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Protected Areas in the Amazon: forest management, conflict and social participation

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ABSTRACT. Problems of environmental degradation worldwidehave generated different environmental policies, especially in protected areas. In the state of Amazonas, Brazil, about 50% of the territory is under the order of protected area, including 27% Indigenous Reserves and 23% of state and federal managementreserves. However, many of the conflicts generated over time in these reserves aredue to the limited participation of social subjects in the planning and implementation of various activities in the process of territorial and environmental management. The analysis of territorial disputes arising from forest management in reserves in the state of Amazonas should be based on management plans. It can be inferred that the demarcation process and institutionalization of the protected areas are generating territorial disputes, but along the deployment of the politics and governance, these differences are reduced to the minimum by means of the social participation of stakeholders. The authoritative processes in the delimitation of these areas have been characterized by endogenous planning practices and land use in protected areas with the participation of social subjects, evidencing favorable results of this policy for the state of Amazonas mainly forcultural and environmental preservation.

Keywords: environmental conservation, biosociodiversity, territory.

Áreas protegidas na Amazônia: manejo florestal, conflitos e participação social

RESUMO. Os problemas de degradação ambiental, no cenário mundial, têm gerado diferentes políticas ambientais, com destaque para as áreas protegidas. No Estado do Amazonas, Brasil, cerca de 50% do território está sob a ordem de área protegida, de diferentes tipologias: sendo 27% de terras indígenas e 23% de áreas protegidas federais. No entanto, muitos dos conflitos gerados ao longo do tempo nestas reservas são devido à limitada participação dos sujeitos sociais no planejamento e execução de diversas atividades no processo de gestão territorial e ambiental. A análise dos conflitos territoriais, decorrentes do manejo florestal, nas reservas do Estado do Amazonas, foi baseada nos planos de gestão. Pode-se inferir que o processo de demarcação e institucionalização das áreas protegidas está gerando conflitos territoriais, entretanto, ao longo da implantação desta política de governança, esses conflitosforam significativamente reduzidos, por meio da participação social dos diferentes sujeitos sociais. Os processos de gestão, na delimitação dessas áreas, têm se caracterizado por práticas endógenas de planejamento e uso da terra em áreas protegidas, a partir da participação dos sujeitos sociais, evidenciando os resultados favoráveis dessa política para o Estado do Amazonas, com destaque para a preservação cultural e ambiental.

Palavras-chaves: conservaçãoambiental, biossociodiversidade, território.

Introduction

With the expansion of capitalism, all scales of environmental degradation were intensified and with this, the countries of the 'third world' began to find strategies to mitigate impacts of the current economic system. Among the strategies of Brazil in response to pressures of international environmental organizations was the creation of protected areas (Ioris, 2000), which are demarcated territorial units with the purpose of environmental preservation or conservation.

However, the creation of policies for protected areas occurred after the diffusion of discussions about the modern myth of unspoiled nature, which considers the human being in separate from nature. This understanding began to spread in the United States with the creation of the Yellowstone National Park, the first in the world (Diegues, 2001).

With the 'success' of this park in the United States, other countries began to hold paradigms of conservation of other territories, and this was the case of Brazil. However, the simple transposition of models of protected areas was not efficient in Brazil, since traditional peoples previously lived in the

majority of territories defined as protected areas, as opposed to the national parks of the United States.

The institutionalization of protected areas at the international level is due to the solution proposed by reactive naturalism, in which natural resources can only safeguard themselves if away from the man. However, in the case of Brazil, this fact appears surrounded by conflicts, due to the fact that people who were spatially territorialized, known as traditional populations, always have depended on natural resources for socioeconomic and cultural reproduction (Diegues, 2001).

Therefore, it is emphasized the fact that the environmental issues are inseparable from social problems, and the effective solutions for the environment are those that not underestimate the social aspect. In the field of knowledge of Protected Areas, it is not different, the managers, most of the time, cannot reconcile the social aspect with environmental problems.

