

Perspectives for the Bioceanic Route: an analysis using the FIT-2-Deeds framework

Perspectivas para a Rota Bioceânica: uma análise através do framework FIT-2-Deeds

Perspectivas para la Ruta del Biocéano: un análisis a través del marco FIT-2-Deeds

Maria Aparecida Farias de Souza Nogueira¹

Renan Mendes Camargos¹

Vera Luci de Almeida¹

Received on July 5th, 2023; revised and approved on July 25th, 2023; accepted on August 4th, 2023.

DOI: <http://dx.doi.org/10.20435/inter.v25i1.4187>

Abstract: The construction of a Bioceanic Route that will link Brazilian ports to Chilean ports is seen as an alternative for the flow of Brazilian exports. The recent evolution of the construction negotiations was accompanied by practical measures such as paving in Paraguay essential sections for the implementation of the Project. However, studies on environmental and social impacts only emerge after construction begins, posing political challenges for managers regarding the reconciliation of economic development and environmental responsibility. The application of the FIT-2-Deeds framework proves to be a good tool for assessing and developing the Bioceanic corridor, since corridors in the world have already been built and their economic and environmental results are already consolidated. Actions for the consolidation of the Biocean Corridor lack coordination and holistic vision given the magnitude of the venture, the possible advantages and the large impacts it can cause.

Keyword: transport corridors; Biocean Corridor; environmental responsibility.

Resumo: A construção de uma Rota Bioceânica que ligará portos brasileiros a portos do Chile é vista como alternativa para o escoamento das exportações brasileiras. A recente evolução das negociações para construção foi acompanhada por medidas práticas como o asfaltamento, no Paraguai, de trechos essenciais para a implementação do Projeto. Entretanto, os estudos sobre impactos ambientais e sociais surgem após o início das obras, impondo desafios políticos para os gestores quanto à conciliação do desenvolvimento econômico e a responsabilidade ambiental. A aplicação do *framework* FIT-2-Deeds demonstra ser boa ferramenta para avaliação e desenvolvimento do corredor bioceânico, visto que outros corredores no mundo já foram construídos e seus resultados econômicos e ambientais já estão consolidados. As ações para a consolidação do Corredor Bioceânico carecem de coordenação e visão holística dada a magnitude do empreendimento, as possíveis vantagens e os grandes impactos que pode causar.

Palavras-chave: corredores de transporte; Corredor Bioceânico; responsabilidade ambiental.

Resumen: La construcción de una Ruta Bioceánica que conectará los puertos brasileños con los puertos de Chile es vista como una alternativa para el flujo de las exportaciones brasileñas. La evolución reciente de las negociaciones para la construcción estuvo acompañada de medidas prácticas como el asfaltado, en Paraguay, de tramos esenciales para la ejecución del Proyecto. Sin embargo, los estudios sobre impactos ambientales y sociales aparecen después del inicio de las obras, imponiendo desafíos políticos a los gestores en cuanto a la conciliación del desarrollo económico y la responsabilidad ambiental. La aplicación del marco FIT-2-Deeds demuestra ser una buena herramienta para evaluar y desarrollar el corredor bioceánico, ya que otros corredores en el mundo ya han sido construidos y sus resultados económicos y ambientales ya están consolidados. Las acciones para la consolidación del Corredor Bioceánico carecen de coordinación y visión holística dada la magnitud del emprendimiento, las posibles ventajas y los grandes impactos que puede causar.

Palabras clave: corredores de transporte; Corredor Bioceánico; responsabilidad ambiental.



¹ Universidade Federal da Grande Dourados (UFGD), Dourados, Mato Grosso do Sul, Brasil.

1 INTRODUCTION

The Bioceanic Corridor, a road route aimed at connecting ports in Brazil to ports in Chile, presents an opportunity to improve South American integration and provide an option for the circulation of goods and people. In 2019, construction began after years of negotiations.

By linking ports in Brazil to ports in northern Chile, the corridor will bring development to areas with limited economic activity. Cities such as Porto Murtinho in Brazil and Carmelo Peralta in Paraguay are locations that could experience economic growth and attract numerous logistics-related activities. These regions are also environmentally important due to their significant portions of the Pantanal, with abundant biodiversity and relative preservation. At this point, balancing economic development and environmental preservation is crucial.

The magnitude of the project, which will increase the flow of people, heavy trucks, and the establishment of services such as restaurants and hotels, makes effective environmental management imperative. The complexity of the project is further compounded by its transnational nature, involving cooperation between four countries whose territories will be traversed by the route. Brazil, Paraguay, Argentina, and Chile will need to create agreements and foster international cooperation to address the myriad of issues involved in the project, such as truck traffic through customs, the movement of people, monitoring systems, and, most importantly, environmental preservation.

Similar large-scale transportation corridor projects have been successfully implemented in other parts of the world. Examples can be found on different continents, accompanied by studies that have analyzed their successes and failures. Notably, "The WEB of Transport Corridors in South Asia" is a significant study that examined various corridors throughout Asia, including historical and contemporary transportation networks, and proposed an analysis framework containing guidelines for evaluating transport corridors.

