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# THE ENVIRONMENTAL DISASTER OF MARIANA AND THE KRENAKS OF THE DOCE RIVER<sup>1</sup>

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## ABSTRACT

This article proposes to present a reflection on BRASIL's biggest environmental disaster, which took place in Minas Gerais in November 2015, and the consequences to the Krenak people, who have an ancestral link with the Doce River, the largest one in this river basin. The whole area has been highly impacted by the unprecedented spilling of iron mining tailings. The disaster points to another one of the socio-environmental conflicts directly experienced by indigenous people who, most of the times, have their own notions on development, but suffer the effects of the economic projects they are left out of. The aim of this article is to verify whether indigenous concepts regarding development put into question those existing in nationwide encompassing societies, and if a conceptual change is possible regarding the idea of development prevailing in these larger societies based on the natives' way of thinking. The investigation is part of the problem permanently found in countries that have indigenous populations, who seek to maintain their traditional ways of life, while they are impacted by economic development policies, which do not take them into account during decision-making. The conclusive idea of the article is

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to initiate a discussion about the concept of development for indigenous peoples, and how much it relates to the one understood as sustainable development, as well as addressing the issue of corporate responsibility for environmental disasters and their prevention. We used the deductive method for supporting an exploratory-bibliographic research.

**Keywords:** development; Mariana disaster; native peoples; sustainability; traditional knowledge.

*O DESASTRE AMBIENTAL DE MARIANA  
E OS KRENAK DO RIO DOCE*

*RESUMO*

*O artigo se propõe a apresentar reflexão sobre o maior desastre ambiental do Brasil, ocorrido em Minas Gerais, em novembro de 2015, e as consequências trazidas ao povo Krenak, que possui ligação ancestral com o rio Doce, o maior dessa bacia fluvial. Toda a área foi altamente impactada pelo vazamento sem precedentes de rejeitos da mineração do ferro. O desastre aponta para mais um dos conflitos socioambientais diretamente vivenciados por indígenas que, mais das vezes, possuem conceitos próprios quanto ao desenvolvimento, mas sofrem os efeitos dos projetos econômicos dos quais são aliçados. O objetivo do artigo é verificar se os conceitos indígenas a respeito de desenvolvimento colocam em xeque aqueles contidos em sociedades nacionais abrangentes, e se é possível uma modificação paradigmática quanto à ideia de desenvolvimento vigente nas sociedades majoritárias, a partir do pensamento indígena. A investigação parte do problema permanentemente avistado em países que possuem populações autóctones, as quais buscam manter seus modos de vida tradicionais, ao mesmo tempo em que são impactadas pelas políticas de desenvolvimento econômico, que não as levam em consideração na tomada de decisões. A ideia conclusiva do artigo é iniciar uma discussão quanto ao conceito de desenvolvimento para os indígenas, e o quanto ele se relaciona com aquele entendido como sendo o desenvolvimento sustentável, além de abordar a questão da responsabilidade das empresas pelos desastres ambientais e sua prevenção. O método utilizado foi o dedutivo para amparar pesquisa de cunho exploratório-bibliográfico.*

**Palavras-chave:** *conhecimentos tradicionais; desastre de Mariana; desenvolvimento; povos indígenas; sustentabilidade.*

## INTRODUCTION

On November 5, 2015 the Fundão dam containing ore tailings from mining company Samarco S.A., located in Mariana, Minas Gerais, ruptured and released the equivalent of 20,000 Olympic pools of toxic mud and water, or about 50 million cubic meters of iron ore tailings (VARGAS, 2018, p. 496). 128 homes were immediately hit in the Bento Rodrigues district, located a few kilometers away. After that, the sea of tailings, mud and water covered more than 600 kilometers, reaching an area of about 10,000 square kilometers on the coast of the state of Espírito Santo – more than six times the size of the city of São Paulo (DENNY; TRINDADE; Jesus, 2016). If the amount were divided, each Brazilian would receive approximately 450 kilograms of mining tailings (MILANEZ et al., 2016).

