



## WICKED PROBLEMS, IMPERFECT SOLUTIONS: AN ANALYSIS OF THE INTEGRAL REPARATION AGREEMENT FOR THE TRAGEDY OF CÓRREGO DO FEIJÃO DAM

PROBLEMAS PERVERSOS, SOLUÇÕES IMPERFEITAS: UMA ANÁLISE DO ACORDO DE REPARAÇÃO INTEGRAL PELA TRAGÉDIA DA BARRAGEM DO CÓRREGO DO FEIJÃO

PROBLEMAS PERVERSOS, SOLUCIONES IMPERFECTAS: UN ANÁLISIS DEL ACUERDO DE REPARACIÓN INTEGRAL POR LA TRAGEDIA DE LA REPRESA DE CÓRREGO DO FEIJÃO

### ABSTRACT

**Dilemma:** the Brumadinho dam collapse (2019) exposed the dilemma between fully repairing human, social, and environmental damages and preserving the economic interests of a major mining company. The judicial agreement signed illustrates the tension between fast institutional solutions and the demand for democratic participation and social justice.

**Objective:** to analyze whether the Integral Reparation Agreement provides quality solutions for the affected population.

**Design / methodology / approach:** a qualitative study, based on document analysis (agreement text, manifestos, reports) and non-participant observation at events held between 2021 and 2023, combined with theoretical references on governance, wicked problems, and international guidelines.

**Findings:** the agreement is a linear attempt to address a complex problem. Although it extinguished lawsuits and allocated BRL 37 billion, it restricted the participation of those affected to less than 10% of resources. The mining company retained control over indicators, targets, and audits, reducing transparency. Community voices reveal frustration, invisibility, and worsening psychosocial suffering.

**Research limitations / implications:** the analysis focused on documents and collective statements, without in-depth individual interviews.

**Practical implications:** highlights the need for independent audits and for affected communities to play a central role in reparation processes.

**Social implications:** shows that excluding victims reinforces inequalities, weakens rights, and turns tragedies into business costs.

**Theoretical implications:** reveals the inadequacy of linear solutions for wicked problems in neo-extractivist contexts.

**Originality / value:** provides empirical evidence that judicial agreements designed without social participation may reproduce corporate logics, undermine integral reparation, and perpetuate vulnerabilities.

**Keywords:** Sustainability; Stakeholder Theory; Corporate Social Responsibility.

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## RESUMO

**Dilema:** O rompimento da barragem em Brumadinho (2019) expôs o dilema entre reparar integralmente danos humanos, sociais e ambientais e preservar interesses econômicos de uma grande mineradora. O acordo judicial firmado revela a tensão entre soluções institucionais rápidas e a exigência de participação democrática e justiça social.

**Objetivo:** Analisar se o Acordo de Reparação Integral oferece soluções de qualidade às populações atingidas.

**Design / metodologia / abordagem:** Pesquisa qualitativa, com análise documental (texto do Acordo, manifestos, relatórios) e observação não participante em eventos entre 2021 e 2023, articulando referências sobre governança, problemas perversos (wicked problems) e diretrizes internacionais.

**Resultados:** O Acordo é descrito como tentativa linear de enfrentar um problema complexo. Embora tenha extinguido processos e destinado R\$ 37 bilhões, limitou a participação dos atingidos a menos de 10% dos recursos. A mineradora manteve controle sobre indicadores, metas e auditorias, reduzindo transparência. Relatos comunitários apontam frustração, invisibilidade e agravamento de sofrimentos psíquicos e sociais.

**Limitações / implicações da pesquisa:** A análise concentrou-se em documentos e manifestações coletivas, sem entrevistas individuais aprofundadas.

**Implicações práticas:** Ressalta a necessidade de auditorias independentes e de protagonismo das comunidades nos processos de reparação.

**Implicações sociais:** Mostra que a exclusão reforça desigualdades, fragiliza direitos e transforma tragédias em custos empresariais.

**Implicações teóricas:** Evidencia a inadequação de soluções lineares para problemas perversos em contextos de neoextractivismo.

**Originalidade / valor:** Demonstra empiricamente como acordos judiciais concebidos sem participação social podem reproduzir lógicas corporativas, enfraquecer a reparação integral e perpetuar vulnerabilidades.

**Palavras-chave:** Sustentabilidade; Teoria dos Stakeholders; Responsabilidade Social Corporativa.

## RESUMEN

**Dilema:** el colapso de la represa de Brumadinho (2019) evidenció el dilema entre reparar integralmente los daños humanos, sociales y ambientales y preservar los intereses económicos de una gran minera. El acuerdo judicial firmado refleja la tensión entre soluciones institucionales rápidas y la exigencia de participación democrática y justicia social.

**Objetivo:** analizar si el Acuerdo de Reparación Integral ofrece soluciones de calidad a las poblaciones afectadas.

**Diseño / metodología / enfoque:** investigación cualitativa, basada en análisis documental (texto del Acuerdo, manifiestos, informes) y observación no participante en eventos realizados entre 2021 y 2023, articulando referencias sobre gobernanza, problemas perversos (wicked problems) y directrices internacionales.

**Resultados:** el Acuerdo constituye un intento lineal de enfrentar un problema complejo. Aunque extinguió procesos judiciales y destinó 37 mil millones de reales, limitó la participación de los afectados a menos del 10% de los recursos. La empresa mantuvo el control de indicadores, metas y auditorías, reduciendo la transparencia. Las voces comunitarias expresan frustración, invisibilidad y agravamiento del sufrimiento psicosocial.

**Limitaciones / implicaciones de la investigación:** el análisis se centró en documentos y manifestaciones colectivas, sin entrevistas individuales en profundidad.

**Implicaciones prácticas:** subraya la necesidad de auditorías independientes y del protagonismo de las comunidades en los procesos de reparación.

**Implicaciones sociales:** muestra que la exclusión refuerza desigualdades, debilita derechos y convierte las tragedias en costos empresariales.

**Implicaciones teóricas:** evidencia la inadecuación de soluciones lineales para problemas perversos en contextos de neoextractivismo.



**Originalidad / valor:** demuestra empíricamente cómo acuerdos judiciales sin participación social pueden reproducir lógicas corporativas, debilitar la reparación integral y perpetuar vulnerabilidades.

**Palabras clave:** Sostenibilidad; Teoría de los Stakeholders; Responsabilidad Social Corporativa.

## INTRODUCTION

On January 25, 2019, the debris dam at the Córrego do Feijão Mine, owned by mining company Vale S.A., in the city of Brumadinho, state of Minas Gerais, Brazil, ruptured, causing the leakage of approximately 12 million cubic meters of tailings. 272 people died, and two are still missing. 48 municipalities, with a total population of over 1.3 million inhabitants, were affected by river pollution. It is estimated that 24 thousand people were forced to leave their homes because of the leakage, considered the biggest dam disaster of the decade<sup>1</sup>.

