greater or lesser density by indigenous populations or by "traditional" rural communities " traditional "-caiçaras, bordering, rubber tappers, quilombolas, rednecks-for which the conservation of fauna and flora is the guarantee of their continuity (Arruda, 1999; Grandson and Carniello, 2007). The threats and vulnerabilities present in the conservation units under study considerably affect the articulation capacity of the members of the management councils, especially those of civil society organizations, who are lacking in information and / or training or are even led by uncommitted individuals or even linked to

political projects of personal interest, leaving even more vulnerable local communities to incoherent actions of public bodies and legal spheres that degrade their livelihood and may cause serious social and environmental disasters, since the mere legal guarantee is uncertain of environmental conservation.

Final Considerations

Given the immense natural heritage with international recognition of the State of Pernambuco, the need to invest efforts in environmental conservation actions, is evident and urgent. Some steps have already been taken towards this goal; however, they are intense and varied to the threats and vulnerabilities inherent to this process, generating risks and potentially unprecedented environmental and social disasters around protected areas.

The development of this work allowed the visualization of potential and real risks for the management of protected areas of the State, allowing the construction of guidelines that can support decision making and assure the basic objectives of the operation of these areas, especially the integral protection units. This can make conservation of nature compatible with maintaining the conditions of survival for the surrounding communities.

The reflection points out several aspects that prevent or do not collaborate with the effective functioning of an integrated and participatory system of conservation units, highlighting especially the financial and human resource limitations and the problems related to the articulation between the different levels of Government (State and local). Therefore, the suggestion is that, for the establishment of effective public policies, there is a need for integrated actions of the Brazilian Government, system improvement, strengthening of dialogue channels between the social actors, and sectors involved and understanding the social perspective associated with protection from nature.As Ahmed (1999) and Grandson and Carniello (2007), one should consider proactive participation of local communities in protected area management, since they maintain relations (direct or indirect) with the natural resources of these areas contributing to its conservation. Without mobilized civil society, there will be little capacity for the institutionalization of norms, standards and rules, without which the public Manager will continue to dictate the State's way of operation and its relation to society.

Therefore, a way out for the management of protected areas is in perfecting the instruments of governance and State governance to direct public policies that guarantee direct environmental conservation, with intense coordination between the different social actors in their development and implementation (O'Connor, 1998; Pasquino, 1998; Borrini-Feyerabend et al., 2014).

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