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THEMATIC ARTICLE

Governance arrangements for socio-environmental sustainability in the implementation of large infrastructure projects in the Brazilian Amazon

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Abstract

This article explores governance arrangements' conditions to attend socio-environmental demands from local communities in the context of megaprojects. Specifically, we investigate how the causal conditions "social participation effectiveness," "political entrepreneurs," "governmental coordination," "public budget," "political priority," and "administrative capacity" are mobilized in sustainable territorial development plans – governance arrangements to attend socio-environmental demands – in the context of infrastructure megaprojects in the Brazilian Amazon. We applied Mill's method of difference to compare the role of these conditions in processing five socio-environmental demands claimed in the context of the implementation of the Belo Monte hydroelectric plant and paving BR-163. The results indicate that the relevance of these conditions depends on context, and only the condition "social participation effectiveness" was shared by all the successful cases.

Keywords: Infrastructure megaprojects management. Project's sustainability management. Governance arrangements. Territorial development plans.

Arranjos de governança para a sustentabilidade socioambiental na implantação de grandes projetos de infraestrutura na Amazônia brasileira

Resumo

A motivação deste artigo é explorar as condições dos arranjos de governança para atender às demandas socioambientais das comunidades locais no contexto de megaprojetos. Especificamente, investigamos como as condições causais "efetividade da participação social", "empreendedores políticos", "coordenação governamental", "orçamento público", "prioridade política" e "capacidade administrativa" são mobilizadas em arranjos de governança de planos de desenvolvimento territorial sustentável para atender demandas socioambientais no contexto de megaprojetos de infraestrutura na Amazônia brasileira. Aplicamos o método da diferença de Mill para comparar o papel dessas condições no processamento de cinco demandas socioambientais reivindicadas no contexto da implantação da hidrelétrica de Belo Monte e da pavimentação da BR-163. Os resultados indicam que a relevância dessas condições depende do contexto, e apenas a condição "efetividade da participação social" foi compartilhada por todos os casos de sucesso.

Palavras-chave: Gestão de megaprojetos de infraestrutura. Gestão de sustentabilidade do projeto. Arranjos de governança. Planos de desenvolvimento territorial.

Arreglos de gobernanza para la sostenibilidad socioambiental en la implementación de grandes proyectos de infraestructura en la Amazonía brasileña

Resumen

La motivación de este artículo es explorar las condiciones de los arreglos de gobernanza para atender las demandas socioambientales de las comunidades locales en el contexto de los megaproyectos. Especificamente, investigamos cómo las condiciones causales "eficacia de la participación social", "empreendedores políticos", "coordinación gubernamental", "presupuesto público", "prioridad política" y "capacidad administrativa" se movilizan en arreglos de gobernanza de planes de desarrollo territorial sostenible para atender demandas socioambientales en el contexto de megaproyectos de infraestructura en la Amazonía brasileña. Aplicamos el método de diferencia de Mill para comparar el papel de estas condiciones en el procesamiento de cinco demandas socioambientales reclamadas en el contexto de la implementación de la hidroeléctrica de Belo Monte y la pavimentación de la carretera BR-163. Los resultados indican que la relevancia de estas condiciones depende del contexto, y solo la condición "eficacia de la participación social" fue compartida por todos los casos exitosos.

Palabras clave: Gestión de megaproyectos de infraestructura. Gestión de la sostenibilidad de proyectos. Arreglos de gobernanza. Planes de desarrollo territorial.

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INTRODUCTION

The motivation of this paper is to explore governance arrangements' conditions to attend socio-environmental demands from local communities in the context of megaprojects. Megaprojects are a massive investment in infrastructure, planned by the governments, which have high complexity, long lifespans, and social impacts (Sun & Zhang, 2011). They are tools to enhance countries' economies and satisfy human social and economic needs (Jia, Yang, Wang, Hong, & You, 2011). Despite that, megaprojects management is extremely challenging since they face intense pressure to mitigate social and environmental impacts (Capka, 2004). Megaproject management is especially tricky in emergent economies, where studies have associated the implementation of these projects with a lack of local benefits and uneven distribution of negative impacts (Abers, Oliveira, & Pereira, 2017; Gregory, 2020). In the case of the Brazilian Amazon, the investment in massive infrastructure projects – such as hydroelectric plants and roads – has been causing immense socio-environmental distress in local communities (Fleury & Almeida, 2013; Gomide, Pereira, & Machado, 2019). Based on this evidence, some studies have reinterpreted the meaning of “project success” to incorporate not only the compliance with scope, time, and cost objective but also the minimization of socio-environmental impacts in local communities (Bornstein, 2010; Carvalho & Rabechini, 2017; Sabini & Alderman, 2021).

The recognition of the socio-environmental challenges caused by megaprojects and the expansion of the concept of project success has strengthened two subfields inside this debate: project sustainability management and stakeholder governance. Whereas the first is associated with the Triple Bottom Line (TBL) concept of harmony between economic, social, and environmental interests (Elkington, 1997; Huemann & Silvius, 2017); the second can be understood as the coordination of the demands of the affected by the construction project life cycle (Maddaloni & Davis, 2017). Both are associated positively with overall project success (Carvalho & Rabechini, 2017; Sabini & Alderman, 2021), and there is also a connection between them since addressing sustainability in project management is a balancing act of the priorities and concerns of different stakeholders (Eslerod & Huemann, 2013; Sabini & Alderman, 2021). However, there is still a lack of research about stakeholders' management in the context of megaprojects, as pointed out by Mok, Shen, and Yang (2015). Studies on the management of external or secondary stakeholders – the actors who do not have a formal contractual link with the project or direct legal authority, such as the local community impacted by the project in their daily lives (Eesley & Lexonx, 2006) – and governance arrangement mechanisms to include their demands are still incipient (Carvalho & Rabechini, 2017; Derakhshan, Turner, & Mancini, 2019; Maddaloni & Davis, 2017). Besides, from a practical standpoint, managerial attention has traditionally excluded local community demands (Maddaloni & Davis, 2017).

We aim to contribute to this debate by studying new governance arrangements to project sustainability and stakeholders' management in the context of implementing two megaprojects in the Brazilian Amazon: the Belo Monte Hydroelectric Plant and the paving of the BR-163 road. By governance arrangements, we mean patterns of interaction between the State and society, where social problems are identified, public policies are designed, and where the dispute over the legitimacy and implementation of public actions occurs (Capano, Howlett, & Ramesh, 2015). These arrangements are comprised of actors, coordination mechanisms, and policy instruments, enabled by a set of resources (Bouckaert, Peters, & Verhoest, 2010; Steurer, 2013).

We explore the governance arrangements of two sustainable territorial development plans to process the socio-environmental demands of the local community affected by the two mentioned megaprojects: the Xingu Regional Sustainable Development Plan (Plano de Desenvolvimento Regional Sustentável do Xingu – PDRSX), in the scope of the planning of Belo Monte, and the BR-163 Sustainable Plan. The federal government planned both to mitigate the impacts of the infrastructure megaprojects and, at the same time, allow the State to use these projects as vectors of regional development in peripheral territories, which are difficult to penetrate by public power (Pereira, 2014; Pereira & Gomide, 2019). Specifically, the BR-163 Sustainable Plan was a pilot experience by the federal government, first elaborated in 2004 by an interministerial work group. The plan's formal document contains strategic guidelines and priorities to direct socio-environmental public policies in the territory of influence of the BR-163 road (Ministério do Planejamento, Orçamento e Gestão, 2004). The management of the plan had the formal participation of actors from civil society and the federal and local government (Abers et al., 2017). The PDRSX was created in 2010, based on Federal Decree nº 7340/2010 (Decreto nº 7.340, de 21 de outubro de 2010), to implement public policies and

initiatives that promote sustainable development and improve the quality of life of people who live in 12 municipalities under the influence of UHE Belo Monte (Presidência da República, 2010). The plan's management also involved the participation of civil society organizations, local communities, and governmental agencies (Rios, 2013).

We focus on the following research question: what are the Plans' governance arrangements conditions that enable the processing of socio-environmental demands from the moment they are formally incorporated as "actions" in the Plans? "Actions" are defined as a set of policies considered by the Plans as priority to boost sustainable territorial development. In particular, we verified which are the causal conditions that are sufficient for the Plans' actions to be transformed into governmental instruments, projects, or programs that satisfy the demands of the affected community. Ika (2015) and Ika and Donnelly (2017) proposed three main conditions categories for project success: structural, managerial, and institutional. These conditions are defined as necessary¹ by the authors since they are "essential to the final outcome" (Ika & Donnelly, 2017, p. 48), what means that they need to be present to project success. Also, these conditions are presented as complementary, what means that in a case they must be combined to produce project success. In this paper, we focus on sufficient conditions since they play a different causal role to produce project success. Differently from necessary conditions, sufficient conditions are defined as those that alone produce the outcome of interest, even though they need not be present to occur (Beach & Pedersen, 2016). The investigation of sufficient conditions is important because they have been underexplored by previous research about project success. Also, since these conditions are sufficient alone to produce an outcome, testing them have practical implications for project management as it indicates which conditions are able to trigger alone an outcome in specific cases.

This study has as its unit of analysis cases of socio-environmental demands brought forward in the context of the implementation of the Belo Monte hydroelectric plant and the paving of the BR-163 road and formally incorporated as actions in the PDRSX and the BR-163 Sustainable Plan, respectively. This approach was chosen because it allows an analysis of the effectiveness of the Plans, not in general terms, as done by previous studies (such as Abers et al., 2017; and Pereira & Gomide, 2019), but based on the management of five specific demands: environmental protection and productive inclusion, in the scope of the BR-163 Plan; health infrastructure, environmental protection and demands of the extractivist peoples of Terra do Meio (TM), in the context of the PDRSX. This approach makes it possible to study the internal heterogeneities of the plans about their capacity to process specific demands. Furthermore, this research design represents an innovative contribution to studies on the management of socio-environmental demands in the context of large projects since previous studies have chosen infrastructure projects as the unit of analysis (Abers et al., 2017) or the Plans themselves (Gomide & Pereira, 2019; Grisotti, Felipe, & Ramos, 2020).