The Brumadinho case was the second major tragedy involving Vale S.A. in little over three years. In 2015, the Fundão dam, owned by Samarco, which belongs to Vale and BHP Billington, ruptured in the city of Mariana, killing 19 people and causing environmental damage greater than that of Brumadinho. In their analysis of the resettlement of those affected by Fundão, Soares and Bonduki (2024) denounce the imposition of a new urban order, dissociated from local identities. This action, under a logic of corporate authoritarianism, excluded those affected from decision-making processes and symbolically reconfigured the territory. The Inter-American Court of Human Rights (Corte Interamericana de Derechos Humanos, 2021, p.3) establishes that "every violation of an international obligation that has caused harm entails the duty to adequately repair it." For the body, reparation consists of restitution, defined as the restoration of the previous situation and the repair of consequences caused by the infraction. Added to this is the payment of compensation for damages, divided into material (loss or loss of income, expenses and other pecuniary consequences) and immaterial (suffering,

distress and other non-monetary alterations to existence). The latter can be classified as: moral and psychological, physical and to life project - "interference in the person's destiny, frustrating or delaying their personal fulfillment" (Lopes et al., 2019, p. 21).

In Brazil, coercive judicial rulings are being increasingly replaced by alternative conflict resolution mechanisms that appear more consensual and expedient. Through the establishment of an "integrated system for the protection of collective rights" (Reis, 2018, p.18), comprised of public institutions, Brazilian legislation claims to seek to empower and enable citizens to collectively pursue resolutions to disputes involving the commons. Consequently, in dam failure cases, the approach has shifted from prioritizing criminal prosecutions and punitive measures toward administrative management of socio-ecological disputes (Zhourri *et al.* 2016; Dias & Repolês 2021). Thus, beyond exercising coercive authority—whereby the Brazilian State has imposed penalties on Vale S.A.—an effort emerged to negotiate settlements between the corporation and the State, incorporating the actors involved (Reis, 2018), within the framework of the Córrego do Feijão dam catastrophe. In February 2021, an Integral Reparation Agreement was celebrated, mediated by the Judicial Center for Conflict Resolution and Citizenship (Cejusc) of the Court of Justice of the State of Minas Gerais (Tribunal de Justiça do Estado de Minas Gerais - TJMG), involving the Government of Minas Gerais, Vale S.A., the public prosecutor's office, and the public defender's office of the union. The agreement extinguished four terms of commitment that had been previously ratified between the involved parties, in addition to re-ratifying one term and renewing another. Furthermore, approximately 210 requests that were included in public civil action proceedings were eliminated and/or suspended, based on the understanding that the agreement's clauses would meet the demands of the affected communities (Oliveira, 2022).

The agreement presents as one of its bases principle number 10 of the United Nations Conference for Development and Environment, which establishes the importance of access to information and popular participation in the remediation of socio-environmental damages. However, even

<sup>1</sup><https://veja.abril.com.br/brasil/brumadinho-e-o-maior-desastre-com-barragens-da-decada-aponta-oit/>



before ratification, the population of Brumadinho started denouncing that the document was being prepared without adequate consultation with the affected population (Associação Estadual de Defesa Ambiental e Social, 2020).

Studies on disasters caused by Vale S.A. confirm the dissatisfaction of communities, denouncing authoritarianism and dissonance between discourse and practice in reparation processes (Almeida *et al.*, 2024; De Abreu, 2025; De Melo *et al.*, 2024; Oliveira, 2022; 2025). Few studies, however, work with the voices of the affected communities, narrating their experiences, feelings, and emotions. In this study, we analyze the construction process of the document in view of international reparation premises, contrasting its propositions with public statements by community representatives. Working from the perspective of human ecology, we adopt its multidisciplinary character to analyze the management of common goods in the socio-ecological system from the viewpoints of Law, business administration, and public administration. Starting from the research question "Has the Integral Reparation Agreement been able to provide quality solutions for the population affected by the Brumadinho tragedy?", we analyze the process of construction and the text of the agreement, in light of theoretical references on human ecology, intersectoral relations, governance and the guidelines of the Inter-American Court of Human Rights and the United Nations on reparation processes. We also seek to bring to light the voices of the community, silenced in the official reports published on the recovery process, about how the document was elaborated and the results that are presented so far.

The present study does not aim to conduct a legal-dogmatic analysis of the Integral Reparation Agreement, nor to systematically examine its insertion within the Brazilian collective protection system or the formal distinction between collective, diffuse, and individual damages. The approach adopted is analytical and socio-political, oriented toward understanding the dynamics of governance, participation, and power distribution throughout the reparation process. Accordingly, the Agreement is examined as an institutional instrument for the management of a wicked problem, rather than as an object of nor-

mative exegesis.

The results demonstrate that the Integral Reparation Agreement, in the case of the Brumadinho tragedy, characterizes an attempt at a linear solution to a wicked problem - which, by nature, does not admit this type of remedy. Conceived without popular participation, the Agreement configures a top-down answer, since it does not offer those affected the possibility of organizing and leading the solution to problems. The research demonstrates that this kind of agreement weakens comprehensive reparation and perpetuates vulnerabilities, highlighting the need for independent audits and community protagonism in reparation processes.

In addition to the introduction, the article presents five main sections. The first contains the theoretical framework, which articulates human ecology, business management and international guidelines on reparation, addressing also concepts such as neocolonialism, neoextractivism, governance, mutuality and morality. The following section presents the qualitative methodology adopted, which involved bibliographic research, analysis of the Integral Reparation Agreement and collection and analysis of manifestations from those affected in documents and events. The next section deals specifically with the structuring and premises of the Integral Reparation Agreement. In the fourth, the results are discussed, by relating the agreement's proposals to the voices of the affected people. The last section presents the final considerations, highlighting the main findings, contributions of the study and implications for the debate on the relationship between companies, governments and affected people in the context of socio-environmental disasters.

## THEORETICAL FOUNDATIONS

### Globalization, neocolonialism, and neoextractivism

The growth of the Brazilian economy in the 20th century, according to Evans (1986) resulted from an alliance between multinationals, local capitalist elites, and the so-called state bourgeoisie. Sousa Santos (2019, p. 405) mentions a "national capitalist class", formed by relationships between



top management of large companies (national and multinational), political leaders, senior state officials, and other influential professionals, united by their interest in power relations and socioeconomic privilege – a kind of revolt of the elites against the post-World War II redistribution of wealth. This alliance would be the basis of the industrialization model of the peripheral countries, whose implementation requirements erode institutions and norms in such a way that they affect the State's legitimacy in controlling society; they interfere with class formations and inequality at the world level (Sousa Santos, 2019).

