



## ENVIRONMENTAL GOVERNANCE IN BINATIONAL SCENARIO

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### ABSTRACT

**Study objective:** analyze environmental governance in a binational scenario, specifically in the twin cities of Ponta Porã (Brazil) and Pedro Juan Caballero (Paraguay), seeking to identify the national environmental policies of the two countries (joint and individual actions) and their impacts/ effectiveness in an international territory.

**Methodology/approach:** with a qualitative approach, the methodological scope initially, is based on theoretical contributions of the environmental governance and complemented with an empirical study in loco made through semi-structured interviews with municipal representatives of the two countries.

**Originality/relevance:** the environmental theme requires discussion of the negative and positive effects of both economic and urban-demographic growth. Thus, reflections on ecological interdependence cannot be neglected, either locally or globally. These challenges are strengthened in territories located at the international frontier, especially when characterized by conurbation, as in the case studied.

**Main results:** faced with the complexity of a binational scenario, the decentralization proposed by the principles of environmental governance implies, firstly, the breaking of political, cultural and legal barriers; in addition, it was verified that it is imperative that both governments work together to raise awareness and promote the environmental concern of the population.

**Theoretical/methodological contributions:** environmental governance in binational territory must be planned and guided by public managers on both sides of the border, as neglecting the complexity and challenges imposed by this political and administrative division confers great inconsistency on the effectiveness of individualized actions.

**Conclusion:** In this binational scenario, the application of the principles of environmental governance becomes extremely relevant, but its effectiveness is conditioned by different factors.

**Keywords:** Twin Cities. Environmental sustainability. Environmental policy. Global Public Goods.

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## A GOVERNANÇA AMBIENTAL EM CENÁRIO BINACIONAL

### RESUMO

**Objetivo do estudo:** analisar a governança ambiental em um cenário binacional, mais especificamente nas cidades gêmeas de Ponta Porã (Brasil) e Pedro Juan Caballero (Paraguai), buscando-se identificar as políticas ambientais nacionais dos dois países (ações conjuntas e individuais) e seus impactos/efetividade em um território internacional.

**Metodologia/abordagem:** com abordagem qualitativa, o escopo metodológico inicialmente, baseia-se em aportes teóricos da governança ambiental e complementados com um estudo empírico *in loco* realizado através de entrevistas semiestruturadas com representantes municipais dos dois países.

**Originalidade/relevância:** a temática ambiental requer a discussão dos efeitos negativos e positivos tanto do crescimento econômico como do urbano-demográfico. Assim, não podem ser negligenciadas as reflexões sobre a interdependência ecológica, seja no âmbito local ou global. Esses desafios são potencializados em territórios localizados na fronteira internacional, especialmente quando caracterizados pela condição de conurbação, como é o caso em epígrafe.

**Principais resultados:** frente à complexidade de um cenário binacional, a descentralização proposta pelos princípios da governança ambiental implica, primeiramente, no rompimento das barreiras políticas, culturais e jurídicas; além disso, constatou-se que é imprescindível que ambos governos atuem juntos visando sensibilizar e fomentar a preocupação ambiental da população.

**Contribuições teóricas/metodológicas:** a governança ambiental em território binacional deve ser planejada e orientada pelos gestores públicos dos dois lados da fronteira, pois negligenciar a complexidade e desafios impostos por essa divisão política e administrativa confere grande inconsistência na efetividade de ações individualizadas.

**Conclusão:** neste cenário binacional, a aplicação dos princípios da governança ambiental faz-se extremamente relevante, mas sua efetividade está condicionada a diferentes fatores.

**Palavras-Chave:** Cidades Gêmeas. Sustentabilidade ambiental. Política ambiental. Bens Públicos Globais.

## LA GOBERNANZA AMBIENTAL EN ESCENARIO BINACIONAL

### RESUMEN

**Objetivo del estudio:** analizar la gobernanza ambiental en este escenario binacional, buscando identificar las políticas ambientales nacionales de los dos países (acciones conjuntas e individuales) y sus impactos en este territorio internacional.



**Metodología/enfoque:** con enfoque cualitativo, el ámbito metodológico, inicialmente, se basa en aportes teóricos de la gobernanza ambiental y complementados con un estudio empírico in loco realizado a través de entrevistas semi estructuradas con representantes municipales de los dos países.

**Originalidad/relevancia:** la temática ambiental requiere la discusión de los efectos negativos y positivos tanto del crecimiento económico como del urbano-demográfico. Así, no se pueden descuidar las reflexiones sobre la interdependencia ecológica, ya sea en el ámbito local o global. Estos desafíos se potencian en territorios situados en la frontera internacional, especialmente cuando se caracterizan por la condición de conurbación, como es el caso en cuestión.

**Principales resultados:** frente a la complejidad de un escenario binacional, la descentralización propuesta por los principios de la gobernanza ambiental implica, primero, en el rompimiento de las barreras políticas, culturales y jurídicas; además, se constató que es imprescindible que ambos gobiernos actúen juntos para sensibilizar y fomentar la preocupación ambiental de la población

**Contribuciones teóricas/metodológicas:** la gobernanza ambiental en territorio binacional debe ser planificada y orientada por los gestores públicos de los dos lados de la frontera, pues descuidar la complejidad y desafíos impuestos por esa división política y administrativa confiere gran inconsistencia en la efectividad de acciones individualizadas.

**Conclusión:** en este escenario binacional, la aplicación de los principios de la gobernanza ambiental se hace extremadamente relevante, pero su efectividad está condicionada a diferentes factores.

**Palabras-clave:** Ciudades Gemelas. Sostenibilidad del medio ambiente. Política medioambiental. Bienes Públicos Globales.

## 1. INTRODUCTION

The capitalist logic, based on the maximization of wealth and new markets (read new products and expansion of consumption), extrapolates the territorial limits both from an economic and, above all, ecological point of view. The current context of this dynamic of global capitalism is defined by globalization.

The term "globalization" can be understood as a multifaceted process of transformation in social organizations that brings distant communities closer together and, at the same time, broadens power relations on a continental scale, but which has, in its essence, the fascination of the idea that "Global" implies overcoming local and national boundaries and barriers (Held & McGrew, 2001; Porto-Gonçalves, 2006). On the other hand, "besides reducing the economic frontiers, globalization simultaneously affects the ideological, social and political dimensions of life in society, with consequent implications for management" (Lorenzetti & Carrion, 2012, p.722).

It is observed that the effects of globalization are related to the degradation of the environment that results from "limitless" economic growth, the superiority of men over natural resources and colonizing modernization (Porto-Gonçalves, 2006), since the environmental problems have taken global proportions in the face of unregulated "de-involvement" in certain localities.

Thus, it is possible to verify that these negative and /or positive effects suggest that there are several reflections and studies on alternatives capable of considering that the ecological interdependence between nations defies the geographical, political, administrative and State



sovereignty borders. Geopolitical limits do not exist for the environment, which makes it imperative to recognize the need to increase the involvement of the whole society in political actions and decisions.

In this perspective, several initiatives are proposed and led, mainly by the UN - United Nations, to minimize the effects of environmental degradation on a global scale. Among the most recent in Brazil is the Rio+20 Conference held in 2012. On this occasion, it was recommended that the company work with the public power so that it was possible to draw up plans for a strategic change in the decisions about the environment, transforming the forms of management and regulation through Environmental Governance (Jacobi & Sinisgalli, 2012).

Environmental governance can be understood as a set of processes, structures and mechanisms that regulate the actions of political actors and involve multiple social segments (such as non-governmental organizations / NGOs, companies and civil society), directing the management of natural resources (Silva & Fraxe, 2012). Thus, when considered as a new way of governing, it proposes a decentralization of the decision-making process through collective participation, aiming to improve the management of the environment and also to minimize the negative impacts of globalization.

Jacobi and Sinisgalli (2012) emphasize that this decentralized process presents itself as a useful strategy to increase the adhesion of the various social actors around environmental issues. Therefore, many questions emerge from this new management proposal, for example: is it possible, in a binational scenario, to have the process of environmental governance? What are the main environmental challenges when it comes to an international territorial border?

Facing these issues, this article proposes to analyze environmental governance in the peculiar and binational scenario comprised by the twin cities<sup>4</sup> of Ponta Porã (Brazil) and Pedro Juan Caballero (Paraguay). In order to meet the general objective, specific objectives were established: i) analyze in a descriptive and exploratory way the existing environmental policies in both territories; ii) identify the actions and awareness of civil society on both sides of the border (NGOs, associations or cooperatives of collectors, selective collection, etc.) and iii) evaluate the effectiveness of this action.

From the methodological point of view, the research was based on the literary and theoretical revision and the empirical analysis. When dealing with the theoretical elements, texts were selected from several areas of knowledge (such as ecological economics, geography, public administration) since key words and central concepts are approached in a multidisciplinary way. The empirical study was carried out through the field research, aiming to obtain information on the current environmental problems of the twin cities. For this, semi-structured interviews were conducted with the municipal public representatives responsible for the environmental sector on each side of the border.

These objectives and methodological resources were thus defined in view of the elements that make up the central hypothesis of this work. It is based on the understanding that environmental governance, in a binational scenario, requires the involvement of local actors and public managers on both sides of the border. It is assumed that this is not an easy task, much less short-term, and does not allow isolated actions so that, in fact, there is effectiveness in environmental policies.

In order to respond to the problematic, to contemplate the objectives and to confirm or refute the initial hypothesis, the next pages are distributed among the theoretical reference (which presents the concepts and essential contributions to the present investigative proposal), methodological procedures (detailing the construction of the interview itinerary by thematic

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<sup>4</sup> **Twin cities** are the geographical area that best characterizes the border area, especially the dry borders (Lamberti & Martins, 2010, page 58, emphasis added).



axis), analysis and discussion of the results from the empirical research and relating to the central theoretical elements.