Therefore, this study aims to apply the framework in the analysis of the Bioceanic Corridor, to ascertain if the concerns of local authorities encompass all the prescriptions of the model. Specifically, the goal is to describe the Bioceanic Corridor, to understand its scope, magnitude, and objectives. Afterward, the study seeks to verify whether the negotiations and meetings that define the course of the project are incorporating the best practices outlined in the framework, particularly concerning social responsibility.

Given that the Bioceanic Corridor is still in the implementation phase, with ongoing negotiations and meetings to finalize the project, Content Analysis is employed as the method to identify the main points of the corridor, its route, and proposals for environmental management interventions. Vergara (2005, p. 15) describes "Content Analysis as a technique for data treatment that aims to identify what is being said about a particular topic." Identifying what is being said involves analyzing journalistic materials, interviews, institutional documents, among others. Additionally, a literature review and document analysis are conducted to support the development of this work. The literature review is necessary for theoretical support and gathering information about the Bioceanic Corridor.

The choice of the analysis framework is justified by its promotion of broader economic benefits, encompassing social and environmental gains. The concern in question is fully aligned with the concept of Sustainable Development. Throughout this endeavor, prioritizing the reconciliation of economic development and environmental preservation, as well as the reduction

of risks and externalities, is crucial. The regions designated to receive the Bioceanic Corridor will face significant environmental impacts. Currently, these areas have limited economic activity and are distant from the major centers of South American countries. They are typically characterized by their rich fauna and flora, and they serve as subsistence locations for several indigenous communities, with their winding rivers cutting through the landscape.

The Brazilian Pantanal and the Paraguayan Chaco refers to regions within the same biome. These spaces remain preserved, among other factors, due to their geographical isolation and limited infrastructure. On the Paraguayan side, most roads still lack asphalt. In the border region, separated by the Paraguay River, only small-capacity ferries transport cars, making it impossible for trucks to cross. With the arrival of infrastructure, the region's fauna and flora will face constant traffic from cars and trucks, emissions of pollutants from fuel combustion, inevitable roadside wildfires, the establishment of commercial points, and human settlement.

2 THEORETICAL FRAMEWORK

On one hand, the economic benefits of projects are widely publicized and serve as a convincing factor for their implementation. On the other hand, poorly managed environmental impacts can lead to protests and opposition from non-governmental organizations and the public. Sanches (2000) explains this issue. The changes and transformations in the business world that have occurred in recent decades have led to demands for environmental control and responsibility. Globalization of production and consumption, new consumer demands, evolving values, and ideologies have resulted in more stringent expectations regarding product and company performance, "through the adoption of standards, monitoring, pollution reduction targets, and so forth" (Sanches, 2000, p. 77).

In this context, companies and governments aware of the importance of managing environmental impacts have embraced environmental management and its tools as a means of addressing environmental issues. To clarify the concept, the following definition is referred to:

Environmental management involves planning, organizing, and guiding a company to achieve specific environmental goals, analogous, for example, to what happens with quality management. An important aspect of environmental management is that its introduction requires decisions at the highest levels of administration and, therefore, sends a clear message to the organization that it is a corporate commitment. Environmental management can also become an important instrument for organizations in their relationships with consumers, the general public, insurance companies, government agencies, etc. (Nilsson, 1998, p. 134 *Apud* Corazza, 2003, p. 4).

Furthermore, the foundation for environmental management and concerns for preservation revolves around the concept of Sustainable Development. Mebratu (1998) provides a historical and conceptual review of the construction of the sustainable development concept in his work "Sustainability and Sustainable Development: Historical and Conceptual Review". Humanity has always been related to nature, but the perception of preservation or development without destroying the environment has evolved over time. Mebratu (1998, p. 497–500) describes the historical evolution of this notion, dating back to ancient religious contexts, highlighting classical thinkers such as Thomas Malthus and David Ricardo, who played fundamental roles in introducing this idea, culminating in the Stockholm Conference.

The Stockholm Conference in 1972 was the first United Nations conference to recognize the "importance of environmental management as a management tool" (Dubose et al., 1995 *apud* Mebratu, 1998). Simultaneously, the Club of Rome, a group of notable scientists, entrepreneurs, bureaucrats, and politicians, published the report "Limits to Growth." This report emphasized that industrial society would soon surpass ecological limits if it continued to promote the same type of development (Mebratu, 1998). This marks the beginning of the idea of reconciling development with conservation. In 1987, during the World Commission on Environment and Development, also known as the Brundtland Report, the document "Our Common Future" was produced, which introduced the well-known term "sustainable development": development capable of meeting the needs of the present without compromising the ability of future generations to meet their needs (WCED 1987, *apud* Mebratu, 1998).

This conceptual evolution promoted debates and awareness, but for practical implementation, it was necessary to reconcile the concepts with economic interests. In a deeper analysis of Mebratu's work (1998), two distinct approaches emerge that seek to develop tools to combat environmental degradation: the institutional approach and the academic approach, which offer valuable perspectives for improving environmental management strategies.

In the institutional version, satisfying needs within the concept of sustainable development is central. Basic needs are divided among three systems: economic, social, and biological. To avoid conflicts in this system and achieve the goals, institutions such as governments, communities, or corporations are necessary to manage the convergence of social, economic, and biological interests, reconciling them.