Quoting Bob Jessop, Sousa Santos (2019) mentions three trends in the transformation of state power in a globalization scenario: 1) denationalization, through the reorganization of capacities and the emptying of the apparatus, 2) the privatization of political regimes - transition from "government" to "governance" – in which the State moves from the central role in the integration of the economy, society, and culture to that of coordinator (at most) of associations between organizations of various natures, in the name of the integration of economy, society, and culture to the global context; and 3) the internationalization of the national state, especially in economic matters.

Even playing a key role in Latin national economies, mining has been a great object of discussion in Brazil, due to the economic, environmental, and social impacts in the regions in which it operates. Sehnem et al. (2020) state that mining does not always lead to improved social and economic conditions for all, reinforcing the Abundance Paradox or Resource Curse (Auty, 1993): regions that are abundant in non-renewable resources tend to have less economic growth and worse development rates compared to places that do not have such resources.

Gudynas (2009) comments that the "old" extractivism, before the 1990s, involved exports, and the world market, advocating a smoother performance by the government. In turn, the modern "neo-extractivism" would, apparently, be characterized by the strengthening of the Government; however, the government operates following business strategies aimed at gaining

competitiveness and increasing profitability - state practices reproduce conventional business practices; power is used by the government itself to favor the private initiative, which ends up meeting what Sousa Santos (2019) advocates: the government itself acts to weaken itself, transferring power to the private sector, notably to large multinational companies - which configures a neo-colonial practice.

Neo-extractivism reinforces neo-colonialism by promoting the international insertion of South American countries marked by subordination – a competition to attract international investments. And this dispute implies the competition for the flexibility of social-environmental rules (Gudynas 2009). Thus, social and environmental impacts have increased, while actions to combat them have been weakened by a discourse that social and environmental impacts must be accepted by the surrounding populations as sacrifices, in exchange for benefits to the country. Gudynas points out that, in the name of these benefits, governments reject social protests and accuse affected minorities of impeding development.

According to Sousa Santos (2019), this new articulation between politics and economy implies that national commitments are replaced by pacts with global actors or globalized national actors. Gudynas (2009), additionally, points out that both right-wing and left-wing governments, from which one would expect attitudes to combat the overexploitation of natural resources, end up committing themselves to neo-extractivism since the financing of social investments often happens to depend on the foreign exchange generated by these ventures. Thus, in a contradictory way, social legitimacy becomes an argument for the defense of extractive activities, which, in turn, have a high social-environmental impact. The discussion becomes no longer about inequality and the damages brought about by mining, but about what will be done with the financial resources from this activity; debates fail to contemplate the development model.

Gudynas highlights cases in which extractive companies enjoy a leading role in local communities, assuming part of the State's role, throu-



gh the construction of schools, health centers, and other undertakings. This weakens protests against the development model, which in turn makes the discussion about extractive enterprises even more difficult. The discourse of previous decades, exalting progress and job creation is reedited, starting to advocate that extractivism is a necessary condition for combating poverty, as it generates wealth – a reductionist vision that confuses economic growth and development (Gudynas, 2009; Rezende & Ramalho, 2006). Politicians and other local leaders adopt this speech, and the State starts to serve extractivism. Social and environmental costs are transferred to local communities, considering that social inequalities are effects of economic growth and can be solved by compensatory measures, as long as they do not affect market mechanisms, while the benefits are shared on a national scale. Disasters become part of the business itself, as part of corporate strategies to maximize profits, supported by public policies that make lives precarious and exacerbate vulnerabilities. Hegemonic globalization is configured, as pointed out by Sousa Santos (2019), and represents a disaster in the management of commons.

### **Reparation, mutuality, morality and social responsibility**

For Rangan (2018), mutuality, or the exchange of benefits, has been the basic principle of social contracts involving business activity. He agrees when Evans (1986) states that there is, in fact, a mutual relationship between managers, business owners, and regulators (Government) - which seems to be sustained at the expense of society. Mutuality is based on outcomes, defined by Rangan as a product of power and interest. In other words: if one wants to define the results, it is necessary to pay attention to the structure of power. Corporate responsibility is nowadays geared towards outcomes such as the possibility of attracting brilliant professionals, the overpricing paid by engaged consumers, or the more lenient attitudes of regulators in case of violations. The question would be: is this type of mutuality relationship enough to guarantee social-environmental sustainability as a result?

Rangan (2018) considers that is necessary to overcome this type of relationship, through a philosophical perspective of economics, which embraces moral and normative issues and an expanded scope of humanity. In other words: more than regulating market power, as evoked by Hardin (1968), it is necessary to educate it – a proposition that connects with Ostrom's (2009) premises. For Rangan, it is necessary to use power to go beyond self-interest, based on moral reasoning, contemplating philosophical ideals and principles - which today influence legislation and policy, but still go far from inspiring business theories and affecting economic paradigms: "There is more to well-being than income and consumption" (Rangan, 2018, p. 10). Real sustainability propositions demand companies be protagonists in raising the levels of justice and well-being, sharing the ideals that are traditionally treated by philosophers. The author reinforces that philosophers and social scientists need to work together to develop economic perspectives combining morality and mutuality, since the capitalist paradigm, based purely on mutuality, does not help economic agents to respond to the demand for justice and well-being; even the state machine remains focused on outputs rather than outcomes. As in the social sciences practice guides theory, the need to incorporate this morality into practice emerges: "Does the pursuit of outputs have to lead to the sacrifice of outcomes?" (Rangan, 2018, p. 15).

Banerjee (2008b) affirms that regulation by the government and other agencies is needed for businesses to produce socially beneficial results. He then denounces the current influence of big corporations in the design of national laws itself, even though it is largely known that corporations cannot replace governments in the mission of promoting social welfare, because they are driven by economic functions. While its ability to generate wealth is unquestionable, the social-environmental effects of the actions of large corporations also unquestionably continue to be destructive. Thus, social responsibility, corporate citizenship, and sustainability can configure a form of rationality that, despite an emancipatory intention, marginalizes sectors of society (Banerjee 2008a). According to Rangan (2018), this points to a lack of morality.



Analyzing the assumptions that support the discourse of corporate social responsibility, Banerjee meets Ostrom (2009) and Rangan (2018) when he highlights three points on which companies should focus: thinking beyond profit, paying attention to social and environmental issues; adopting ethics, integrity and transparency in all its operations, and engage with the community, promoting social well-being and providing support. These processes should take place through dialogue and real engagement with stakeholders (Banerjee 2008b); however, social responsibility and sustainability discourses have been used by companies to restrict and silence the dissatisfaction of external stakeholders and legitimize and consolidate their power. In this context, the Stakeholders Theory can represent a neo-colonial instrument focused on regulating the behavior of these actors. Even appearing to be based on societal interests, these discourses may end up serving corporate interests at the expense of segments of society (Banerjee, 2008b).

