

**MARIA ELANNY DAMASCENO SILVA
(ORGANIZADORA)**



**O MEIO AMBIENTE
E A INTERFACE DOS
SISTEMAS SOCIAL
E NATURAL**

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APRESENTAÇÃO

Estimados leitores do Livro “O Meio Ambiente e a Interface dos Sistemas Social e Natural” é com satisfação que entregamos 44 capítulos divididos em dois volumes, que tratam da diversidade acadêmica em pesquisas sociais, laboratoriais e tecnológicas na área ambiental e afins.

Para melhor organização, o volume 1 inicia-se com o resgate histórico que percorre a trajetória da Revolução Industrial e sua relação com a degradação ambiental e o capitalismo exacerbado. Em seguida, mescla-se uma breve análise da atualização dos Códigos Florestais do Brasil de 1934, 1965 e 2012. Diante destas configurações é discutido também sobre os crimes ambientais e o conhecimentos das Leis sob as percepções das pessoas que cumprem penas. Adiante, destacam-se consideráveis estudos voltados para pontos de vistas de comunidades rurais juntamente com a manutenção de Áreas de Preservação Ambiental, Reservas Legais, qualidade de vida e sua estreita relação com o meio ambiente, além dos sistemas de plantios tradicionais, sustentáveis e o vínculo com os serviços ecossistêmicos.

A participação feminina é evidenciada com o exemplo de sustentabilidade financeira e socioambiental por meio do artesanato com Taboa. Além do mais, as atividades de pesca artesanal com mariscos é realidade diária para mulheres de região litorânea. Ainda sobre as questões socioambientais são apontados os principais desafios da mineração e a convivência social.

O crescimento populacional é alvo frequente de pesquisas devido às implicações decorrentes do crescimento econômico e o cuidado com a sustentabilidade dos recursos em grandes centros de urbanização. Neste viés, são apresentados projetos que envolvem o setor público e instituições interessadas na conservação das bacias hídricas em locais de manancial.

As iniciativas de gestão ambiental em ambientes acadêmicos aliam o conhecimento prático de estudantes e funcionários acerca da capacitação em educação ambiental. Oficinas ecológicas são abordadas como meio eficaz para conhecimento dos 17 Objetivos do Desenvolvimento Sustentável propostos pela Agenda 2030 das Organizações das nações Unidas - ONU.

As Políticas de Sustentabilidade são referências em atividades de monitoramento, levantamento de dados e gestão ambiental de efluentes em Universidades. A visão dos docentes de ensino superior do eixo da saúde sobre o ambiente natural revela reflexões importantes.

O ensino a distância atrelado aos projetos de extensão universitária promovem abrangência de conhecimentos históricos e botânicos em meio a pandemia de Covid-19, bem como de leitura e escrita de textos científicos com base em Revista Ambiental. Estudantes do ensino fundamental são entrevistados quanto ao que sabem sobre a

relação do efeito estufa e queimadas. Da mesma maneira que aulas práticas sobre solos têm resultados surpreendentes.

Por último, é evidenciado o estudo que associa a saúde humana com os aspectos do ambiente natural em zonas rurais. É oportuno citar o efeito de ferramentas ambientais que reduzem resíduos e desperdícios de alimentos em refeições.

Desejamos que este volume auxilie em vossas reflexões acadêmicas sobre o meio ambiente e o sistema social e natural.

Maria Elanny Damasceno Silva

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ENVIRONMENTAL CRIME AND AMAZON CULTURAL ASPECTS: SOCIAL REPRESENTATIONS OF FEATHERS AND ALTERNATIVE MEASURES IN THE BOA VISTA / RR

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ABSTRACT: This chapter is the result of the Doctorate in Biodiversity thesis, which presented as a general objective to understand the social representations of people who committed environmental crime and serve an alternative sentence or measure in the city of Boa Vista-RR, discussing the importance of the influence of Amazonian cultural aspects. in its relation to the conservation and sustainable use of biodiversity, as well as its perception of what is a crime. For this, we used the triangulation method, in which there is a reconciliation between the qualitative (semi-structured interviews, participant observation) and quantitative methods (socioeconomic identification questionnaire and statistical data

of legal proceedings between 2013 and 2016). As for the participants were persons assisted in the Sentencing Court and Alternative Measures (VEPEMA) who committed environmental crime, according to the Law of environmental crimes (Law No. 9.605 / 98) and were benefited by the proposed criminal transaction, conditional suspension of proceedings or who have been deprived of their custodial sentence by the restrictive penalty of rights in the modalities. As results and impacts, we analyzed the understanding of who committed environmental crime and the repercussion in daily life, and it can be concluded that the act of committing an environmental crime is directly related to cultural beliefs. Therefore, public policies should be applied with the objective of raising awareness of conservation and sustainable use of biodiversity.

KEYWORDS: Environmental crime. Perception. Conservation. Biodiversity.

CRIME AMBIENTAL E ASPECTOS CULTURAIS DA AMAZÔNIA: REPRESENTAÇÕES SOCIAIS DE PENAS E MEDIDAS ALTERNATIVAS EM BOA VISTA / RR

RESUMO: O presente artigo é fruto da tese de Doutorado em Biodiversidade, que apresentou como objetivo geral compreender as representações sociais de pessoas que cometeram crime ambiental e cumprem pena ou medida alternativa na cidade de Boa Vista-RR, discutindo a importância da influência dos aspectos culturais amazônicos na sua relação com a conservação e uso sustentável da biodiversidade, bem como na sua percepção do que é crime. Para isso, utilizou-se o método de triangulação, em que há uma conciliação entre os métodos qualitativos (estudos psicossociais) e quantitativos (questionário de identificação socioeconômica e dados estatísticos dos processos judiciais entre os anos de 2013 e 2016). Quanto aos participantes foram pessoas atendidas na Vara de Execução de Penas e Medidas Alternativas (VEPEMA) que cometeram crime ambiental, segundo a Lei de crimes ambientais (Lei nº 9.605/98) e foram beneficiados com a proposta de transação penal, suspensão condicional do processo ou que tiveram a substituição da pena privativa de liberdade pela pena restritiva de direitos nas modalidades. Como resultados e impactos, analisou-se a compreensão de quem cometeu crime ambiental e a repercussão no cotidiano, sendo possível concluir que o ato de cometer um crime ambiental está diretamente relacionado com as crenças culturais. Devendo, portanto, serem aplicadas políticas públicas com o objetivo de trabalhar a conscientização da conservação e uso sustentável da biodiversidade.