In the academic version, Mebratu (1998) discusses the responsibility that the scientific community has concerning the environment and highlights that the solutions offered by academia tend to involve pricing the environment. By analyzing the environment as commodities, a price is defined, and costs for degradation are imposed. What has no price is not valued.

Another current concept is Corporate Social Responsibility (CSR). Carroll and Shabana (2010) present the idea that businesses and companies have responsibilities to society beyond profitability. Companies have responsibilities in four areas: economic, legal, ethical, and philanthropic (Carroll; Shabana, 2010). Within the first two spheres, managers seek to maximize profits while complying with the law. The essence of CSR lies in the ethical and philanthropic spheres, where corporations undertake actions beyond normal expectations to improve society (Carroll; Shabana, 2010).

Waddock (2008) traces the evolution of Corporate Responsibility through the emergence of structures that promote its institutionalization. Organizations, management systems, consulting firms, responsible investment indices, reports, codes, aligned with societal expectations, are emerging, directing corporate management and government actions towards adopting more Corporate Responsibility, transparency, and accountability in all their projects.

With the consolidation of these concepts, transportation route construction projects are influenced to align with environmental responsibility.

3 FIT-2-DEEDS ANALYSIS FRAMEWORK

Specifically for the study of transport corridors, we turn to the framework developed jointly by the Asian Development Bank (ADB), the Department for International Development of the

United Kingdom (DFID), the Japan International Cooperation Agency (JICA), and the World Bank (WBG). These organizations, through their work titled "The WEB of Transport Corridors in South Asia", created an analytical model that integrates political, economic, and geopolitical spheres to empower authorities, stakeholders, and enable holistic evaluations of economic corridors. The focus is not only on immediate cost-benefit improvements but also on long-term gains. This model proves useful for predicting positive and negative effects of constructing logistic corridors and tailoring terms to the South American reality.

The first concept we refer to is the Economic Corridor. According to ADB *et al.* (2018), only those corridors that bring extensive economic benefits to the regions they pass through can be considered as economic corridors. Seeking comprehensive economic benefits should be the objective of the managers, as corridors bring immediate gains by reducing travel time between locations, lowering freight costs, and improving transportation. However, the most important impact is on the economic and social well-being, such as increased income, social inclusion, and environmental preservation (ADB *et al.*, 2018).

Thus, the model helps to perceive under which circumstances high investments yield positive and broad economic effects. These benefits may have different impacts, as exemplified by the following scenario: expanding a section may increase arable land, resulting in immediate income growth for the population but may have adverse long-term environmental effects (ADB *et al.*, 2018).

Delving directly into the model proposed by ADB *et al.*, its tools and characteristics are combined in the acronym FIT-2-Deeds (2018, p. 29). The name is catchy, and it can be loosely translated as "fit for action" or "fitting two actions". The acronym is based on the initials of the following processes: Flow of Expected Results, Intervention Design, and Impact Typology. The number 2 refers to the possibility of two complementary public interventions. Finally, "Deeds" refers to financing mechanisms and the implementation of the corridor.

To clarify, the Flow of Expected Results refers to the occurrence of immediate benefits that happen due to the construction of the project, such as increased trade, productivity, and business openings. Through all this, progress is made towards extensive economic benefits, which are the ultimate goals. The model describes five categories of economic benefits: social inclusion, inequality, environmental quality, and economic resilience. These points are influenced by other pre-existing complementary factors that must be taken into account, such as land prices or labor availability. The corridor influences and is influenced by these factors, rearranging them; for example, the lack of labor can be resolved by facilitating migration through the corridor.

The letter "I" refers to Intervention Design. Given the numerous impacts generated, it is necessary not only to conceive the construction of a road but also to take other parallel actions, such as negotiations to facilitate border crossings, free trade zones, financing, and institutions for joint management. Certain impacts can lead to synergy, where improvement in one area benefits another. On the other hand, improvements in one area may impose costs on others, necessitating consideration of compensation.

Aligned with the above and clarifying the meaning of the number 2 in the acronym, the stages of intervention and impact assessment must be considered together, merging them to anticipate problems and achieve objectives. There will always be winners and losers, and policymakers need a clear understanding of the impact hierarchy to improve the distribution of benefits.

The word "Deeds" is plural because it contains two meanings. Firstly, planning corridor financing involves considering how the cost will be imposed on society and how gains will be distributed. Will taxes fund the project, or will tolls be charged, for example? Are there funds to cover costs? Strategies must be used to avoid public discontent when costs are too high or when other urgent areas could also be invested in.

The second meaning of "Deeds" pertains to consolidating the implementation of the project. At this stage, the work highlights four crucial points. Firstly, integrating expertise among sectors is essential since, in addition to infrastructure and finances, knowledge of urbanization and environmental preservation must be integrated. Secondly, the collaboration of local and federal governments is necessary. The corridors pass through states and municipalities but depend on national management to allocate resources, manage the environment, register and compensate populations. Frictions between government spheres are common at this stage. Thirdly, attracting the private sector is also crucial for financing, construction, and future use of the corridor. This necessitates good governance. Lastly, to manage all these points and address cross-border issues, international institutions must be created. They should understand and address regional and transnational differences, provide resources in different ways, financing, and capacities, and reduce asymmetries to avoid failure.