## 2. THEORETICAL REFERENCE

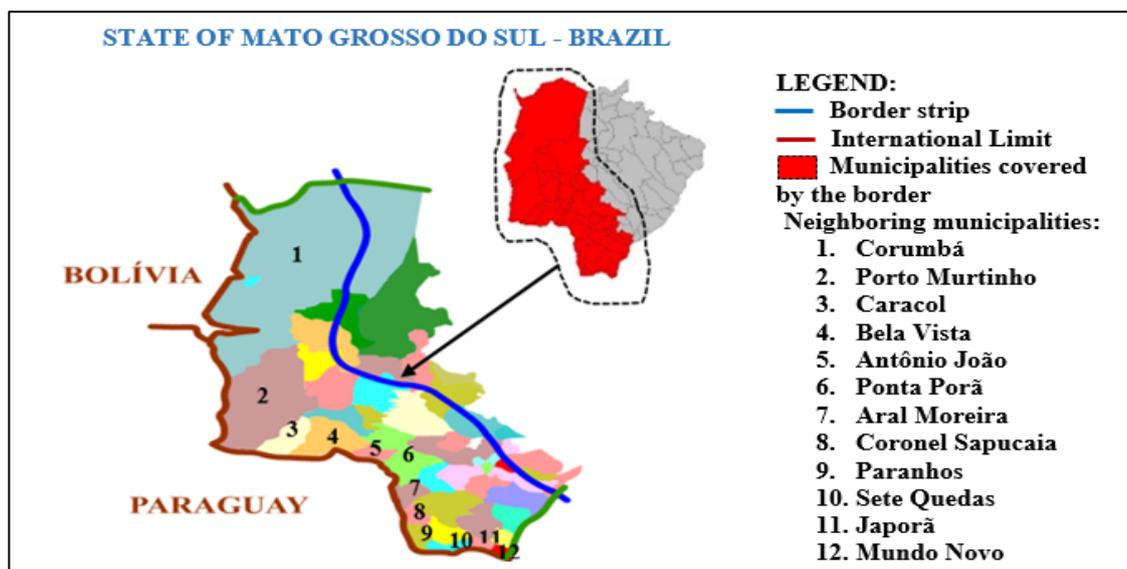
In this item, the concepts related to frontier territories, public planning for the border, sustainable development and challenges of environmental governance are presented and related. For this, reference was made to several areas, such as Human and Political Geography (Machado, 2010; Oliveira, 2008, 2015; Raffestin, 1993, 2005) of Public and International Relations (Muller, 2005; Scherma, 2016), and in the literature on the environment, Sociology, Environmental Policy and International Cooperation (Sachs, 2008; Cavalcanti, 2004; Veiga, 2010, 2013; Esty & Ivanova, 2005; Gemmill & Bamidele-Izu, 2005; Lorenzetti & Carrion, 2012; Speth, 2005; Streck, 2005; Moura, 2016).

### 2.1- Frontier Territories and Twin Cities: brief conceptual discussion

Brazil is a country that has an international *border strip*<sup>5</sup> of approximately 23,086 km. This border (terrestrial and fluvial) is distributed in 11 states and affects almost all South American countries (BRASIL, 2005).

In this scenario, Mato Grosso do Sul is one of the states that has a border area of more than one thousand kilometers and is neighboring two countries: Paraguay and Bolivia. From this international border area, about 848 km constitute water courses and 730 km of dry frontier, comprising a total of 44 municipalities in south of Mato Grosso do Sul, 12 of which are in the bordering border (as shown in Figure 1) (Torrecilha, 2013).

In some of these municipalities, as is the case of Ponta Porã, the boundary border is defined by a central plot, an avenue, or some material symbols (flags, landmarks, etc.) that refer to the existence of an international *territory*.



**Figure 1:** Border line and international boundary in Mato Grosso do Sul

Source: Own elaboration through: <[https://ww2.ibge.gov.br/home/geociencias/cartogramas/ff\\_brasil.html](https://ww2.ibge.gov.br/home/geociencias/cartogramas/ff_brasil.html)>

<sup>5</sup> The boundary band normalized by the Federal Constitution, in Law 6,634 of May 2<sup>nd</sup>, 1979, is delimited by the extension of 150 km of width, parallel to the Brazilian terrestrial dividing line. (Source: <[http://www.planalto.gov.br/ccivil\\_03/leis/L6634.htm](http://www.planalto.gov.br/ccivil_03/leis/L6634.htm)> Recovered on April 9<sup>th</sup>, 2017).



Initially, it is important to point out that there is a conceptual difference between the *border* and *border region*, because, according to Machado *et. al.* (2005, p.95, emphasis added):

While the border strip is a *de jure* expression, associated with the territorial limits of state power, the concept of border zone points to a space of interaction, a specific landscape, a transitive social space, composed of differences arising from the presence of the boundary cross-border flows and interactions.

However, it is known that the term *frontier* has different approaches in the different areas of knowledge. Although there is no such thing as a "boundary theory", it is possible to grasp this term in a traditional way and in the classic definition of "limitation" or "barrier" and to go to broader, multifaceted and specific aspects that intrinsically relate to international territories (Machado, 2010).

Muller (2005) advocates the adoption of a definition that is more in keeping with reality, and the border areas are considered as "broad territorial fringes on both sides of the geographic-political boundary lines, in which populations with their own peculiarities coexist with other parts of the national territories"(Sarquis, 1996 as quoted in Muller, 2005, p 577). The author also emphasizes that the frontier offers several possibilities, both socially, through integration, as well as in the economic, through strategic negotiation.

The theoretical link between the concept of territory and frontier can be grasped by the perspective that a territory corresponds to a territorialized, appropriate space, or a place of relations, from "society-nature" relations to "man-man" relations. That is, it is considered a space of action and power (Dallabrida & Becker, 2003) and, in this case, between two countries.

The current representation of the border by the media in general is as poor as it is distressing and contradictory: first, there is the destruction of the frontiers, both in the historical and geographical sense by the market without homeland; second, at the same time reinforce their senses when trying to identify that space as the "place" of contraband, drug trafficking, unpunished banditry, trafficking in human beings, and so on. (Oliveira, 2008, p. 233).

In this sense, in order to understand a frontier, a more encompassing view is indispensable, since "a frontier is not only a geographical fact, but it is also a social fact of considerable wealth for the religious connotations implicit in it" (Raffestin 2005, p.10). And, since the frontier "is already something specific by itself and, when this condition is added to the international character and to the conurbation process the particularities multiply" (Lamberti & Martins, 2010, p. 23).

In view of these specificities, it is possible to verify that the frontier presents itself as something more than a mere international geographical conurbation with superficial relations. It is a strategic area which, because of its borderline character, is full of historicity and unique territorial dynamics, which can favor from commercial relations (lawful or not) to immeasurable "social exchanges".

To Oliveira (2015), the border territory is understood as a place that sustains, approximates and correlates the global order (governed by the logic and rhythm of flows of international organizations) and local (governed by the order and dynamics of local dissimilarities) and which, when confronted, imbricate the consolidation of a new geographical environment: complex and intertwined through networks of exchanges and occupation.

Therefore, in view of conceptual transitions, the definition of *frontier territory* goes beyond geopolitical limitations and can present itself as a fundamental element for integration, both in socio-cultural aspects and in those related to the promotion of the economic potential in



the region, favoring the different countries. In order for this to happen, it is necessary to have a political will among the agents involved, in order to make the constitution of a new element, integrated de facto and de jure (Muller, 2005).

However, it is noticeable that the management of a territory, *a priori*, already involves several aspects and relevant challenges in all areas of public administration. In the frontier context, these challenges add to the specificities that give it greater complexity and intensity, mainly due to the "bi-nationality" that permeates it, both in the political-administrative division and in the historical and cultural aspects that are unique.

At the national level, in considering this particularity and stimulated by the proposal of the National Policy of Regional Development (NPRD<sup>6</sup>), the Ministry of National Integration (MNI) fostered a detailed study on the borders<sup>7</sup>. The publication took place in 2005 entitled *Proposal for the Restructuring of the Border Strip Development Program*, and "aimed at knowing the rich and complex economic and cultural diversity of the region" (BRASIL, 2005, p. 8).

Based on the results obtained in the aforementioned study, in 2009, the Ministry of Education institutionalized the new "*Borderland Development Program*" (BDP) and proposed macro-directives to direct the state, municipal and local public development activities of the border strip. As the border region was not very dynamic economically, with difficulties in access to public goods and services, historically abandoned by the State and with serious problems regarding public security, in addition to precarious conditions of citizenship, it became preponderant "to promote the development of the Border Range through its physical, social and productive structure, with emphasis on the activation of local potentialities and articulation with other South American countries" (BRASIL, 2009a, p.12).

According to Gadelha & Costa (2005), this new perspective was important in order to make possible a new territorial planning of the borders of the country because, through the BDP, the different governmental levels began to have information for an articulated and joint action, since the border area was defined as one of the priority areas of the country.

However, due to the breadth of the definition of the border region, it should be noted that the so-called twin cities, specifically, became more relevant due to the high level and multidimensional nature of the relations and articulations between neighboring countries (Oliveira, 2015).

In these cities, different processes of integration (economic, cultural, and so on.) and conflicts that are not usually foreseen in the form of laws, norms or regulations are made possible (Lamberti & Martins, 2010, pp. 54-55). That is why, in 2014, Ordinance Number 123 of March 21<sup>st</sup> was published<sup>8</sup>, which established criteria to define and enumerate which

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<sup>6</sup> NPRD was formulated in 2003, but institutionalized only through Decree Number. 6,047, on February 22<sup>nd</sup>, 2007, with the main objective of reducing inequalities in living standards among Brazilian regions and promoting equity in access to development opportunities, guiding programs and actions in the National Territory.

<sup>7</sup> The study was developed by the RETIS Group, of the Federal University of Rio de Janeiro (UFRJ), coordinated by the teacher and researcher Lia Osório Machado (BRASIL, 2005).