PALAVRAS-CHAVE: Crime ambiental. Percepção. Conservação. Biodiversidade.

ASPECTOS CULTURALES AMBIENTALES DE LA AMAZONIA: REPRESENTACIONES SOCIALES DE SANCIONES Y MEDIDAS ALTERNATIVAS EN BOA VISTA / RR

RESUMEN: El artículo es el resultado de la tesis doctoral en Biodiversidad, donde se presentó como un objetivo general para comprender las representaciones sociales de las personas que cometieron delitos ambientales y están cumpliendo una sentencia o medida alternativa en la ciudad de Boa Vista-RR, discutiendo la importancia de la influencia de los aspectos culturales amazónicos en su relación con la conservación y el uso sostenible de la biodiversidad, así como su percepción de lo que es un delito. Se utilizó el método de triangulación, en el cual existe una conciliación entre los métodos cualitativos (estudios psicossociales) y cuantitativos (cuestionario de identificación socioeconómica y datos estadísticos de los procedimientos judiciales entre los años 2013 y 2016). En cuanto a los participantes, hubo personas atendidas en el Tribunal para la Ejecución de Sanciones y Medidas Alternativas (VEPEMA) que cometieron un delito ambiental, de acuerdo con la Ley de Delitos Ambientales (Ley N ° 9.605 / 98) y se beneficiaron de la transacción penal propuesta, suspensión condicional del proceso. o quien tuvo la sustitución de la privación de libertad por la restricción de derechos en las modalidades. Como resultados e impactos, se analizó la comprensión de quienes cometieron un crimen ambiental y las repercusiones en la vida cotidiana, siendo posible concluir que el acto de cometer dicho delito está directamente relacionado con las creencias

culturales. Por lo tanto, deben aplicarse políticas públicas para crear conciencia sobre la conservación y el uso sostenible de la biodiversidad.

PALABRAS - CLAVE: Crimen ambiental. Percepción. Conservación. Biodiversidad.

1 | INTRODUCTION

One of the current major global concerns is maintaining an ecologically balanced environment, and to this end, countries are beginning to criminalize conduct that harms the environment. The Stockholm Conference in 1972 made a significant contribution to concern for environmental issues around the world. One of the key points in the Stockholm resolutions is the need for investment in environmental education, encouraging people's collaboration in discussions about and solutions to environmental problems. Environmental education is based on the relationship between generations and cultures, seeking to establish a fairer society on the local, continental and planetary levels (REIGOTA, 2010).

In Brazil, the Federal Law of Environmental Crimes no. 9.605 / 98 emerged as a way to prevent and curb criminal conduct against nature (SIRVINKAS, 2009). It defines the environment as follows: "it is the space occupied by living beings, where they live and there is reciprocal interaction, influencing the way of life with all its natural characteristics" (NUCCI, 2010). Therefore, environmental crime, according to Jesus (2010), is a typical and anti-juridical behavior that causes damage to the environment.

Despite an apparent maturation of the issue of environmental protection, it is clear that society has been concerned only with economic development. One cannot disregard the fact that unbridled urban growth has spread throughout Brazil, reflecting the absence of territorial occupation policies and compromising natural resources. One cannot deny that surveillance has increased with the advent of specific centers of fauna and flora protection; however, advertising and publicity have not grown in parallel, nor has the creation of public policies that can affect society in general.

The right to a balanced environment was elevated to the status of a fundamental right and even received constitutional protection, as described in Article 225 of the Constitution of the Federative Republic of Brazil:

All have the right to an ecologically balanced environment, which is an asset of common use and essential to a healthy quality of life, and both the Government and the community shall have the duty to defend and preserve it for present and future generations. (BRAZIL, 1988).

It is noteworthy that the punishment is only useful if people are aware of it, thus enabling the legislation to achieve its expected goals: to educate and promote critical reflection on the facts, avoiding recidivism.

In this sense, this article has developed a study on environmental crime and the social representation of its perpetrators, contributing to the understanding of the influence

of Amazonian cultural aspects on the relationship between man and the environment.

2 | METHODOLOGY

The triangulation method was used, in which there is conciliation between qualitative and quantitative methods. Triangulation is a strategy of dialogue between distinct areas of knowledge, enabling the intertwining of theory and practice and aggregating multiple points of view. According to Minayo, Assis e Souza (2014), the idea of triangulation supports the construction of indicators that can quantify objective dimensions and interpret the subjective facets of the object of study.

Minayo (2010) states that it is possible to work with the meanings of human actions and relationships, thus addressing issues related to the beliefs, values and attitudes present in the subjects involved. Among the various types of qualitative research, the explanatory technique was chosen, in which review of psychosocial examinations of the subjects and documentary research of judicial processes enabled analysis of the subjects' understanding of these processes.

The use of triangulation requires the combination of multiple research strategies capable of apprehending the qualitative and quantitative dimensions of the object. Thus, the methodological complementarity was based on quantitative instruments (socioeconomic identification questionnaires and statistical data of judicial proceedings between 2013 and 2016) and qualitative instruments (semistructured interviews and participant observation). Minayo, Assis and Souza (2014) cites this resource as fundamental to understanding complex phenomena.

The participants' age, gender, crime committed, and education were noted. There were 50 participants (defined by the information saturation criterion).

The inclusion criteria were people who had committed environmental crimes, as defined by the Environmental Crimes Law (Law No. 9,605 / 98), and benefited from the proposal of criminal prosecution, conditional suspension of the process or the replacement of a custodial sentence with restrictions on other rights. There was diversity among the participants regarding age, gender, crime committed, and education level.