4 THE BIOOCEANIC CORRIDOR

According to Lima (1996), can be defined as land bridges that connect markets of distant continents, linked by various modes of transportation, including roads, railways, and waterways, which complement each other to form a viable route.

Researching about the biooceanic corridor in academic texts or news websites, we find several proposals, different routes, and various modes of transportation. The Biooceanic Road Corridor would be a project easier to implement compared to a railway project and gained new momentum with the Paraguayan government confirming the paving of the roads in the Chaco region and the agreement with Brazil for the construction of a bridge over the Paraguay River, connecting the cities of Porto Murtinho and Capitão Carmelo Peralta. In summary, this corridor starts at the port of Santos in São Paulo, goes through the interior of the state until reaching Mato Grosso do Sul, including its capital, Campo Grande, and its southern portion. It then crosses the Paraguayan border, passing through the departments of Alto Paraguay and Boqueirón, enters the northern region of Argentina, and then heads to Chile, reaching the port of Antofagasta.

The antecedents of the project date back to the year 2000 when the international organization called South American Regional Infrastructure Integration (IIRSA) was created, comprising all South American countries to study methodologies and options for the physical integration of the continent (Honório, 2017). In 2009, IIRSA was incorporated into the South American Council for Infrastructure and Planning (COSIPLAN) (Honório, 2013). Since then, COSIPLAN's studies have contributed to defining the concept of Transport and Development Axes, which are, according to Camacho and Molina (2005), stretches that extend between national territories, comprising natural resources, human settlements, productive areas, and logistic services, which, when articulated by transport, energy, and communication infrastructure, facilitate the flow of goods and services between all territories.

Analyzing the South American continent, IIRSA defined regions with great potential to receive infrastructure and become axes of integration and cargo flow, classifying them as follows:

Andean Axis, Southern Andean Axis, Paraguay-Paraná Waterway Axis, Capricorn Axis, Amazon Axis, Guianas Shield Axis, Southern Axis, Central Interoceanic Axis, Mercosur-Chile Axis, and Peru-Brazil-Bolivia Axis (Honório, 2013).

The Capricorn and Central Interoceanic Axes deserve attention as they encompass the region of the Bioceanic Corridor under analysis. The Brazilian Development Bank well describes the areas of these axes:

The area of influence of the Central Interoceanic Axis includes the departments of Arequipa, Moquegua, Puno, and Tacna in Peru; the Regions XV and I (Arica and Tarapacá, respectively), Puno, and Loa Province in the Antofagasta Region of Chile; the departments of Beni, La Paz, Oruro, Potosí, Tarija, Cochabamba, Chuquisaca, and Santa Cruz in Bolivia; the entire Paraguay; and the states of Mato Grosso, Mato Grosso do Sul, Rio de Janeiro, São Paulo, and Paraná in Brazil. [...] The Capricorn Axis specifically comprises the states of Paraná, Santa Catarina, and Rio Grande do Sul in Brazil; the Tarija Department in Bolivia; the entirety of Paraguay; the Argentine provinces of Salta, Jujuy, Catamarca, La Rioja, Formosa, Chaco, Misiones, Corrientes, Tucumán, and Santiago del Estero; and the Second and Third regions (Antofagasta and Atacama) of Chile. (Banco Nacional de Desenvolvimento Econômico e Social –[BNDES], 2011, p. 62)

The impacts on these areas will be inevitable. The proposal of the corridor will encourage the movement of people, aiming at the integration of countries and their peoples. Thus, environmental management must be careful, as prohibiting circulation will not be possible, making it essential to manage it efficiently. Barza and Cavalcante Filho (2017, p. 231) analyzed the freedom of movement of people as a way to consolidate this regional integration:

[...] the fact that economic integration processes, marked by the reconfiguration of state sovereignty and the need to adopt common rules for the integration model, lead to the creation of common spaces for member states, where specific rules are observed to meet the objectives of the bloc.

Given the geographic dimension of the project, the need for political coordination becomes evident to achieve positive results and address environmental impacts. Currently, the works are in progress, and the physical integration will occur, while cooperation policies and environmental management are still under negotiation. For this reason, a comparison is sought with other examples of operational corridors.

5 APPLYING FIT-2-DEEDS TO THE BIOCEANIC CORRIDOR

In accordance with the methodology of content analysis, we turned to news published on websites and portals to verify how negotiations for the planning of the corridor are progressing. The economic advantages that the Bioceanic Corridor will bring are clear and can be found in the statements of authorities who emphasize the reduction in transportation time, freight costs, and increased competitiveness of South American products.

According to the theoretical framework, the initial proposal of the FIT-2-Deeds Framework is to predict the broader end goals of the corridor that will be achieved through initial interventions and complementary measures. For example, economic development in the region could occur simply by constructing a bridge. These objectives are evident in the following paragraphs.