<sup>8</sup> It should be noted that it is from then on that officially Mato Grosso do Sul becomes the second Brazilian State to cover the largest number of twin cities in the country. At first the Ministry of National Integration listed 30 twin cities in this ordinance, they are: Aceguá (RS), Barra do Quaraí (RS), Chuí (RS), Itaqui (RS), Jaguarão (RS), Porto Xavier (RS), Quaraí (RS), Santana do Livramento (RS), São Borja (RS), Uruguaiana (RS), Bela Vista (MS), Corumbá (MS), Mundo Novo (MS), Paranhos (MS), Ponta Porã (MS), Coronel Sapucaia (MS), Porto Murtinho (MS), Assis Brasil (AC), Brasiléia (AC), Epitaciolândia (AC), Santa Rosa do Purus (AC), Barracão (PR), Foz do Iguaçú (PR), Guaíba (PR), Bonfim (RR), Pacaraima (RR), Dionísio Cerqueira (SC), Oiapoque (AP), Guajará-Mirim (RO) and Tabatinga (AM). Subsequently, they were included in this list: Santo Antônio do Sudoeste (PR) and Porto Mauá (RS) on July 19<sup>th</sup>, 2016. Retrieved on May 5<sup>th</sup>, 2017 from <<http://pesquisa.in.gov.br/imprensa/jsp/visualiza/index.jsp?journal=1&pagina=12&data=20/07/2016>>.



municipalities could be called a twin city, in order to direct actions and public policies specific to those realities, as follows:

Art.1) The municipalities cut by the frontier line, be it dry or fluvial, articulated or not for infrastructure works, that present great potential of economic and cultural integration, may or may not be presented, and may or may not present a conurbation or semi-conurbation with a locality of the neighboring country, as well as manifestations "condensed" of the problems characteristic of the frontier, that there acquire greater density, with direct effects on the regional development and citizenship will be considered as **twin cities**. Art. 2) Individuals with a population of less than 2,000 (two thousand) inhabitants will not be considered twin cities (BRASIL, 2014, n/p, emphasis ours).

In a complementary and instructive way, in addition to this legal definition of twin cities, the BDP also set some priorities for the planning of its implementation along the entire frontier (BRASIL, 2009): i) typed the twin cities into five groups<sup>9</sup>, developing actions according to the degree of relationship established with neighboring peoples; ii) divided the border into three major arcs: *North/Central/South*<sup>10</sup>; and iii) instituted sub-regionalization, aiming to optimize and catalyze the use of peculiarities of social organization, local productive characteristics: economic, political and cultural.

It is important to point out that, according to Machado *et. al.* (2005, pp. 107-108, emphasis added) state that the need for classification and typology among twin cities was due to the fact that,

In the field of cross-border interactions, the situations are not the same along the country's extensive (continental) boundary (15,700 km), not only because of geographical differences but also because of the differential treatment they receive from state agencies and the type of relationship established with the neighboring peoples. In this last aspect, the importance for the geography of the border and for a new Program of the border of the twin cities, places where the symmetries and asymmetries between national territorial systems are more visible and that can become one of the foundations cooperation with the other countries of South America and consolidation of citizenship.

From this perspective, it is understood that, in spite of the similarities between frontier territories, each twin city has peculiarities and dissimilarities that differentiate one from the other depending on the form that institutional<sup>11</sup>, formal or informal relations are constituted. That is, these cities have similar cross-border dynamics that present themselves as common elements, but with different behaviors among them, be it in relation to work, capital flows, land use, natural resources and services of collective consumption, making are interdependent. Scherma (2016: 5) emphasizes that "in many twin cities the problems on both sides of the border

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<sup>9</sup> The typologies of the Twin Cities were denominated in: Margin, Zone-buffer, Fronts, Capilar and Synapse. For information purposes, the municipality of Ponta Porã was classified as the Sinapse type. See details in Brazil (2009a).

<sup>10</sup> The Arco Norte, includes the Border Range of the States of Amapá, Pará, Amazonas and the States of Roraima and Acre (totally located in the Border Range). The second is the Central Arc, which includes the Border Range of the States of Rondônia, Mato Grosso and Mato Grosso do Sul. The Arco Sul includes the border of the states of Paraná, Santa Catarina and Rio Grande do Sul (BRASIL, 2005).

<sup>11</sup> *Institutions* would be like "the rules of the game of life in society. They restrict individual behavior and human interactions." (North, 1990 as quoted in Castelli & Conceição, 2014, p.13). They may be *formal* in the form of policies and laws, or *informal* through social practices, habits and customs (Bresser-Pereira, 2006).



are usually condensed and become problems common to both populations, directly affecting [...] local development and citizenship".

So, the distinct reality that is experienced through this "territorial sharing" in these territories is unique and specific. They encompass both problems and potentialities, implying unique challenges for local public management, as well as the bi-national condition in relation to environmental issues.

## 2.2- Development Sustainability and Environmental Governance.

The urban and consumer demographic increase together with the economic growth "without limits" are the central elements that must guide the discussions on the management of the environment in the current capitalist conjuncture.

It was at the Stockholm Conference<sup>12</sup> in 1972 that an alternative that would mediate the international direction of development-related debates on environmental issues was established. From this conference, it was understood that economic growth is necessary for development, but must consider the social character and methods used in the process must respect the environment, not only aiming at the "predatory incorporation" of natural resources into financial capital (Sachs, 2009).

In 1987, the term "Sustainable Development" (SD) was first presented in the *Brundtland Report* - or in English *Our Common Future* prepared by the World Commission on Environment and Development -WCED. For this report, sustainable development is a process that "meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1991 as quoted in Rebelo Junior 2002, p. 14).

Since then, the environmental dimension has become part of the agenda for development debates and, although there has been divergence in opinion among the representatives of nations, over the years the theme has given rise to discussions in several spheres on how each country could achieve sustainable development. However, it must be noted that there is no consensus on the possibility and concept of sustainable development. There are critical trends based on a "pessimistic rationality" and they question whether it is even possible to achieve a balance between economic growth and environmental and social issues.

Mainly because most proponents of optimism conveyed, by the *Brundtland Report*, seem to see environmental problems as mere defect in the allocation of resources that could be corrected through specific taxation. It is believed that, once the equality between the private costs of the firm and the costs that its activity inflicts on society is restored, there would be a coincidence between the optimum individual and the collective optimum again. Thus, the search for profit would continue to be the best lever of social welfare and the logic of the market would remain safe and sound (Veiga, 2010, pp. 196-197, emphasis added).

Sachs (2009) affirms that growth is essential for development, but it must be properly reformulated in relation to the use and the modalities employed in productive activities. One must learn to distinguish between means of resource utilization and that growth that leads to true development (Sachs, 2009). The path mapped by governmental planning through an "economic valuation" of environmental resources is only one option, not necessarily the most effective one. It is necessary to review the biased idea "of considering the ownership of natural

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<sup>12</sup> It is a United Nations Conference on the Human Environment, held from 5<sup>th</sup> to 16<sup>th</sup> June, 1972 in Stockholm, and urged the need for common criteria and principles to give people of the world inspiration and guide to preserve and improve the human environment. (Available in: <[https://www.apambiente.pt/\\_zdata/Politicass/DesenvolvimentoSustentavel/1972\\_Declaracao\\_Estocolmo.pdf](https://www.apambiente.pt/_zdata/Politicass/DesenvolvimentoSustentavel/1972_Declaracao_Estocolmo.pdf)>).



resources as a mere capital good, and of their income as a profit" (Veiga, 2010, p. 202), where there is "a viable combination of economics and ecology, natural resources can describe what is needed for a sustainable world, but it is the social sciences' responsibility to articulate the strategies of transition towards this path" (Sachs, 2009, p. 60).

In other words, development in the perspective of environmental sustainability is that economic process that takes into account all the costs (or evils) that are inevitably associated with the production of goods and services (Cavalcanti, 2004).

This discussion prompted reflections on the idea that stagnation of growth (both economic and demographic) by itself would not bring the development, but through strategic and collective conciliation. In other words, the need to redefine development seems to be a peaceful matter, considering it as an "effective appropriation of all human, political, social, economic and cultural rights, including the collective right to the environment." (Sachs, 2009, p.60) for all nations and their peoples.

In this sense, the creation of the *United Nations Environment Program (UNEP)*<sup>13</sup> was one of the fruits of the Conference in Stockholm and institutionalized concern for responsible management of the environment. Until then, there was no international organization with this responsibility, promoting debates on the evidence of climate change detected by men and exclusively committed to the global environmental picture (SOI<sup>14</sup>, 2012).

The main scope addressed by UNEP is:

[...] maintain the state of the global environment under continuous monitoring; alert people and nations about problems and threats to the environment and to recommend measures to increase the quality of life of the population without compromising the environmental resources and services of future generations (SOI, 2012, p. 9).

According to Speth (2005), the actions of UNEP, NGOs and the intellectual and political leadership of the scientific community were fundamental to the establishment of a new international environmental agenda. Such agenda, obviously, is filled with challenges to be faced by governments that want to have credibility at the international level, but without a mandatory character.

In this sense and in a complementary way, Moura (2016, p.7) considers that "the magnitude and complexity of environmental problems demand a coordinated action not only of the State, but of the whole community, to direct all the resources of society towards to environmental sustainability, one of the pillars of sustainable development."

These joint actions characterize and explain the emergence of the term *environmental governance*. This type of governance can be understood as a set of processes, structures and mechanisms that regulate the actions of political actors, involve the participation of non-governmental social segments and aims to direct actions related to the use of natural resources (Silva & Fraxe, 2012). Therefore, environmental governance would be a decentralized and strategic decision-making process, guided by the broad adherence among the several social actors in environmental issues (Jacobi & Sinisgalli, 2012). This way, through the involvement of the community, it is believed that it will contribute to the dissemination of the importance of an integrated management of natural resources, as well as the promotion of the awareness of all about the degradation of the environment and its long-term effects.

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<sup>13</sup> UNEP was created on December 15, 1972 (SOI, 2012).

<sup>14</sup> SOI - Simulation of International Organizations of the Federal University of Rio Grande do Norte developed a Study Guide on the United Nations Environment Program in the XII edition (Available at: <<http://soi.org.br/>>).