As for the analysis, the data obtained from the different collection techniques were sorted and analyzed using the content analysis method, according to which the raw text data were transformed into categories, as a coding process, using record or context units. The thematic analysis aimed to identify the nuclei of meaning that indicated some meaning for the chosen analytical objective. From the clipping of the analyzed documents, parts of the contents were grouped into sub-thematic blocks, constructing the categories corresponding to the concepts that cover elements or aspects with common or related characteristics (MINAYO, 2010).

3 | LITERATURE REVIEW

3.1 Relationship of man to biodiversity

Without elucidating all the paths already traveled by man in his changing interactions with nature, we will briefly analyze the dualistic relationship of the arrangements formed in this changing relationship between living beings and biodiversity. The relationship is dualistic in the sense that population growth and land occupation in disordered forms have caused the reduction and / or extinction of essential aspects of biodiversity, producing disharmony in the fragile terrestrial ecosystem to the extent that *stricto sensu* man appropriates natural resources, exposing his own species to the environmental impacts and scarcity of nonrenewable resources available to him. Mucci (2014) estimates that by 2025 the world population will be ten billion inhabitants, and today we consume approximately 40% of the organic material produced annually. The inability of the planet to indefinitely provide the resources necessary for the reproduction of life, caused by high levels of production and consumption, has caused significant damage to the subject relationship and renewable resources (SILVA, 2010).

Siqueira (2002) states that the crisis in human-nature relations must be sought in axiological models that, supported by philosophical foundations, mark the different conceptions of nature, some of which are deeply questioned. Miranda (2017) emphasizes the need to understand the relationship between traditional knowledge and its association with biodiversity¹ because this knowledge is dynamic and the result of a construction in the geographical space in which humans live. In the National Biodiversity Policy², which outlines the guiding principles for the conservation of biodiversity and its sustainable use, the “V” principle emphasizes that everyone has the right to an ecologically balanced environment, as the environment is used by all people and is essential to health and quality of life, imposing on the public power and the collective the duty to defend and preserve it for present and future generations.

According to Philippi Jr. and Maglio (2014) the Biodiversity Convention has strengthened a policy of defending biological diversity by protecting and conserving natural ecosystems and species of flora and fauna. Commercial activities, without due respect for the limits of environmental renewal, have been extinguishing important animal, plant and mineral species, as well as affecting the harmony of others that still exist. Sirvinskas (2018) points out that the importance of biological diversity is closely linked to the sustainability

1 This is any individual or collective information or practice of indigenous people or traditional communities with real or potential value associated with genetic heritage. This knowledge is dynamic and the result of a construction in the geographical space in which they live and in intergenerational time. Thus, it is developed in space from experiences and observations of phenomena, such as whether a particular plant has healing properties. Moreover, it arises from exchanges with other communities of information and genetic material, characterized by the diversity of plants, fruits, seeds, animals, etc., as well as religious practices and the need to adapt to the environment in which they live throughout the world. Moreover, the transmission of this knowledge occurs in time, i.e., it is passed from generation to generation (MIRANDA, 2017, p.26, our translation).

2 Decree No. 4,339, of August 22, 2002.

of all living beings in the environment. There is no way to imagine Earth without the great living organism constituted by biological diversity (fauna, flora and microorganisms).

From this perspective, the importance of managing natural resources combined with knowledge of traditional communities is emphasized³. Carona-M (2011) points out that when fauna become important for a particular community, they become part of its routine and culture, and the community establishes various relationships with animals, whether utilitarian, symbolic or commercial. This approach contributes to the harmonization between the community and the natural elements, including not only the local fauna but also the biodiversity existing in that space. Moreover, this “harmonious coexistence” allows the expropriator (man) to understand the differences between predatory hunting and cultural hunting, as well as the impacts of both on that ecosystem.

Culture is considered a set of ideas, symbols, behaviors and social practices guided by knowledge passed from one generation to another through a sociohistorical process. It is a necessary and universal aspect of the process of development of culturally organized and specifically human psychological functions (VYGOTSKY, 2000). Culture is in constant dialectical movement because it is modified by new ways of thinking and feeling of the subjects (men). In this doctrine, marriage between man and nature involves a system of beliefs and values. Thus, emancipatory culture presupposes new forms of knowledge effectively founded on collective solidarity (MAGOZO, 2014).

Iamamoto (2014) also states that capital⁴ creates the specific historical form of property that suits it, valuing this monopoly on the basis of capitalist exploitation, subordinating agriculture to capital. The capital of the late twentieth and early twenty-first centuries bumps into biosphere-level ecological barriers that cannot be overcome, as before, through spatial adjustment of exploration and geographical expansion (FOSTER; CLARK, 2006). Thus, the time has come for societies to think about new models of sustainable currency generation, ensuring the immediate abandonment of the current model of predatory exploitation by capital of natural resources, ensuring not only the maintenance of the “irrational” animals and native vegetation but also the rational animal (man), which needs this biological-social balance to continue to exist.

The core of environmental disputes is the impact of the economic activities of a current generation on the quality of life of future generations. This impact occurs due to the use of finite natural resources and the accumulation of pollution in the environment, generating detrimental effects (CECHIN, 2010). Clearly, wear and tear on the environment is engendered by the advance of capitalism and its eminently expropriatory origin, involving disordered land use, irregular occupations, and inharmonic plant, mineral and

³ The associated traditional knowledge, under Brazilian law, is the individual or collective information or practice of indigenous or local communities, with real or potential value, associated with genetic heritage (ANTUNES, 2015, our translation).