The time frame of analysis for the PDRSX cases is 2011, which sets the beginning of its implementation (Rios, 2013), up to 2016, a time of changes in the management of the Plan due to leadership ruptures in the federal government. For the cases of the BR-163 Plan, we focus on the years between 2004 - when the preliminary version of the plan was published - and 2011, marked by its demobilization (Leão, 2017). In both, the criterion to define the time frame was first the initial period of planning and implementation of each Plan; and second the moment of contextual change, which is important since case-based studies require contextual homogeneity. The two plans were elaborated in a participatory manner and, thus, the actions foreseen by them present convergence with the historical and more persistent demands related to the two works. However, according to Kingdon (1984), the problems or demands inserted in the government agenda are not automatically translated into specific policies. In this sense, Haelg, Sewerin, and Schmidt (2020) indicate that the success in elaborating and inserting general objectives of a policy may not be concretized in specific policies or in instruments to make it feasible. Translating a demand/problem into a specific policy design is part of a chaotic process - marked by negotiation, conflict, and agency (Bressers & O'Toole, 1998; Engeli & Varone, 2011; Haelg et al., 2020).

¹ A necessary condition is one that needs to be present for the result to occur. Nevertheless, it alone is not capable of producing the outcome, presenting causal effects only when followed by another condition (Beach & Pedersen, 2016).

STAKEHOLDER’S GOVERNANCE AND PROJECTS SUSTAINABILITY MANAGEMENT: MAPPING RELEVANT CONDITIONS FOR SOCIO-ENVIRONMENTAL PROJECT SUCCESS

This section aims to map out relevant conditions of governance arrangements for processing socio-environmental demands by sustainable territorial development plans in the scope of megaprojects management. To this end, we combine three central literature approaches: projects sustainability management, stakeholders’ governance, and previous studies about management failures on the PDRSX and the Sustainable BR-163 Plan. Whereas the first and second approaches indicate relevant conditions for sustainable project success, the third offers specific conditions for the management success of the PDRSX and the Sustainable BR-163 Plan. These conditions were organized according to the categories proposed by Ika (2015) and Ika and Donnelly (2017) (Box 1).

Box 1
Conceptual framework

| Causal condition | Definition | Literature approach that indicates relevant conditions for megaproject success | | | Conditions’ category |
|--|---|--|--|---|----------------------|
| | | Project’s sustainability management | Stakeholders’ governance | Management failures on the PDRSX and the Sustainable BR-163 Plan | |
| C1- Social participation effectiveness | Applied here to the moment of deliberation (Avritzer, 2011) and understood as the internal legitimacy (input legitimacy), which refers to the quality of the decision-making process based on a plurality (Cunha, Almeida, Faria, & Ribeiro, 2011). The attributes that characterize internal legitimacy are: the capacity of engagement of social actors, made possible by access to information and technical knowledge (Lubambo & Coelho, 2005; Tatagiba, 2002); the representativeness of society/community in the spaces of dialogue with the State and the inclusion of groups with less power and organizational and financial capacity (Alencar, Cruxên, Fonseca, Pires, & Ribeiro, 2013); and the quality of the decision/deliberation, which must express a plurality of interests (Fuks & Perissinotto, 2006). | Carvalho and Rabechini (2017); Sabini and Alderman (2021) | Bitektine (2011); Bornstein (2010); Derakhshan et al. (2019); Lin, Zeng, Ma, Zeng, and Tam (2017); Maddaloni and Davis (2017); Shiferaw, Klakegg, and Haavaldsen (2012); Van marrewijk and Smits (2016); Xie et al. (2017) | Grisotti et al. (2020); Monzoni, Pinto, Artuso, and Dal Fabbro (2018); Neves (2017); Oliveira (2010, 2015); Pereira (2014); Pereira and Gomide (2019) | Institutional |

Continue

| Causal condition | Definition | Literature approach that indicates relevant conditions for megaproject success | | | Conditions' category |
|---|---|--|--|--|----------------------|
| | | Project's sustainability management | Stakeholders' governance | Management failures on the PDRSX and the Sustainable BR-163 Plan | |
| C2- Presence of political entrepreneurs | They are defined as individuals or a small group of people, located inside or outside the government, who invest resources in defense of proposals based on the expectation of personal, sympathetic, or intentional gains (Kingdon, 1984). They have three central characteristics: they have legitimacy, they have negotiation skills, and they are willing to invest personal resources. For Kingdon (1984), public policy entrepreneurs act in defense of an idea and in the perception of the opportune moment to connect ideas about specific problems and solutions, promoting changes in public policies. | - | - | Oliveira (2010, 2015) | Managerial |
| C3- Governmental Coordination | It is defined as the instruments that aim to strengthen the voluntary or coercive alignment of the public administration organizations' tasks and efforts to build shared solutions to social problems (Bouckaert et al., 2010). The Coordination unfolds in intersectoral (or horizontal), among agencies of the same governmental level; and interfederative (or vertical), among agencies located in different governmental levels (Lotta & Favareto, 2016). | - | Andersen (2012); Derakhshan et al. (2019); Swärd (2016) | Grisotti et al. (2020) | Managerial |
| C4- Public Budget | It is defined here as the availability of sufficient and available financial resources to attend to the demands. | Silvius, Kampinga, Paniagua, and Mooi (2017); Sabini and Alderman (2021) | Bourne and Walker (2005); Johnson, Scholes, and Whittington (2005) | Pinto, Monzoni, and Ang, 2017 (2017) | Structural |

Source: Elaborated by the authors.

The condition “social participation effectiveness” is based on the literature on project sustainability management, stakeholder governance, and management failures on the PDRSX and the Sustainable BR-163 Plan. The first literature approach claims that essential aspects of meeting TBL pillars are transparency, accountability, and respect for stakeholders' interests. All of them are enabled by social participation effectiveness (Carvalho & Rabechini, 2017; Sabini & Alderman, 2021). The second perspective argues that the governance structure of the project should provide spaces for stakeholders' representatives to manage their involvements in decision making and to address their concerns and demands to improve project performance (Derakhshan et al., 2019; Shiferaw et al., 2012; Van marrewijk & Smits, 2016). In the case of megaprojects, social participation is even more critical since their deployment might have severe impacts on their surroundings and local community (Derakhshan et al., 2019; Maddaloni & Davis, 2017). Public participation is associated with reducing potential conflicts for smooth project execution (Xie et al., 2017) and improving the legitimacy of the affected community (Bitektine, 2011; Lin et al., 2017).

The participation of the local community also reduces planning misjudgment by moving towards more community-inclusive megaprojects (Bornstein, 2010; Maddaloni & Davis, 2017). The specific studies on the PDRSX and the BR-163 Sustainable Plan explain their failures to attend socio-environmental demands because of social participation ineffectiveness. In the case of the PDRSX, there is evidence of difficulties in the representation and engagement of small civil society organizations in the management committee (Pereira, 2014; Pereira & Gomide, 2019). There is evidence of strong centralization of the committee's dynamics in the actors representing the federal government (Monzoni et al., 2018; Neves, 2017). Grisotti et al. (2020) study highlights that the PDRSX was disjointed from the already existing participatory institutions, which caused overlaps and emptiness. In the case of the Sustainable BR-163 Plan, studies also point out that participatory effectiveness in planning was compromised since only socio-environmental bodies committed to participatory management of the plan (Oliveira, 2010, 2015). Consequently, traditional developmental agencies' management of themes unrelated to socio-environmental issues tended to become isolated.

The "presence of political entrepreneurs" condition is based on management failures on the Sustainable BR-163 Plan. Oliveira (2010, 2015) states that when the road project was retaken after the standstill caused by the 2008 crisis, a large part of the leadership of the government agencies responsible for the articulation around the plan had moved to other agencies. This would have contributed to the governmental demobilization regarding the sustainable and territorial aspects of the road-paving project. In addition, the plan's successful actions were led by actors located in agencies whose agendas presented strong convergence with the plan's proposal, such as the Ministry of Environment and the Ministry of National Integration (Ministério do Meio Ambiente e o Ministério de Integração Nacional) (Oliveira, 2015).

The condition "coordination" is based on the literature on stakeholder governance and management failures on the PDRSX. According to the literature on stakeholder governance, since the governments usually plan megaprojects, the coordination of state agencies is vital for project success (Derakhshan et al., 2019). The coordination is associated with organizational communication and relations at the same level or between different levels (Andersen, 2012), and it is enhanced by institutions that ensure that the project is cooperatively oriented (Swärd, 2016). The specific studies on the PDRSX also explain their failures to attend socio-environmental demands because of shortcomings in the Brazilian federative pact and intersectoral governance (Grisotti et al., 2020).

The condition "public budget" is based on the literature on project sustainability management, stakeholder governance, and management failures on the PDRSX. Concerning the literature on project sustainability management, Silvius et al. (2017) and Sabini and Alderman (2021) affirm that cost is a significant constraint limiting the number of sustainability criteria project managers consider when making their decisions. The literature on stakeholder governance concludes that project managers cannot always attend to the demand of every potential stakeholder (Bourne & Walker, 2005; Johnson et al., 2005). The specific studies on the PDRSX emphasize the conditions regarding budget management, showing that the pulverization of funding and the low efficiency of the operationalization of resources represented problems for the plan's effectiveness (Pinto et al., 2017).