The disaster is considered the largest of its kind in world history in the last 100 years, considering the volume of tailings dumped – 50 to 60 million cubic meters (m<sup>3</sup>). It amounts to the sum of the two other major events of its kind ever recorded in the world – both in the Philippines – one in 1982, involving 28 million cubic meters (m<sup>3</sup>); and another in 1992, involving 32.2 million cubic meters (m<sup>3</sup>) of mud (DENNY; TRINDADE; JESUS, 2016). From a social and environmental point of view, the mud carried destruction along 663 km, with the tailings merging into the Gualaxo do Norte, Carmo and Doce Rivers before reaching the mouth of the latter, where they entered 80 km<sup>2</sup> into the sea. Bento Rodrigues, Paracatu de Baixo, Gesteira, the town of Barra Longa and five other villages in the Camargo district of Mariana were razed by the mud, causing the loss of human lives in both the dam itself, and in the town of Bento Rodrigues. The dead and missing totaled 19 people, mostly workers outsourced by Samarco S.A. and Bento Rodrigues residents. Another 1,200 were left homeless (WANDERLEY et al., 2016).

The tragic and devastating event continues to produce its effects, including an impact on the life and economy of the Krenak Natives – the focus of interest of this article – together with Tupiniquins and Guarani (FERREIRA, 2016, p. 284-289), due to general worsening of economic rates in the states of Minas Gerais and Espírito Santo, where these ethnic groups live (ADAMS et al., 2019, p. 26-28). The next chapter will discuss the Krenak's presence in Minas Gerais, followed by how the environmental tragedy directly impacted them.

This article proposes a reflection on the environmental tragedy of Mariana, the largest in Brazil, which has severely impacted the Doce River, in the state of Minas Gerais, a watercourse that gives meaning to the life of Krenak Natives, according to their own views. This reflection is linked to the issue of corporate and government responsibility in the face of environmental disasters. The subject also adds to the concept of development from the perspective of indigenous populations. The idea to bear in mind is how the concept of sustainable development (or not) fits into indigenous people's own thinking of sustainability, and how such a concept would apply to them (or not). Interest in the discussion comes, first from the monumental nature of the disaster and second from the premise that ethnic minorities have been viewed as experts on environmental sustainability in their own territories, one more reason for redressing human rights violations under corporate responsibility when these ethnically differentiated groups are impacted.

This article will describe the indigenous Krenak people, who live on the banks of the largest river affected by it, the Doce River, to then assess how the environmental disaster impacted them, forcing a specific section in the mitigation, remediation and settlement agreement for damage caused to them and other indigenous peoples affected. At the end, the text addresses the problem itself, summed up in the idea that different development concepts emerge from indigenous and non-indigenous populations, and how they relate through the intermediation of the solidarity rights paradigm.

## **1 THE KRENAK INDIGENOUS PEOPLE ON THE BANKS OF THE DOCE RIVER AND MARIANA'S ENVIRONMENTAL DISASTER**

The *Krenák* or *Borun* constitute the last Eastern Botocudos, a name given by the Portuguese in the late 18th century to groups wearing ear and lip plates. They are also known as Aimorés, a name given by the Tupi, and as *Grén* or *Krén*, their self-denomination. The so-called Botocudos were subdivided into small groups of 60 to 200 individuals who had similar cultural characteristics, despite their territorial boundaries being well-defined (CORRÊA, 2003 apud REIS; GENOVEZ, 2013, p. 8):

The Krenaks were one of the Botocudo groups and occupied the Doce River Valley. According to Soares (1992) and Paraíso (2002), the formation of the Krenak came from a split within the Gutkrak group in the Pancas River region around 1918, during

the first contacts with SPI. The agency maintained a Native Attraction Post called “Pancas Post”, in the locality of the town of Pancas, in the state of Espírito Santo. The purpose of SPI was to change the Pancas Post into a place where all indigenous groups in the region should be attracted to.