Under the historical context of the environmentalist trajectory, Speth (2005) emphasizes that the first stage of environmental governance took place in the 1970s and 1980s, and they were essential to achieve two achievements: i) legitimizing environmental policy in national level of each nation; and (ii) dissemination to all peoples of the importance of vital biosphere maintenance processes. Being that:

The first phase of global environmental governance helped to raise domestic and international awareness of environmental issues, but overall it was marked by failure rather than success. The threatening trends that attracted international attention twenty years ago remain essentially unchanged (Speth, 2005, p.17).

Summarizing, it is observed that the foundations of environmental governance were presented on the basis of the principle of a global "duty" for cooperation, whether from the relationship between "country-country" through the actors and considering the several scenarios encountered. However, such bases are still insufficient. It is necessary to consider the implementation of actions that bring theory to practice, be it at the *global* or *local level*. In addition, awareness about the importance of "good" management of natural resources is crucial for the perpetuation and future of human life and the planet.

### **2.2.1- Perspectives of Global Governance for Environmental Sustainability.**

The sustainability of the environment has become a strategic issue for territorial development in a sustainable way, implying that:

The environmental concern has already been ratified by several international agreements and by many business understandings that conservation / preservation of the environment is the most important anchor for sustainable development. On the other hand, consumers are also too worried about the management of nature's assets. That means that the suppliers and demanders of goods/services have a clear perception that the environment supplies raw materials for economic and human activities (IPEA, 2010, p. 31).

In other words, it is assumed that in this "computerized" times, environmental issues have been discussed and presented over the years to public authorities, private agents and civil society. However, it is still necessary to clarify how to actually establish the practice and action of different social actors for global environmental governance. In this sense, Streck (2005) believes that despite the numerous agreements, agencies and institutions established in the last decades, the environment continued to deteriorate due to the fact that they were constituted by a traditional, bureaucratic and hierarchical structure. The author proposes so-called *network governance*: an innovative mechanism, with open, flexible, transparent and inclusive structures. She argues that these global public policy networks would be "partnerships that interconnect different sectors and levels of governance, aggregating governments, international organizations, corporations and civil society" (Streck, 2005, p. 141). These networks are formed around common issues and have certain characteristics (summarized below, based on some of the networks that have already been formed and highlighted by the author<sup>15</sup>):

i) *Diversity*: in relation to the trilateral nature by involving the public sector, society and business;

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<sup>15</sup> The author mentions three successful examples of global networks: the World Commission on Dams, the Global Environment Facility, and the flexible mechanisms of the Kyoto Protocol (Streck, 2005).



- ii) *Openness and flexibility*: they are able to incorporate several perspectives, even local knowledge and the participation of affected communities to solve the problem in question;
- iii) *Speed*: they receive quick answers, due to the urgency, pressures and deadlines imposed in the action plans and in the outlines specifically outlined; and,
- iv) *Delegation and legitimacy*: the possibility of implementing agreements and policies at the several levels of decision-making, and, thanks to the internet, access and participation at many levels in networks.

Esty & Ivanova (2005) share the view that cooperation between countries is crucial. However, there are insufficient legal and institutional mechanisms to address environmental degradation on an efficient planetary scale. In the words of the authors:

The need for international cooperation in dealing with environmental problems with cross-border or global implications is evident both in theory and in practice. Some ecological problems (local air pollution or waste disposal, for example) are geographically limited and can be addressed on a national or local scale. However, a number of major problems - persistent organic pollutants, predatory fishing, and climate change, among others - require effective responses from a number of jurisdictions and, sometimes, coordinated action across the globe. Governments are beginning to recognize the limits of their ability to deal with transboundary environmental problems (Esty & Ivanova, 2005, p. 216, emphasis added).

The authors also mention the difficulties in implementing cooperation on so-called *global public goods*. They can be defined as those goods (or services) that must be supplied in the same quantity and made available to all people, not presenting rivalries in their consumption. That is, individual consumption cannot imply its unavailability to other people (Varian, 2012; Vasconcellos & Oliveira, 2008). The individualized way of regulating the use of public goods in each country, especially with regard to natural resources (due to easy access and availability), causes global environmental governance to find problems and challenges to be implemented due to the multiple authorities, governors and jurisdictions involved (Esty & Ivanova, 2005).

Environmental governance shows itself as an alternative for changes in decisions made independently and based on individualistic interest in order to overcome *externalities*<sup>16</sup>. Externalities can be understood as impacts (negative or positive) that occur when individual well-being (or the product of a company) is affected by decisions of use and consumption of others, and that are unavoidable in the environmental arena because there is no global sovereignty (Vasconcellos & Oliveira, 2008, Esty & Ivanova, 2005).

Thus, the authors propose a *Global Environment Facility* that could "respond to the common aspects of national problems and the special requirements of cross-border issues and global public goods in an effective way" (Esty & Ivanova, 2005, p. 221). That mechanism would build on the operational elements of existing institutions, filling in the gaps inherent in jurisdiction, information and implementation, and it would include the following essential tasks:

- i) Provision of information and adequate analysis to characterize problems, monitor trends and identify interests;

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<sup>16</sup> A case that exemplifies the occurrence of a negative externality in relation to the unlimited use of public goods (specifically the natural resources) became known as Garrett Hardin's theory of the *Tragedy of Commons* in 1968. According to her, "free access to a common resource must lead to more than the dissipation of the gains from the use of such access: it must lead to ruin of the resource itself" (Vasconcellos & Oliveira, 2008, p. 273).



- ii) Creating a policy space for environmental negotiations and bargaining;
- iii) Expansion of the capacity - both national and global - to deal with issues of importance (Esty & Ivanova, 2005, pp. 221-222).

In general terms, those alternatives have relevance in bringing new perspectives to the institution of environmental governance on a *global scale*, of viable application to problems that affect all and congruent with the current capitalist reality: dynamic, volatile and computerized.

However, Veiga (2013) provides a critical view of the paths taken by global environmental governance (its trajectory of advances and setbacks in the last four decades), and emphasizes that the process of legitimizing sustainability as a new value is, in many ways, still crawling. The author states, in summary, that there are two aspects to be considered to understand the current and future situation of this *global misgovernance of sustainability*. The first one refers to the significant ecological problems experienced until then and to the necessary environmental transformations, which can present a constant symbiosis with the economic panorama brought by the idea of sustainable development. The second one is related to the fact that this global misgovernance is the result of a historical mismatch between globalized economic activity and the political order on planetary ecological frontiers, since they have to deal with the imposed national sovereignty (Veiga, 2013). Which can be exemplified by the reality of twin cities.

## 2.2.2- Local Environmental governance: Scenarios and opportunities.

Considering global environmental issues is very important to understand the complexity and implications of ecological interdependence. However, the fact that more "regionalized" environmental governance organizations could act "as an intermediary database for local information gathering efforts, stimulating greater involvement in the political process of broader segments of the population" (Lian & Robinson, 2005, p. 134). In this sense, it is possible to note that, within the national scope, some tools for the adoption of *local* environmental governance have already been proposed. One of them is the *Environmental Agenda program in Public Administration - the A3P*<sup>17</sup>. Despite its focus on public management, it is made up of several axes that seek to incorporate and disseminate principles that emphasize the importance of effective environmental management and has:

[...] a multiplier and transformative effect, since it is based on environmental education, the change of culture and habits on the part of the public servants and managers, and such changes are also taken to the rest of society, to their residences, neighborhoods and cities. Besides, this environmental awareness will modify the way these civil servants operate, providing a better performance of the public service, especially in the area of environmental governance (Ferreira, 2012, p. 37).

Still in the municipal public scenario, the creation of Law Number 10,257/2001 - the *Statute of Cities* - was highlighted, which "established general guidelines for urban policy as well as rules of public order and social interest that regulate the use of urban property in favor of the collective good, security and well-being of citizens and environmental balance" (BRASIL, 2009b, p. 16). With the aforementioned law, it was established the obligation to draw up (and constantly update) a Municipal Master Plan that can be seen as an important instrument

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<sup>17</sup> The A3P program was developed by the Ministry of the Environment (MMA) in 2001 (BRASIL, 2009b).



for the planning of municipal public power actions regarding its territorial structure, as well as those management of natural resources.

Another tool on public performance that can contribute to local environmental governance is the results of the *Municipal Basic Information Survey - Munic* (IBGE, 2016). Since 2002, it has started to investigate relevant aspects related to the Municipal Environmental Policy<sup>18</sup>. It is shown, among the data, some information about the physical structure of municipal management, the existence of a geographic information system, environmental licensing, local Agenda 21, among other aspects that help in the diagnosis and representation of the municipal space in more accurate and transparent way, both for political agents and for the general population (IBGE, 2016).

However, in spite of the current "modern" and legitimized apparatus available to assist the decision-making of public managers, it is clear that the effectiveness of the environmental management of Brazilian municipalities is still mostly deficient. According to Leme (2016), the promotion of environmental management at the municipal level requires administrative structure, personnel, space for political negotiation, legislation and, above all, financial resources. Thus, it is not always feasible to implement such management, in addition to the fact that its non-obligatory nature may compromise the most effective local environmental governance initiative (Ferreira, 2012).

On the other hand, Gemmill & Bamidele-Izu (2005) discuss the role of NGOs and civil society in the local scenario, noting that environmental governance has a trilateral nature (Public-Private-Society). NGOs are the ones that most encourage environmental governance, since they:

[...] are groups of people organized by innumerable reasons of human imagination and aspiration. Such groups may be constituted for the purpose of defending a specific cause, such as human rights, or of carrying out humanitarian aid programs, such as during disasters. Its members can act at the local, regional or global level (Gemmill & Bamidele-Izu, 2005, p. 92).

The authors emphasize that the performance of civil society is limited, since besides requiring a more formal and institutional structure of engagement, it is necessary that there is a commitment of time and financial resources of the governments. The implementation of regional environmental governance structures is an important part of a larger architecture that comprises the local and global levels. Such initiatives at the regional level should complement and not replace the policies and efforts of international institutions (Lian & Robinson, 2005).