Banerjee (2008a) denounces the practice of large companies in the illusion of "empowering" the community: it consists of consulting stakeholders (involved/affected communities), making decisions privately, and then informing the community about the decisions taken - which demonstrates a clear inequality of power in relationships. Consultations usually do not involve do's or don'ts but at best address the conditions under which the practice should take place. Stakeholders who do not align themselves with company policy end up being co-opted or marginalized. The provisions of the Inter-American Court of Human Rights (IACHR) confirm and reinforce what Rangan (2018) proposes in the case of reparation processes for human rights violations: implementation must obey the principle of effectiveness, which includes, in addition to full compliance with the measures, that the needs of the victims are duly taken into account: "taking into account the expectations and participation of the victims in their implementation," in the words of the IACHR (Corte Interamericana de Derechos Humanos, 2022). Additionally, the court warns that these measures cannot be confused with humanitarian aid or the satisfaction of other needs.

Lopes et al (2019) point out that, confirming Banerjee (2008a; 2008b), in Brazil, victims have been denied a leading role in repairing their violated rights: "the role reserved for victims and their families in the Brazilian judicial process remains residual, secondary and of little relevance." By criticizing the low effectiveness of the Brazilian judicial system in guaranteeing full reparation for human rights violations, the authors highlight the "patrimonialization of moral damages reparation" - the mere offer of money to the victim, reducing moral damage to monetary figures. Typical of the so-called paradigm of "money as a universal remedy", this attitude, according to Lopes and colleagues, paves the way for those who can "pay the price" to feel entitled to violate fundamental human rights. Thus, compensation for violations of so-called personality rights (which concern people's extra patrimonial sphere - essential attributes to the human condition) end up being accounted for as costs by large companies. This leads to a process of commodification of moral damages: indemnities, which should be exceptional, become operational fees; corporations consciously begin to deliberately opt for harmful practices as long as judicial indemnities do not exceed investment.

In the case of Brumadinho, recent investigation shows that Banerjee's recommendations are not being taken into account. Almeida *et al.* (2024) focus on reconstruction governance, quantitatively analyzing the theoretical reconstruction model, and point out that better results could be obtained if those responsible for reconstruction focused on the real needs of the territories. De Abreu (2025) denounces the State's omission in oversight, the slowness and violation of rights in the reparation process. De Melo et al (2024) investigate disaster governance in the context of civil society organizations, criticizing the absence of the population in the development of response plans, also pointing out the lack of transparency, the low trust of those affected in the governance system, and the inadequacy of Vale's and governmental authorities' response. Oliveira (2025) analyzes the decision-making process and its results, using procedural theory of democracy, denouncing that the confidential conduct of judicial agreements, without the participation of tho-



se affected, has become a recurring practice of governments and mining companies in socio-environmental crimes. She points to a democratic deficit in the process, characterized primarily by information asymmetry, which generates a power imbalance among actors.

## METHODOLOGICAL PROCEDURES

This work adopts the qualitative approach to examine aspects of the social process, such as the daily routine, experiences, and aspects of the participants' imagination, the articulation of social processes, and their meanings (Denzin, 2006). Magalhães et al (2018) point out the interest of qualitative research in the spontaneous expression of people, in what they consider important and in how they reflect on their actions and those of the actors with whom they interact. The choice for a qualitative approach in a Case Study, in contrast to positivist and quantitative ones, common in studies involving companies, is anchored in the intention to understand the social phenomena linked to the disaster in the environment where they occur and from the perspective of the subjects involved, which enables a contextualized understanding of the behavior analyzed.

This is a single qualitative case study of an exploratory-explanatory nature, with the Integral Reparation Agreement signed in 2021 in the context of the Córrego do Feijão dam collapse as its unit of analysis. By analyzing the text of the Integral Reparation Agreement and the counterpoint represented by the voices of the local community, this article demonstrates its practical, descriptive, and explanatory nature, seeking to assist in the development of applied solutions for society.

To understand the context preceding the tragedy and the events immediately following the dam collapse, a structured bibliographic review was conducted. The search was carried out between October and December 2022, through the Nova Discovery platform, which aggregates databases such as ScienceDirect, JSTOR, SciELO, and Web of Science. Articles published between 2019, the year of the collapse, and 2023 were included, provided they addressed: (i) the Brumadinho tragedy; (ii) post-disaster reparation processes; (iii) reconstruction governance; (iv) community participation; and (v) socio-environ-

mental impacts. Institutional documents and manifestos were also considered as primary sources, given their relevance to the understanding of the analyzed process.

Subsequently, empirical data collection was carried out through two complementary procedures:

### **Documentary analysis**, comprising:

- the official text of the Integral Reparation Agreement (TJMG, 2021);
- institutional reports from the Government of Minas Gerais;
- manifestos from associations of affected communities;
- technical notes from independent advisory bodies;
- audiovisual records of public hearings and events;
- documents produced by collectives and social movements.

**Structured non-participant observation**, conducted between August 2021 and March 2023, at both virtual and in-person events, including:

- a public hearing on the agreement (2021);
- the lecture *Reparation Works for the Brumadinho Accident*, delivered at the Expositram Fair (2022);
- meetings of the Brumadinho Social Observatory (2022);
- meetings of the Collective of Affected Persons (2023);
- a seminar held in Brumadinho in January 2023, marking the fourth anniversary of the tragedy.

Non-participant observation constitutes a methodological approach wherein researchers function as attentive observers, gathering data without direct involvement with participants or the phenomena under investigation. The fundamental objective of non-participant observation is to document and record the maximum volume of pertinent facts and details for the research without interfering with participants' behavior or interactions (Richardson et al., 2012).



Data collection followed a structured protocol encompassing: (i) identification of the actors present; (ii) recurring themes in the discourses; (iii) references to social participation; (iv) mentions of reparation criteria; (v) expressions of satisfaction or dissatisfaction; and (vi) evidence of power asymmetry in the decision-making process. Qualitative data were documented in field notebooks, including observations, reflections, and detailed experiential accounts, alongside contextual information, nuances, and the researcher's impressions regarding both physical and social environments. Subsequently, these records were organized into thematic analytical matrices, enabling the systematic cross-referencing of institutional discourse and community expressions.