The discourse used by the media shows that only protected areas have as objective the conservation of vulnerable ecosystems, as its name says. However, such protected areas became political strategy to generate external incentive for the countries of the 'third world', describing the discrepancies between the technology holders and holders of biodiversity.

Therefore, protected areas are presented as territorial units created by the multilateral policies. They have been established with the aim of conserving ecosystems, for funding from multiple international sources in order to take advantage of the income generated by tourism in the parks and by the public, through the symbolic representations of man with nature, which expresses many ideological issues.

Besides that, the protected areas represent for the State a source of financial resources by the promotion of projects of payments for environmental services. Those services are justified because of climate change intensified by human actions, whose historic increase concentrations of greenhouse gases (GHG) takes place from the beginning of the Industrial Revolution, (Raupach et al., 2007). Studies are being promoted in this sense, and the fifth assessment report of the Intergovernmental Panel on climate change brings the findings of such evidence (IPCC, 2014a, 2014b).

Methodology/approach

The conceptual basis of the research focuses on the concept of public order, conflict and State Protected Areas. Its execution was the dialectic method with the methodological procedures of documentary research, field research using primary and secondary sources, and theoretical studies for data analysis.

The survey of primary and secondary sources is carried out with the aim of a theoretical basis that provides a useful analysis. Fieldwork in the Secretary of State for environment and sustainable development (SDS), the State Center of Conservation Units (CEUC in Portuguese), and some non-governmental organizations (NGO) were conducted with open questionnaire with to understand the nature of the processes that occur in the units of conservation in the State of Amazonas and the different active ingredients.

To characterize the territorial conflicts in reserves in the state of Amazonas, it was delimited as a study area of research all Amazon Reserves that have Management Plan (Table 1). The management plan is a technical document that helps the heads of the units in the planning process and decision making, built collectively with the social subjects involved.

Table 1. Study Area.

Name of conservation units	area (ha)
Sustainable development reserve rio Amapá	216.109
State forest Maués	438.440
State park rio Negro (setor sul)	257.422
State park Serra do Aracá	1.818.700
Sustainable development reserve Piagaçu-Purus	1.008.167
Sustainable development reserve Cujubim	2.450.380
Environmental protection area Maroaga	2.562,20
Sustainable development reserve do Juma	589.611
Sustainable development reserve do Uacari	632.949
Extractive reserve Catuá-Ipixuna	217.486,00
State park rio Negro (setor norte)	178.620

Source: Adapted from CEUC (2015)

The maps of the types of conflicts in the Amazon Reserves were built through the Program QuantunGis software, which graphically represents the selected data. From the Conflicted Use Zone contained in the Management Plan, it has become possible to identify the conflicts in each protected area. After identifying these conflicts, data were exported to a worksheet in Excel, which was transformed into an attribute table in the program QuantunGis.

Results and discussion

In Brazil, protected areas are divided according to the National System of Protected Areas (SNUC) into two main groups: full protection, protected areas that do not allow the presence of traditional populations; and the sustainable use of protected areas, allowing people inside, but with significant restriction on the use of the natural resources in these protected territories.

The Sustainable Use Reserves were imposed in order to sustainfinancial interests to social subjects who see as positive the presence of residents that give subsidies to the traditional villages as a way to incuse and maintain their culture and their accumulated generational ethnoknowledge (Medeiros and Nascimento, 2006).

In addition to the above, State Governments give preference to the creation of sustainable use conservation units becauseprotected areas generate fewer conflicts between Government and traditional populations (Borges, 2007).

According to the institution CEUC, the State of Amazonas has 36 federal conservation units and 42 state conservation units, which corresponds to 37.6 million hectares of conservation and preservation purposes. The implementation of these territorial units is based on the discourse of sustainable development, which had escalated after the United Nations Conference on environment and development (UNCED), held in Rio de Janeiro, in 1992.

The state system of conservation is based on the national system of conservation units to divide the Amazon conservation units in two distinct groups: full protection units and sustainable use. The full protection reserves are the private reserves of Natural patrimony, better known as RPPN, the biological reserve (Rebio) and state parks (PAREST).