⁴ It is upon the industrial groups that rests the activity of capital appreciation in industry, services, the energy sector and large agriculture, upon which the material existence of the societies on which peasants and artisans were almost completely destroyed depends. as for the extraction of surplus value intended to pass into the hands of financial capital. (CHESNAIS *apud* IAMAMOTO, 2014, our translation).

animal extractives. Other examples of environmental modification are river pollution caused by siltation and heavy metals, soil erosion in areas where forests have been cleared, and unscrupulous agriculture and livestock practices that consume and pollute the thin layer of soil (PHILIPPI JR.; MALHEIROS, 2014). To advance environmental protection, sustainable alternative livelihoods must be adopted that allow the natural recovery of life (biodiversity) in addition to constant socioenvironmental education; transparent and accessible public policies are also needed regarding the proper use of environmental resources.

In this intricate web of intersections among cultural knowledge, beliefs, values, ethics, sustainable development, trade relations and economic growth, the complexity of the human-biodiversity relationship is evident; it is up to everyone to take responsibility for the triad of consumption, awareness and predatory practices. The destiny of humanity is closely linked to the preservation of the environment (SIRVINSKAS, 2018).

3.2 Environmental Crime

Today, the process of environmental degradation, among many factors that we intend to study elsewhere, is occurring globally: by the advance of a predatory capitalist system; irregular land occupation, especially in urban areas; pollution and depletion of aquifer reserves intended for human consumption; and global warming, the curtailment of which must involve the effort of man himself. That is, the environment is now the issue, including at the political-marketing level, that has demanded the most interest and concern from world leaders and for this reason demands the physical and / or legal liability of those committing crimes⁵ against the environment.

The theme of “environment” has been promoting drastic changes in the structure of societies and how they must interact with nature. The careless use of environmental resources, even with different gradations for the State, is subject to cumulative civil, criminal and administrative liability. Bejn (2015) notes that liability is one of the most fundamental legal institutions. To be legally responsible is to answer for any damage caused to a third party.

The modalities of responsibility in the aforementioned spheres are enshrined in the Brazilian Federal Constitution of 1988 in Chapter VI, which addresses the “environment”. Specifically, §3 of art. 225 establishes that conduct and activities considered harmful to the environment will subject the violators, whether individuals or legal entities, to criminal and administrative sanctions, regardless of the obligation to repair the damage caused. Thus, analogously, there are constitutional and infraconstitutional norms of environmental protection as well as the newer ones provided for in Article 121 et seq. of the Brazilian Penal Code⁶. They are fundamentally protective of life, albeit coercive.

5 Crime is a typical fact, anti-juridical and guilty (PEDRO, 2014, our translation).

6 Article 121 addresses crimes against life.

The legal good protected is the environment⁷, to which injury or threat of injury is defined and criminally punishable. Regarding environmental legal assets, this protection is legitimate, given that the environment is related to the dignity of the human and represents the various manifestations of life (FIORILLO; CONTE, 2012).

According to Sirvinskas (2018), the legal protection of the environment in Brazil can be divided into three periods. The first period begins with the discovery (1500) and continues until the coming of the Portuguese Royal Family (1808); the second period begins with the coming of the Royal Family (1808) and extends to the creation of the National Environmental Policy Act (1981). The third period begins with the creation of the National Environmental Policy Law (Law No. 6,938, of 8/31/1981), giving rise to the holistic phase, which consists of fully protecting the environment through an integrated ecological system (in which parts are protected from the whole). Benjamin (2011) note that Law no. 6.938 / 81 inaugurates the holistic phase of environmental protection in the legal system, characterized by greater concern for the environment.

According to Landim (2003), all damage to property that is legally protected constitutes damage. Given that the environment is a legally protected asset, it can be concluded that any action harmful to any of its constituent elements is environmental damage. Therefore, environmental damage is all damage caused by the action of man, whether guilty or not, directed to the environment and considered harmful to the interests of the community, both collective and individual.

Thus, any degradation that man causes to the environment is punishable, according to the provisions of art. 14 °, §1, Law n °. 6.938 / 81. Anyone who hinders implementation of penalties provided in this article is a polluter, regardless of fault, and will be forced to compensate or repair the damage to the environment and to others affected by their activity. From this perspective, any aggression against the environment will be subject to the dictates of the legislation that corresponds to the fact imputed as a crime.

3.3 Alternative penalties and environmental crimes

The Brazilian penitentiary system, given the increasing number of incarcerations of provisional prisoners who are arbitrarily imprisoned each year, shows a deficit in the legalistic application of prison sentences. The deleterious conditions to physical and mental health to which prisoners are exposed in Brazilian Recovery Centers contribute nothing to their resocialization. Silva and Coutinho (2019) point out that Brazil is currently the fourth country in the world in the absolute number of prisoners and that the number of people deprived of the right to come and go through sentencing or *res judicata* already exceeds 726.000 people. The prison issue presents a higher level of complexity, especially

⁷ Environmental good can therefore not be classified as a public or private good (Art. 98 CC 2002). It is a third category. However, this good is in an intermediate range between the public and the private, considered very diffuse. This good belongs to everyone and at the same time to no one. There is no way to identify its holder, and its object is impossible to divide. Consider, for example, air (SIRVINSKAS, 2018, our translation).

because the law here does not even guarantee the formal legal equivalence that the notion of citizenship prescribes (SILVA, 2014).

In these chaotic conditions, commitments are signed daily between the procedural parties, involving faithful proportional application of the penalty for the damage done to the convicted. Thus, the principle of proportionality determines, in the abstract, that the penalty cannot be greater than the degree of responsibility for the action. In other words, the penalty should represent the measure of the actor's culpability (FIORILLO; CONTE, 2012), thus reserving deprivation of liberty, among the potential punishments, for those who are proven to pose a risk to society.

Alternative penalties arise to alleviate the consequences of overburdening the prison system and provide penalties commensurate with the damage done. The just duration of the penalty should therefore vary not only with the act and its circumstances but also with the penalty itself as it unfolds concretely (FOUCAULT, 2014). For Dotti (1998), alternatives to prison seek to lend greater effectiveness to criminal law. The Tokyo Rules⁸ (1998) state that in the case of a specific noncustodial measure, a number of programs should be developed, such as case studies, group therapy, housing programs and specialized treatment, to respond more effectively to the needs of various categories of offenders.