The name Krenak is that of a leader of the group that led the split of the *Gutkrák* (the *Krén* subgroup) of the Pancas River; this group settled on the left bank of the Doce River, between the towns of Resplendor and Conselheiro Pena, in Minas Gerais (ISA, 2018). The Krenak belong to the Macro-Jê language group, speaking a language called *Borun*. Only women over forty are bilingual, while men, youth and children of both sexes are Portuguese speakers. For the past three years, efforts have been made to have children speak *Borun* again (ISA 2018).

Initially, the attempt of the former Natives Protection Service (SPI) was to settle all the Botocudo subgroups at the Pancas attraction post, but as we said, there was a split in the group called Gutkrak, with Captain Krenak of this group having settled on the banks of the Eme River, and refusing to make contacts with SPI agents. This contact was not made effective until after the Kuparak massacre in 1923, when Captain Krenak’s son Muin consented to an attraction post to be established by the Eme River. The attraction posts were places used by SPI agents to, as their name implies, attract indigenous people from a certain region in order to accomplish what in indigenist practice is called contact (FREIRE; GURAN, 2010, p. 13-15). This resistance offered by the Krenak led, in 1918, to engineers in the service of the SPI begin signposting lands along the Eme creek for Krenak protection (REIS; GENOVEZ, 2013).

The Minas Gerais state government then donated 2,000 hectares of land and ordered the establishment of a colony for the Pojixá and Krenak Natives. The State Legislative Assembly expanded the area to 4,000 hectares to include other ethnic groups in that indigenous colony. It so happens that SPI began to lease the land, given the integrationist view of the time, with the justification of turning the Indians into agricultural workers (REIS; GENOVEZ, 2013). The model caused a change in the pattern of space occupation, with the tenants settling down and pushing for the Krenak to be removed from the signposted area, which actually ended by being done by SPI itself (REIS; GENOVEZ, 2013).

There were two transfers or forced displacements of the Doce River Krenak. In 1958, they were taken to the lands of the Maxacali Indians, in the county of Santa Helena de Minas; this lasted for two years, until

they taken back on foot, in a three-month journey between Santa Helena de Minas and Governador Valadares. During this period, considered as an exile in Maxacali lands, there was a small group that refused to leave the Doce River, taking refuge on an island, which eventually served as a milestone for the return of the others (REIS; GENOVEZ, 2013). That group also partially dispersed, and some, due to the legal warship exercised at that time, were sent by SPI to other indigenous lands, including Bananal Indigenous Post in São Paulo, Cachoeirinha Indigenous Post in Mato Grosso do Sul, and a large majority to Vanuíre Indigenous Post, in the county of Tupã, in the countryside of São Paulo (REIS; GENOVEZ, 2013).

The second forced displacement occurred under the management of the newly created National Natives Foundation (FUNAI), which, once again due to economic interests, caused them to go to Guarani Farm, in the county of Carmésia, Minas Gerais, also called the Krenak Reformatory, and the scene of several human rights violations during the military regime (MONTEIRO, 2018). This area was, in fact, a penal colony created in 1969 with the purpose of “recovering delinquent Indians” (FERREIRA, 2016, p. 287-288). This second exile lasted eight years, between 1972 and 1980, and there the Krenak shared the territory with Pataxó Natives.

Upon their return to Resplendor, they found a former reservation granted formerly to private parties by the state of Minas Gerais. Then, in 1983, an Ordinary Action for Annulment of Ownership was filed for rural properties located on native Krenak lands, with a ruling in favor of the native peoples in 1995. From then on, the area originally donated by the Minas Gerais government was reconstituted through Decree 4462, of December 10, 1920 (ISA, 2018). Currently, the Krenak, whose population amounts to about 374 people, claim inclusion in the land reservation known as Sete Salões State Park (Reis; Genovez, 2013).