Thus, it is possible to notice that despite the fact that global environmental governance presents itself as a different form of "shared management" of natural problems and resources, it has been crucial to act locally in order to take into account territorial specificities. Thus, by amplifying and intensifying targeted actions in a given region, it is possible to create stimuli that aim to gradually increase the degree of involvement of non-governmental actors in the different scenarios and problems, as in the case of the international border analyzed below.

### 3. METHODOLOGICAL PROCEDURES

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<sup>18</sup>In the case of the municipality of Ponta Porã, the updated data are available at the link: [https://munic.ibge.gov.br/sel\\_tema.php?periodo=2015&municipio=5006606&UF=50](https://munic.ibge.gov.br/sel_tema.php?periodo=2015&municipio=5006606&UF=50) Recovered on November 10<sup>th</sup>, 2017.



The methodological scope of the current research has a qualitative approach. Such research is classified in a case study, which occurs "when the researcher has little control over events and when the focus is on contemporary phenomena embedded in some real-life context" (Yin, 2001, p.11). In relation to its objectives, it is classified in a descriptive and exploratory research, aiming at the same time to describe characteristics of a certain population or phenomenon in practice and still serve to provide a new vision of the problem (Gil, 2002).

The information was obtained through semi-structured interviews with the aid of a script previously elaborated and organized in eight questions. This kind of interview is the one composed of "a series of open questions verbally asked in a planned order, but in which the interviewer can add clarifying questions" (Laville & Dione, 1999, p. 188). The content of these primary data was analyzed and categorized into five thematic axes, which are summarized in Table 1 below:

**Table 1:** Thematic axes and their respective issues in the interview script

THEMATIC AXIS	GUIDING QUESTIONS
<b>1<sup>st</sup>) Environmental Policies - municipal level</b>	1) What environmental policies are being implemented or planned? And how are they operationalized?
	2) What is the effectiveness / practical results of these actions?
<b>2<sup>nd</sup>) Binational Environmental Policies</b>	3) Are there or have there been projects / initiatives with the Paraguayan (Brazilian) municipal government?
	3b) How are they operationalized? Or how they were executed?
<b>3<sup>rd</sup>) Existence of NGOs / Associations / Cooperatives</b>	4) Is there knowledge about the existence of NGOs or associations? Which are they? What activities do they do?
	5) Is there any kind of municipal government support / partnerships with these institutions?
<b>4<sup>th</sup>) Public initiatives aimed at the border population</b>	6) There are events / lectures / folders / etc. for the municipalities and/or for foreign citizen neighbors?
<b>5<sup>th</sup>) Specific initiatives due to the condition of international conurbation</b>	7) Are there policies/agreements/rules (federal or state) directed to the environmental problem due to the frontier condition of the municipality is a twin city?
	8) In your perception, does the public management (municipal, state or federal) have a different look at the environmental problems of the border?

Source: Created by the authors.

The interviews took place between June 21<sup>st</sup> and 26<sup>th</sup>, 2017 and included representatives of the environmental management agencies from both municipalities. The first interview was held in Ponta Porã-MS, with the environmental technique, Mrs. Wandi Mara Frediani Tirelli, who, at that time, held the position of Chief of Staff of the Municipal Secretariat for Sustainable Development and Environment. Subsequently, the Secretary of Infrastructure of the Municipality of Pedro Juan Caballero (PY), Mr. Óscar Romero was interviewed. Afterwards, the discourse analysis was done through the transcription of the responses that were recorded in MP3 format and lasted approximately 20 minutes with each of the respondents.

It is necessary to clarify that the scope of this research is the result of readings and discussions proposed by the Territorial Dynamics and Sustainable Development subject offered by the *Stricto Sensu* Postgraduate Program in Regional Development and Productive Systems (PPGDRS/UEMS). In the same sense, it constituted the initial intellectual efforts for the



construction of the master's thesis entitled "Public Policies in the Frontier Region: the impasses inherent in the shared management of common goods in the twin cities of Ponta Porã (BR) and Pedro Juan Caballero (PY)". These considerations justify the specific and limited character of the target audience interviewed, although the carefulness in defining the interview script has sought to overcome and compensate for such a limitation. However, they indicate the importance of this stage as an essential preliminary research to keep the master's research, as well as for the startup of an agenda of other research perspectives focused on this complex and dynamic international territory.

#### 4. ANALYSIS AND DISCUSSION OF RESULTS

The first two questions fall under the thematic axis 1 and aimed to identify the current scenario of the environmental policies in progress or already implemented in the individual scope of each municipality, as well as its effectiveness. On the Brazilian side, it was identified that the main concern refers to the irregular occupation of the needy population at the edge of the streams. Ms. Tirelli pointed out that this has been a constant action, regardless of which party is in municipal management. However, she stated that a more effective practice is still needed: "then what has to happen is a more effective practice, a more effective thing, to take, close, monitor. Because then not to return, while you are monitoring they are not coming back." (Tirelli, 2017, Interviewee I.)

Another point highlighted by the representative of the Brazilian municipality is the existence of the Municipal Solid Waste Plan (MSWP)<sup>19</sup> since 2015, but only in that year there was the implementation of the selective collection in a part of the city:

The first thing that was put into practice now, in this government, was the selective collection. It was not in the whole city, it was only some area of the city. It was bought a truck now, the collectors' association is already on the street doing this collection, so they are collecting what would go to the dump, so it is decreasing the trash, the solid waste that can be occupied but that were going to the dump. And nowadays, it is working then. (Tirelli, 2017. Interviewee I)

It was asked then how this action started and how it has being operationalized:

[...] we went to schools around, to the local press, also from house to house, carrying a flier, telling people about the day the selective collection was going to be carried out, and that the selective collection had already started. But many people still do not have this habit (Tirelli, 2017, Interviewee I).

In the interview with Mr. Romero, it was identified that the main action related to the environmental issue that has been happening in Pedro Juan Caballero is the separation of solid waste through so-called neighborhood commissions. These commissions would be like associations or committees of neighborhoods, composed by about 50 people in 10 different districts. It stands out the existence of a public place, given by the Paraguayan city hall where the materials collected by these associations are concentrated:

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<sup>19</sup> Municipal Decree Number. 6.944, from April 22<sup>nd</sup>, 2015, approved the Municipal Basic Sanitation Plan and the Municipal Solid Waste Management Plan, where this one was specifically important for establishing access to the resources of the Union, which is subject to Law 12,305/2010, aimed at infrastructure related to urban cleaning and solid waste management. (IBAM / PP, 2014).



We also have a recycling center in a large tent, where they gather the garbage and ... it is practically a collection center, where everything is that comes from the garbage is gathered... then they sell or not in the Brazilian or Paraguayan side (Romero, 2017, Interviewee II).

When asked about the process of operationalization of this activity, Mr. Romero explained that it acts as a cooperative, in which most of the collectors are employees who have already worked for the city hall in the area of garbage collection, and they carry out this activity simultaneously in order to increase their income. However, the interviewee also emphasized that it is an open space for the other collectors who take the materials collected for sale.

Regarding the effectiveness of these actions, that is, if the results of the activities have been really achieved, it was observed that, in Ponta Porã, the selective collection has not obtained the expected results yet, which can be explained because it is still a recent practice in the city. Mrs. Tirelli believes that it is still necessary to build this habit in the population that until then had had all their garbage taken to the dump, as she says:

It is because it is recent, and this is not our culture, people do not have this culture here yet, to separate the dry garbage from the wet garbage, when people learn to do it at home, both the elderly people as well as children, and then things work out ... and this is really talked about in school, because here, all the trash used to go to the dump, but when everyone starts to take it seriously, it will work out [...] (Tirelli, 2017, Interviewee I).

Regarding Paraguayan activities, Mr. Romero emphasized that many things are missing and that these actions were recently instituted. In 2010, through an initiative carried out jointly with a European NGO called *Paz y Desarrollo*, representatives of the public management of Ponta Porã also took part (as the interviewee explained later and Ms. Tirelli also mentioned). However, regarding the current reality experienced, he explained that:

[...] in 2010 we kind of gave many people, from the different neighborhoods, carts to carry out the collection, and there we had the neighborhood commissions in these neighborhoods to work, and then they left and destroyed everything and did not renew them. And they are not constant, they find a job but they leave it [...] (Romero, 2017, Interviewee II).

The third question sought to identify the existence of some binational initiative currently or already carried out and how it is (or was) operationalized, representing the thematic axis 2. It was verified that nowadays, according to both interviewees, there is no joint action/initiative between Paraguay and Brazil. However, they pointed out that in 2010 there was a binational initiative funded by the European Union, which was important to establish the Associations as in Brazil as in Paraguay, according to the following transcriptions:

Now, regarding the way the association came out... the machinery of the association of recyclables, which is the scale, the press, the table ... then we had a joint action [...] then both Ponta Porã and Pedro Juan had set up an association, organized that association, a place of operation, and machinery. Then everything Ponta Porã did, Pedro Juan did. They used money from the European Union [...] (Tirelli, 2017. Interviewee I).

[...] It was only during the training period, the associations from Brazil and from here held meetings, but then they quit (Romero, 2017, Interviewee II).



So, it is possible to note that the initiative proposed by the cited project was extremely relevant and that it provided a first "binational approach" to the environmental problems of the border. This relationship, however, has not been intensified or preserved over the years.

It should be emphasized that the existence of a project with the Paraguayan government on the Integrated Management of the Rio Apá – GIAPA<sup>20</sup> was mentioned. However, in practice, actions are focused on solving seasonal problems (for example, irregular housing facilities on both sides of the river), and regulatory and control activities are not carried out jointly between governments. Ms. Tirelli also informed that the municipality of Ponta Porã has other important instruments for municipal environmental management: the *Geo Ponta Porã* and the *Environmental Vulnerability Assessment (EVA)*<sup>21</sup>, although these do not establish joint goals and strategies with the neighboring country.

