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## Environmental compensation as a viability instrument of conservation units: A case study in pernambuco, Brazil

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### Abstract

Law No. 9,985/2000 instituted the National System of Nature Conservation Units – SNUC with the concept that conservation units are territorial spaces and their respective natural resources that are protected due to their characteristics and relevance to the environment. In this perspective and with the objective of costing the planning and administration of these spaces, Article 36 of the aforementioned legal diploma instituted environmental compensation, as a form of pecuniary obligation to entrepreneurs who cause significant environmental impact in the manner described in the study of environmental impacts – EIA/RIMA. Thus, the main objective of this research was to analyze the payment of environmental compensation in the State of Pernambuco, Brazil, with the focus of contributing to the improvement of this important instrument of viability of nature conservation units. The methodology used in this research was the bibliographic review and documentary analysis; at the first moment, we systematically sought to survey environmental standards related to environmental compensation and conservation units, later, studies were conducted in doctrine, articles and jurisprudence related to the subject and finally, collection of information in the databases of government agencies of the State of Pernambuco in order to seek answers on the subject, also, we sought to know the application of the resources arising from environmental compensation in the State of Pernambuco with the control and inspection agencies, such as; The State Prosecutor's Office, The State Environment Agency - CPRH and the State Court of Auditors. Thus, for a better understanding of the theme, this research was divided into two parts; the first refers to the institute of environmental compensation; concepts and general principles of environmental law, later illustrated the moment in which compensation takes place, that is, in environmental licensing and the second stage of the research brought the study of conservation units, legal basis, typology and objectives. As results obtained, it was observed that in Pernambuco, of the 90 existing conservation units only 16 have a management plan, a basic document for the management of The Unities of C onservação, which makes it difficult to apply the resources of environmental compensation and also that there is no transparency in the management of the environmental compensation fund by the CPRH, knowing only that the number of employees of the aforementioned agency is insufficient for the effective management of the U c onservation. It is concluded before the collected data that there is a contradiction between the large values captured through environmental compensation and their effective application in the Unities of Conservação. Finally, it is suggested the participation of other actors of society as a way to give greater fluidity and speed in the application of the environmental compensation fund in nature conservation units.

**Keywords:** environmental compensation. conservation units. biodiversity. preservation

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### Introduction

The Institute of Environmental Compensation provided for in Article 36 of the National System of Nature Conservation Units (SNCU), Law 9.985/2000 (BRASIL, 2020) is defined in the legal scope as being the pecuniary obligation of the entrepreneur causing significant environmental impact to support the implementation and maintenance of conservation units throughout the national territory. The amount to be added will depend on the impacts effectively or potentially caused which should be described in the Environmental Impact Studies - EIS and its respective report.

In turn, nature conservation units consist of efficient mechanisms for the protection of local biodiversity, since they are protected territorial spaces with well-defined geographical contours and these become the source of natural resources whether they are of full protection or sustainable use.

Thus, nature conservation units are spaces specially protected by law due to their wealth and relevance to society because they are places where biodiversity must be preserved for the good of present and future generations as recommended by the Federal Constitution of 1988.

It is perceived that the concern is the preservation of biodiversity and therefore it is necessary that the resources from environmental compensation are effectively applied to the Conservation Units (CUs) and that they are regularly implemented to maintain and preserve them.

However, in this research through the data provided by the State Environment Agency of Pernambuco (CPRH, 2022) <sup>[21]</sup>, in the State of Pernambuco of the 90 existing conservation units, only 16 have management plans and 67 have management councils, that is, less than 80% of the conservation units have the minimum instruments necessary for their management, causing obstacles to the application of environmental compensation resources in these units.

In the light of the lack of effective implementation of conservation units in the State of Pernambuco, the data contained on the CPRH website show, in the time lapse from 2005 to 2020, that approximately 30 terms of commitment were signed, which means in dollars about \$ 40. 876.577.35. These resources are linked funds and should be used exclusively in the Conservation Units, so even if there is a financial contribution, 80% CU's in Pernambuco does not even have the minimum instruments for its management.

Thus, it is hypothesized that there is an inefficiency of the application of environmental compensation resources in conservation units in the State of Pernambuco, Brazil. This is because, on the one hand, most conservation units in Pernambuco have not even been regularly implemented, and on the other hand, there are financial resources in the environmental compensation fund to solve, or at least minimize this situation.