According to Law No. 9.605 / 98, art. 28, the alternatives should apply to environmental offenses with less potential for harm⁹, defined in this law as all those offenses typified in legislation whose minimum penalty is one year or less. Trials for these crimes are under the jurisdiction of Special Criminal Courts. The provisions of art. 60 of Law No. 9,099 / 95 address the prosecution and execution of criminal offenses with less potential for harm, respecting the rules of connection and contiguity. The (summary) procedures of the faster Special Courts guarantee greater agility in judging cases punishable according to the limits imposed above; that is, this Special Court aims to reduce bureaucracy in certain contexts, increase the application of decriminalizing measures, and reduce impunity (GIACOMOLLI, 2006).

Landim (2003) notes that the practice of environmental crimes defined in Law No. 9605/98 is addressed through processes that, under the Special Criminal Courts, adopt practices to address such crimes more quickly than regular courts.

Regarding pollution and other environmental crimes, art. 54, of Law No. 9,605 / 98 states that a crime of any level of pollution, such as resulting in the death of animals or significant destruction of flora, is penalized by imprisonment of one to four years and a fine. The sentence is consummated with the intent to cause pollution that results or may result in damage to human health or cause the death of animals or significant destruction of flora. The attempt is admissible (FIORILLO; CONTE, 2012).

8 United Nations Standard Minimum Rules for the Development of Non-custodial Measures.

9 Art. 61. Criminal offenses of lesser potential for offense are, for the purposes of this Law, criminal offenses and crimes to which the law imposes a maximum penalty of not more than two (2) years, whether or not combined with a fine. (BRAZIL, Law No. 9,099 / 95, our translation).

The classic doctrine of Public Law is any change in the natural properties of the environment caused by an agent of any kind, harmful to the health, safety or welfare of the population, characterized by being the most harmful mode of degradation of the natural environment. Pollution is characterized by degradation of environmental quality, as it is precisely the adverse change in the environment that defines pollution.

Brazilian law has already defined “pollution” for the purposes of applying the relevant legislation. The Law no. 6,938 / 81, in its art. 3rd inc. III defines it as the degradation of environmental quality resulting from activities that directly or indirectly: a) harm the health, safety and well-being of the population; b) create adverse conditions to social and economic activities; c) adversely affect the biota; d) affect the aesthetic or sanitary conditions of the environment; or e) release materials or energy in violation of established environmental standards. The broad concept of “pollution” in Brazilian legislation embraces both water, land and air pollution and noise and visual pollution, given the norm of points b and d. In addition, all polluting sources and pollutable ecosystems are provided for in this definition. Gas, liquid and solid pollution are covered by the legal concept.

In short, there is no doubt that a healthy environment is a prerequisite for the health of society, and consequently, preservation depends on everyone. Law no. 9.605 / 98 addresses penalties for environmental violations and application of the punishment of activities harmful to the environment. Thus, art. 6¹⁰ of that law specifies the rules for the application of penalties to environmental crimes, as well as the judicial processes and aggravating and attenuating circumstances.

The Act emphasizes that the repair of environmental damage is required to enjoy the benefits of plea bargaining and conditional suspension of the process¹¹. Art. 20 of the Environmental Law emphasizes that the condemnatory criminal sentence, whenever possible, will set the minimum amount to compensate the damage caused by the infraction, considering the damage suffered by the offended party or the environment. This allows the purpose of the law to be achieved, protecting the health of the environment while punishing the offender.

In a specific case, the judge, when considering a possible criminal sentence with a deprivation of liberty of less than two years, may replace it with one of the penalties listed

10 Art. 6. For the imposition and grading of the penalty, the competent authority shall observe:

I - the seriousness of the fact, considering the reasons for the violation and its consequences for public health and the environment;

II - the violator's antecedents regarding compliance with the legislation of environmental interest;

III - the economic situation of the violator, in the case of a fine.

11 Art. 27. In environmental crimes of lesser potential for offense, the proposed immediate application of a restrictive penalty or fine, provided for in art. 76 of Law No. 9,099, of September 26, 1995, can only be formulated as long as there has been the prior composition of environmental damage, which is dealt with in art. 74 of the same law, except in case of proven impossibility. The institute of conditional suspension of proceedings provided for in art. 28, I, points out that the declaration of extinction of punishment, referred to in paragraph 5 of the article referred to in the *caption*, will depend on the report of the finding of compensation for environmental damage, except for the impossibility provided for in paragraph 1 of paragraph 1. of the same article.

in art. 8¹² of Law No. 9,605 / 98. The conditions for the replacement of penalties are that the accused is convicted of the crime; the private penalty applied is less than four years; and the convicted person's background and social conduct, in addition to the motives and context of the crime, indicate that it is possible for the offender to learn and avoid recidivism (BITTENCOURT, 2016).

The alternative legal mechanisms are developed in four distinct phases: a) The first is the initial procedural phase, which is completed through the drawing up and sending to the court of the Circumstantiated Term, thus offering the criminal transaction¹³ and the remission¹⁴. (b) In the second stage, when the complaint or representation is offered, with conditional suspension of the proceedings, the judge may still offer remission. In this phase, the judge may request the assistance of the interdisciplinary team by ordering a psychosocial examination of the offender to inform the judge's actions. c) In the third phase, the trial takes place, and in the event of a conviction, the judge may suspend the sanction (sursis) or replace imprisonment or detention with alternative criminal penalties (restrictions on other rights: provision of service to the community, temporary interdiction by law, and cash benefit). d) The fourth phase is the execution of the sentence imposed by the court by the interprofessional division of Execution of Sentences and Alternative Measures. The recent environmental legislation expanded the sanctions applied to environmental crimes; in addition to adding noncustodial sanctions, and there is now harmony with constitutional precepts.