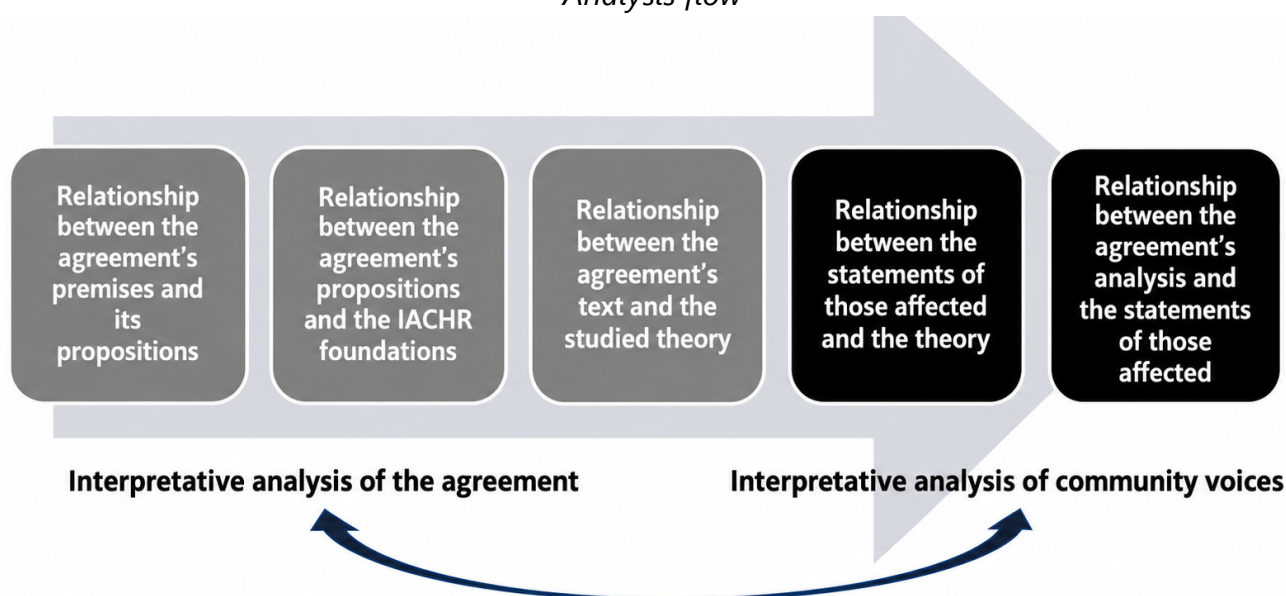
Data analysis was conducted through Directed Thematic Analysis, as proposed by Hsieh and Shannon (2005). This method was adopted as it allows for the use of theoretically pre-defined categories derived from the framework on wicked problems, governance, corporate mora-

lity, and international reparation guidelines, while simultaneously enabling the incorporation of emergent categories arising from the empirical material.

Coding was performed manually through exhaustive reading of the material and organization into analytical matrices, allowing for the systematization of categories and the cross-referencing of documentary sources and field records.

Next, we proceeded to the interpretative analysis, divided into two stages, as shown in Figure 1: first, we focused on the text of the Agreement, then we moved to the voices of the community. The analytical procedure unfolded in three stages: (i) thematic coding of the Agreement text; (ii) thematic coding of community expressions; and (iii) comparative analysis between institutional discourse and community discourse, establishing a "point and counterpoint" approach based on the identification of convergences, divergences, and power asymmetries.

**Figure 1**  
*Analysis flow*



Note. Elaborated by the authors.

The quality of reparation was operationalized as a multidimensional construct, understood as the degree of adherence of the Agreement to international reparation guidelines and to the principles of democratic governance discussed in the theoretical framework. For analytical purposes, four dimensions were defined: (i) participa-

tory inclusion; (ii) transparency and accountability; (iii) comprehensiveness of reparation (material and immaterial); and (iv) distribution of decision-making power throughout the implementation process. These dimensions guided the coding and comparative analysis between the text of the Agreement and community expressions.



The analysis was subsequently continued, equally divided into two stages: the text of the Agreement and the counterpoint of community voices. The quality of reparation was operationalized on the basis of four analytical dimensions: (i) participatory inclusion; (ii) transparency and accountability; (iii) material and immaterial comprehensiveness of reparation; and (iv) distribution of decision-making power throughout the implementation process. The result of the analysis is materialized in the conclusions and contributions.

## THE INTEGRAL REPARATION AGREEMENT

Before proceeding to the analysis of the provisions of the Agreement, we will briefly describe

the main lines of its structure. The document defines obligations to do, involving projects that must be executed by Vale S. A., and the obligations to pay, which encompass projects to be financed by the company, through the transfer of resources to the Governo do Estado de Minas Gerais. Of the total amount of R\$ 37.689.767.329,00 (thirty-seven billion, six hundred and eighty-nine million, seven hundred and sixty-seven thousand, three hundred and twenty-nine reais, approximately 7.9 billion dollars), R\$ 15.1 billion (3.15 billion dollars, approximately) correspond to obligations to do by Vale and R\$ 22.5 billion (about 4.7 billion dollars) configure obligations to pay by Vale. The obligations defined by the agreement are divided into four parts - called, in the document, Annexes, and presented in Table 1.

**Table 1**  
*Annexes of the Full Reparation Agreement*

<b>ANNEX</b>	<b>DESCRIPTION</b>
Annex I - Socioeconomic Reparation Program Total value: R\$ 11.4 billion	The actions encompass, in addition to Brumadinho, directly affected communities and 25 municipalities also considered affected.
Annex II - Socio-environmental reparation and Compensation Program for Known and Non-Recoverable Damages Value: approximately R\$ 6 billion. (Not subject to financial ceiling)	Includes the reparation of affected municipalities and communities, with interventions for environmental recovery and compensation for damages considered irreversible.
Annex III - Mobility Program Total value: R\$ 4.95 billion	Comprises actions for reparation and compensation of impacts caused in the State as a whole. They seek to provide improvement of quality of life and development for the municipalities to raise the mobility conditions of the population. Also involves logistical improvement, the attraction of investments, employment, and income increase. Actions are distributed throughout the State.
Annex IV - Public Service Strengthening Program Value: R\$ 3.65 billion	Actions that also involve the entire State, aiming to compensate for negative economic and social impacts, such as losses of revenue and direction of global public services to attend to the people and regions affected at the time of the disaster.

Note. Elaborated by authors. Data from Tribunal de Justiça do Estado Minas Gerais (2021) and Governo do Estado de Minas Gerais (2021).



In addition to these values, also are included: the expenses previously incurred by Vale, in the amount of R\$ 6 billion (about one billion euros), and the so-called Special Projects, involving: Term of Adjustment of Conduct (TAC) with the Firefighters, Term of Adjustment of Conduct (TAC) with Civil Defense, risk assessment, monitoring of water quality for human consumption, the construction of a memorial in honor of the victims and other provisions. These projects will be funded and executed directly by Vale (Governo do Estado de Minas Gerais, 2021). At the end of 2022, Vale's Integrated Report indicated that 58 % of the agreement had been executed, having fulfilled 76 % of the obligations to pay and only 5 % of the obligations to do<sup>ii</sup>.