In July 2019, the 71st Annual Meeting of the Brazilian Society for the Progress of Science was held at the Federal University of Mato Grosso do Sul. During the meeting, a conference

discussing the corridor took place, with the presence of chancellors and authorities, and Senator Nelsinho Trad's statements reflect enthusiasm for the project:

This project will stimulate the development of this entire region. Chilean, Argentine, and Paraguayan products will enter Brazil through Porto Murtinho, Corumbá, and Ponta Porã, and products from the region will reach more distant markets at more competitive prices," assured the senator. Another significant gain will be the reduction in travel time and transportation costs. When operational – the projection is within two to three years – it will be possible to transport goods from MS to Chile within two to three days and ship products destined for Asia, the United States, Mexico, and Canada. "Businesses in MS will find more efficient and less congested ports in Chile compared to those in Brazil, saving \$780 per container to Asia. MS will be a major national hub, distributing inputs and products to the North, Northeast, and Midwest of Brazil," Nelsinho Trad stated. Shorter distances will facilitate the exchange of perishable products such as fruits, vegetables, meats, and dairy, increasing competitiveness between imported and exported products (Universidade Federal de Mato Grosso do Sul [UFMS], 2019, *s.p.*).

The municipality of Porto Murtinho in western Mato Grosso do Sul is at the center of this potential economic transformation. The municipality is separated from Paraguay by the homonymous river, has a port terminal, and three others under construction while awaiting the new bridge over the river. The flow of trucks could increase up to 700 vehicles per day in the municipality (Viegas, 2019).

In 2019, in the city of Campo Grande, the 8th Meeting of the Bioceanic Road Corridor coordinated by the State Government and representatives of the countries involved took place: João Carlos Parkinson for Brazil, Monica Dinucci for Argentina, Roberto Ruiz for Chile, and Gloria Amarilha for Paraguay. The Institute of Applied Economic Research (IPEA) also participated in the working group, along with other authorities, including the then Minister of Foreign Affairs, Ernesto Araújo. The meeting "organized activities in five working groups on infrastructure, transport, and logistics; production and trade; simplification of customs procedures; university network; and tourism" (IPEA, 2019, *s.p.*). As per the theory, immediate trade gains consolidate broader economic benefits, and during this meeting, the perspective of the state becoming a logistics and processing center for products and inputs from the Asia-Pacific and Southern Cone to other Brazilian states was also analyzed (IPEA, 2019).

During the VIII Meeting, as reported on the website of the government of Mato Grosso do Sul, the perception of benefits for tourism was also noted. According to João Carlos Parkinson de Castro, the coordinator of the Bioceanic Corridor in Brazil, a tourism brand will be launched to strengthen the route. "We also identified the need to map the main tourist attractions along the route," he said. In the future, the group wants to launch a tourism observatory for the stretch (Chaves, 2019, *s.p.*).

Moving on, the "I" of the FIT-2-Deeds Model refers to the form of intervention and other parallel measures depending on the level of ambition with the project. This means that it is not only necessary to build a highway but also to take other actions, such as resolving customs differences to streamline traffic between borders. This issue was addressed in the analysis by Marcelo Miglioli, State Secretary for Infrastructure of Mato Grosso do Sul:

The issue of simplification and streamlining of customs procedures between Brazil, Paraguay, Argentina, and Chile must be resolved simultaneously with the execution of physical works to ensure the implementation of the land road route that connects the Brazilian South-Central to Chilean ports (TV Morena, 2017, *s.p.*).

Currently, there are eight toll booths on the corridor route that need intervention for reduction or simplification through a single payment system or electronic payments.

Another complementary action not present in the news but which could be adopted is the creation of an international body or organization to manage the corridor. The existence of such an organization is common in other corridors around the world, following the principles of FIT-2-Deeds. Examples include the Transit and Transport Corridor in the north, located in the eastern part of Africa, which has had a coordinating authority since its inception to monitor its performance and transform the commercial route into a transparent, efficient, intelligent, and green corridor of economic development (Northern Corridor Transit and Transport Coordination Authority [NCTTCA], 2019).

Furthermore, the increased flow of goods and the transformation of cities will alter the demand for skilled labor. With the construction of the new bridge and new cargo terminals, qualified labor will be required, as otherwise bottlenecks will persist. Minister João Carlo Parkinson stated in one of the meetings:

We must promote alliances between universities, expand links with companies, attract talent, work through collective actions, and not in isolation. MS is shifting from being a mere receiving market to becoming a cargo redistributor. We are transforming the territorial reality (UFMS, 2019, *s.p.*).

The "T" in the model aims to predict how actions in one area affect others, and thus, attention must be paid to the gains and losses provided and to prioritize the impacts. During a meeting held in Porto Murtinho by the University Network of the Latin American Integration Route (UniRila), the working group reflected on the social impacts by discussing "the conditions of vulnerability and social risks of the populations that make up the territory reached by the Bioceanic Route, as well as establishing indicative public policies for local, regional, and national governments" (UFMS, 2019, *s.p.*). Social, educational, and vulnerability conditions of children, youth, and indigenous people were also discussed by participants from the National University of Asunción (UNA), as well as representatives from UFMS, Dom Bosco Catholic University (UCDB), and the State University of Mato Grosso do Sul (UEMS). The group's presence is positive, and their work is still in the stage of choosing methodologies and researchers for the studies (UFMS, 2019).