It is important to clarify that these four conditions were selected because they were considered as extremely relevant by the revised literature. However, they are not exhaustive. In this paper, our aim is to understand if they played a causal role as sufficient conditions by applying Mill's method of difference, which does not require mapping all relevant causal conditions and does not require controlling for other conditions².

²For more details about the method, see Beach and Pedersen (2016).

RESEARCH DESIGN

The research was designed from Mill's method of difference, which is a comparative case study method used to investigate causal relationships (Rohlfing, 2012). This investigation is conducted by comparing two or more cases with different outcomes. When a causal condition is present in different cases with different outcomes, it can be dismissed as a sufficient condition (Beach & Pedersen, 2016). This method was chosen because it allows for the mapping and refutation of possible causal conditions that produce the outcome of interest. Unlike qualitative comparative analysis (QCA), which investigates configurations of causes (Rihoux & Ragin, 2008), Mill's methods enable a broad and disaggregated preliminary survey of possible causes, which is adequate for the current research stage on the topic addressed in this paper. Other methods based on case studies, such as Process-Tracing and congruence, would not be suitable, since their focus is on the causal mechanism that connects an already known cause to the outcome of interest (Beach & Pedersen, 2019).

As a first step, the method rules out sufficient conditions. In a second stage, it is combined with interview text analysis to apply an exploratory theory-building design by investigating the causal effects of the conditions not ruled out are. Interview text analysis was conducted from the main strategy known as "hypothesis coding," based on a deductive analysis in which codes are developed before data analysis (Saldaña, 2009). For this purpose, we used the four conditions based on the literature review and presented in the previous section (Section 2). An inductive approach was also applied to identify new conditions from the interviews.

Case selection was based on three criteria: 1) historical relevance, identified from the literature review on the construction works, documents from public agencies and social movements, and exploratory interviews; 2) recognition of the demand by the territorial development plans based on its incorporation as an "action" or "guideline", which was mapped from the analysis of each plan; 3) heterogeneity in the outcome, since Mill's method of difference requires variety in the presence of the outcome of interest.

For BR-163 road, we selected two demands (cases): "environmental protection" and "productive inclusion". The demand for environmental protection represents a historical concern since the road's opening could enable access for loggers and land grabbers, producing an "aisle of devastation" (Coy & Klinger, 2014; Fearnside, 2006). In the context of the plan's creation, this demand was also driven by alarming deforestation rates in the BR-163's region of influence. According to the Santarém's Letter (Carta de Santarém) - a document produced in 2004 from a solid social mobilization (Oliveira, 2015) - and the interviews, this demand encompassed claims for strengthening environmental enforcement and land-use planning. This demand analysis focuses on the management carried out mainly by the Ministry of Environment (Ministério do Meio Ambiente – MMA). The demand for "productive inclusion" was driven by the idea that the project should benefit the preeminent producer and family farming. This would be especially important since the paving of the road, by strengthening the traditional agricultural sector, would produce processes of the expulsion of small rural producers (Scholz, Dräger, Floer, Neher, & Unger, 2004). Moreover, this demand is part of a greater demand for a new sustainable economy based on extractivism and agroforestry systems. According to Santarém's Letter and the interviews, this demand encompassed mainly: technical assistance; access to special credit for family farming and extractivist communities; production processing structures; forest concessions; creation of sustainable development settlements. The emphasis was on the management carried out mainly by the Ministry of Agrarian Development (Ministério de Desenvolvimento Agrário – MDA) for this demand analysis.

We chose three demands (cases) for analysis and comparison regarding Belo Monte. The first is the demand for environmental protection demanded by environmental and indigenous non-governmental organizations (NGOs). This demand was consolidated in documents from National Indian Foundation (Fundação Nacional do Índio [Funai], 2009), Brazilian Institute for the Environment and Renewable Natural Resources (Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis [Ibama], 2010) and Public Prosecutor's Office (Ministério Público Federal [MPF], 2010). The latter point to the plant as a strong threat of anthropic pressure on the territory, especially on Indigenous Lands. Specifically, this demand encompasses the claim for strengthening environmental enforcement actions, institutional strengthening, land-use planning, and land-title regularization. Our focus was on managing Technical Board 01 (Land and Environmental) to analyze this demand. The second demand is for health infrastructure, which was mobilized in a context of increased health problems caused by the plant and a substantial influx of people in the region of influence of the plant, especially in Altamira city, which overloaded the public health services. To analyze this demand, we analyzed the management of Technical Board 07 (Health). The third demand analyzed is Terra do Meio (TM), a forest region located in the Xingu and Iriri rivers (Instituto Socioambiental [ISA], 2020).

The region is home to a mosaic of protected areas inhabited by riverine, extractivist, and indigenous peoples. While the Basic Environmental Plan (PBA), in the scope of Belo Monte's environmental licensing, contemplated the indigenous population of TM the extractivist were not. Historically, the region where the extractive reserves are located was quite fragile in terms of State presence, especially in the areas of health and education, which was evidenced by the high rate of illiteracy - over 80% (ISA, 2020). With the implementation of Belo Monte, the situation of this group became even more vulnerable due to territorial disorganization and social conflicts - exemplified by the invasion of Conservation Units (UC) and clashes overfishing. The specific claims refer mainly to health and education services, in addition to income generation. These claims were placed mainly by the associations³ representing the extractive reserves' residents. To analyze this demand, we studied the management of Technical Board 06 (Indigenous and Traditional Peoples). To analyze this demand, we studied the management of Technical Board 06 (Indigenous and Traditional Peoples).

The selected cases contain different contextual conditions since the Plans possess different characteristics. A contextual condition is understood as factors that allow a causal relationship to work as theorized, which means that in different contexts the exact causal condition can exert heterogeneous causal effects (Beach & Pedersen, 2016). While the beginning of the Sustainable BR-163 plan is marked by the prioritization of regional planning and deforestation control agendas in the Amazon, the PDRSX occurs in predominance in investments in large infrastructure works as the leading regional development strategy. There are also differences in the management designs of the plans. The BR-163 Plan had a management committee, which included the inter-ministerial working group, coordinated by the Civil Office the Presidency, and some participatory instances (Ministério do Planejamento, Orçamento e Gestão, 2004). The BR-163 plan did not have its own resources, which meant that each ministry had to fit the plan's actions into its budget. The PDRSX, on the other hand, had 500 million reais - coming from the requirement of the auction notice for the construction work (Pinto et al., 2017). A participatory management committee carried out the management of these resources - PDRS Xingu management committee (Comitê Gestor do PDRS do Xingu – CGDEX) (Presidência da República, 2010). The plan also had Technical Boards (TB), which had the function of subsidizing the decisions of the managing committee and presenting the list of priority projects to the CGDEX plenary (Grisotti et al., 2020; Neves, 2017; Rios, 2013). The analysis of the cases of the BR-163 Plan and the PDRSX was carried out separately because the application of comparative methods based on case studies requires contextual homogeneity (Beach & Pedersen, 2016).

The conceptual operationalization and measurement strategy (of the outcome and causal conditions) performed here is based on Beach and Pedersen (2016) and Goertz and Mahoney (2012), who argue that an abstract concept should be broken down into attributes that are relevant to the causal relationship one intends to investigate. When more than one attribute is chosen for the conceptual definition, they must be related from the Boolean operators "or" (+) or "and" (*). The "or" connector describes a "disjunction" and points to "logical alternatives," indicating that if at least one of the concept's attributes is present, the requirements for case membership in the concept are met (Schneider & Wagemann 2012). Meanwhile, the operator "and" describes a "conjunction" and "intersection". For Goertz (2020), the connector "and" should be used when the components are necessary and must all be present.

The outcome of interest in this research is the effective processing of the socio-environmental demands of vulnerable groups affected by Belo Monte and BR-163. To operationalize the term "effective processing," we use the public administration literature on public action performance and align ourselves with the narrow definition of performance - which refers to its evaluative dimension and its substantive character of goal attainment (Roller, 2020). As a conceptual attribute, we mobilized the qualitative perspective, which refers to "satisfactory results" (Verweij, 2015), indicated by the satisfaction of claimants and managers regarding the content and scope of approved projects or programs.

We defined the conceptual structure of the causal conditions as follows:

- The causal condition "effective social participation" is comprised of the intersection of the attributes "representation of claimants in plan management", "engagement of claimants in plan management"; "ability of claimants to influence the decision-making process".

³ Residents Association of the Extractivist Reserve of Riozinho do Anfrísio (Associação dos Moradores da Reserva Extrativista Riozinho do Anfrísio – Amora), Residents Association of the Extractivist Reserve of Iriri River (Associação dos Moradores da Reserva Extrativista Rio Iriri – Amoreri) and Residents Association of the Extractivist Reserve of Xingu River (Associação dos Moradores da Reserva Extrativista Rio Xingu – Amomex).

- The “political entrepreneurs” condition is defined from one attribute: the presence of political entrepreneurs in favor of a particular demand in the plan’s management.
- The “coordination” condition is formed by the conjunction of two attributes: sectorial and federative coordination.
- The “budget” condition is defined from one attribute: sufficient resources for the approval of projects that make the socio-environmental demands feasible.

Besides these four causal conditions mapped from the literature review, two other conditions were identified from the interviews for the BR-163 cases: 1) “ministerial priority”, defined as the centrality of the socio-environmental demand in the ministerial agenda; and 2) “administrative capacity”, defined as the intersection of two attributes – the presence of qualified civil servants and in adequate quantity in the leading ministry of that demand.