Accordingly, after accepting the substitution of the penalty of deprivation of liberty with restrictions of other rights, the interprofessional division continues the enforcement of the penalty. The defendant must be clearly informed that this is an alternative tool made available to him, which may be revoked at any time if he does not meet the requirements set by the judge, in judgment, for his offer. The work carried out by the division team aims to provide the convicted individual with the necessary conditions to comply with the sentence so that he is not sentenced to a more severe penalty, since the main objective of the alternative measures is above all to avoid the recidivism of the convicted person, in addition to enabling environmental rehabilitation.

The modalities of alternative measures (procedural or punitive) appear as alternative penalties to imprisonment, given the former primacy of punitive punishment but

12 Art. 8. The restrictive penalties of law are: I - provision of services to the community; II - temporary interdiction of rights; III - partial or total suspension of activities; IV - cash benefit; V - domiciliary payment.

13 The Penal Environmental Law establishes, in art. 27, that the criminal transaction may only be proposed by the Public Prosecution Service after the prior composition of the environmental damages. There is no need for effective reparation; it is sufficient for the degrader to formulate an appropriate proposal for recovery of the damaged environment. This composition may be made in advance with the Public Prosecution Service and presented at a hearing, for court approval and subsequent criminal settlement proposal. It may also be made in audience. In such a case, it is appropriate that it be transcribed in detail in the hearing, with all clauses and combinations (GHIGNONE, 2007, p.77, our translation).

14 A remission is the institute granted by the prosecutor and applied prior to the offer of representation, the effect of which is to terminate the proceedings. And it was an important innovation, whose wake came to be traced, in relation to certain offenses committed by the imputable, by Law 9,099 / 95, which established the institute of criminal transaction in the Brazilian adult criminal system (SARAIVA, 2010, p. 226, our translation).

not resocialization. In this sense, alternative measures have provided a new perspective on crimes with less potential for harm because these measures lean more toward decriminalization. This does not mean that the state is absent from the execution process of the sentence but rather that punishment is proportionate to the degree of the offense committed, making it possible to develop educational practices that appreciate the person, while at the same time making them realize the consequences of the offenses. Craidy and Gonçalves (2003) note that when the rules become clear to the subjects, they feel productive and useful, allowing a greater range of measures.

Regarding the modalities of alternative measures listed in art. of Law No. 9,605 / 98, the one most frequently applied by magistrates in environmental crimes has been the provision regarding Pecuniary¹⁵ Fines¹⁶ and the Provision of Service to the Community or Public Entities (PSC).

The cash benefit is given directly to the victim if he suffers any type of damage from the offender's conduct, whose value may be deducted from the amount of civil reparation¹⁷. The law does not explicitly require that the entity receiving the money have environmental purposes, and the money may be directed to the entity for social purposes. This does not exclude the need for the offender to repair the environmental damage caused.

Art. 9 of Law no. 9.605 / 98, addressing the substitution of the penalty of deprivation of liberty by PSC, provides that community service consists of giving the convicted individual uncompensated tasks in public parks, gardens and conservation areas, and in cases of damage to property, whether private or public, restoration if possible. The purpose of the measure is education and environmental protection.

Shecaira (2008) argues that community service should be one the major penalty alternatives in AMB into of criminal justice because through it, the offender has the ideas of responsibility, adherence to community norms, and respect for work; this alternative also generates a sense of obedience to the rules in the community, which is fundamental to collective trust. For Bitencourt (2011), this sanction represents one of the great penological hopes due to maintaining the normal state of the subject and, at the same time, requiring minimal resocializing treatment; community service also does not prevent the performance of normal work activities.

The application of criminal alternatives has enabled a greater reach in the enforcement

15 The cash benefit consists of the payment in cash to the victim or to the public or private entity with social purpose, set by the judge, not less than one minimum wage or more than three hundred and sixty minimum wages. The amount paid will be deducted from the amount of any civil reparation to which the violator is sentenced (BRAZIL, art. 12, Law No. 9.605 / 98, our translation).

16 Art. 18. The fine will be calculated according to the criteria of the Penal Code; if it proves ineffective, even if applied at its maximum, it may be increased up to three times, given the value of the economic advantage gained (BRAZIL, art. 12, Law No. 9.605 / 98, our translation).

17 The last sentence of art. 12 provides that the amount paid shall be deducted from the amount of any civil reparation to which the infringer is ordered. Of course, the allusion is to the civil remedies that would be paid to the victim in a civil nature process (indemnity action) that this will move against the aggressor (identically to the contained, expressly, in art. 45, § 1 of CP, which allows the deduction "if the beneficiaries match"). It is only from this reparation that the amount already paid in the criminal sphere can be discounted as a cash benefit (GHIGNONE, 2007, p.98, our translation).

of constitutional protection of the environment and the offender because it allows convicted individuals to serve their sentences in freedom, maintaining their social and family ties, and prevent the imprisonment of those who committed environmental crimes, which are considered by law to have less potential for harm. It is necessary to affirm that the alternative penalties are not escape valves to prison; rather, they are instruments capable of enabling real social change, with clear pedagogical practices and valuing the dignity of the human person.

4 | RESULTS AND DISCUSSION

4.1 Sentencing Court and Alternative Measures to custodial sentences – VEPEMA

The research was conducted at the Roraima Court of Justice, created by the 1988 Constitution from the creation of the State of Roraima, which is located in the civic center of the capital Boa Vista. The entity took 27 years to create. The Roraima Court of Justice currently has 52 judges (42 trial and 10 appellate) and 953 civil servants who provide services in the administrative units of the institution and in the eight counties in the municipalities of Boa Vista, Alto Alegre, Bonfim, Caracaraí, Mucajaí, Pacaraima, Rorainópolis and São Luiz do Anauá.