The Mariana disaster of 2015 – the largest in the mining industry worldwide in the past 100 years – has impacted indigenous populations such as the Tupiniquim, Guarani and Krenak ethnic groups, who live about 300 km downstream from where the dam broke (LOPES, 2016, p. 373). According to ADAMS et al., 2019 (2019, p. 25-26):

The mud tsunami eventually reached a large area and, where it went through, caused severe damage to health, human life, the environment, socioeconomic development and cultural, artistic and historical heritage. Reaching riverbeds, the gigantic wave of pollutants decimated villages and destroyed crops in rural areas, and then moved on to the state of Espírito Santo, before reaching the sea. The tailings that spilled

over the surrounding vegetation caused the destruction of 1,469 hectares, including permanent preservation areas. With the change in water quality, public supply along the Doce River Basin and hydroelectric power generation were severely impaired, leading to the extermination of aquatic biodiversity (including ichthyofauna) and wildlife specimens.

Some days after the accident, the Krenak decided to occupy a section of the Vitória to Minas Railroad in protest against the conditions they were in (lack of potable water was among the most severe ones), which was only closed on the afternoon of November 16, as reported at the FUNAI website (2015):

Following a meeting held yesterday afternoon, 11/16, attended by representatives of Funai and the Specialized Federal Attorney General's Office of the Federal Attorney General (PFE/AGU), the Krenak Indians decided to release the section of the Vitória to Minas Railroad they had occupied since last Friday, in the county of Resplendor – MG. VALE has pledged to provide emergency support to the 126 indigenous families affected by the contamination of the Doce River, with immediate and uninterrupted water supply for human and animal consumption, animal food supplementation, financial support for indigenous families, allocation of resources for healthcare actions, and also the acquisition of two small ships. The company also undertook to install 120 cisterns according to the patters of government programs, and a fence along the riverbank within the Natives' Land.

According to the same news report, on the Friday before the meeting, Krenak natives occupied the tracks along a section of Vitória do Minas Railroad, located in the county of Resplendor, in the Doce River valley, in Minas Gerais. The action is said to have been a response to the contamination of the river that crosses the native lands and, because of the accident, was compromising the survival of 126 families.

The text also reports that “Krenak leaders have tried to negotiate exhaustively with representatives of Vale and Samarco since the failure of the dam in Mariana – MG on November 5, but without success”. The immediate need was for drinking water, but “on Friday, however, an empty water tanker truck was sent to the village, increasing the disgust of the indigenous people, who decided to occupy the railroad tracks” (FUNAI, 2015). According to the news report, only on Saturday night were a few gallons of mineral water available, and a potable water tanker truck only arrived in the village on Sunday, along with water tanks for storage, and “boxes were made available in a single spot of the indigenous lands, which includes six villages far from each other” (FUNAI, 2015).

News from the days immediately following the accident gives account first of a) the importance of the Doce River for the survival of the Krenak Indians and, secondly, b) of the initial disregard of those responsible for the disaster to that ethnically differentiated population of 126 families and about 350 people (FUNAI, 2015; ISA, 2018). In addition to the immediate and physical survival proper, the Doce River represents for the Krenak population an important cultural sign and powerful cosmological element. The body of water is known by its indigenous name “Uatu”, and according to Ferreira (2016, p. 275), there is a “deep identification with the Doce River, which goes far beyond the supplying of water or fish”:

When asked about the quality of water being supplied to the community by Samarco, one resident showed his indignation: “You do not understand. We are not here talking about water, whether it is good to drink or not. We’re talking about the one from Doce River” (04/14/2016). To the Krenak people, the Doce River is “Uatu”, the oldest ancestor, an ever-present relative in everyone’s life, who provided its waters for children’s baptism rituals, and is still the main boundary reference of the territory of belonging and shelter.