Regarding the conservation units of sustainable use, this category includes sustainable development reserves or RDS, extractive reserve or RESEX, area of relevant ecological interest or ARIE, environmental protection areas or APA, State Forests and Sustainable Development Private Reserve or RPDS. These subdivisions of protected areas is justified by different restrictions of use imposed by management plans, so it is very important the consideration.

The full protection reserves are those that cause more conflicts, due to the fact that it cannot have the presence of traditional populations, creating territorial discrepancies. However, the sustainable use reserves also have internal differences, since the inhabitants residing in these territorial units in general do not participate in all stages of the preparation of management plans, which leads to great dissatisfaction by these social subjects and a Government mismanagement.

Therefore, territorial disputes are the result of the different and divergent interests, by which are materialized, and are reflected in the territory. The territory is expressed through various social processes they materialize in the spatiality.

Territorial disputes arise from the beginning and persist today. They are the result of the importance of the political space structure, economic, cultural and social force in society. Conflicts are intrinsic to the movement's dominance and power relations in the territory. Santos (1996, p. 215) says that the territoriality "[...] is also trans individuality, and the compartmentalization of human interaction in space is an aspect of the territoriality as trans individuality". Therefore, protected areas are examples of conflict-filled areas.

Conflicts are polysemous, express and embody the global, national and local interests, act sometimes in tandem, and sometimes at odds, in a constant epiphenomenon. What can be deduced is that the types of current conflicts in the protected areas are the result of the confrontation of interests of different social subjects.

Conflicts in conservation of the Amazon units are varied: for forestry, mining, fishing, tourism, for the recognition of the Indigenous Reserves, by poaching, among others. The conflict that prevails in all protected areas, without exception, are land conflicts, whether the struggle for the maintenance of the territory and territoriality, as well as the search for new lands.

The conflict of connection are also significant (observed in ten units), as shown in the map. The deforestation rate in protected areas is increasing, but according to Ferreira, Venticinque and Almeida (2005):

> The proportion of deforested area in protected areas ranged from 1.5 to 4.7%, while the proportion of deforestation out of such areas ranged from 29.2% to 48.1% in the three States. These results clearly demonstrate the importance of protected areas (protected areas and indigenous lands) as one of the tools to contain or reduce the deforestation process in three States that most contributed to the deforestation in the Amazon it is partially wrong to generalize that protected areas in the Amazon are not fulfilling itsmain role in the conservation and rational use of resources in the region the fact that many are not yet implemented and have different degrees of vulnerability (Ferreira, Venticinque & Almeida, 2005, p. 163, translated by the authors)[1].

Despite the conflicts in protected areas, their original purpose is serving in some territorial units,

[1] A proporção de área desmatada dentro das áreas protegidas variou de 1,5 a 4,7%, enquanto a proporção de desmatamento fora delas variou de 29,2 a 48,1% nos três estados analisados. Esses resultados demonstram claramente a importância das áreas protegidas (Unidades de Conservação e Terras Indígenas) como uma das ferramentas para conter ou diminuir o processo do desmatamento nos três estados que mais contribuíram com o desmatamento na Amazônia legal e contraria parcialmente a hipótese generalizada de que as áreas protegidas na Amazônia não estão cumprindo sua função principal na conservação e uso racional dos recursos na região, pelo fato de que muitas não estão ainda implementadas e apresentam diferentes graus de vulnerabilidade.

but of course, there are exceptions. It cannot be said that in all the Reserves the deforestation rate declined, but it can be inferred that municipalities more deforested in the Amazon dropped their deforestation rates after the institutionalization of some units of conservation and Indigenous Reserves. This demonstrates the importance of protected areas, but this fact does not alleviate the conflict (Figure 1).