The Judiciary of the State of Roraima began following up on alternative penalties and measures in 2007, first creating the Interprofessional Division of Follow-up of Sentences and Alternative Measures - DIAPEMA, which aimed to monitor and enforce the penalties and measures applied to those who violated the Repressive Penal Statutes with the goal of resocializing individuals through psychosocial analyses. In 2014, VEPEMA was created and in turn created the Sentencing Court and Alternative Measures to the Private Penalty of Freedom, located on the 1st floor of the Minister Evandro Lins e Silva Criminal Forum in the Caraná neighborhood, which is located in the west of Boa Vista-RR. VEPEMA's mission is as follows:

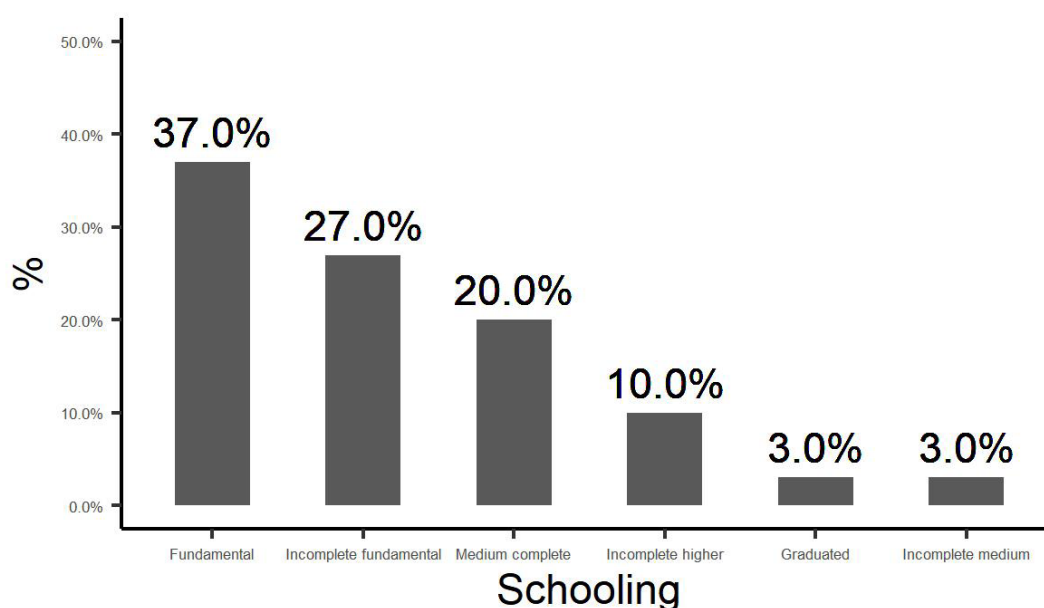
Inform the civil society and, in particular, the partner institutions that make up the Social Network, about the on-the-spot monitoring of the Community Service Provider, in order to give seriousness to the implementation of the Penalties and Alternative Measures in the State of Roraima, as well as, **motivate** the full development of citizenship and **enhance** the process of reintegration of the individual into the community, family and society.

VEPEMA has 20 employees distributed among the technical sector, including agents, notaries and office staff, aiming to ensure the effectiveness of penal alternatives. Vara also has a large social network with various entities, including public (e.g., education, health, safety, social assistance, environmental), private (e.g., NGOs, associations), and philanthropic (e.g., churches, mutual aid groups, therapeutic communities) entities.

4.2 Compliance

The most common crimes in the last three years cited by VEPEMA - 2013-2015 (according to psychosocial record and statistics) were: “killing, stalking, hunting, using wildlife specimens without proper permission, license or authorization from competent authority”; “To abuse, mistreat, injure or maim wild, domestic or domesticated, native or exotic animals”; “Fish in a period when fishing is prohibited”; “Destroy or damage forest considered permanent preservation”; “Felling trees in forests considered to be permanent preservation without permission of the competent authority”; “Cause forest or forest fire”; “Cut or turn into hardwood charcoal, in violation of legal provisions”; “Prevent or hinder the natural regeneration of forests and other forms of vegetation”; “Deforest, economically exploit or degrade forest, whether planted or native, on public or vacant land, without the permission of the competent body”; “Cause pollution of any kind to such a degree as to result in or may result in damage to human health or to the death of animals or significant destruction of the flora”; and “Build, renovate, expand, install or operate potentially polluting establishments, works or services in any part of the national territory, without license or authorization from the competent environmental agencies, or contrary to the relevant legal and regulatory norms”, all typified by the law specifying environmental crimes (Law No. 9,605 / 98).

From the study of the socioeconomic questionnaires, it was observed that 64% of the convicted individuals had education below the fundamental level, which brings us to limitations in people’s understanding of the crimes with which they were charged, as well as the penalty received and the development of the process and the penalty.

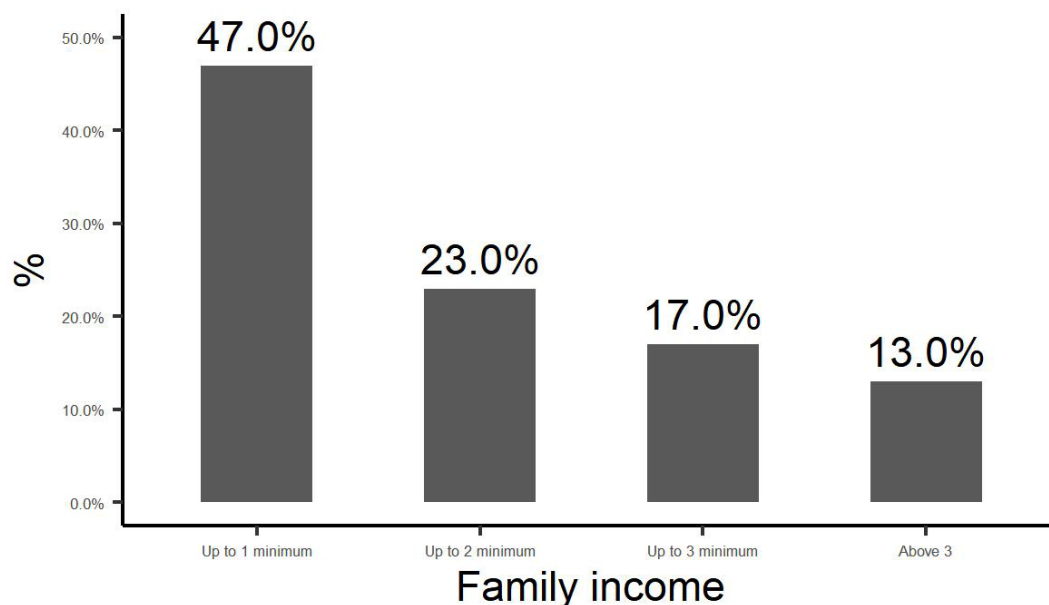


Graph 1 – Schooling: Percentage related to educational level.