Regarding the provisions of the document, the Integral Reparation Agreement (Tribunal de Justiça do Estado de Minas Gerais, 2021, p. 31) presents as a guideline the principle number 10 of the United Nations Conference for Development and Environment, concerning popular participation:

The best way to deal with environmental issues is with the participation of all interested citizens, at various levels. At the national level, every person should have adequate access to information on the environment that public authorities have, including information on materials and activities that pose a danger to their communities, as well as the opportunity to participate in decision-making processes. States should facilitate and foster public awareness and participation, making information available to everyone. Effective access to judicial and administrative procedures should be provided, including compensation for damages and relevant resources. (United Nations, 1993, p. 5)

This principle ensures everyone, especially people in situations of vulnerability, in addition to timely and reliable information, meaningful participation in decisions that affect their lives. This determination is closely related to the Sustainable Development Goal (SDG) number 16, which

<sup>ii</sup> Information contained in the Integrated Report 2022, prepared by Vale S.A. and available at: [https://vale.com/documents/d/guest/vale\\_relatointegrado2022-br-fina](https://vale.com/documents/d/guest/vale_relatointegrado2022-br-fina)

proposes "to ensure inclusive, participatory and representative decision-making". Brazil is committed to the SDGs, as it is a participant in the 2030 Agenda for Sustainable Development - Resolution A / Res 70/1, of 25.09.2015, of the United Nations General Assembly.

The text of the Agreement characterizes it as a "constitutional and legal alternative for the consensual resolution of conflicts (...) in a more agile and efficient way". It appears as a premise of the document the "responsibility of Vale for the integral reparation of all damages resulting from the Break, already recognized in a judicial sentence, issued on July 9, 2019" (Tribunal de Justiça do Estado de Minas Gerais, 2021, p. 4). It is also established that the socio-economic reparation provided "will respect the local ways of life, the autonomy of the affected people and the strengthening of public services" (Tribunal de Justiça do Estado de Minas Gerais, 2021, p. 6)

However, the provision of participation of those affected in the Agreement already brings with it the restriction of their access, as shown by the text:

3.3. The affected people will have informed participation ensured in the conception, formulation, execution, monitoring, and evaluation of plans, programs, projects, and actions related to Annex I.1 - Projects for Demands from Affected Communities. 3.4. The affected people will act in the prioritization and monitoring of projects from Annexes I.3 and I.4. (Tribunal de Justiça do Estado de Minas Gerais 2021, p. 7)

Finally, it should be noted that in the final provisions of the agreement, "the centrality of those affected" is established, adding that "the execution of this instrument will take into account the specificities and singularities of traditional peoples and communities, through prior, free and informed consultation". It also established the maintenance of "channels of dialogue and interaction between those affected, the compromisers, Vale, and society, in existing institutional forms" (Tribunal de Justiça do Estado de Minas Gerais, 2021, p. 20).



## DISCUSSION AND ANALYSIS

Having in mind the theoretical bases that guide this study, the collected data were analyzed considering the divisions of the framework. Thus, the analysis of the agreement text sought to: a) evaluate the coherence between the propositions and the premises of the document, b) evaluate the coherence between the propositions and the bases established by the Inter-American Court of Human Rights for reparation processes and c) identify the relationship between the agreement's proposals and the concepts of globalization, neocolonialism, neoextractivism, commons management, governance, mutuality and morality. In turn, the analysis of the voices of those affected sought to: a) connect the reality of those affected to the studied concepts and b) connect the statements of those affected to the analysis of the agreement.

According to definitions provided by Churzman (E 1967, B141) and Bannink and Trommel (2019), environmental disasters can be considered wicked problems, and reparation process involves many actors, with conflicting values, the complexity is inherent, and information flows everywhere, in a confusing way. Therefore, this kind of problem does not admit linear or cartesian solutions and demand systemic approaches. Proceeding to the analysis of the text of the Agreement, in light of the theoretical framework, it should be pointed out that the negotiations and dealings did not follow systemic approaches, and took place under judicial secrecy - the affected population could not validate, or even access the text, before it was signed, having the right to participate only in the definition of the actions foreseen in Annex I.1 (whose value corresponds to less than 10% of the total of the Agreement). According to Oliveira (2022), the Federal Public Defender's Office, which did not participate in the elaboration of the document, publicly confirmed these weaknesses in the construction process, indicating that the collective's claims were still far from the consensual solution.

Despite extinguishing some lawsuits previously proposed for the reparation of damages, the Agreement does not cover all points addressed by these processes, even because, at the date of signing, the Damage Matrix, which was being done by Instituto Guaicuy, an independent con-

sultancy linked to the Federal University of Minas Gerais, had not been completed (Pontes, 2021). According to MAM - Movement for Popular Sovereignty in Mining (Movimento pela Soberania Popular na Mineração, 2021), the value of the Agreement is insufficient to finance integral reparation. The initial amount proposed by the Government of Minas Gerais, based on technical studies produced by Fundação João Pinheiro and the Public Prosecutor's Office of Minas Gerais, was R\$ 54.6 billion. Therefore, a discount of almost 20 billion was offered to Vale, already including in the final amount what had been previously spent by the company on emergency actions (R\$ 6 billion). And more: MAM points out that the amounts destined to the affected population are much lower than what was due to the State; of the 37 billion reais, only 20 % (R\$ 7.4 billion) are being directed to those affected. Additionally, considering only the amount destined to the State in general (R\$ 8.6 billion), most (R\$ 4.95 billion) will not be invested in the region victimized by the tragedy, but in road infrastructure works - implementation of a subway in the state capital, highway repairs, bridge construction, and a ring road, which will also facilitate the flow of mining production.

The text establishes that the mapping of damages - which would previously be done by an academic and independent entity - should then be done by a private company hired by Vale. It is also noteworthy that the parameters for measuring Vale S.A.'s obligations should be defined, according to the Agreement, by a company "funded and under the responsibility of Vale", although they must later be validated by the compromisers - which positions the State in the position of mere coordinator, as denounced by Sousa Santos (2019) when addressing the replacement of "government" with "governance". In addition, Vale, formally responsible for the tragedy, took the responsibility for detailing the projects for the Paraopeba Basin and Brumadinho (Annexes 1.3 and 1.4). According to the text, the company must present "the analysis of technical and financial feasibility and presentation of detailed scope, schedule, estimated costs, expected results (indicators, goals, and delivery milestones)" (Tribunal de Justiça do Estado de Minas Gerais, 2021, p. 19). That is: the company was declared responsible for mapping the damages it caused itself, as well as defining indicators, goals, and milesto-



nes for actions to repair these damages. It is also worth noting that among Vale's obligations to do are projects for "Living with mining dependence and transition to a new economy". It is questionable why a mining company - rather than the Public Power - was assigned the responsibility of setting objectives and goals and executing projects aimed at overcoming a condition imposed by itself on the population. (Gudynas, 2009; Sousa Santos, 2019). It should be noted that, according to Banerjee (2008b), the fact that companies are driven by economic functions should prevent them from replacing governments in promoting social well-being.

Item 6 of the Agreement establishes the hiring of independent external audit companies to evaluate the achievement of objectives and results. Once again, it is surprising that socio-economic and socio-environmental audits are to be hired by Vale S.A.; it is not clear why public power could not hire this audit, at the expense of the company, which denotes the Government's action to transfer power to the private sector. (Evans, 1986; Gudynas, 2009; Rangan, 2018; Sousa Santos, 2019). It should be remembered that right before the tragedy that this study deals with world safety standards were disregarded by an external consultancy, hired by Vale, which allegedly acted under pressure from the company to change the stability factor in a report on the dam (Ragazzi & Rocha, 2019).