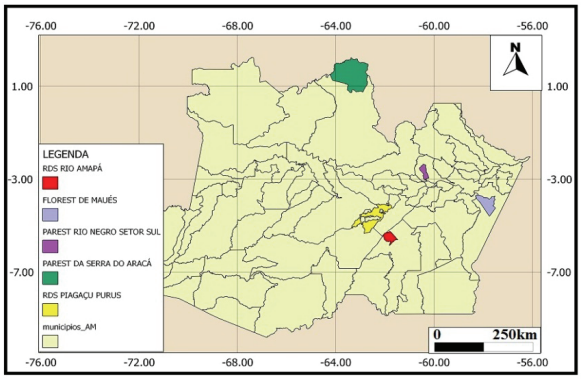

Figure 1. Units of conservation with the logconflict.
Source: Adapted from CEUC (2015)

Logging conflicts, either in reserves or in other areas, have increased in some cases and decreasedin others over the years. The factor that drives these increases or decreases is the economic and political forces in the area of the Amazon (Fearnside, 2001). Loggers feel threatened by knowing the implementation of protected areas, so hatch conflicts between loggers, forest, and traditional populations.

The extraction of minerals in conflictive activities are identified in four Reserves: Sustainable Development Reserve Cujubim, Sustainable Development Reserve River Amapá, Negro River Southern sector Park, and Environmental Protection Area of Presidente Figueiredo 'Cave Maroaga'. Conflicts over mineral mining play a role in today´s economy emphasizing the fact that economic activities and territorial relations and up influencing the materialization of such conflicts (Figure 2).

Silva (2001) says that mining conflicts arise (internal and externalmarket) economic forces, political forces (incentives to State subsidies) and the phenomena that emerge from these two forces, such as the oil crisis, which is both economic and political force. Mining activities have always generated disputes, especially in Brazil; this fact is justified because of the 'competition' for the use and occupation of the territory with the presence of minerals. The lack of territorial control in the border areas makes it difficult to mitigate the conflicting relationships, on the other hand, the non-recognition of the plurality of interests between social actors also contribute to accentuating the conflict (Farias, 2002).

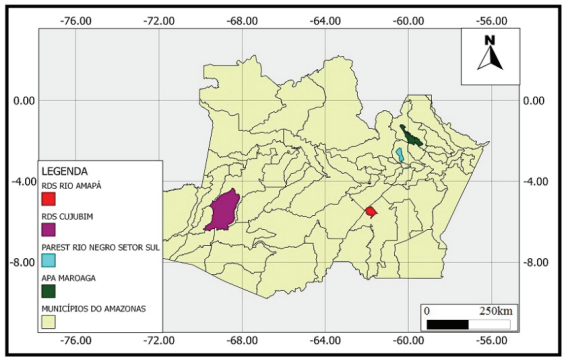

Figure 2. Mineral Conflict Zones.
Source: Adapted from CEUC (2015)

Most of the laws that have to do with Speleological are restrictive, making the balance between mining activities, numb, either in protected areas or overseas, generating political pressure, though particular interests, causing a variety of conflicts (Figueiredo, Rasteiro & Rodrigues, 2010). Therefore, the political and economic forces create a specific legislation for the mining theme, failure to comply with the plurality of the interests involved, especially traditional populations, causing conflicts.

The conflict for commercial fishing is the second most latent conflict in the protected areas of the State, since it is present in nine protected areas. Reserves with fishing disputes have fish as a primary source of protein, not forgetting its symbolic meaning to traditional people.

The Negro river and the Amazon, in general, improve fishing activities, mainly due to the loss of local control over the resources of the Earth (Silva, 2011). The establishment of specific rules for Lakes used for fishing activities generates conflicts, since it is forbidden in many reserves with the use of drift nets of trawlers;traditional populations use these devices for decades. After these legal restrictions, there was an increase in the displacement of commercial fishing areas that were territorializedwithin protected áreas (Figure 3).

The lack of enforcement in simply protected areas allows that many commercial fishermen continue to explore further, this also leads to conflicts due to the intense work of these social subjects, who ends up diminishing stocks of traditional populations.