The data used to verify the cases’ conceptual belonging in the conditions and outcomes of interest refer to the perception of the central managers of the plan and of the claimants, which was captured from 15 interviews for the BR-163 cases and 14⁴ for the Belo Monte cases. The interview guide and a summary of the interview respondent profile can be found in appendices 1 and 2. The initial mapping of the interviewees was based on document analysis – the Santarém Letter and the minutes of the PDRSX managing committee meetings – followed by the “snowball” strategy. Interviews were transcribed and systematized based on text analysis. The coding of the interviews was done using NVivo software.

RESULTS AND ANALYSIS

The sustainable BR-163 plan

The following contextual conditions characterize the Sustainable BR-163 Plan. The emergence of the plan from a strong mobilization⁵ of socio-environmental institutions is the first condition. The second contextual condition is the election of a left-wing party to the federal government in 2003, with support from the environmental movement; and the appointment of Marina Silva to the Environment portfolio, whose management was marked by the priority of combating deforestation in the Amazon (Abers & Oliveira, 2015). Finally, the third condition is the priority that the resumption of territorial planning occupied at the beginning of the Lula administration, combined with the centrality of the Amazon at this time. This was driven by the murder of Sister Dorothy Stang in the region of influence of BR-163 and the alarming deforestation rates in the region. All these conditions together would have produced a context of solid societal activism and intense government openness to a socio-environmental plan born in society.

Concerning the outcome of interest, the interviews’ content analysis indicates 76 mentions about the level of satisfaction regarding the public policies formulated to meet the socio-environmental demands in question (Box 1).

Table 1
Outcome mentions per case (BR-163 Plan)

| Cases | High Satisfaction | Low Satisfaction | Average Satisfaction | Total |
|--------------------------|-------------------|------------------|----------------------|-----------|
| Environmental Protection | 25 (71.43%) | 5 (14.29%) | 5 (14.29%) | 35 (100%) |
| Productive Inclusion | 14 (34.15%) | 18 (43.9%) | 9 (21.95%) | 41 (100%) |
| Total | 19 (51.32%) | 24 (30.26%) | 14 (18.42%) | 76 (100%) |

Source: Elaborated by the authors.

For the first case (environmental protection demand), most (71.43%) mentions were coded in the “high satisfaction” category. The content of these mentions refers to two strategies: land use planning policy and command and control instruments. The first is represented by creating a mosaic of conservation units in Terra do Meio and north of Transamazon, encompassing

⁴In this case, four interviews were not coded because they were not recorded and transcribed.

⁵Since the end of the 1990s, these organizations had already been producing information about the priority areas for conservation. Furthermore, they worked, in the early 2000s, on local mobilization, producing a series of public consultations and expeditions to raise the demands per municipality and for the elaboration of a proposal for an initial plan, the “Socio-environmental Plan for the Development of BR-163”.

about twelve million hectares (Silva, Miragaya, & Ximenes, 2008). This made it possible to form an effective “cordon sanitaire” to control deforestation, interrupting the circuit that landowners and cattle ranchers were structuring to expand deforestation. The second strategy occurred from strengthening the presence of Ibama inspectors in the most critical regions for deforestation, which allowed a greater power of reach for the State to control and punish illegal activities. In addition, the MDA/Incra ministerial order 10/2004 was launched, culminating in the suspension of the re-registration of properties located on public land in the Amazon. After that, decree 6321/2007 (Decreto nº 6.321, de 21 de dezembro de 2007) was issued - by Incra, MMA and the Civil Office, which determined the re-registration of rural properties in the 36 municipalities with the highest deforestation rates. In addition, resolution 3545/2008 (Resolução nº 3545, de 29 de fevereiro de 2008), of Incra and the Central Bank, introduced the requirement to present the rural property registry to obtain credit in the Amazon region.

Moreover, in the case of “environmental protection”, the quotes framed as “low satisfaction” (14.29%) and “average satisfaction” (14.29%) refer to the difficulties in managing the created UCs. In addition, the very design of the UCs presented weaknesses. However, given the context of intense deforestation in the period, which exceeded 24 thousand km² in 2004 (Instituto Nacional de Pesquisas Espaciais [INPE], 2021), there was no time to conduct more in-depth studies. Thus, we classified the outcome of the research as present for the case of “environmental protection” (see Box 1).

Despite being very effective in containing deforestation in the Amazon, the land-use planning and command and control strategies ended up destructuring the local economy, which should be replaced by a forest-based economy, creating “a productive belt on a sustainable basis that embraces the conservation units” (A16, 09/09/2021). However, according to the interviewees, the policies of productive inclusion and stimulus to a new sustainable economy (referring to the second demand studied) represent the great bottleneck of the plan. Thus, “there was a gap in the transition from a disorderly productive matrix to another productive economy matrix, which generated, on the one hand, prohibition and, on the other, lack of alternative” (A16, 09/09/2021).

In this second case/demand, there is a predominance of mentions in the “low satisfaction” category (43.9%). The content of these mentions points out that in terms of credit policies, existing and not very expressive programs were used:

“That is, in the field of credit and incentives, nothing new was created. It [the government] tried to increase our demands based on the structures that the government already had, the financing channels. And we already had difficulties accessing this” (A13, 08/23/2021).

The implementation of forest concession practices and sustainable settlements were also incipient. The interviewees also reported the non-implementation of sustainable production centers - such as logging centers; mining centers; and integration between crops, livestock, and forest.

In addition, concerning the second case/demand, the quotes classified as “high satisfaction” (34.15%) and “average satisfaction” (21.95%) refer to the strengthening of the debate about forest management and concessions in public agencies, especially in the Brazilian Forest Service (SFB). Other advances were the preparation of notices for rural technical assistance for UCs and settlements, in the scope of the Brazilian Forest Service (Serviço Florestal Brasileiro – SFB), the Chico Mendes Institute for Biodiversity (Instituto Chico Mendes para a Biodiversidade – ICMBio), and Incra. The interviewees also report as positive points, in this case, some MDA and Incra programs that had axes related to productive inclusion for the BR-163 area - such as the Green Arch Legal Land (Arco Verde Terra Legal). However, in the view of some interviewees, these programs - especially National Program for Strengthening Family Farming (Programa Nacional de Fortalecimento da Agricultura Familiar – Pronaf) - were based on a model poorly adapted to the Amazon region. Besides, it was difficult for the government to propose concrete policies that escaped the logic of agribusiness. Thus, we classified the outcome as absent for the case of “productive inclusion”.

The table below compares the two cases from all causal conditions and their subcategories regarding the plan management conditions⁶.

⁶ For the deductively elaborated conditions, for each condition attribute, categories were created. The disaggregation of these categories into levels (high, low, average; presence, absence) followed the strategy of concept operationalization (see section 3). For the conditions elaborated inductively (administrative capacity and ministerial priority), the levels of analysis were simplified. This is because these categories arose spontaneously and, therefore, the level of information about them is reduced.

Table 2
Mentions of the subcategories of causal conditions by case (BR-163)

| Condition | Subcategory | Environmental Protection | Productive Inclusion | Total |
|---------------------------------------|----------------------------|--------------------------|----------------------|------------|
| Federative coordination | High | 0 (0%) | 2 (100%) | 2 (100%) |
| | Low | 7 (77,78%) | 2 (22,22%) | 9 (100%) |
| | Average | 1 (33,33%) | 2 (66,67%) | 3 (100%) |
| Sectoral coordination | High | 22 (75,86%) | 7 (24,14%) | 29 (100%) |
| | Low | 10 (34,48%) | 19 (65,52%) | 29 (100%) |
| | Average | 8 (88,89%) | 1 (11,11%) | 9 (100%) |
| Political entrepreneurs Budget | Presence | 28 (68,29%) | 13 (31,71%) | 41 (100%) |
| | High | 5 (38,46%) | 8 (61,54%) | 13 (100%) |
| | Low | 4 (50%) | 4 (50%) | 8 (100%) |
| | Average | 4 (66,67%) | 2 (33,33%) | 6 (100%) |
| Effectiveness of social participation | High influence capacity | 4 (66,67%) | 2 (33,33%) | 6 (100%) |
| | Low influence capacity | 2 (40%) | 3 (60%) | 5 (100%) |
| | Average influence capacity | 1 (100%) | 0 (0%) | 1 (100%) |
| | High engagement | 14 (60,87%) | 9 (39,13%) | 23 (100%) |
| | Low engagement | 3 (33,33%) | 6 (66,67%) | 9 (100%) |
| | Average engagement | 4 (80%) | 1 (20%) | 5 (100%) |
| | High representation | 6 (40%) | 9 (60%) | 15 (100%) |
| | Low engagement | 0 (0%) | 2 (100%) | 2 (100%) |
| | Average engagement | 2 (33,33%) | 4 (66,67%) | 6 (100%) |
| Administrative capacity | Presence or absence | 5 (27,78%) | 13 (72,22%) | 18 (100%) |
| Ministerial priority | High | 19 (76%) | 6 (24%) | 25 (100%) |
| | Low | 0 (0%) | 1 (100%) | 1 (100%) |
| | Total | 149 (56,23%) | 116 (43,77%) | 264 (100%) |

Source: Elaborated by the authors.

The causal condition “high ministerial priority” was more mentioned in the case of “environmental protection” (76%) than in “productive inclusion” (24%). However, the content analysis of the quotes indicates that this condition is present in both cases. The leadership of the plan, according to the interviewees, was attributed by President Lula (president of that time) to the ministers of MMA, MDA and Ministry of National Integration (Ministério de Integração Nacional – MIN), which contributed to the centrality of the Plan in these ministries. In the case of environmental protection, the interviewees also mentioned a convergence of agendas of the Plan and the most prominent actions planned by the MMA.