Thus, this research had as general objective to analyze the payment of environmental compensation provided for in Article 36 of the SNCU in the State of Pernambuco and as specific objectives to know the legal framework of the rules surrounding the theme of environmental compensation and to collect data regarding conservation units and environmental compensation in the State of Pernambuco with the scope of identifying possible weaknesses and thus finding plausible solutions for solving this problem Presented.

### **Materials and Methods**

Research on science is part of a field of study whose main objective is conditioned by the social context. According to Gil (1994) <sup>[22]</sup>, this field of study involves complex social phenomena with synergies between various actors, for example, man versus man versus social entities, because social sciences comprise a group of areas of knowledge whose object is conditioned by the social context. Also, according to Gil (1994) <sup>[22]</sup>, these sciences deal with the phenomena that involve aspects related to man in his multiple relationships with other men and social institutions.

With this process of synergy between several actors, the methodology or methodological processes enter as processes of improvement of the procedures and criteria used in research.

In this sense, this work sought to relate the payment of environmental compensation provided for in Article 36 of the SNUC and the contribution of these resources in the CU's of the State of Pernambuco, this through bibliographic reviews, theoretical materials, such as books, articles, laws, decrees, academic studies, as well as, through documentary survey obtained in government databases and questions directed to the control bodies of the environmental compensation fund.

With the focus on entering the theme, the present study carried out in the first stage a chronological analysis about legislative evolution related to environmental compensation from federal and state legislation, this to illustrate the legal framework studied.

In the second stage, data collected through government databases were collected, especially on the CPRH website. Thus, the data related to the conservation units, the terms of commitments signed by the entrepreneurs with the respective values and the projects approved by a commitment term signed, were extracted on the CPRH website of the State of Pernambuco. Through these, the quantity of the conservation units with their peculiar characteristics, the undertakings that caused relevant impacts, the relationship of the approved projects with the application of the resources and the general framework of the conservation units were accounted for.

In the third stage of the research, letters were sent to the control bodies of the environmental compensation fund, such as the CPRH, TCE and the MPPE as a way to understand the effective application of environmental compensation resources in conservation units in Pernambuco.

Data collection and organization took place chronologically from 2005 to 2022, since the entire collection of documentary data relates to this time lapse, this way to facilitate critical thinking and demonstrate the importance of the information brought to the reader.

This work is characterized by qualitative analysis with the content analysis technique proposed by Bardin (1977) <sup>[1]</sup>. Because it is very practical, the author facilitates the sequence of tasks and activities to be followed to analyze qualitative data. This analysis consists of three stages of exploration of the proposed theme that allows a critical and social measurement of information.

### **Results and Discussion**

To respond to the objectives proposed in this research, the connections between the data collected in this study related to the problem raised regarding the payment of environmental compensation and the contribution to nature conservation units in Pernambuco were articulated below.

As already presented, the environmental compensation provided for in Article 36 of the SNUC, regulated by Decree No. 4,340 of August 22, 2002 (BRASIL, 2002), consolidates the understanding that the use of this instrument imposes, not only on enterprises that reach areas of vegetation cover, but to any project that has significant environmental impact, the obligation to compensate for such impacts, also observed by Souza (2017). For Kate (2017) monetary environmental compensation is considered the last resort to counterbalance the negative environmental impacts caused by enterprises, such as loss of biodiversity and loss of areas representing historical and archaeological heritage, to ensure that there is no net loss of biodiversity.

Therefore, monetary/pecuniary environmental compensation should be the last resort to mitigate the negative environmental impacts caused by an enterprise. However, little is said about the adequacy to the principles of spatial and functional connection, although Conama Resolution No. 371, in article 9, makes it clear the intention of compensating areas that have a functional connection (ALMEIDA, 2017).

This is because, CONAMA resolution no. 371/06 (BRASIL, 2006), clearly establishes that in the occurrence of one or more UC's or damping zones that have been affected by the enterprise, regardless of the group they belong to, these should be achieved by the resources of environmental compensation, however, in the absence of these financial contributions should occur by the areas that have the same environmental functions.

Another important point to be raised is that the environmental compensation institute established in the SNUC differs from compensatory measures. According to Bechara (2007) <sup>[2]</sup> while environmental compensation has a more generic character, focused on the overall negative impact of the enterprise, compensatory measures tend to be more specific, focused on the specific impacts of the work or activity. As a result, the benefit generated by the former will also be generic, because it will offer an environmental gain, but not necessarily related to the observed loss; the benefit generated by the second invariably will have a minimal relationship with the loss, making the environmental gain equivalent to or very close to the loss.