According to Sobreiro and Freitas (2008), from the 60's conflicts regarding fishing intensified in the Amazon. The regions with more conflicts were

floodplain lakes, because there is greater pressure for commercial fishing.

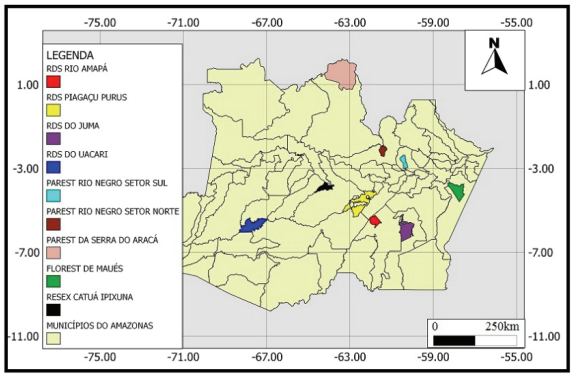

Figure 3. Fishing Related Conflict Areas.
Source: Adapted from CEUC (2015)

In the rivers (Rio Negro), the fishing conflicts were more related to the different modes of appropriation and use of fishing zones. Conflicts between the riverine people and the commercial fishermenare much smaller in the white water rivers (Sobreiro & Freitas, 2008). Analyses in Uacari RDS, Rio Negro Northern sector Park, the Juma RDS, between other Reserves, confirmed the fact described above.

Conflicts by tourism are representative in five protected areas: Rio Negro Northern sector Park, Rio Negro Southern sector Park, Serra do Aracá Park, Piagaçu-Purus RDS and the Presidente Figueiredo 'cave Maroaga'. The convergence of points of view and attitudes toward tourism create conflicts in some protected areas, since the polarized positions are the most defended by conservationists and industrialists, who despise traditional people and fight to remove them from their territories (Medeiros & Nascimento, 2010).

Economic activities generated through conflict space caused by tourismwith the interests of the traditional populations. No prioritization of space of the residents, giving priority always is elite spaces, passive conflicts of appointments (Coriolano, 2005).

All State Reserves in the Amazon that have disputes over tourism activities (Figure 4) are state parks, except Piagaçu-Purus RDS, thus explaining the lack of endogenous regional policy capable of creating a fairer planning and equitable land use. Conflicts on the recognition of indigenous lands in the areas of conservation in the Amazon are also frequent. The Rio Amapá RDS, Rio Negro Southern Sector Park, Mamirauá RDS, Piagaçu-Purus RDS and the Serra do Aracá Park are examples of protected areas including conflicts related to the demarcation of indigenous lands.

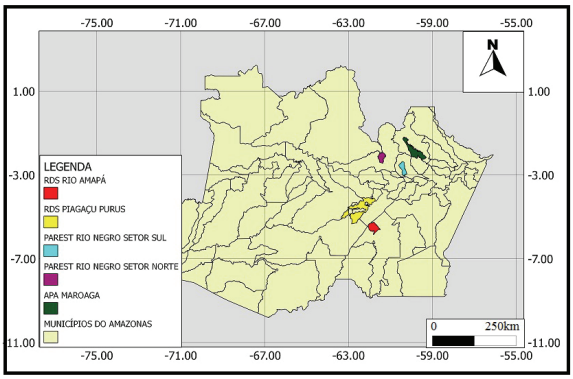

Figure 4. Conservation units with conflicts caused by tourism.
Source: Adapted from CEUC (2015)

Poaching is also a disturbance activity in some Reserves (Rio Amapá RDS, Maués Forest, Rio Negro Southern Sector Park, Piagaçu-Purus RDS and the Serra do Aracá Park). The game, from the very beginning represented much of the power of traditional peoples, along with fishing. The imposition of restrictions on people who are used to hunting for social reproduction produces conflicting relations (Figure 5).