According to the mentions, the causal condition “political entrepreneurs” is more relevant in the case of “environmental protection” (68.29%) than in the case of “productive inclusion” (31.71%). The quotes content analysis confirms the importance of this condition for producing the outcome of interest in the first case. There is a convergence of quotes indicating the presence of different actors and groups that acted mobilizing resources, ideas, and networks to accomplish the environmental protection demands. In the case of governmental actors, the interviewees cited several political entrepreneurs who held public leadership positions in the MMA: the minister Marina Silva herself and the leadership elite of some secretariats and departments, especially the Executive Secretariat and the Secretariat of Biodiversity and Forests (Secretaria da Biodiversidade e Florestas). In the specific case of Marina Silva, the BR-163 represented a successful case for her, since she used the BR-163 plan to prove that it was possible to implement infrastructure works without significant environmental impacts. According to the interviewees, she “militated” for the plan, using her political capital to mobilize the Presidential Chief of Staff - José Dirceu - and former President Lula in favor of the Plan. On the civil society side, some organizations, such as the Socio-environmental Institute (Instituto Socioambiental – ISA) and the Amazon Environmental Research Institute (Instituto de Pesquisa Ambiental da Amazônia – IPAM), also mobilized to propose and even implement some environmental actions of the plan. In the case of “productive inclusion”, the reports point to a less expressive action of political entrepreneurs: on the civil society side, there was the action of the Live, Produce, Preserve Foundation (Fundação Viver Produzir e Preservar – FVPP), of the rural workers’ movement, and of associations linked to the Catholic Church. IPAM was also active, mobilizing family farmers to participate in the Plan. However, the activities of these players were primarily concentrated in the region of influence of the Xingu, as one of the interviewees explains: “that region of Rurópolis, Novo Progresso and Trairão, that region never had a social organization, do you know why? Because the origin of that is mining and miners don’t get together” (A17, 09/09/2021). On the governmental side, no relevant actors were mentioned. Thus, we classified this causal condition as present in the case of “environmental protection” and absented in the case of “productive inclusion” (see Box 2).

Regarding administrative capacity, the majority (72.22%) of the mentions falls under the case of “productive inclusion”. However, unlike the case of “environmental protection”, in this case almost all mentions indicate low administrative capacity. In the case of “environmental protection,” besides the plan being a priority for the MMA and Marina Silva having acted as a political entrepreneur in its defense, the ministry’s team was highly competent - with the presence of an expressive number of environmentalists with the previous trajectory in environmental NGOs, in addition to the newly permanent staff personnel coming from the restructuring of the environmental bureaucracy (Abers & Oliveira, 2015; Hochstetler, 2017). This combination of political activism in favor of the plan and technical capacity allowed proposals to be developed and incorporated by the government elite: “To what do I attribute this? To the fact that we [the MMA] had proposals. The proposals were more mature. So, from the technical point of view, we had proposals to dispute, and, from the political point of view, Marina played the role of a political agent in favor of that agenda” (A19, 09/16/2021). On the other hand, the central body linked to the demand for “productive inclusion”, the MDA, found itself in a situation of greater destructuring, especially the local bodies that should act in credit and rural technical assistance policies. In addition, there was the technical complexity of making productive inclusion instruments viable, and the fact that rural extension structures were adapted to agricultural dynamics rather than to agroecology and sustainable extractivism. All this demanded strong innovative capacity from the bureaucracy, requiring maturation and learning. From this, we classified this causal condition as present in the case of “environmental protection” and absented in the case of “productive inclusion” (see Box 2).

The condition “budget” was barely mentioned in both cases. The content of the quotes reveals that there was an adequate budget, at least in comparative terms with other governments, for the actions planned for each demand in the MMA and MDA, since the context was one of budget expansion in the federal government. In the case of the MMA, there were also resources from international cooperation to make the plan’s actions viable. Thus, we consider this condition to be present in both cases (see Box 2).

Concerning the condition “coordination”, in the case of environmental protection, most mentions were coded as high sectorial coordination and, in the case of federative coordination, citations referring to low coordination predominated. Regarding sectorial coordination, in the two cases studied, it was performed by the Civil Office of the Presidency and operationalized in periodic meetings. However, the capacity to promote coordination among the bodies necessary to produce the actions for each demand was uneven. In the case of environmental protection, there was strong concertation between MMA, Inbra, and MDA, especially:

“Incra and MDA were essential for us to be able to guarantee the actions of the MMA on the land. They gave support for the creation of the Conservation Units. Without them, we would not have created them. Political support and also local support when we went for consultations. Therefore, the MDA was very important, together with Incra” (A19, 09/16/2021).

A significant part of this combined action is the combined edition of land-use planning ordinances. An example of this was the Incra and ICMBio ordinance, which transferred UC lands to the environmental autarchy to regularize the living communities.

The interviewees also mentioned successful partnerships of the MMA with Funai, MIN, Incra, Federal Police, Ministry of Defense, and Federal Revenue: “the public power had never acted in an [so] orderly manner: Federal Police, National Force, Ibama, ICMBio, it was a war operation, really” (A16, 09/09/2021). This coordination was led by the MMA, with solid support from the Civil Office.

In the case of productive inclusion, most mentions (65.52%) fall into “low sectoral coordination”. This is because, except for the MDA, the portfolios linked to the productive issue - such as the Ministry of Mines and Energy (Ministério de Minas e Energia – MME), the Ministry of Agriculture, Livestock and Supply (Ministério da Agricultura, Pecuária e Abastecimento – MAPA) and the Ministry of Transportation (MT) - acted marginally in the Plan. This was made explicit by the small number of civil servants from the agencies that accompanied the meetings of the inter-ministerial Working Group, coordinated by the Casa Civil, and by the predominance of third-level bureaucrats. According to the interviewees, MAPA should have acted in the proposal of a differentiated agricultural policy, which did not occur. The MME should have played an important role in the proposal of mineral planning in the area of influence of the BR-163 road, which also did not occur. Besides the structure of the Civil Office, the intersectoral coordination also occurred from the “rural territories”, whose management was the responsibility of the MDA. Nevertheless, it was difficult to achieve coordination around an agenda that was different from the traditional development approach of most of these agencies, which was based on large-scale and robust financing.

Moreover, necessary cooperation between Incra, ICMBio, Brazilian Forest Service, Funai, and Palmares Foundation to resolve land conflicts in such a manner as to make forest concessions feasible that only happened too late, in the context of the Legal Land Program, starting in 2013.

In terms of federative coordination, most of the region’s governors and mayors favored the road but opposed the plan, particularly the command-and-control actions and land-use planning in the context of the demand for environmental protection. The mayors especially defended the interests of the local elite related to mining, agriculture, extraction, and timber trade. Unlike sectoral coordination, there was no institutional arrangement to promote this coordination between federal, state, and municipal governments:

“It was that kind of interlocution: ‘Look, they are coming to Brasília tomorrow, they have to set a meeting. They want to talk to the minister. And then, we had to talk, and it was very much about this thing of local interests that they defend, which for them is development: mining, farming, etc. and so and so forth” (A14, 08/23/2021).

Local governments were more favorable to this agenda’s actions concerning productive inclusion. Furthermore, there was an involvement of the state secretariats of agriculture in the debates about the investments coming from the MDA and the territorial collegiate. In Pará, the State’s multi-annual plan incorporated several actions from the Sustainable BR-163 Plan. As neither of the two cases accumulated the two attributes of coordination - sectoral and federative - this condition is absent in the cases studied (see Box 2).

Regarding the effectiveness of social participation, while most of the interviewees evaluated that participation, in general, was weakened after the approval of the Plan, in both cases, the representation of civil society actors linked to the environmental protection and productive inclusion agenda relied on several participatory arrangements: the BR-163 Forum has constituted and a parity management committee with the participation of representatives of family farmers, loggers, extractivists and NGOs, and the environmental movement. In addition, the Amazon Working Group (GTA), formed by a network of socio-environmental NGOs, had the function of monitoring the progress of the implementation of the plan’s demands and worked in strong articulation with the MMA. In the case of productive inclusion, the MDA mobilized the territorial collegiates and the specific land tenure regularization commissions. Moreover, the MMA’s Department of Extractivism (DEX) promoted, in partnership with the Food and Agriculture Organization of the United Nations (FAO), participative workshops called “cycle of

strategic debates on sustainable development of productive chains in Western Pará”, with the region’s rural workers’ unions and indigenous associations. For the land title regularization, the Intergovernmental Group for Monitoring the Legal Land Program counted on the participation of NGOs, employers’ movement, and social movements.

Nevertheless, in the case of productive inclusion, an autochthonous representation was not consolidated since most civil society leaders came from the metropolis. The most mobilized organizations were concentrated in the Transamazon region, with little organization in the other regions of the plan.

Lastly, a part of the productive sector - loggers, cattle ranchers, landowners, and miners – was critical of the plan and used other instances to put forward their demands: “They also worked to convene their group. But they had other ways. They would go to the ministries, they would go to audiences with ministers, and they took a shortcut” (A20, 09/16/2021).

There is also a difference between the two cases concerning the represented actors’ engagement. In the case of environmental protection, some NGOs, and socio-environmental institutes (such as ISA, Imazon, and IPAM) have acted by producing technical information that is extremely relevant both for mapping demands and for proposing solutions, as in the case of the debate on the definition of the polygons of the UCs. In the case of productive inclusion, despite some relevant proposals, there were no systematized and robust proposals for a new green economy:

“They did not know how to do economics. They are people who are much more connected to social management, confrontation, territorial defense, and such things [...]. We had no experience. We had experience in social movements, peasants, and the environmental agenda. We put it there [the new sustainable economy agenda], but we didn’t know how to do it” (A17, 09/09/2021).