According to the information available on the UFMS website, it is evident that the impact studies were driven by movements to begin the construction works, but they were not approached from a holistic perspective. This can be observed in the statement of federal deputy Vander Loubet (PT-MS), as reported in the news:

I am very excited about this study. It is essential that we have a diagnosis of what the Bioceanic Route represents for Mato Grosso do Sul in economic, social, political, cultural, etc. terms. The bridge over the Paraguay River will begin this year, and it is essential that we start planning now to ensure that it guarantees the maximum possible benefit for our state (Bueno, 2019, *s.p.*).

Entering the prescriptions corresponding to number 2 in FIT-2-Deeds, according to the model, the stages of intervention and impact typologies should be considered together to reduce costs. This point proves to be problematic as the negotiations and agreements for the works are thought of in isolation from other measures. The tender for the construction of the bridge over the Paraguay River was launched by the Itaipu Binacional Energy Generator and was prepared by representatives of both countries with details of the tender, financing, and environmental

licensing but without considering other impacts or foreseeing socio-environmental management (Viegas, 2018).

Numerous communities and ethnicities, with different lifestyles and cultures, live along the route, and the implementation will cause cultural and social impacts of dimensions not yet foreseen, as disclosed by the actions of the University Network of the Latin American Integration Route-UniRila on its website:

The knowledge produced by the Universities can contribute to an inventory of the living conditions of the peoples in the regions, their capacities, potentials, cultures, forms of organization, vulnerabilities, and needs. This information is necessary for the establishment of strategies that allow the overcoming of natural risks to the construction and operationalization of the route (Rosa *et al.*, 2019, *s.p.*).

Regarding Deed, in its first interpretation, it encompasses the financing of the project. It is noticeable that each country pursues its project according to its local legislation, with specific tenders without forecasting resources for the entirety of the works. The Itaipu Binacional company will be responsible for financing the construction of two bridges over the Paraguay River, and the resources for the Porto Murtinho bridge come from the Paraguayan side (Itaipu Binacional, 2019). Paraguay is moving at an accelerated pace on the pavement of the Transchaco Highway and delivered the first 40 kilometers of the total 277 kilometers in the country ahead of schedule (Siqueira, 2019, *s.p.*). Despite the progress, there are no guarantees against funding interruptions if political will changes because without the complete paving, the project cannot be concluded.

On the Brazilian side, the works are also carried out through parliamentary amendments that are not constant. It is possible to find reports describing the concern of politicians in search of funds, without which the entire project becomes unfeasible. During a meeting at the Ministry of Infrastructure alongside representatives of the executive and legislative branches, Deputy Dr. Luiz Ovando-PSC said:

We were astounded to see that the funding to conclude the feasibility study of the Bioceanic [Route] was cut, which is already underway. We need about R\$770 thousand. A Ministry that does not have R\$1 million for a project of this scope, like the Bioceanic Route, has to close its doors (Belo, 2019, *s.p.*).

Finally, the application of the second sense of the word Deeds is essential to consolidate the project, aligning collaborations from various areas of knowledge, coordinating the actions of various government spheres, and attracting private investments. As already explained during the analysis, there is no coordination in this sense. The Bioceanic Route is a possibility and is being constructed through small steps, by different actors, with a common direction but without coordination. Studies related to Environmental Responsibility are few and carried out within universities. The necessary funds are not guaranteed and may be subject to budget cuts due to the current economic slowdown.

A good comparison can be drawn when observing the network of corridors in Europe. The important step towards the consolidation of European corridors was the formulation of the Trans-European Transport Network (TEN-T). Each European country already had its road network implemented, but without integration, and the objective of the TEN-T "was to create a network of infrastructure that facilitates the movement of goods and people between the countries of the European Union. This network should cover 90,000 km of motorways and high-quality roads by 2020" (COMISSÃO EUROPEIA, 2014, *s.p.*).

Difficulties were encountered in implementing the trans-European transport network as the countries continued, predominantly, to pursue their internal interests. Vassallo-magro and Baeza-muñoz (2011) summarize the central points that were identified and addressed by the European Union as difficulties for agreements between countries, lack of community financing funds, and isolated regions that did not converge towards the objective. Due to these problems and the growing concern for the environment, the European Union approved new guidelines for the project involving coordination between the member countries of Europe and significant investments in transport infrastructure. To finance these projects, resources are mobilized from European funds and also encourage public-private partnerships.

6 CONCLUSIONS

It is noted that there is some convergence between points of the model and the studied reality, but there are numerous inadequacies. The prescriptions of the FIT-2-Deeds Framework may be useful for the future of the Bioceanic corridor, also contributing to the notion of social responsibility. The Framework is a good tool for analyzing and planning transportation corridors. It is a complete and complex tool that can contribute to the improvement of the Bioceanic Corridor. Its applicability in the studied context reveals the persistence of several problems.

There is no coordinating body or supranational organization for the overall administration of the adopted policies and measures. Although numerous meetings between authorities of the countries occur, it cannot be said that there is a common policy. There is a desire to complete the new route, considering its significant economic benefits and its alternative for the export of Brazilian grains and a solution to the geographical isolation of other countries. However, it will still be necessary to remove bottlenecks and technical barriers, as well as strengthen social, economic, and territorial cohesion.