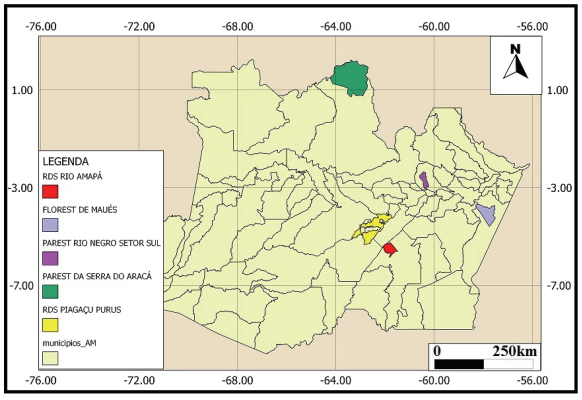

Figure 5. Hunting conflicts in protected areas.
Source: Adapted from CEUC (2015)

Predatory activity increases the availability of animalsfor human consumption. Along with this, the need for increased hunting for food for the family's basic needs supply intensifies this activity and generates conflicts (Barbosa, Nobrega & Alves, 2010).

The establishment of sound environmental policies aimed at the preservation and conservation of terrestrial ecosystems has led to discontent by some social actors. Biological resources play an important role for the traditional populations of Brazil, but the conditions of use of these resources have not been exploited by the State, therefore, creating conflicts (Andriguetto-Filho, Kruger & Lange 1998).

Therefore, hunting, fishing, the production of space tourism, mining, timber extraction and the need for demarcation of indigenous lands are more crystallized conflicts in conservation status units in the Amazon. The political and economic forces are the key points for the understanding of the nature of the territorial conflict and its consequences.

Payments for environmental services

The depletion of natural assets and the threat to the environmental system can be observed in plasticity of the capitalist system, which promotes systematic changes to maintain its hegemony. For both were created the so-called green markets, in which the commons start to integrate the capitalist markets, regardless of the cultural differences of the human populations involved and the impacts that these will suffer. An example are environmental services payment markets, emerging as income-generating opportunity to Amazonian societies and its environmental conservation strategies, whose practices contribute to the maintenance of the standing forest, to the detriment of their own existence and transgenerational maintenance of life.

But, the environmental rationality is present in everyday life, and the production system in agroecosystems do not obey the rationality of the market but the environmental, the seasonality of water basin life, cultural production and reproduction in space and time (Noda, 2007; Fraxe et al, 2007).

What can be inferred is the evidence of the contradictions as demonstrative contributions of ethics to be applied incisively to the division and application of funds from these projects. The management of these programs and projects always takes place at the government public-private and/or non-governmental organizations and assume what is good for the state in order to meet the goals while decreasing deforestation environmental impacts and access to public social policies, which are constitutional duties.

The discussion on Payments for Environmental Services has generated differences of views and perspectives on the environmental system. There are two large groups of researchers, who believe that the payment for the maintenance of environmental services is a form of remuneration for services provided by traditional peoples, and at the same time it strengthens people in their territories, ensures the conservation of the generated services by ecosystems; on the other side, are those who believe that the payment for these services is an attempt to territorialization of a green market, which does not take into account the culture of traditional peoples, and only aim at the maintenance of productive capitalism without questioning consumerist model.

Traditional people have a very different way of life consumption model adopted by modern society. They respect the environment and its resilience, have deep knowledge on the environmental system, and most often do not practice activities that could lead the system to crises. The environmental services provided by these people is part of their culture, insert a monetization for their respectful way of life for with 'Mother Earth', translates into a deep cultural disrespect and *habitus*.

Environmental services are benefits offered by the environmental system that ensures directly or indirectly to human well-being. They can be classified into service, support, cultural and regulatory provision. Provision of services stems from the ability of the ecosystem to provide assets and resources. Regulatory services are natural processes that contribute to the regulation of environmental conditions. Cultural services are from the beauty that landscapes have, and provide spiritual, emotional and recreational satisfactions. And the support services are those that cooperate to the operation of other environmental services.