As for their ability to influence the decision-making process, the managers interviewed and the civil society actors reported their influence and the openness of state agencies - especially the MMA and MDA - for developing specific policies, in the two cases studied. Thus, we consider that all the attributes of the condition “effectiveness of participation” were present only in the case of “environmental protection” since the case of “productive inclusion” showed low representativeness and engagement (see Box 1).

The table below systematizes the presence and absence of the outcome and causal conditions of the research, for the cases of the Sustainable BR-163 Plan. Based on the application of Mill’s method of difference, it is possible to discard the conditions “budget availability” and “ministerial priority” as sufficient conditions to produce the outcome, since in the case of productive inclusion, the conditions are present, and the outcome is not produced. Specifically, the presence of a sufficient cause always produces the outcome of interest. When this does not occur, we can rule out the cause as sufficient. As for coordination, we cannot make causal inferences about it, since in both cases it is not present. The conditions of effective social participation, presence of political entrepreneurs, and administrative capacity present potential to be sufficient conditions in the analyzed context, indicating that the presence of one of them may guarantee the production of the outcome. However, with Mill’s method of difference, we can only rule out conditions, but not confirm them. The interviews in-depth analysis of the “environmental protection” case points out that the three conditions relate to mobilization and the production of concrete proposals to produce policies regarding the demand. On the other hand, in the case of “productive inclusion”, one of the main impediments refers precisely to the scarcity of mobilization and proposals connected to the new sustainable economy, in a scenario where ideas connected to traditional economic development predominate.

Box 2
Comparison of the BR-163 Plan cases using Mill’s method of difference

| Case | Effective social participation | Coordination | Budget availability | Political entrepreneurs | Ministerial priority | Administrative Capacity | Outcome |
|--------------------------|--------------------------------|--------------|---------------------|-------------------------|----------------------|-------------------------|---------|
| Environmental protection | + | - | + | + | + | + | + |
| Productive inclusion | - | - | + | - | + | - | - |

Source: Elaborated by the authors.

Note: (+) indicates the presence of the condition or outcome, and (-) indicates its absence.

The Xingu sustainable territorial development plan

Three contextual conditions characterize the PDRSX. The first one refers to the participatory elaboration of the plan based on public hearings and a commission demanded its activation of local organizations that visited Brasília in 2011 - especially the Chief Minister of the General Secretariat of the Presidency at that time, and the Deputy Chief of Analysis and Monitoring of Government Policies of the Civil Office. The second condition is that, unlike the Plan for the Sustainable BR-163, which did not have its own budget, in the PDRSX there were exclusive resources to make the plan’s actions viable, which allowed civil society to decide directly with government representatives on the resources’ destination. Finally, the third contextual condition is the intense change in the federal government’s agenda for the Amazon, which begins to interpret development for the region based on large infrastructure projects. In this scenario, the plan emerges to minimize criticism of the plant and mitigate its impacts, but it is not part of a robust governmental regional planning strategy.

Regarding the outcome of interest of the research, the content analysis points out that 51 mentions were referring to the respondents’ satisfaction with the policies formulated to meet the demands (see table 2).

Table 3
Outcome mentions per case (PDRSX)

| Cases | High Satisfaction | Low Satisfaction | Average satisfaction | Total |
|-----------------------------|-------------------|------------------|----------------------|-----------|
| Environmental protection | 12 (60%) | 6 (30%) | 2 (10%) | 21 (100%) |
| Extractive communities (TM) | 8 (88.89%) | 1 (11.11%) | 0 (0%) | 9 (100%) |
| Health infrastructure | 18 (81.82%) | 3 (13.64%) | 1 (4.55%) | 22 (100%) |
| Total | 39 (75%) | 10 (19.23%) | 3 (5.77%) | 51 (100%) |

Source: Elaborated by the authors.

In the three cases studied, the number of mentions classified as “high satisfaction” predominates. Nevertheless, the content analysis of these mentions reveals some differences between the cases. Concerning “environmental protection”, the interview A09 (01/11/2020) summarizes the situation: “Technical Board 01 managed to advance in strengthening environmental management, which was one of the TB tripods, but in the land regularization and land planning agendas we failed a lot”. Thus, the citations framed as “high satisfaction” refer mainly to the structuring projects of the municipal environmental secretariats, such as the purchase of equipment and software, physical reform, and investments in the rural land registry. On the other hand, the only significant action in the land title regularization agenda, considered as the “biggest bottleneck in the region” (A02, 08/09/2021), approved by TB-01 was the Land Title Management System (SIGEG), which Incra now uses throughout Brazil. Several interviewees mentioned that the TB-01 projects were timid in organizing the landholding situation in the territory:

“There was land chaos, which was a big obstacle in the region, and which deprived the landowners, the rural producers, from having access to credit. This caused instability and generated conflicts. And this was a focus that was placed very emphatically by the regional society: the need for land regularization. But this goal was disintegrating, given the fact that you didn’t have a policy, obviously, of the government, especially the federal and State governments, to do the land regularization” (A10, 11/01/2020).

Therefore, we classify the survey result as absent for the case of “environmental protection” (see Box 3).

Regarding the “extractivist peoples of Terra do Meio”, the majority (88.89%) of the mentions were classified as “high satisfaction”. The content of these mentions points out that the resources and projects coming from the PDRSX were strategic to restructure the forest economy and strengthen the extractive production chains. Some examples in this line were the construction of mini-mills and canteens. This allowed the associations of traditional peoples to sign contracts with some companies – such as Wickbold and the Swiss company Feminich – which moved the income of this territory until today. In addition, the Plan’s projects made

it possible to build an infrastructure for services in health, transportation, communication, and education⁷. Examples in this sense were the construction of 21 schools, the construction of health units, and airstrips for emergency removal. Thus, we classify the research outcome as present for this case (see Box 3).

Regarding “health infrastructure”, most of the mentions fall into the “high satisfaction” category (81.82%). The content of the quotes indicates that the Health Technical Board (TB) was able to approve permanent projects, which were essential to structure the health care network of the Transamazon Xingu region: “it was due to the creation of this TB that we built one of the best health care networks in the state of Pará” (A04, 08/11/2021). Therefore, there was the creation of the Psychosocial Care Center in municipalities of the region where this type of service did not exist; the construction of hospitals in Altamira and Brasil Novo; and the structuring of the Mobile Medical Emergency Service (Serviço de Atendimento Móvel de Urgência – SAMU). The PDRSX resources were used to complement the actions of the conditionalities of the environmental license of the BM plant in two ways: structuring primary care in municipalities not covered by the licensing, funding the services of the health structures delivered by Norte Energia under the environmental licensing. We thus classified the outcome of the research as present for this case (see Box 3).

Concerning the causal conditions there were 105 citations about them, whose distribution is systematized in the table below.

Table 4
Mentions of the subcategories of causal conditions per case (BM)

| Condition | Subcategory | Environmental | Extrative communities (TM) | Health | Total |
|---------------------------------------|----------------------------|---------------|----------------------------|-------------|-----------|
| Federative coordination | High | 3 (20%) | 4 (26,67%) | 8 (53,33%) | 15 (100%) |
| | Low | 2 (25%) | 1 (12,5%) | 5 (62,5%) | 8 (100%) |
| | Average | 2 (66,67%) | 0 (0%) | 1 (33,33%) | 3 (100%) |
| Sectorial coordination | High | 0 (0%) | 2 (66,67%) | 1 (33,33%) | 3 (100%) |
| | Low | 3 (100%) | 0 (0%) | 0 (0%) | 3 (100%) |
| | Average | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) |
| Political entrepreneurs | Presence | 3 (13,64%) | 18 (81,82%) | 1 (4,55%) | 22 (100%) |
| Budget | High | 1 (25%) | 2 (50%) | 1 (25%) | 4 (100%) |
| | Low | 2 (16,67%) | 7 (58,33%) | 3 (25%) | 12 (100%) |
| | Average | 1 (33,33%) | 1 (33,33%) | 1 (33,33%) | 3 (100%) |
| Effectiveness of social participation | High influence capacity | 1 (12,5%) | 4 (50%) | 3 (37,5%) | 8 (100%) |
| | Low influence capacity | 1 (100%) | 0 (0%) | 0 (0%) | 1 (100%) |
| | Average influence capacity | 2 (100%) | 0 (0%) | 0 (0%) | 2 (100%) |
| | High engagement | 1 (12,5%) | 1 (12,5%) | 6 (75%) | 8 (100%) |
| | Low engagement | 3 (100%) | 0 (0%) | 0 (0%) | 3 (100%) |
| | Average engagement | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) |
| | High representation | 3 (30%) | 3 (30%) | 4 (40%) | 10 (100%) |
| | Low representation | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) |
| | Average representation | 0 (100%) | 0 (0%) | 0 (0%) | 0(100%) |
| | Total | 28 (12,67%) | 43 (40,95%) | 34 (32,38%) | 105(100%) |

Source: Elaborated by the authors.

⁷For more details about this, see ISA (2020).

There are 22 mentions to the condition “political entrepreneurs”. The most prominent here refers to the case of the “extractivist communities of TM”, which relied on the solid articulation of ISA. The institute worked in the PDRSX with an emphasis on extractivists and indigenous populations, advising partner organizations so that they could present their own projects:

“ISA never put projects into the PDRS, they had this premise. But they supported us, helped us organize the ideas and demands, transform them into projects and helped us defend the projects in the Technical Board and in the CGDEX” (A26, 09/10/2021).

The institute also performed strategically planned the territory, identifying which projects and actions would be priorities for a certain period.

Entrepreneurs were also identified in the other two cases: in the “environmental protection” case, IPAM, FVPP, and ISA coordinated civil society’s votes in favor of this demand; in the “health infrastructure” case, a historical figure of the region, an activist of social movements in the health area, mobilized especially his technical knowledge about the area to defend structuring projects in the health area. Thus, we classified this causal condition as present in the three cases (see Box 3).