Still regarding the detailing of programs and projects, item 5.6 of the agreement establishes: "The monitoring and follow-up of the projects will be carried out by those affected. The inspection will be carried out by the compromisers, supported by the Socioeconomic Audit" (Tribunal de Justiça do Estado de Minas Gerais, 2021, p. 20). At this point, it is not clear how monitoring and follow-up would be done by those affected, nor whether this item refers to any specific Annex, and which one it would be. Fundação Getúlio Vargas, later hired by Vale as auditor, published a website with information, provided by the company, on the progress of the projects<sup>iii</sup>. However, as of the production of this article, the website presents qualitative and very summarized information, without quantitative data that indicates

the number of beneficiaries, efficiency or effectiveness evaluation, or data reliability indexes.

### Community Voices

Despite having been announced as a kind of "perfect mode of governance", criticized by Bannink and Trommel (2019), the agreement has been the target of many criticisms, by social movements, political representatives, the church, and the affected population itself. We will now address some of them.

Even before the ratification of the agreement, back in 2020, there were several manifestations. The three Independent Technical Advisory (ATIs)<sup>iv</sup> that worked in the Paraopeba River basin, with the help of the Pontifical Catholic University of Minas Gerais, gathered dozens of Organized Commissions of Affected and prepared a Manifesto for participation in the discussion of the agreement, approved by those present at the 4th Meeting of the Commissions of Affected and Affected by the Paraopeba Basin. In the text (Associação Estadual de Defesa Ambiental e Social, 2020), the affected population disagrees with the approval of an agreement built without the properly informed participation of those affected, claiming for a broad and transparent process of participation, including traditional peoples and other communities, with revocation of confidentiality, unrestricted access to information and adequate time for appreciation - that is compliance with what the agreement itself proposes (Corte Interamericana de Derechos Humanos, 2021). The Manifesto also demands the participation of those affected and technical advisors, chosen by the population, in all phases of reparation, from data collection, planning, management, and oversight, with equal participation and decision-making power among those affected, the State and other institutions. The term "polluter pays" deserves attention as it qualifies Vale S.A. in the Manifesto: the affected population argues that the company's role in re-

<sup>iii</sup> Information contained in the Integrated Report 2022, prepared by Vale S.A. and available at: [https://vale.com/documents/d/guest/vale\\_rela-tointegrado2022-br-final](https://vale.com/documents/d/guest/vale_rela-tointegrado2022-br-final)

<sup>iv</sup> On May 19, 2019, within the scope of the lawsuits filed against Vale by public authorities, those affected chose AEDAS (State Association for Environmental and Social Defense) to provide Independent Technical Advisory (ATI) in Brumadinho. The ATI's functions are "to carry out studies and participatory processes in which those affected have access to information about the reparation process and can discuss their damages". It is also up to ATI "to inform, raise and discuss in participatory spaces the proposals of those affected about the best way to repair the losses suffered", so the Public Prosecutor's Office and the Public Defender's Office receive information for the defense of the rights of those affected in judicial proceedings (State Association for Environmental and Social Defense, n.d.)





ted the importance of taking care of the affected people. At another time, the representative of the Federal Public Defender's Office stated that the Public Defender's response to the affected population "is always, within the Law, in the field of (financial) compensation", ignoring the importance of reparation for immaterial damages, proposed by the Inter-American Court of Human Rights (Corte Interamericana de Derechos Humanos, 2022). In response to this, we address below manifestations collected during another event, aimed at analyzing and commenting on the post-tragedy: the Seminar Cities Affected by Mining, held on January 24, 2023, in Brumadinho, by the initiative of AVABRUM - Association of relatives of victims and affected by the rupture of the dam mine Córrego Feijão, four years after the tragedy.

Contrary to what is recommended by IA-CHR (Corte Interamericana de Derechos Humanos, 2022) and even in the final provisions of the agreement, the affected population complains that they are not being heard: "Without criminal accountability, there is no relief. Life is priceless. When we see the agreement of 37 billion reais, we see the money of our blood and our tears". The speech is by Andresa Rocha Rodrigues, vice-president of AVABRUM. Rodrigues, who is the mother of one of the 272 fatal victims, said that the population has been silenced and that the community is not a protagonist in the reparation process (Legado de Brumadinho, 2023). She used a play on words, "RE-PARA-AÇÃO" (something like RE-STOP-ACTION), to show that the reparation process "stops us on January 25, 2019". For her, the lives of families and other affected people remain stagnant while they fight for dignified reparation.

At this same event, Silas Fialho, representative of the Brumadinho Leadership Committee, also criticized the non-listening of the population in the reparation process: "Speaking for me is easy; it's hard to represent me. Those who represent us don't listen to us (...). (the compromisers) don't answer emails; they show up once a year". Márcio Rodrigues, president of the Brumadinho Leadership Committee, described the events after the agreement was signed:

The Justice institutions, the compromisers, do not even call or have called an affected person or want to know if the decisions made are representative. We are not called to participate (...). This is wrong and needs to change. So far there has been no reparation. Works that violate the rights of those affected are taking place, causing inconvenience. Call the leaders, listen to the community. (Legado de Brumadinho, 2023)

The mental health of the affected population also suffers during the reparation process; experts draw attention to the growth of impacts. Rodrigo Chaves Nogueira, psychologist and technical reference of the Mental Health Team of Brumadinho, reinforces the exclusion of affected population and also denounced:

We have experienced various losses, affecting social, affective, and cultural ties. Four years after emergencies, pseudo-indemnities, works, and attempts at reparation, we find that human beings cannot live 'in a state of war'. People continue to suffer. Material reparation does not cover immaterial damages. One faces a problem with insomnia, another takes medicine, and another falls into alcohol. (...) Whoever did not step on the mud should not speak for us. Don't think anything for us without us. (Legado de Brumadinho, 2023)

The testimonies presented do not constitute isolated expressions, but rather converge toward a structural critique of the institutional arrangement of the reparation process. The narratives of silencing, absence of community agency, decision-making centralization, and patrimonialization of suffering engage directly with the theoretical categories mobilized throughout this study.

The joint analysis of the Agreement text and community expressions reveals a recurring pattern: concentration of decision-making power in the company responsible for the damage, restriction of social participation to the secondary stages of the process, reduction of reparation to a predominantly financial dimension, and fragi-



lity of independent oversight mechanisms. These elements, examined in light of the theoretical categories mobilized — governance, commons management, corporate morality, and wicked problems — allow for the understanding that the linear solution approach adopted in the Brumadinho case not only disregards the inherent

complexity of the problem, but also reproduces structural power asymmetries.