All four types of services are generated by the environment and cannot be replaced. They are systemic, because they act simultaneously and interact within the environmental system. Human life is only possible because of the existence of these ecosystem services; they are in the world every day and feed each other daily incessantly.

The provision of environmental services provide all the elements necessary for the human use and reproduction, either directly (through the use of forest products, water and soil) or indirectly (through the coal that produces the energy needed for human activities). Environmental services provision relies on support services, which are dependent on regulatory services. And the interaction between these services generates cultural environmental services, which represent the spatial marks left by the development of natural processes, materialized in the landscape.

Progress that has been made are social assistance whose obligations print the State the duty: school/education, transportation, health care, leisure, among others. These initiatives have promoted the invisibility of livelihoods of traditional Amazonian societies (peoples and communities), carrying with it the denial of their existence, permanence, reproducibility and knowledge on the environmental system.

Final consideration

Preserving the territorial disputes inconservation units in the Amazon were proven by multiple factors, ranging from planning of remote areas though management of the territory. Conflicts over forest management is one of the most latent in the protected areas of the Amazon, however, these units have been effective in the control of deforestation, since the municipalities with the highest deforestation rates in the Amazon have reduced their deforestation after the implementation of protected areas.

Conflicts over timber have increased in some cases and decreased in others in recent years. The factor that drives these increases or decreases is the economic and political forces in the Amazon territory. The loggers feel threatened when they know about the implementation of protected areas, so hatch disputes between loggers, timber, and traditional populations.

The knowledge of those who live and depend on the forest become even more relevant when it comes to better understand the influences of climate change on forests, the environment. As communities(indigenous peoples and coastal communities) experience in their daily life the environmental changes, they improve the time and space of cultivation, extraction, checking the distribution and occurrence of species of fauna and flora. These perceptions at the local level that guide the decision-making of human populations that will adapt to typical and atypical seasonal events: climate change.

The consequences and incompatibilities between the commodification of the commons by the peoples and traditional communities in the Amazon, reclining criticism of the logic imposed by hegemonic societies. The logic of a legal nature where common goods are replaced with economic valuesand become part of a trade and so its ownership as private property becomes, individual.

Common goods become the object of this market. This is repeated with the environment that despite still beinga common human rightwillbe seen as a commodity and be treated as such, where carbon trading is an example.

Therefore, the intensification of social participation in the planning and management of protected areas can significantly mitigate conflicts in these territorial units, giving sufficient basis for the construction of a project of conservation and preservation of the environment of endogenous nature. Therefore, the reserves can ensure not only the reduction of deforestation, but also for the environment to reforest degraded areas through the development of specific environmental policies.

The difficulties in safeguarding the environmental rights of those communities permeate the increase in inequality, changes in lifestyles and the expansion of disputes and social conflicts. To counteract all these negative elements, the actions must be based on environmental ethics in order to generate a message against the destabilizing hegemonic system and allow the resumption of awareness of the role of man in the environmental system.

Despite the negative elements identified in environmental policy of creating protected areas, it can be said that the protection of areas environmentally preserved has been a strategy used in Brazil, particularly in the Amazon, which has brought many benefits to traditional peoples of the Amazon, highlighting the appropriate forest management for the conservation of biosociodiversity, and reducing deforestation.

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References

Andriguetto-Filho, J. M., Kruger, A. C., & Lange, M. B. R. (1998). Caça, biodiversidade e gestão ambiental na Área de Proteção Ambiental de Guaraqueçaba, Paraná, Brasil. *Revista Biotemas, 11*(2), 133-156.

Barbosa, J. A., Nobrega, V. A., & Alves, R. R. N. (2010). Aspectos da caça e comércio ilegal da avifauna silvestre por populações tradicionais do semi-árido paraibano. *Revista de Biologia e Ciências da Terra, 10*(2), 39-49.

Borges, S. H. (2007). Uma análise geopolítica do atual sistema de Unidades de Conservação na Amazônia Brasileira. *Revista Política Ambiental, 4*(1), 3-42.