Concerning the “budget” condition, most of the mentions fall into the “low” category. The interviewees pointed out that no TB had adequate resources since the plan should cover 12 municipalities and extensive demands. In the case of the “extractive peoples of TM”, TB 06 received few resources compared to other TBs. This was especially serious since these peoples were not contemplated with projects of the Basic Environmental Plan in the scope of the environmental licensing of the plant. However, resources from the PDRSX were combined with those from other sources (ISA, 2020). In the case of health, although some interviewees pointed out that TB 07 was one of those receiving the most resources, its participants claimed that health infrastructure projects were extremely expensive. Based on that, we classified this causal condition as absent in all three cases (see Box 3).

Regarding the causal condition “coordination”, the case of “environmental protection” focuses its citations on the classifications “low sectorial coordination” and “average” and “low” federative coordination. The interviewees reported that, despite the active presence of representatives of the municipal environmental secretariats, the actions of the State and federal agencies were inconsistent. Significantly, the role of the state agency (Iterpa) and the federal agency (Incra) with competence in the land issue was reported as incipient. This ended up making some TB 01 projects unviable. In addition, there was an excessive predominance of projects from the municipal environmental secretariats to the detriment of those from other organs and entities of the federation that would have the greater technical capacity to propose measures on landholding regularization. In this case, we classified this causal condition as absent (see Box 3).

On the other hand, the other two cases concentrate on the “high” classification regarding federative and sectorial coordination. In these two cases, a similar strategy was used to attract the collaboration of government agencies: the resources from the PDRSX were used to complement or initiate a government action. In the case of health, the renovation of the hospital in Senador José Porfírio was made possible with resources from the Plan and a counterpart from the state government. In the case of the “extractivist peoples of TM”:

“They [municipal institutions] claimed that they didn’t have any conditions because they are really very distant areas: we are talking about more or less 500 km from the municipal seat. They always claimed that they didn’t have the resources to put infrastructure in place and so we prioritized within our projects the construction of schools, health centers and they said: ‘It’s here. It is ready. Now put the teacher in and make things work. And this is how we managed to meet all the educational demands of Terra do Meio [...] and we have six health posts working in the Extractive Reserves and one in Maribel’ (A26, 10/09/2021).

In these two cases, there are reports that the PDRSX management committee meetings were used as a space for political coordination with agencies from the different federal entities to facilitate a specific policy. In the case of the “extractivist communities of TM”, this enabled the extractivist teaching, through a partnership with the Ministry of Education (MEC), and a decree from the Ministry of Health (MS) to attend to the health of riverside families. Thus, we classified this condition as present for these two cases (see Box 3).

Concerning the causal condition “effective social participation”, all mentions were classified as “high representation” in all three cases. In the case of “environmental protection”, the interviewees considered the representation of civil society to be adequate since it included actors from environmental NGOs, extractive communities, rural settlements, the federation of agricultural workers, and producers’ unions. In the case of the “extractive peoples of TM”, in TB 06 there was a majority of traditional populations, which was essential to ensure that the demands of this group did not face significant competition. There was always the presence of one of the three TM extractive associations, which alternated in the TB. In the case of health, users and actors from the health movement comprised the TB 07 and were chosen by the most active entities in the area, defined in an exclusive plenary meeting of civil society.

Concerning engagement, all the mentions in the case of health were classified as “high”, since the TB 07 was formed by actors with strong experience in acting in health councils and by “skilled, technical and militant people in favor of the development of the SUS” (A04, 08/11/2021). In the case of the “extractivist peoples of TM”, their engagement in TB 06 was satisfactory, mainly because the technical knowledge barriers were solved with the support of specific larger organizations, especially the ISA. On the other hand, most mentions of the “environmental protection” case were rated as “low”. The content of these citations indicates that, despite the decisive engagement of some organizations, the lack of knowledge of certain smaller institutions about technical concepts of environmental regularization and environmental legislation was a barrier to broader engagement.

All mentions of “influence capacity” in the cases “health infrastructure” and “extractive peoples of TM” were classified in the “high” category. In the case of the TB 06, since it was exclusive to traditional and indigenous peoples, there was a certain consensus around priority actions, which facilitated the approval of projects to meet the demands of the extractivist peoples of TM. In the case of health, civil society actors were characterized as “very respected and supported” both in the managing committee and in the TB 07. In the case of “environmental protection”, although the interviewees reported that there were no significant asymmetries between civil society actors for project approval, there were conflicts between actors from the producers’ union and those linked to family farming. From this, only the cases “health infrastructure” and “extractive peoples of TM” accumulate the three attributes for the classification of “effective social participation” as present (see Box 3).

The table below systematizes the presence and absence of the outcome and causal conditions of the research, for the cases of the PDRSX. By applying Mill’s differential method, it is possible to exclude the condition “political entrepreneurs” as a possible cause to produce the outcome, since in the case of environmental protection the cause is present and even then the outcome is not observed. We cannot draw causal conclusions about “budget availability”, as in all three cases it was not observed. On the other hand, the causal conditions “effective social participation” and “coordination” can be sufficient causes. The in-depth analysis of the cases reveals that coordination was especially important since many of the demands studied depended on public sector action, in areas of historical state incapacity. In this scenario, coordination was necessary to increase the power of the State to offer services that were previously neglected. Social participation was a crucial condition in the success cases to avoid a common criticism of the PDRSX related to the low capacity of territorial planning based on structuring actions as a consequence of the capture of some agendas by local politicians for electoral purposes. Thus, social participation had the effect of neutralizing the actions of these actors in some agendas.

Box 3
Comparison of PDRSX cases from Mill’s “difference method”

| Case | Effective social participation | Coordination | Budget availability | Political entrepreneurs | Outcome |
|---------------------------|--------------------------------|--------------|---------------------|-------------------------|---------|
| Environmental protection | - | - | - | + | - |
| Traditional Peoples of TM | + | + | - | + | + |
| Health infrastructure | + | + | - | + | + |

Note: (+) indicates the presence of the condition or outcome, and (-) indicates its absence.

Source: Elaborated by the authors.

CONCLUSIONS

The investigation conducted in this article was guided by the research question: what are the sustainable territorial development Plans' governance arrangements conditions that enable the processing of socio-environmental demands in the context of megaprojects? The results indicate that the peculiarities of the plans and the political contexts in which they are inserted affect the relevance and role of these conditions. Thus, while in the cases referring to BR-163 the conditions of political entrepreneur, administrative capacity, and effective social participation appear as possible sufficient conditions; the conditions of coordination and effective social participation were highlighted in the cases of Belo Monte. The literature on project management supports this conclusion since it recognizes that the internal processes of a project and project success conditions are contingent to context (Engwall, 2003; Ika & Donnelly, 2016), which implies that “no project is an island” (Engwall, 2003). This means that there is no single recipe for successfully managing the socio-environmental aspects of infrastructure megaprojects. In the BR-163 cases, the three possible sufficient causal conditions relate to elaborating and mobilizing solutions and policies. In the Belo Monte cases, external actors could elaborate and offer proposals and projects, which could explain why the two plans did not reach the same results. In the Belo Monte cases, coordination appears as a possible sufficient condition, since the plan was not inserted in a broader government planning strategy, requiring coordination to be built during implementation. In addition, on these cases, unlike the BR-163 cases, the causal effects of social participation in the PDRSX were to avoid fragmentation and the approval of non-structural proposals because of solid political disputes over the plan's resources.

The conclusions presented are convergent to previous studies that emphasized the relevance of institutional, managerial, and structural conditions for project success (Ika & Donnelly, 2016). However, the only possible sufficient condition shared in both plans is the “effectiveness of participation”, which sheds light on the importance of civil society actors' actions in the governance arrangement of these plans. This is especially relevant in the current context of the re-creation of the PDRSX management committee by decree 10729/2021 (Decreto nº 10.729, de 23 de junho de 2021) of the Ministry of Regional Development (MDR), which considerably limits the role of civil society in the governance of the plan. The literature supports the project's sustainability management and stakeholders' governance (see Section 2). The successful cases of attending socio-environmental demands reveal that participation must be based on the capacity to influence, engage, and represent the local affected community. The importance of civil society participation for attending socio-environmental demands in the context of megaprojects can be explained by the Brazilian context, in which insulated project management has been associated with the excess of technocracy and a selective permeability of the State to the interests of certain economic groups (Pereira, 2013). This insulation and lack of participation has been mobilized to explain project management failure to attend socio-environmental demands in previous megaprojects in the Amazon – such as Balbina and Tucuruí hydroelectric Plants (Barrow, 1988; La Rovere & Mendes, 2000; Monosowski, 1990). Besides, in both studied megaprojects settings the effectiveness of participation is likely to play causal role as a sufficient condition since, as demonstrated, it alone triggers mechanisms of actors' negotiation, knowledge and proposals' mobilization, and state recognition of social demands. All these processes are crucial for project management ability to incorporate socio-environmental demands.

This study represents an innovation in terms of design and results within the scope of research on sustainable territorial development plans and the management of social demands in the planning of large projects, since studies on these topics tend to generalize the inability of governance arrangements to manage these demands. This research emphasizes that variations in this capacity are influenced by the political context of the project, the nature of the demand, and the different conditions of the governance arrangement.

It is worth mentioning that conditions discarded as sufficient may have another type of causal relationship with the outcome – they may be, for example, necessary conditions (Beach & Pederden, 2016). However, the method used does not allow this kind of verification. The conditions not ruled out are treated here as “possible sufficient conditions,” since more robust in-depth case study methods, such as the congruence or process-tracing method, need to be applied to confirm the causal relationship produced by these conditions. Thus, a research agenda for future studies on the topic is evidenced.