With the aim of synthesizing this evidence and making explicit the analytical contribution of the study, a framework is presented below that systematizes the dimensions of reparation quality identified in the research.

**Table 2**

*Synthesis framework for reparation quality in the context of a wicked problem*

<b>Analytical Dimension</b>	<b>Theoretical Basis</b>	<b>Observed Empirical Evidence</b>	<b>Analytical Implication</b>
<b>Participatory inclusion</b>	UN Principle 10; Democratic governance; Commons management	Participation restricted to Annex I.1; absence of community agency in the drafting and implementation of the Agreement	Deliberative exclusion and weakening of the legitimacy of the reparation process
<b>Transparency and accountability</b>	Governance theories; Public accountability; Corporate morality	Audits contracted by the company itself; absence of robust public evaluation indicators	Transfer of power to the private sector and weakening of public oversight
<b>Comprehensiveness of reparation</b>	Inter-American Court of Human Rights guidelines; Concept of integral reparation	Reduction of reparation to a predominantly financial dimension; insufficient consideration of immaterial damages	Patrimonialization of suffering and limitation of the reparation scope
<b>Distribution of decision-making power</b>	Wicked problems theory; Commons management; Critiques of neo-extractivism	The responsible company defines goals, indicators, and implementation projects	Corporate centralization of the process and reproduction of structural asymmetries

Source: elaborated by authors

The framework presented above does not constitute an abstract typology, but rather derives directly from the empirical analysis conducted. It demonstrates that, in contexts of wicked problems, agreements structured under a technocratic and centralized logic tend to produce interdependent structural effects, expressed in the restriction of substantive participation, the displacement of oversight toward the private sector, and the reduction of reparation to its patrimonial dimension, as systematized across the four analytical dimensions presented.

## **RESULTS AND FINAL CONSIDERATIONS**

This work empirically demonstrates how judicial agreements conceived without social participation can reproduce corporate logics, weaken comprehensive reparation and perpetuate vulnerabilities, highlighting the need for independent audits and community protagonism in reparation processes.

The results demonstrate that the Integral Reparation Agreement, in the case of the Brumadinho tragedy, characterizes an attempt at a linear solution to a wicked problem - which, by



nature, does not admit this type of solution. Given that it was demonstrably not an accident, the situation is characterized as a result of the actions of a free rider and its consequences (Hardin, 1968; Ostrom, 2009). The agreement configures a top-down, inefficient solution, as demonstrated by the literature since it does not offer those affected the possibility of organizing and leading the solution to problems. The elaboration process, behind closed doors, contradicts the principle of the Inter-American Court of Human Rights contained in its text, by not involving the affected population to contemplate their expectations and needs systemically. The rational understanding of the issues at hand, which characterizes legal procedures, must be associated with the engagement of the actors involved when dealing with wicked problems. Trying to solve a problem of this nature simply by approaching it as if it were a tame problem and denying its complexity, as seen throughout this work, may have brought some relief in the short term; however, testimonies and manifestos indicate that over time, there is no trust in the relationships; frustration among those involved has been growing as the focus remains on symptoms rather than causes (Bannink & Trommel 2019; Termeer et al., 2019).

The design of the solution, made even before the conclusion of the elaboration of the matrix that would point out the damages, did not contemplate mechanisms for listening to the voices of the affected stakeholders. It was based on the vision of the so-called compromisers and on the determinations of the company. By excluding those affected from prior debate, public power seems to be not only tutelary rights but also the population itself. Annex I.1 (whose value corresponds to less than 10% of the total) even provides for consultation with the population, but it should be pointed out that this consultation takes place after the decision on the main lines and values, and that the agreement does not provide for an evaluation of satisfaction among those affected after the execution of reparations. That is: consultations, when they occur, usually do not involve doing or not doing, but at best address the conditions under which practice should be carried out. After consultation, decisions are made privately and then communicated to the population - which confirms the "residual, secondary and of

little relevance" role pointed out by Lopes et al. (2019). Additionally, the lack of transparency and scant depth in disseminating reparations open up opportunities for overpricing, as mentioned in the External Commission of the Chamber of Deputies.

The analysis indicates that the company, and not the problem created by the collapse of the dam, occupies the central space of the reparation process - this is evidenced when the text of the agreement gives power to Vale S.A. to establish goals and hire companies that attest to their achievement. It should be noted, once more, that before the disaster, the stability of the dam had been certified by a company hired by Vale, which, contrary to international standards and claiming to have been pressured, adopted a different standard in the safety standards in force to issue the report.

In close relation with the State, the company absorbs functions that would be those of public power, and this assumes the classic business vision when moral damages are "patrimonialized" in defining reparation. This contradicts the principle of morality, which points out that corporate protagonism should be exercised in seeking to expand levels of justice, not in applying justice to problems of its own responsibility. The company again assumes the role of the State when invested with the power to (allegedly) promote social well-being, define goals, and indicators, conduct reparation actions, and attest to their fulfillment. The study shows the replacement of state commitment by agreements with global actors, which offer benefits to affected populations by financing social investments and assuming leadership positions. It ends up positioning extractivism as a condition for economic growth and poverty reduction because it generates income. The State, in turn, abdicates its position as a leader and becomes a mere coordinator of the reparation work, which is led by the company that caused the disaster itself. Thus, business logic, not public power logic, defines the progress of the process. The fact that justice and well-being continue to be on the agenda of the demands of the affected population confirms the Abundance Paradox (Auty, 1993, Sehnem et al., 2020) and demonstrates the prioritization of outputs (mutuality) over outcomes (morality).



As a result of this research, it can be stated that the Integral Reparation Agreement analyzed cannot be considered a tool for providing quality solutions to the problems created by the collapse of the Córrego do Feijão dam. Public power - at all levels and spheres of action - needs to understand the essence and forms of approach to wicked problems, preparing to deal with the consequences of the actions of large multinational companies in Brazil. There are no quick and linear formulas for addressing these problems, nor any guarantee of a solution; however, denying their complexity and taking decisions behind closed doors is the worst-case scenario. The patches for solving wicked problems must be based on iterative processes involving all stakeholders in designing collaborative solutions that contemplate not only material losses but also emotions, feelings, and expectations. Public power must count on multidisciplinary teams to assume leadership roles, regulate free-rider behavior and ensure that those affected be protagonists from the outset in designing solutions. By preventing disasters from becoming part of the operational costs of large corporations' businesses, it will be possible to prevent tragedies like this from becoming routine in mining territories.

As limitations of this study, we point out that the analysis focused on documents and collective manifestations, without in-depth individual interviews, given that this paper results from an exploratory research, aiming to structure a doctoral thesis methodology, later developed, including field interviews. As suggestions for future work, we mention conducting comparative studies, both in countries affected by mining in the global south and in countries considered "developed", with a view to evaluating the nature of the proposed solutions and the reaction of those affected to these propositions.

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