Thematic axis 3, through questions 4 and 5, sought to identify the existence of NGOs, associations, cooperatives and if the municipal government establishes a support/partnership relationship with them. The existence of only two institutions was identified. One in Brazil is called the *ASCARS - Solid Waste Collectors Association of Ponta Porã*, and the other in Paraguay. Both, as previously mentioned, carry out activities aimed at the collection, cleaning, organization and sale of solid waste (cardboard, cans, glass, plastics, and iron in Paraguay) and they have a supporting relationship with the public sphere.

In Pedro Juan Caballero, Mr. Romero stated that the Municipality was active in the period of construction of the *Recycled Center*, when the press was made available, they set up the office, bathroom, etc., but it was only at that initial moment. At the time of the interview, there were no on-site maintenance. And in Ponta Porã, according to Ms. Tirelli, ASCARS has an important role in the promotion of Selective Collection, since it is the members who make the collection and are responsible for the truck acquired by the city council precisely for this purpose:

They collect. They have the truck that the city hall has bought, and the truck is already prepared for it. It's a cage truck, they go by ... there's a little piece of music, the truck and everything ... (laughs), everything to drive people's attention ... everything, everything ... Okay, then they'll pick it up, take it to the large tent, and while the others are collecting, there are people there who are already separating these materials, because they know who is interested in buying them [...] (Tirelli, 2017, Interviewee I).

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<sup>20</sup> This was a project started in 2006 but evolved through Federal Decree Number 7,170 on May 6<sup>th</sup>, 2010, which dealt with the negotiation process and the implementation of the "Cooperation Agreement for Sustainable Development and Integrated Basin Management Hydrographic Basin of the Apa River", between the Brazilian and Paraguayan government, considering that it is a transboundary basin, located in the Prata Basin, where 12,181.31 km<sup>2</sup> are located in Brazil and 3,436.22 km<sup>2</sup> in Paraguay (Broch, 2013; Torrecilha, 2013). Currently, the Municipality of Ponta Porã has regulated the Management Plan of the Environmental Protection Area of the Rio Apa. This is a planning instrument that aims to guide participatory management in order to ensure the conservation of natural resources and improve the quality of life, seeking to establish guidelines and guide programs, projects and actions that may be carried out in the region by different groups of interest (GIAPA/FADEMS, 2013).

<sup>21</sup> The GEO Ponta Porã published in 2010 was a project developed by the regional offices of the United Nations Environment Program (UNEP) in Latin America and the Caribbean and the United Nations Human Settlements Program (UN-HABITAT) to develop an Urban Environmental Strategy for Latin America and the Caribbean, which was implemented in several countries of the region, and in Brazil the Ministry of Cities was joined by the Ministry of Environment, Partnership 21, besides the governments and local technical partners of each municipality. Summing up, the main purpose of this study was to evaluate specifically how the incident urbanization process puts pressure on the natural environment, through indicators of social, economic, political and territorial dynamics (Oliveira, 2010). And the EVA was a part of this project that aimed at analyzing the vulnerability conditions on environmental issues in the municipality, and was fundamental for the technical mapping of natural resources and the problems to be faced by municipal management and by the community in general (Oliveira, 2005).



The analysis inherent to thematic axis 4, with question 6, referred to actions directed at society in general, as well as the opening of spaces for social action in debates on the environmental issue. Two relevant points were noticed: in Pedro Juan Caballero there was only a more emphatic communication for the population in the initial time of the integrating project in 2010. In Ponta Porã, the activities carried out are directed to certain situations, such as the launching of selective collection and educational lectures in environmental week, that is, they are sporadic. It should also be noted that, apparently, the population does not have a concern with environmental issues yet. This finding stems both from the lack of involvement of people in the separation of solid waste and from the insistent irregular occupation at the edge of streams, which is also justified by the discontinuity and inconstancy in public actions in order to raise public awareness.

The last guiding questions (7 and 8) comprise the thematic axis 5 and were complemented by seeking to understand the perception of the public representatives in the different scopes (municipal, state, federal) on the environmental problems that derive from the condition of border conurbation. In other words, if there was an institutionalized "directed look" (formally or not). It was found that there is no such political differentiation by either country, not in an effective and concrete way. Mr. Romero mentioned that in the period of 2010 there was still a project to establish a "Multinational Waste" and that there would be cooperation among countries so that "border garbage" would be placed and treated in one place, but that did not happen.

On the Brazilian side, some interesting points were presented by Ms. Tirelli. One of them would be the existence of a partnership of the municipality with the Public Prosecutor's Office, considered by it as fundamental for the constitution of the Municipal Environment Fund. Another point highlighted was the reactivation of the Municipal Environmental Council<sup>22</sup> (CMMA):

[...] the only partnership that we always do is with the State Attorney's Office, she ... when it has some fines to collect, it puts it in the Municipal Environment Fund, because here there are the Municipal Fund, Municipal Council of Environment, and they are active. Every month they have a meeting, so ... if there is money in the Fund coming from fines ... we have some machines nowadays, coming from the prosecution. So this partnership with the prosecution, Gabriel, the prosecutor, he is extremely strict, but at the same time he is able to understand us... So he transforms these fines that he has there, in donation to us [...]  
(Tirelli, 2017, Interviewee I).

However, it is not clear that this partnership is based on the "priority" condition of this international conurbation of Ponta Porã and is not directed towards the resolution of binational environmental problems, being focused only on the municipal level and in an individualized way. It is also perceived that, despite this partnership with the State Attorney's Office, environmental activities still occur in isolation and are seasonal, with rare financial and human resources.

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<sup>22</sup> In view of the objective proposed in this research, this analysis was delimited based only on the interviews with the municipal representatives, however, it is emphasized that information was sought on actions that are being planned by the Municipal Council of the Environment (CMMA) of Ponta Porã, limited only by means of the CMMA's Internal Rules and through informal contact with some members of the council, has identified that no discussions have been established yet on joint actions with the Paraguayan government. It is worth noting that CMMA in Ponta Porã was inactive for over two years, for more information see: <http://www.msemfoco.com.br/cidades/ponta-pora/posse-conselho-municipal-do-meio-ambiente-ponta-pora/> Recovered on June 20<sup>th</sup>, 2017.



Finally, the last question sought to understand, in the opinion of the interviewees, "how" and "why" the absence of this "joint" view of governments (from the municipal to the federal level) is lacking. The following perceptions were obtained:

I do not see that, and that's because I've been working here for so long. I do not see that. First of all, we do not see this difference here ... you suddenly remember that it is borderline when you need an environmental license on the other side, because then you cannot get it, and your certificate is not even worth it ... and then you cannot have this environmental licensing. [...] I do not see this differentiation [...] (Tirelli, 2017, Interviewee I).

I say, if there must be, because they are twin cities, they have the same problems, if they have dengue, we have it here [...], there are the issue of water, that we are on top of the Guaraní aquifer, the pollution is direct. And there must be, there must be that agreement. I believe that, it has to be formed, there must be interest from the national government and from Brazil. Nothing, there is nothing. We are starting, Brazil is more advanced yet due to its laws. But we, so far the law is ... we can get by yet [...] (Romero, 2017, Interviewee II).

In the interviewees perceptions it was evident that there is currently no institutionalization of mechanisms (formal or informal), stimulus or incentives for the consolidation of international cooperation between the two governments at the border, at the municipal, state and national levels. Although the interviewed representatives understand that there is a need for this differentiated view, local action is limited by the international condition that "separates" the territory and causes each country to act limited by the national normalization (which does not contemplate such specificity).

Table 2 below summarizes the main points identified in each thematic axis analyzed on environmental governance in the binational scenario above.

**Table 2:** Synthesis on Environmental Governance in the Binational Frontier

Thematic axis analyzed	In Ponta Porã (BR)	In Pedro Juan Caballero (PY)
<b>1<sup>st</sup>) Environmental Policies - Municipal level</b>	<ul style="list-style-type: none"> <li>- Constant actions to contain the irregular occupation at the edge of the streams;</li> <li>- Recent implementation of the 1<sup>st</sup> stage of Selective Collection, which was planned since 2015, when the PMRS was formed. However, the results could not be measured yet.</li> <li>- Instruments available to assist municipal environmental management: Geo Ponta Porã and Environmental Vulnerability Assessment.</li> </ul>	<ul style="list-style-type: none"> <li>- Performance of "neighborhood commissions", composed of about 50 people in 10 neighborhoods that collect solid waste;</li> <li>- Provision of a space for the operation of the "Collection Center" for the separation and commercialization of solid waste collected by the commissions or other collectors.</li> </ul>
<b>2<sup>nd</sup>) Binational Environmental Policies</b>	<ul style="list-style-type: none"> <li>- Only in 2010 through the binational approach, funded by the NGO <i>Paz y Desarrollo</i> of the European Union.</li> <li>- The GIAPA project involves both countries, but the actions are seasonal and only focus on practice to solve eventual problems. Control and monitoring actions are individualized.</li> </ul>	



<p><b>3<sup>rd</sup>) Existence of NGOs / Associations / Cooperatives</b></p>	<ul style="list-style-type: none"> <li>- Only one association, called ASCARS, formed with the support of the Brazilian city government and financed with the resources of the NGO <i>Paz y Desarrollo</i> in 2010;</li> <li>- There is a partnership between the municipal government and ASCARS that was fundamental for the implementation of Selective Collection;</li> <li>- Recent reactivation of the Municipal Council of the Environment.</li> </ul>	<ul style="list-style-type: none"> <li>- The <i>Collection Center</i> functions as a cooperative, formed by the support of the Paraguayan city hall and also funded by the NGO <i>Paz y Desarrollo</i> in 2010;</li> <li>- The partnership between the municipal public power and the cooperative was limited in the constitution period, there were no investments in improvements and/or maintenance of the equipment, they only make the place available;</li> </ul>
<p><b>4<sup>th</sup>) Public initiatives aimed at the border population</b></p>	<ul style="list-style-type: none"> <li>- There are sporadic and recent actions, such as the dissemination of selective collection. And they are focused on specific dates (eg, environmental week, etc.) and only to residents of Ponta Porã.</li> </ul>	<ul style="list-style-type: none"> <li>- There is not at the moment, there was only in 2010 a more intensified communication to the residents of Pedro Juan Caballero on <i>the neighborhood commissions</i>.</li> </ul>
<p><b>5<sup>th</sup>) Specific initiatives due to the condition of international conurbation</b></p>	<ul style="list-style-type: none"> <li>- An important financial partnership with the State Prosecutor for the constitution of the Municipal Environmental Fund, but there is no knowledge that the border condition is a criterion for the distribution of the resource, which is used within the municipal territory.</li> </ul>	<ul style="list-style-type: none"> <li>-Although there is no clear understanding of the need to exist that was well expressed in the response given by the representative of the Paraguayan municipality.</li> </ul>

Source: Created by the authors (Field research, 2017).