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APPENDIX 1 – INTERVIEW GUIDE

PDRSX version

The following questionnaire was developed as a data collection instrument for the research “Governance Arrangements for Major Infrastructure Works: territorial development, environmental sustainability and social inclusion”. The research objective is to analyze the management conditions that allow territorial development plans to meet the socio-environmental demands of groups affected by large-scale infrastructure projects in the Brazilian Amazon. Specifically, we would like to understand which factors allow the plan's objectives to be translated into concrete projects.

This questionnaire is intended for civil society and state actors who participated in managing the Xingu Sustainable Regional Development Plan (PDRSX), concerning thematic X (insert the case theme). Specifically, this theme refers to x and y⁸. The research focuses on the period between 2011 and 2016 and the region of influence of the Xingu River (municipalities of Altamira, Anapu, Brasil Novo, Medicilândia, Pacajá, Placas, Porto de Moz, Sandor José Porfírio, Uruará and Vitória do Xingu). Therefore, when you answer, refer to that period and this territory.

Source: Elaborated by the authors.

Version Plan BR-163

The following questionnaire was developed as a data collection instrument for the research "Governance Arrangements for Major Infrastructure Works: territorial development, environmental sustainability, and social inclusion." The research objective is to analyze the management conditions that allow territorial development plans to meet the socio-environmental demands of groups affected by large-scale infrastructure projects in the Brazilian Amazon. Specifically, we would like to understand what factors allow the plan's objectives to be translated into concrete policies.

This questionnaire is intended for civil society and State actors who participated in the management of the Sustainable BR-163 Plan concerning thematic X (insert the theme of the case). Specifically,⁹ this theme refers to x and y. The research focuses on the period between 2006 and 2012 and the region of influence of the BR-163 corresponding to the Eastern Transamazônica (Altamira), Vale do Jamanxim (Novo Progresso) and Médio Xingu/Terra do Meio (São Félix do Xingu). Therefore, when you answer, refer to that period and these territories.

Source: Elaborated by the authors.

Section 2

Information about the respondent

I would like to know a little about your history of acting in plan X. Could you start by telling me in which period you participated/followed up the management of the plan?

How did you get involved in the management of Plan X (which sector did you represent?)?

Source: Elaborated by the authors.

⁸Specification: see the “cases” worksheet and the analysis of the survey results for the approved projects.

⁹Specification: see the “cases” worksheet and the analysis of the survey results for the approved projects.

Section 3

Measurement of the result of research interest

| |
|--|
| Evaluate your degree of agreement with the following statements by choosing a number from 0 to 10, with 10 being the most agreement and 0 being a minor agreement. |
| <p>1. The projects approved by¹⁰ (Ministry for BR-163 and Technical Chamber for PDRSX) addressed the significant impacts caused by work X, about X (insert theme).</p> <ul style="list-style-type: none"> • Explore the answer: which impact was left out and/or which was privileged? |
| <p>2. The projects approved¹¹ by (Ministry for BR-163 and Technical Chamber for PDRSX) had the potential to reach all territories (among the territories specified in the presentation of this questionnaire- repeat the territories here¹²) that faced X impacts (insert thematic) resulting from the work X.</p> <ul style="list-style-type: none"> • Explore the answer: which territory was left out and/or which was privileged? |
| <p>3. The projects approved¹³ by (Ministry for BR-163 and Technical Chamber for PDRSX) had the potential to reach all groups and individuals facing X impacts (insert thematic) resulting from the work X</p> <ul style="list-style-type: none"> • Explore the answer: which group was left out and/or which was privileged? |

Source: Elaborated by the authors.

Section 4

Measurement of pre-identified conditions

| Part I - Social Participation |
|---|
| Evaluate your degree of agreement with the following statements by choosing a number from 0 to 10, with 10 being the maximum agreement and 0 the minimum agreement, regarding the management of X (insert theme) by (Ministry for BR- 163 and Technical Chamber for PDRSX ¹⁴) in terms of social participation. |
| <p>1- The management of X (insert theme) had the participation of a significant number of representatives of civil society who worked in area X (insert theme) or who were affected by X (insert theme).</p> <ul style="list-style-type: none"> • Explore the answer: Can you explain your answer to me? Did you miss the participation of any important actor from civil society? |
| <p>2- Representatives of civil society who worked in area X (insert topic) or who were affected by impacts X (insert topic) took an active role in discussions on the approval of projects¹⁵ related to issue X (insert topic).</p> <ul style="list-style-type: none"> • Explore the answer: Can you explain your answer to me? Can you exemplify your answer? What contributes to this active/passive posture? |
| <p>3- The main suggestions from representatives of civil society who worked in area X (insert theme) or who were affected by X (insert theme) and who participated in the management of issue X were incorporated into decisions on approved projects.</p> <ul style="list-style-type: none"> • Explore the answer: Can you explain your answer to me? Can you exemplify your answer? What contributes to this low/high incorporation? |

Continue

¹⁰ In the case of BR-163, replace “approved projects” with “public policies approved as a result of Plan X”.

¹¹ In the case of BR-163, replace “approved projects” with “public policies approved as a result of Plan X”.

¹² In the case of the PDRSX, put only “[...] all territories in the region of influence of the Xingu River”.

¹³ In the case of BR-163, replace “approved projects” with “public policies approved as a result of Plan X”.

¹⁴ Use a spreadsheet with the results of centrality. There are the central bodies for each case.

¹⁵ In the case of the BR-163, replace projects with “public policies”.

| Part II - budget, coordination, and political entrepreneurs |
|--|
| 1- The (Ministry for BR-163 and Technical Chamber for PDRSX) had its own budgetary resources and sufficient for the approval of projects X ¹⁶ (insert theme). • Explore the answer: Can you explain your answer to me? Can you exemplify your answer? What contributes to this? |
| 2- The project ¹⁷ s approved by (Ministry for BR-163 and Technical Chamber for PDRSX) referring to X (insert theme) provided for cooperation or partnership between government agencies for their execution. • Explore the answer: Can you explain your answer to me? |
| 3- The management of X (insert theme) by (Ministry for BR-163 and Technical Chamber for PDRSX) was marked by the actions of individuals who mobilized key actors (such as politicians, bureaucrats, and financiers) and/or resources to defend the approval of projects ¹⁸ relating to this theme. • Explore the answer: Can you explain your answer to me? Who were these actors? What resources did they mobilize? Could you give an example of the performance of these acts? |
| 4- In the case of the management of X (insert thematic) with the presence of individuals who mobilized actors and resources to guarantee the approval of projects, this action was constant until the approval of ¹⁹ relevant projects. • Explore the answer: Can you explain your answer to me? |

Source: Elaborated by the authors.

Section 5

Identification and Measurement and new conditions

1- What other factors do you believe were relevant to (un)enable the approval of policies/projects related to demand X?

Source: Elaborated by the authors.

¹⁶In the case of BR-163, replace projects with “public policies X (thematic) to make plan X viable”.

¹⁷In the case of BR-163, replace “approved projects” with “public policies approved as a result of Plan X”.

¹⁸In the case of the BR-163, replace projects with “public policies”.

¹⁹In the case of the BR-163, replace projects with “public policies”.

APPENDIX 2 – RESPONDENT INFORMATION

| Interview code | Organization | Place of operation | Project | Acting theme | Interview date |
|----------------|---------------|--------------------|---------------|----------------------|--------------------|
| A1 | ISA | Civil society | BR-163 | Environmental | August 10, 2021 |
| A2 | SIRALTA | Civil society | BM | Environmental | August 09, 2021 |
| A3 | MMA | State | BR-163 | Environmental | August 11, 2021 |
| A4 | MMTCC | Civil society | BM | Health | August 11, 2021 |
| A5 | FVPP | Civil society | BM | Environmental | August 09, 2021 |
| A6 | ISA | Civil society | BM | Terra do Meio | August 11, 2021 |
| A7 | SGP | State | BM | Wide | December 08, 2020 |
| A8 | CC | State | BM and BR-163 | General | November 03, 2020 |
| A9 | IPAM | Civil society | BM | Environmental | November 03, 2020 |
| A10 | ISA | Civil society | BM | Terra do Meio | November 02, 2020 |
| A11 | UFPA | State | BM | General | November 02, 2020 |
| A12 | IPAM | Civil society | BR-163 | Environmental | August 13, 2021 |
| A13 | FVPP | Civil society | BR-163 | Productive inclusion | August 23, 2021 |
| A14 | MMA | State | BR-163 | Environmental | August 23, 2021 |
| A15 | MMA | State | BR-163 | Environmental | August 25, 2021 |
| A16 | MMA | State | BR-163 | Environmental | September 09, 2021 |
| A17 | MMA | State | BR-163 | Environmental | September 09, 2021 |
| A18 | MMA | State | BR-163 | Productive inclusion | September 09, 2021 |
| A19 | MMA | State | BR-163 | Environmental | September 16, 2021 |
| A20 | MIN | State | BR-163 | Productive inclusion | September 16, 2021 |
| A21 | IPAM | Civil society | BR-163 | Productive inclusion | September 09, 2021 |
| A22 | MDA | State | BR-163 | Productive inclusion | September 08, 2021 |
| A23 | INCRA | State | BR-163 | Productive inclusion | September 16, 2021 |
| A24 | FVPP | Civil society | BM | Health | September 08, 2021 |
| A25 | Health advice | Civil society | BM | Health | September 08, 2021 |
| A26 | ISA | Civil society | BM | Terra do Meio | September 10, 2021 |
| A27 | MDA | State | BM | Wide | November 03, 2020 |
| A28 | MDA | State | BM | Wide | November 03, 2020 |
| A29 | MDA | State | BM | Wide | November 03, 2020 |

Source: Elaborated by the authors.