Source: own elaboration.

The intervention of the interdisciplinary team is indispensable in the reception, orientation and referrals of individuals convicted of these crimes. Another important role is that of the follow-up agent, who carries out thorough follow-up to monitor compliance, counting monthly frequencies, visiting the places of compliance, assisting the accused and informing the prosecutor and judge, and obtaining the necessary documents in the victim compensation process.

Regarding the family income of convicted individuals, it was observed that 70% received up to 2 minimum wages (47% up to 1 salary and 23% up to 2 salaries), enrolled in the Unified Registry for Social Programs (CadÚnico). The vast majority were residents of areas of nonregular occupation in multifamily dwellings (regular and irregular).



Graph 2 - Family income: Percentage referring to the average family income of the participants

Source: own elaboration.

As for gender, 80% who were responsible for environmental crimes were male and 20% were female.

As for the subjective analysis of the perpetrators' perceptions, the cultural aspects and social representations of each could be understood to influence the commission of environmental crimes, as most did not consider their acts crimes. For example, perpetrator 01 was charged with a crime for raising two parrots without a license from or registration with the relevant environmental agency. She was brought to the 5th DP, where she gave testimony and was then released. In addition, the animals were seized and taken to CETAS -IBAMA. When asked how she viewed what had occurred, she replied, «I was unaware that you needed to have a license to raise parrots in your home.» This perpetrator was 63 years old and claimed that her whole life she had been used to raising animals at home and had never been accused of any crime. She said she felt terrible at having to

endure such an embarrassment.

Soares (2013) states that there are major difficulties in applying the Environmental Crimes Law, including the fact that some offenders do not consider themselves “evil doers” because they cite cultural values and beliefs and consider their conduct to be correct. Thus, the preventive character, especially with regard to recidivism, is not very effective.

For example, perpetrator 02 was cited by a team of inspectors from Environment SMGA for building residential property in APP without the permission of the relevant environmental agency. The perpetrator claimed that the land had been owned by his family for 35 years and that there was a stream on the side of the land, as a result of which he built a wall in front of his residence. He claimed that he was unaware that he was committing an environmental crime.

We also note that perpetrator 03 reported that 01 year and 06 months earlier she had been fined because her house was built in an environmental preservation area. She mentioned that she did not see herself as “devastating” the environment; as a farmer, she takes care of the environment, including planting many acai trees around her home. “But at no time did I want to act wrong; I acted out of necessity”. Nevertheless, she wants to do her best because she does not want to have her name “dirtied” in court.

Crime can be viewed as a social construction, in which patterns of behavior permeate the understanding of what is considered a crime. Therefore, it emerges that for most people who are subject to a penalty / measure by VEPEMA for allegedly committing an environmental crime, their environmental awareness is guided by their cultural values.

5 | CONCLUSIONS

Despite the advancement of legislation regarding the preservation and sustainability of the environment, cultural issues prevail in the perception and behavior of people who commit some type of environmental crime. The preliminary results of this study show that social beliefs and values have direct impacts on human behavior regarding environmental conservation.

Thus, understanding the relationship between man and biodiversity requires a better understanding of the biological and cultural importance of regional fauna and flora for different populations. In this sense, it can be understood that conflicts between man and nature are linked to cultural construction rooted in a predatory concept of natural resources, where the devastation of natural resources by man comprises a set of beliefs, values, historical and social contexts, as well as the absence of a socioenvironmental pact of all social groups with future generations. The pursuit by societies of socioeconomic and political development, although privileged by critics when discussing the issue, is only a natural continuation of human disagreement for the global non constitutionalization of common interests for biodiversity.

The most common crimes charged by VEPEMA - 2013-2016 were: “kill, stalk, hunt, use wildlife specimens without proper permission, license or authorization from the competent authority”; “To abuse, mistreat, injure or maim wild, domestic or domesticated, native or exotic animals”; “Fish in a period when fishing is prohibited”; “Destroy or damage forest considered permanent preservation”; “Felling trees in forests considered to be permanent preservation without permission of the competent authority”; “Cause forest or forest fire”; “Cut or turn into hardwood charcoal, in violation of legal provisions”; “Prevent or hinder the natural regeneration of forests and other forms of vegetation”; “Deforest, economically exploit or degrade forest, whether planted or native, on public or vacant land, without the permission of the competent body”; “Cause pollution of any kind to such a degree as to result in or may result in damage to human health or to the death of animals or significant destruction of the flora”; and “Build, renovate, expand, install or operate potentially polluting establishments, works or services in any part of the national territory, without license or authorization from the competent environmental agencies, or contrary to the relevant legal and regulatory norms”, all typified by the law on environmental crimes (Law No. 9,605 / 98).

Therefore, it appears that the vast majority of people who have been convicted of these crimes have a limited understanding of the crimes themselves and how to respond to a criminal case. This situation occurs mainly in peripheral neighborhoods of urban areas and inner cities, showing that cultural aspects directly influence the relationship with the environment.

The environmental issue is very controversial and has made little progress in the state of Roraima. Studies such as this help in analyzing the situation and seeking understanding to determine governmental and social responsibilities. In addition to the laws and enforcement, it is necessary to involve citizens with environmental awareness, seeking environmental preservation. We conclude that it is necessary to think about the strategies adopted by the State to achieve discussion among all of society about sustainable development and man’s relationship with the environment.

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