Promoting better governance is crucial in such complex agreements with public and private participation. According to Frederickson (2004, p.20), the interaction between public and private actors in public administration is recurrent, and governance is defined as rules and procedures that direct the expectations of actors towards a goal.

REFERENCES

ASIAN DEVELOPMENT BANK [ADB]; UK DEPARTMENT FOR INTERNATIONAL DEVELOPMENT [DFID]; JAPAN INTERNATIONAL COOPERATION AGENCY [JICA]; WORLD BANK GROUP [WBG]. Forthcoming. *The WEB of Transport Corridors in South Asia*. Washington, DC: World Bank, 2018.

BARZA, E. C. N. R.; CAVALCANTE FILHO, J. M. M. A liberdade de circulação de pessoas e a construção de espaços comuns em processos de integração regional: uma análise do Espaço Europeu de Liberdade, Segurança e Justiça e as perspectivas para o espaço de livre residência no âmbito do MERCOSUL. *Revista da Faculdade de Direito da UFRGS*, Porto Alegre, v. 36, n. esp., p. 221–46, Oct. 2017.

BELO, R. Ministro promete contemplar Bioceânica após pressão de MS. *Jornal O Estado MS*, Campo Grande, MS, 19 set. 2019. Disponível em: <https://oestadoonline.com.br/2019/09/19/ministro-promete-contemplar-bioceanica-apos-pressao-de-ms/>. Acesso em: 1º Dec. 2019.

BANCO NACIONAL DE DESENVOLVIMENTO ECONÔMICO E SOCIAL [BNDES]. *Corredor Bioceânico Ferroviário: estudos técnicos referentes ao Eixo de Capricórnio Relatório Consolidado*. Rio de Janeiro: Híbrida, 2011.

BUENO, L. *Universidade irá realizar pesquisas sobre os impactos da Rota Bioceânica*. Campo Grande: UFMS, 2019. Disponível em: <https://www.ufms.br/universidade-ira-realizar-pesquisas-sobre-os-impactos-da-rota-bioceanica/>. Acesso em: 1º Nov. 2019.

CAMACHO, G. H.; MOLINA, S. *IIRSA y la integración regional*. OSAL (Observatório Social de América Latina). Buenos Aires: Clacso, n. 17, May-Aug./2005.

CARROLL, A. B.; SHABANA, K. M. The business case for corporate social responsibility: a review of concepts, research and practice. *International Journal of Management Reviews*, Reino Unido, v. 12, n. 1, p. 85–105, 2010.

CHAVES, B. Encontro do Corredor Bioceânico avança em projetos turísticos, culturais e comerciais. *Portal do MS*, Campo Grande, MS, 2019. Disponível em: <http://www.ms.gov.br/encontro-do-corredor-bioceanico-avanca-em-projetos-turisticos8-culturais-e-comerciais/>. Acesso em: 7 Nov. 2019.

CORAZZA, R. I. (2003). Gestão ambiental e mudanças da estrutura organizacional. *RAE eletrônica*, São Paulo, v. 2, n. 2, Dec. 2003.

COMISSÃO EUROPEIA. *Horizon 2020 em breves palavras: o programa-quadro de investigação e inovação da UE*. Luxemburgo: Comissão Europeia, Direção-Geral da Investigação e da Inovação, 2014.

FREDERICKSON, H. G. Whatever happened to public administration? Governance, governance everywhere. *The Oxford handbook of public management*, [s.l.], p. 282-304, Jan. 2004.

HONÓRIO, K. S. *O significado da iniciativa para a integração da infraestrutura regional Sul-Americana (IIRSA) no regionalismo Sul-Americano (2000-2012): um estudo sobre a iniciativa e a participação do Brasil*. 2013. 135 f. Dissertação (mestrado em Relações Internacionais) – UNESP/UNICAMP/PUC-SP, Programa San Tiago Dantas, 2013. Disponível em: <http://www.hdl.handle.net/11449/128074>. Acesso em: 2 Nov. 2019.

HONÓRIO, K. H. IIRSA – Iniciativa para a Integração da Infraestrutura Regional Sulamericana. *Observatório de Regionalismo*, [s.l.], 2017. Disponível em: <http://observatorio.repri.org/artigos/glossary/iniciativa-para-a-integracao-da-infraestrutura-regional-sulamericana-iirsa/> Acesso em: 3 Oct. 2019

INSTITUTO DE PESQUISA ECONÔMICA APLICADA [IPEA]. Ipea coordena debate na VIII Reunião do Corredor Rodoviário Bioceânico. IPEA, [s.l.]. 2019. Disponível em: http://www.ipea.gov.br/portal/index.php?option=com_content&view=article&id=34990 Acesso em: 2 Nov. 2019.

ITAIPU BINACIONAL. Financiada por itaipu, ponte da integração vai receber peça de 60 toneladas. [s.l.], 2019. Disponível em: <https://www.itaipu.gov.br/sala-de-imprensa/noticia/financiada-por-itaipu-ponte-da-integracao-vai-receber-peca-de-60-toneladas#:~:text=A%20obra%20%C3%A9%20financiada%20pela,Pac%C3%ADfco%2C%20via%20portos%20do%20Chile>. Acesso em: 20 Aug. 2020.