Thus, it must be highlighted that ecological interdependence in a binational scenario, such as the mentioned territory, shows itself even more complex. Some central points are relevant and require prominence in public environmental management in Ponta Porã (BR) and Pedro Juan Caballero (PY). Among them: i) the political-administrative boundary delimits the performance of environmental management; ii) political boundaries do not limit the influence of the negative effects related to poor management of natural resources, which are shared simultaneously by both countries; iii) the environmental control is divergent in the two countries, being actions defined vertically, that is, in the federal scope of each country; and (iv) there is the understanding that a binational agreement must be formed for the formalization of mutually cooperative relations such as continuous "self-control", which would minimize the other problems (social and health ones) originated and that affect both nations.

## 5. FINAL CONSIDERATIONS

The condition brought about by a binational conurbation implies in different and multifaceted discussions, whether in social, economic, cultural or political, but mainly environmental, aspects. It is in this last aspect, which has not been debated yet, that this research was relevant. As stated above, instituting a country's environmental governance, both locally and globally, in the current capitalist dynamics, depends on several factors (changes in economic, legal, social and political interests) and the involvement of actors from multiple segments of society. In addition, the more flexible, dynamic and transparent regulatory framework for environmental policies is essential.



Such challenges are even more complex and they get bigger in binational scenarios, especially in twin cities of the synapse type due to the high degree of their dynamics and interactions, as in the case of Ponta Porã and Pedro Juan Caballero. This implies the strengthening of environmental problems at the border, which, because they are inseparable, become common to both countries. Thus, it is essential that the environment be managed in this territory in a different way, with a cross-border character and cooperation between both jurisdictions.

The theoretical, conceptual and official documents studied indicate that the debate is necessarily multidisciplinary and is advanced and institutionalized at the international and national levels. Likewise, these theoretical choices corroborated the field research in order to contemplate the proposed objectives.

The present study analyzed the environmental policies practiced on both sides of the border by mapping the actions taken (or under execution) in each municipality and the effectiveness of these activities, as well as the existence of non-governmental actors. Next, we sought to understand how each municipality perceives and acts in relation to the environmental border issue. It is believed that the main goal of this research was achieved. The main results obtained can be synthesized: i) public initiatives related to environmental inspections are in different stages in the two municipalities; ii) the Brazilian side has some regulatory framework and actions in the search for solutions to environmental problems, however, they are still limited and are not focused on the border dynamics; iii) there was only one action that effectively integrated the two local administrations and took place through the NGO *Paz y Desarrollo* of the European Union; iv) the border population does not formalize an environmental concern, since existing initiatives are inconstant or recent (such as Selective Collection in Ponta Porã); v) associations formed in Pedro Juan Caballero and Ponta Porã limit recycling activities, in essence, as an alternative source of income generation; and vi) there is an understanding by both representatives of the environmental area (at the municipal level) of the importance that "border environmental actions" need to be formalized and institutionalized. Although at the federal level the Brazilian government has already planned specific public policies for twin cities (as mentioned in the BDP), this has not been really established.

Therefore, environmental governance presupposes decentralization in the decision-making process regarding the management of natural resources. It is possible to affirm that, faced with the complexity of a binational scenario, this change would imply, first of all, on the breaking of political, cultural and legal barriers, and it is necessary that governments have the autonomy and technical and political capacity to work together. Environmental awareness of the population should be horizontal and international. Thus, the initial hypothesis of this research could be confirmed: environmental governance in a binational scenario requires the involvement of local actors and public managers on both sides of the border, in a decentralized and continuous way so that there is effectiveness in environmental policies. There is no viability if the complexity and specificity of this binational territory is neglected.

Finally, it is concluded that the theme of environmental governance and its relation to development must inaugurate a research agenda in several areas of knowledge and specific local contexts. Critical analyzes and environmental policy proposals are needed that can positively impact global public goods.



## 6. REFERENCES

BRASIL, Ministério da Integração Nacional (2005). *Proposta de Reestruturação do Programa de desenvolvimento da Faixa de Fronteira*: bases de uma política integrada de desenvolvimento regional para a faixa de fronteira. Brasília. Recuperado em 09 junho 2017 de <<http://www.retis.igeo.ufjf.br/wp-content/uploads/2005-livro-PDF.pdf>>.

BRASIL, Ministério da Integração Nacional (2009a) *Faixa de Fronteira*: Programa de Promoção do Desenvolvimento da Faixa de Fronteira (PDF). Brasília: Secretarias de programas regionais. Recuperado em 09 junho 2017 de <[http://www.integracao.gov.br/c/document\\_library/get\\_file?uuid=e5ba704f-5000-43df-bc8e-01df0055e632&groupId=10157](http://www.integracao.gov.br/c/document_library/get_file?uuid=e5ba704f-5000-43df-bc8e-01df0055e632&groupId=10157)>.

BRASIL, Ministério do Meio Ambiente (2009b) *Cartilha A3P - Agenda Ambiental na Administração pública* (5ª Edição/ Revisada e atualizada). Brasília. Recuperado em 19 junho 2017 de <[http://www.mma.gov.br/estruturas/a3p/arquivos/cartilha\\_a3p\\_36.pdf](http://www.mma.gov.br/estruturas/a3p/arquivos/cartilha_a3p_36.pdf)>.

BRASIL, Ministério da Integração Nacional (2014) *Portaria nº 123, do dia 21 de março de 2014*. Estabelece o conceito de "cidades-gêmeas" nacionais, os critérios adotados para essa definição e lista todas as cidades brasileiras por estado que se enquadram nesta condição. DOU 24/03/2014. Recuperado em 05 maio 2017 de <<http://pesquisa.in.gov.br/imprensa/jsp/visualiza/index.jsp?jornal=1&pagina=12&data=20/07/2016>>.

Bresser-Pereira, L. C. (2006) *O Conceito Histórico de Desenvolvimento Econômico*. [Trabalho originalmente preparado para o curso de Desenvolvimento Econômico na Fundação Getúlio Vargas. Versão de 2 de março de 2006] Recuperado em 07 Novembro 2017 de <<http://www.bresserpereira.org.br/papers/2006/06.7-conceitohistoricodesenvolvimento.pdf>>.

Broch, S. A. O. (2013) Mato Grosso do Sul: a Fronteira é hídrica. (6ª edição). *Revista Águas do Brasil* (online). Recuperado em 09 junho 2017 de <<http://aguasdobrasil.org/educacao-06/mato-grosso-do-sul-a-fronteira-e-hidrica.html>>.

Cavalcanti, C. (2004). Economia e Ecologia: problemas da Governança Ambiental no Brasil. (Vol. 1. pp. 1-10). *Revista Iberoamericana de Economia Ecológica*. Recuperado em 02 setembro 2017 de <<http://www.raco.cat/index.php/Revibec/article/view/38276/38150>>.

Castelli, J. R.; Conceição, O. A. C. (2014) Instituições, Mudança Tecnológica e Crescimento Econômico: Uma Aproximação das Escolas Neo-Schumpeteriana e Institucionalista. In: 42º Congresso Nacional da ANPEC. Natal. *Anais do 42º Congresso Nacional da ANPEC*.

Dallabrida, V. R., & Becker, D. F. (2003) Dinâmica Territorial do Desenvolvimento. (pp. 175-213). In: D. F. Becker; M. L. Wittmann (orgs.). *Desenvolvimento Regional – abordagens interdisciplinares*. Santa Cruz do Sul: EDUNISC.

Esty, D. C., & Ivanova, M. H. (2005) Revitalização da governança ambiental global: um enfoque baseado em funções (pp. 205-231) In: D. C., Esty, & M. H., Ivanova (org.) *Governança Ambiental Global: opções & oportunidades*. Traduzido por Assef Nagib Kfoury. São Paulo: Editora Senac SP.



Ferreira, M. A. S. O. (2012). Apontamentos sobre a gestão socioambiental na Administração Pública Brasileira. In: Bliacheris, M. W.; Ferreira, M. A. S. O. (coord.) *Sustentabilidade na Administração Pública: valores e práticas de gestão socioambiental*. Belo Horizonte: Editora Fórum.

Gadelha, C. A. G., & Costa, L. (2005) A Política Nacional de Integração e Desenvolvimento das fronteiras: o Programa de Desenvolvimento da Faixa de Fronteira – PDFFF (pp. 25-46) In: T. C. M. Oliveira, (org) *Território sem limites: estudos sobre fronteiras*. Campo Grande: Editora UFMS.

Gemmill, B., & Bamidele-Izu, A. (2005) O papel das ONG's e da sociedade civil na governança ambiental global. (pp. 89-114) In: D. C., Esty, & M. H., Ivanova (org.) *Governança Ambiental Global: opções & oportunidades*. Traduzido por Assef Nagib Kfourri. São Paulo: Editora Senac São Paulo.

GIAPA/FADEMS – Gestão Integrada do Rio Apa/Fundação de apoio ao Desenvolvimento da Educação de Mato Grosso do Sul (2013). *Plano de manejo da Área de Proteção Ambiental das nascentes do Rio Apa*. Ponta Porã.