Thus, environmental compensation is endorsed with a general, broad nature, related to the irreversible environmental impact of an enterprise, on the other hand, compensatory measures are specific, punctual to a work or activity, that is environmental compensation will bring environmental gain not necessarily linked to the directly observed loss.

From the point of view of legislative developments in environmental compensation, CONAMA Resolution No. 10/1987 (BRASIL, 1987) was the first legal instrument to regulate the matter; regulated environmental licensing and determined that large works would have to implement an Ecological Station to repair the environmental damage caused by the destruction of forests and ecosystems.

Subsequently, CONAMA Resolution No. 02/1996 (BRASIL, 1996) repealed Resolution No. 10/1987, altered the expression large works, by undertakings with relevant environmental impact imposing mandatory having implemented a conservation unit of integral protection of the Ecological Station type, also established the percentage of 0.5% of the total costs foreseen for the implementation of the enterprise as a form of environmental compensation.

The Federal Decree no. 4,340/2002 (BRASIL, 2002) regulated the rules and guidelines imposed in the SNUC law to lighten the provisions contained, both for the public power for society in general. Subsequently, Federal Decree No. 5,566/2005 (BRASIL, 2005) established that the Preliminary Environmental Impact Study and its report - EIA/RIMA were the correct instrument to establish the degree of impact of an enterprise, considering the negative and non-mitigated impacts on environmental resources.

Conama Resolution 371/2006 (BRASIL, 2006), created the guidelines for the calculation, collection, application, approval, and control of expenditures of environmental compensation resources, setting 0.5% of the costs foreseen for the implementation of the project causing significant environmental impact.

Systematically, Lopes and Gomes (2017) summarize the exhibition stating that the Resolution of the National Council of the Environment (CONAMA, 10/1987) originally inserted, in the Brazilian legal system, the compensation for the undertakings causing significant environmental impact, having been modified by Conama Resolution 02/1996 (BRASIL, 1996) and, subsequently, consolidated through Law 9.958/2000 (BRASIL, 2000), which instituted the National System of Conservation Units (SNUC). Decree 4.340/2002 and Resolution Conama 371/2006, as well as the normative acts of the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA) regulated Law 9.958/2000.

By decision of the Supreme Court, Article 36 of Law No. 9,985/2000 (BRASIL, 2000) was declared partially unconstitutional. At ADI 3,378, it was considered that the compensation should be proportional to the environmental impact, and there may be a requirement of a minimum value of 0.5% of the value of the enterprise, that decision had its effects modulated to recognize the validity of administrative acts intended for the calculation of the value due to environmental compensation on the basis of Article 36 of the SNCU between the period 19.07.2000 to 15.04.2008 (STF, 2008). Thus, Decree No. 6,848/2009 came to regulate Law 9.985/2000 according to the decision of the Supreme Court, establishing that the amount of compensation could not exceed 0.5% (BRASIL, 2009).

In the view of Pessoa et al (2017) <sup>[26]</sup> it is considered that the Ministry of the Environment complies with the decision of the Supreme Court. However, the Reference Value (RV) expressed in the formula for calculating Environmental Compensation is still linked to the total cost of the enterprise, when in fact it should be necessary to observe the value of significant impacts on the ecosystem and environmental services existing in the place where the project was implemented.

Thus, according to the author's understanding, the reference value for the calculations of environmental compensation is tied to the total cost of the enterprise to the mismatch of what the Supreme Court prescribes in the sense that the value of environmental compensation should effectively refer to the correspondence of environmental damage evidenced by environmental impact studies.

With the edition of law 13.787/2009, in Pernambuco was created the State System of Conservation Units (SEUC) in which criteria and standards were established for the creation, implementation and management of conservation units in the State, it is important to highlight that SEUC links the value of environmental compensation to the degree of environmental impact caused by the enterprise (PERNAMBUCO, 2009) <sup>[24]</sup>.

Consema resolution - PE No. 04/2010, established its own methodology for defining the degree of significant environmental impacts, in addition to editing and specific standards for the procedure for fixing and applying environmental compensation (CONSEMA, 2010) <sup>[3]</sup>.