MEBRATU, D. Sustainability and sustainable development: historical and conceptual review. *Environmental impact assessment review*, [s.l.], v. 18, n. 6, p. 493–520, 1998.

NORTHERN CORRIDOR TRANSIT AND TRANSPORT COORDINATION AUTHORITY [NCTCA]. Northern Corridor Strategic Plan 2017-2021. *Northern Corridor Transit and Transport Coordination Authority*, [s.l.], 2019.

ROSA, E.; CASTRO, E.; QUEIROZ, T. UniRila Rede Universitária da Rota de Integração Latino Americana. *ACS/UEMS & Projeto Mídia e Ciência*, Campo Grande, MS, 2017. Disponível em: <http://www.uems.br/midiaciencia/unirila/>. Acesso em: 30 Nov. 2019.

SANCHES, C. S. Gestão ambiental proativa. *Revista de Administração de Empresas*, v. 40, n. 1, p. 76–87, 2000.

SIQUEIRA, R. Paraguai inaugura 40 km de rodovia porta de entrada da Rota Bioceânica. *Campo Grande News*, Campo Grande, MS, 2019. Disponível em: <https://www.campograndenews.com.br/economia/paraguai-inaugura-40-km-de-rodovia-porta-de-entrada-da-rota-bioceanica>. Acesso em: 1º Dec. 2019.

TV MORENA. *Questão alfandegária tem que andar simultaneamente a obras para implantação da rota, diz secretário*. Campo Grande, 2017. Disponível em: <https://g1.globo.com/mato-grosso-do-sul/rila/noticia/questao-alfandegaria-tem-que-andar-simultaneamente-a-obras-para-implantacao-da-rota-diz-secretario.ghtml>. Acesso em: 15 out. 2019.

UNIVERSIDADE FEDERAL DE MATO GROSSO DO SUL. Conferência Rota Bioceânica apresenta discussões sobre oportunidades econômicas e científicas. Campo Grande, MS: UFMS, 2019. Disponível em: <https://www.ufms.br/conferencia-rota-bioceanica-apresenta-discussoes-sobre-oportunidades-economicas-e-cientificas/>. Acesso em: 2 Nov. 2019.

VASSALLO-MAGRO, J. M.; DE LOS ÁNGELES BAEZA-MUÑOZ, M. Las redes transeuropeas de transporte, RTE-T. *International Law – Revista Colombiana de Derecho Internacional*, [s.l.], 19, p. 39–73, 2011.

VERGARA, S. *Métodos de pesquisa em administração*. São Paulo: Atlas, 2005.

VIEGAS, A. Com rota bioceânica e três novos portos, cidade de MS deve se transformar em ‘hub logístico’ do país. *G1 Mato Grosso do Sul*, Campo Grande, MS, 2019. Disponível em: <https://g1.globo.com/ms/mato-grosso-do-sul/noticia/2019/07/20/com-rota-bioceanica-e-tres-novos-portos-cidade-de-ms-deve-se-transformar-em-hub-logistico-do-pais.ghtml>. Acesso em: 7 Nov. 2019.

VIEGAS, A. Promulgado acordo para construção de ponte ligando Brasil ao Paraguai por MS e licitação pode sair ainda em 2018. *G1 Mato Grosso do Sul*, Campo Grande, MS, 2018. Disponível em: <https://g1.globo.com/ms/mato-grosso-do-sul/noticia/2018/08/17/promulgado-acordo-para-ponte-ligando-brasil-ao-paraguai-por-ms-e-licitacao-pode-sair-ainda-em-2018.ghtml>. Acesso em: 29 Nov. 2019.

WADDOCK, S. Building a new institutional infrastructure for corporate responsibility. *Academy of Management perspectives*, [s.l.], v. 22, n. 3, p. 87–108, 2008.

About the authors:

Maria Aparecida Farias de Souza Nogueira: Doutora em Ciências Ambientais e Sustentabilidade Agropecuária pela Universidade Católica Dom Bosco (UCDB). Mestre em Agronegócios, especializada em Contabilidade Gerencial e em Gestão Pública, e graduada em Ciências Contábeis pela Universidade Federal de Mato Grosso do Sul (UFMS). Atualmente é docente da Universidade Federal da Grande Dourados (UFGD), lotada na Faculdade de Administração, Contábeis e Economia (FACE). **E-mail:** mfsouzan@yahoo.com.br, **Orcid:** <https://orcid.org/0000-0001-8410-666X>

Renan Mendes Camargos: Graduado em Relações Internacionais pela Pontifícia Universidade Católica de Minas Gerais (PUC-MG). Assistente em Administração da Universidade Federal da Grande Dourados. **E-mail:** renanmcamargos@gmail.com, **Orcid:** <https://orcid.org/0000-0001-6362-9904>

Vera Luci de Almeida: Doutora em Engenharia e Gestão do Conhecimento pela Universidade Federal de Santa Catarina (UFSC). Vice-Coordenadora do Programa PROFIAP da Universidade Federal da Grande Dourados (UFGD). **E-mail:** veraalmeida@ufgd.edu.br, **Orcid:** <https://orcid.org/0000-0003-1020-9169>