Centro Estadual de Unidades de Conservação do Amazonas [CEUC]. (2015). *Relatório de Gestão 2010-2015*. Manaus, AM: Secretaria de Estado do Meio Ambiente e Desenvolvimento Sustentável.

Coriolano, L. N. M. T. (2005). A exclusão e a inclusão social e o turismo. *Revista de Turismo y Patrimonio Cultural, 3*(2), 295-304.

Diegues, A. C. S. (2001). *O mito moderno da natureza intocada*. São Paulo, SP: Hucitec.

Farias, C. E. G. (2002). *Mineração e meio ambiente no Brasil*. São Paulo, SP: [s.n.].

Fearnside, P. M. (2001). Desmatamento na Amazônia. In *Anais do 3º Simpósio Brasileiro de Pós-Graduação em Engenharia Florestal e do 1º Encontro Amazônico de Ciências Florestais* (p. 126-139). Manaus, AM.

Ferreira, L. V., E. Venticinque, & S. S. de Almeida. 2005. O Desmatamento na Amazônia e a importância das áreas protegidas. *Estudos Avançados, 19*(53), 1-10.

Ferreira, L. V., Venticinque, E., & Almeida, S. (2005). O desmatamento na Amazônia e a importância das áreas protegidas. *Revista Estudos Avançados, 19*(53), 157-166.

Figueiredo, L. A. V., Rasteiro, M. A., & Rodrigues, P. C. (2010). Legislação para a proteção do patrimônio espeleológico brasileiro: mudanças, conflitos e o papel da sociedade civil. *Revista Espeleo-Tema, 21*(1), 49-65.

Fraxe, T. J. P.; Pereira, H. S.; Witkoski, A. C. (Orgs.). (2007). *Comunidades ribeirinhas amazônicas: modos de vida e uso dos recursos naturais.* Manaus, AM: EDUA.

Ioris, E. (2000).Conflitos em Unidades de Conservação com populações locais, o caso da Floresta Nacional de Tapajós. In *Anais da Reunião Brasileira de Antropologia* (p. 3-20). Brasília, DF.

IPCC. (2014a). *Climate Change 2014: impacts, adaptation, and vulnerability: Working Group II to the fifth assessment report of the intergovernmental panel on climate change*. Cambridge, UK: Cambridge University Press.

IPCC. (2014b). *Climate Change 2014: impacts, adaptation, and vulnerability: Working Group II to the fifth assessment report of the intergovernmental panel on climate change*. Cambridge, UK: Cambridge University Press.

Medeiros, M., & Nascimento, E. (2010). Turismo, unidade de conservação e conflito em Ilha Grande (Angra dos Reis, RJ): o caso da comunidade da Vila do Aventureiro. *Caderno Virtual de Turismo, 10*(3), 46-60.

Noda, S. N. (Org.) (2007). A*gricultura familiar na Amazônia das águas*. Manaus, AM: EDUA.

Raupach, M. R., Marland, G., Ciais, P., Le Quéré, C., Canadell, J. G., Klepper, G., & Field, C. B. (2007). Global and regional drivers of accelerating CO2 emissions. *Proceedings of the National Academy of Sciences of the United States of America, 104*(24), 10288-10293.

Santos, M. (1996). *A natureza do espaço: técnica e tempo, razão e emoção*. São Paulo SP: Hucitec.

Silva, A. L. (2011). Entre tradições e modernidade: conhecimento ecológico local, conflitos de pesca e manejo pesqueiro no rio Negro, Brasil. *Boletim do Museu Paraense Emílio Goeldi, 6*(1),141-163.

Silva, F. J. B. S. (2001). *Conflitos de uso em área de proteção ambiental: água, mineração e agricultura.* (Tese de Doutorado). Universidade Federal de Santa Catarina, Santa Catarina.

Sobreiro, T., & Freitas, C. E. C. (2008). Conflitos e territorialidade no uso de recursos pesqueiros do Médio rio Negro. In *Anais do IV Encontro Nacional da Anppas* (p. 31-47). Brasília, DF.

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