Gil, A. C. (2002). *Como elaborar Projetos de pesquisa* (4ª Edição). São Paulo: Atlas.

Held, D., & McGrew, A., (2001). *Prós e contras da globalização*. Traduzido por Vera Ribeiro. Rio de Janeiro: Jorge Zahar Editor.

IBAM/PP – Instituto Brasileiro de Administração Municipal/ Governo Municipal de Ponta Porã. (2014, dezembro). *Plano Municipal de Saneamento Básico e Plano Municipal de Gestão Integrada de Resíduos Sólidos*.

IBGE – Instituto Brasileiro de Geografia e Estatística / Coordenação de População e Indicadores Sociais (2016). *Perfil dos municípios brasileiros – MUNIC 2015*. Rio de Janeiro. Recuperado em 19 junho 2017 de <<http://biblioteca.ibge.gov.br/visualizacao/livros/liv95942.pdf>>.

IPEA – Instituto de Pesquisa Econômica Aplicada (2010). *Sustentabilidade ambiental no Brasil: diversidade, economia e bem-estar humano* [Série Eixos Estratégicos do Desenvolvimento Brasileiro, Livro 7]. Brasília: IPEA. Recuperado em 09 maio 2017 de <[http://www.ipea.gov.br/agencia/images/stories/PDFs/livros/livros/livro07\\_sustentabilidadeambienta.pdf](http://www.ipea.gov.br/agencia/images/stories/PDFs/livros/livros/livro07_sustentabilidadeambienta.pdf)>.

Jacobi, P. R., & Sinisgalli, P.A.A. (2012, junho). Governança Ambiental e Economia Verde. *Revista Ciência & Saúde Coletiva* (vol. 17, nº 6, pp. 1469-1478). Rio de Janeiro. Recuperado em 09 maio 2017 de <<http://www.scielo.br/pdf/csc/v17n6/v17n6a11.pdf>>.

Lamberti, E., & Martins, P. C. S. (2010). *Reexportação e Turismo de Compras na fronteira: o caso das cidades-gêmeas Pedro Juan Caballero (Paraguai) e Ponta Porã (Brasil)* [Série: Fronteiras da Integração]. Pelotas: Editora Universitária/UFPEL.

Laville, C., & Dionne, J. (1999). *A construção do saber: manual de metodologia da pesquisa em ciências humanas*. Belo Horizonte: UFMG.



Leme, T. N. (2016). Governança Ambiental no Nível Municipal. (pp. 147-174). In: A. M. M de. Moura (org.) *Governança ambiental no Brasil: instituições, atores e políticas públicas*. Brasília. Recuperado em 09 maio 2017 de <[http://www.ipea.gov.br/portal/images/stories/PDFs/livros/livros/160719\\_governanca\\_ambiental.pdf](http://www.ipea.gov.br/portal/images/stories/PDFs/livros/livros/160719_governanca_ambiental.pdf)>.

Lian, K. K., & Robinson, N. A. (2005). Governança ambiental regional: exame do modelo da Associação das Nações do Sudeste Asiático (pp. 115-138) In: D. C., Esty, & M. H., Ivanova (org.) *Governança Ambiental Global: opções & oportunidades*. Traduzido por Assef Nagib Kfoury. São Paulo: Editora Senac São Paulo.

Lorenzetti, J. V., & Carrion, R. M. (2012, setembro). Governança ambiental global: atores e cenários. (vol. 10, nº 3, opinião 2, pp. 722-735) *Cad. EBAPE.BR*, Rio de Janeiro. Recuperado em 09 maio 2017 de <<http://bibliotecadigital.fgv.br/ojs/index.php/cadernosebape/article/view/5492/4212>>.

Machado, L., Haesbaert, R., Ribeiro, L. P., Steiman, R., Peiter, P., & Novaes, A. (2005). O desenvolvimento da faixa de fronteira: uma proposta conceitual-metodológica (pp. 87-112) In: T. C. M. Oliveira (org) *Território sem limites: estudos sobre fronteiras*. Campo Grande: Editora UFMS.

Machado, L. O. (2010) Cidades na fronteira Internacional: conceitos e tipologia. (vol.1, pp. 59-72) In: A. Nuñez, M. M. Padoin, T. C. M. de. Oliveira. (orgs) *Dilemas e Diálogos Platinos "Fronteiras"*. Dourados: Editora UFGD.

Moura, A. M. M. de (2016). *Governança ambiental no Brasil: instituições, atores e políticas públicas*. Brasília: IPEA. Recuperado em 09 maio 2017 de <[http://www.ipea.gov.br/portal/images/stories/PDFs/livros/livros/160719\\_governanca\\_ambiental.pdf](http://www.ipea.gov.br/portal/images/stories/PDFs/livros/livros/160719_governanca_ambiental.pdf)>.

Muller, K. M. (2005). Espaços de fronteira nacionais, polos de integração (pp. 573-592) In: T. C. M. de Oliveira, (org) *Território sem limites: estudos sobre fronteiras*. Campo Grande: Editora UFMS.

Oliveira, T. C. M. de (coord.) (2005). *Avaliação da Vulnerabilidade Ambiental - Ponta Porã* [AVA-PP] Ponta Porã.

Oliveira, T. C. M. de. (2008). Condições de conurbação internacional: o caso Corumbá-Puerto Quijarro-Puerto Suárez. (pp. 233-254). In: A. C. do N. Osório, J. H. do V. Pereira, T. C. M. de Oliveira, (org.) *América Platina: educação, integração e desenvolvimento territorial*. Campo Grande: Editora UFMS.

Oliveira, T. C. M. de (coord.) (2010). *GEO Ponta Porã: Perspectivas para o meio ambiente urbano*. Mato Grosso do Sul, Campo Grande. Recuperado em 14 julho 2017 de <<http://terrabrasil.org.br/ecotecadigital/pdf/geo-ponta-pora.pdf>>.

Oliveira, T. C. M. de. (2015, janeiro-junho). Para além das linhas coloridas ou pontilhadas – reflexões para uma tipologia das relações fronteiriças. (pp. 233-256). *Revista da Associação Nacional de Pós-graduação e Pesquisa em Geografia* [Anpege] (v.11, n.15). Recuperado em



05 maio 2017 de <<http://anpege.org.br/revista/ojs-2.4.6/index.php/anpege08/article/view/415>>.

Porto-Gonçalves, C. W. (2006). *A globalização da natureza e a natureza da globalização*. Rio de Janeiro: Civilização Brasileira.

Raffestin, C. (2005). A ordem e a desordem ou os paradoxos da Fronteira. Prefácio. (pp. 9-15) In: T. C. M. de Oliveira, (org) *Território sem limites: estudos sobre fronteiras*. Campo Grande: Editora UFMS.

Rebello Junior, M. (2002) *O desenvolvimento sustentável: a crise do capital e o processo de recolonização*. [Tese de Doutorado em Geografia] Universidade de São Paulo. São Paulo-SP, Brasil.

Sachs, I. (2009). *Caminhos para o desenvolvimento sustentável*. Paula Yone Stroh (org.) Rio de Janeiro: Garamond.

Scherma, M. A. (2016). Cidades-gêmeas e integração: o caso de Ponta Porã e Pedro Juan Caballero. In: *Anais do II Simpósio Internacional Pensar e Repensar a América Latina*. Universidade de São Paulo. São Paulo, Brasil.

Silva, C. M. M., & Fraxe, T. J. P. (2012). Governança Ambiental: conceitos e perspectivas de Estudo para as localidades de Mocambo e Caburi, no município de Parintins/AM. In: *Anais do II Seminário Internacional de Ciências do Ambiente e Sustentabilidade na Amazônia*. Manaus: EDUA.

SOI – Simulação de Organizações Internacionais da Universidade Federal do Rio Grande do Norte. (2012) *Guia de Estudos sobre o Programa das Nações Unidas para o meio ambiente*. Natal-RN. Recuperado em 09 maio 2017 de <<http://soi.org.br/>>.

Speth, J. G. (2005) A agenda ambiental global: origens e perspectivas. (pp. 17-38) In: D. C., Esty, & M. H., Ivanova (org.) *Governança Ambiental Global: opções & oportunidades*. Traduzido por Assef Nagib Kfoury. São Paulo: Editora Senac São Paulo.

Streck, C. (2005). Redes globais de políticas públicas como coalizões para mudança. (pp.139-160). In: D. C., Esty, & M. H., Ivanova (org.) *Governança Ambiental Global: opções & oportunidades*. Traduzido por Assef Nagib Kfoury. São Paulo: Editora Senac São Paulo.

Torrecilha, M. L. (2013). *A gestão compartilhada como espaço de integração na fronteira: Ponta Porã (Brasil) e Pedro Juan Caballero (Paraguai)*. [Tese de Doutorado em Geografia Humana] Universidade de São Paulo. São Paulo-SP, Brasil. Disponível em: <[www.teses.usp.br/teses/disponiveis/8/8136/.../2013\\_MariaLuciaTorrecilha\\_VCorr.pdf](http://www.teses.usp.br/teses/disponiveis/8/8136/.../2013_MariaLuciaTorrecilha_VCorr.pdf)>.

Varian, H. R. (2012) *Microeconomia: uma abordagem moderna*. (8ª edição). Tradução por Elfio Ricardo Dominelli. Rio de Janeiro: Editora Elsevier.

Vasconcellos, M. A. S. de & Oliveira, R. G. de. (2008) *Manual de Microeconomia*. (5ª reimpressão, 2ª edição) São Paulo: Atlas.



Veiga, J. E. da. (2010). *Desenvolvimento Sustentável: o desafio do século XXI*. Rio de Janeiro: Garamond.

Veiga, J. E. da. (2013) *A desgovernança mundial da Sustentabilidade*. (1ª ed.) São Paulo: Editora 34.

Yin, R. K. (2001). *Estudo de caso: Planejamento e Métodos*. (2ª ed.) Porto Alegre: Booknfan.