For all the above, it is observed that with the temporal advance of the legal instruments there was an improvement in the institute of environmental compensation, however the diversity of the legal framework, sometimes contradictory brought in some moment's legal uncertainty, especially with regard to the calculation of the percentage to be used and the lack of definition of a ceiling or floor for this percentage.

After the legal analysis of the legislative evolution of the institute of environmental compensation in Brazil and Pernambuco, the focus was on the second stage of the research, which is the collection of data about the payment of environmental compensation in this State. We sought to collect information regarding conservation units and environmental compensation in the State of Pernambuco, based on the information obtained on the CPRH website.

Thus, in the State of Pernambuco between the years 2005 to 2021, thirty terms of commitments were agreed with entrepreneurs, as an example: with the Shipyard Atlântico Sul - EAS, Abreu e Lima Refinery - RNEST, Petroquímica Suape, Fábrica FIAT - TCA S/A, Fábrica de PTA, TERMOPE, among others. In this time lapse were ported about \$ 42. 970.077.87.

About environmental projects approved by a commitment term signed per project, thirteen of the thirty terms agreed are with financial allocation to different nature conservation units, which totals approximately \$ 19. 607.843,14. It should be highlighted that this information refers to approved projects and not to the actual payment, since it was not possible to have access to this data in this research as will be better detailed in the lines to come.

In fact, in analysis of the projects approved by a commitment term signed it is possible to extract that most of them are equipment acquisitions, review/recovery/reform/creation/maintenance of instruments necessary for the management of conservation units, with emphasis on the allocation of resources at the end of the commitment for the construction of the Abreu e Lima Refinery – RNEST. That's because, from \$26. 945,390.00, about 50% of the value will be provisioned in projects with private initiative (CPRH, 2022) <sup>[21]</sup>.

These projects draw attention to the contracts agreed with the Association Institute of Technology of Pernambuco - ITEP / OS, given the pioneering and uniqueness of the contractual object in which they are founded. This is because ITEP/OS was hired to develop Innovation Instruments for Environmental Management and Biodiversity Conservation in 47 (forty-seven) Conservation Units in Pernambuco – SEUC, in addition to having been hired to develop a sustainable management plan (PSGI) for the Fernando de Noronha Archipelago State Protection Area, with the total cost in the two contracts of \$ 1. 338.041.57.

ITEP/OS will develop innovation instruments for environmental management and biodiversity conservation in 47 (forty-seven) Conservation Units in Pernambuco that include socio-environmental diagnoses, management plans and management council.

The current panorama of the Conservation Units shows that despite the State of Pernambuco that has 90 units of nature conservation (44 units of the group of integral protection and 46 of the group of sustainable use), only 16 units have management plan, of these, 3 are Private Reserves of Natural Heritage (RPNNs) and 13 are managed by the CPRH. And yet, of these conservation units, only 30 have management advice.

## Conclusions

Nature conservation units were created with the scope of protecting nature reserves and biodiversity based on the fundamental right of life with dignity for present and future generations. However, only establishing the conservation units does not guarantee the effectiveness of this right, and it is necessary to guarantee mechanisms for the defense of these units.

This research sought to define the concepts and principles of environmental compensation, as well as took care to detail chronologically the legal framework of the norms surrounding the theme, reaching the conclusion that this institute, despite sometimes causing legal uncertainty regarding the percentages of its application, has presented important evolution and improvement.

Nevertheless, the payment of environmental compensation in the State of Pernambuco had been analyzed. The data collected point to large values captured through the terms of commitment signed with entrepreneurs. From the analysis of the payment of environmental compensation it is perceived that the resources are being incorporated into the environmental compensation fund, but there is no transparency in the provision of basic information on the use of environmental compensation resources for society and that, equally, there is no effective/clear supervision through the Control bodies, especially the ECA and the MPPE.

The contribution of environmental compensation resources in Pernambuco, according to the data collected in this research, is being inefficient, this in relation to the effective lack of minimum management instruments of these CU's. This is because, as seen, most conservation units in the State of Pernambuco lack the minimum instruments for their implementation.

As weaknesses found, it has been found that the CPRH, the managing body of the environmental compensation fund in Pernambuco has an insufficient number of employees for effective management of the needs that surround the agency, which could point to a justification of the inefficiency and centralization of the activities surrounding the contribution of funds raised from environmental compensation.

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