According to Mattos (2004, p. 39), there are several *Uatú* cognomens for the rivers of the region: *Uatú-Uahá* (Male River), *Uatú-Yupú* (Mother River), *Uatú-Uahá-Orang* (son of the Male River), *Uatú-Brukukuke* (Red River). The Doce River is the *Uatú-Yupú*, or the Mother River, as described by Guido Marlière, in the newspaper “O Universal”, nº 62, of December 7, 1825, in Ouro Preto (MATTOS, 2004, p. 39). When considered according to this description and meaning of the name, the Doce River that bathes the Krenak Indigenous Land is much more than a mere aquifer resource, it is imbued with symbolic, cosmological and religious value to the Krenak.

In this sense, and because of this specificity, which is acknowledged in the Brazilian ordainment (BRASIL, 1988, art. 231), when there was a wide negotiation that will be discussed below regarding the reparations and compensations to be made to those affected by the disaster, the Krenak population (in addition to Tupiniquim and Guarani) was dealt with in specific clauses (ADAMS et al., 2019). For Ailton Krenak (2016), there was no *accident*, but rather an *incident*, insofar as he attributes the event to state and corporate negligence:

It was not an accident. When I am asked about the Mariana “accident”, I react by saying that it wasn’t an accident. It was an incident, in the sense of an omission and neglect in the licensing, oversight, control, license renewal, and exploitation permit system. The state and corporations have established a promiscuous and delinquent



environment where no one controls anyone and in which the engineers and security chiefs who make the reports also know that there will be no consequences if they kill an entire heritage, an entire village, or even if they kill an entire community. [...] *Watu*, which is what we call that river, is an entity; it has a personality. [...] The Doce River, the *Watu*, can be thought of as a place where, in the first half of the twentieth century, until the 1920s, the Krenak still lived with the innocence view of having a sacred river, full of meaning, symbols, where the water spirits interacted with people – where families were sure they could get food and medicine from.

The animist nature and importance that the Doce River has for the Krenak eventually determined the way the reparation and compensation to this people has been treated through the Transaction and Adjustment of Conduct Agreement (TTAC) formalized by the Federal Government, the States of Espírito Santo and Minas Gerais, and several other players, in order to legally and technically model the broad and complex process of restoration of the river basin and socioeconomic recovery of the affected region, not forgetting that that area covers more than 600 kilometers between the accident site, and the last damaged area on the coast of Espírito Santo (ADAMS et al., 2019, p. 25). Recent news reports damage to the coral reef of the Abrolhos archipelago in Bahia, 250 km from the mouth of the Doce River (LAMA..., 2019). In the next item, this broad agreement will be explained, as well as the difference in treatment between the regional population and the indigenous population, especially the Krenak.

## **2 THE REPARATION AND COMPENSATION AGREEMENT FOR DAMAGE TO THE KRENAK**

Seen from a legal point of view, the Mariana disaster resulted in the filing of a large number of popular actions, thousands of individual actions – some brought by private entities – all seeking reparation or compensation for property damages or pain and suffering, and the prevention of new damages (ADAMS et al., 2019, p. 39). In one year, 35,000 cases had already been filed, and approximately 17,950 lawsuits were filed in the state of Espírito Santo alone (ADAMS et al., 2019, p. 40). For authors Mattos and Mattos (2017), with regard to Krenak, the breach of the Fundão tailings dam, owned by Samarco Mineração S/A, caused profound damage, such as the loss of human life, the destruction of biodiversity, and the affective and material disruption of families.

According to ADAMS et al., 2019 (2019, p. 39),

[...] shortly after the disaster, a number of judicial and extrajudicial measures were taken against the businessmen responsible, including preliminary agreements to cover emergency expenditures of R\$ 1 billion and Conduct Adjustment Terms (TACs) signed with MPF and the Public Prosecution Service of the State of Minas Gerais (MPE/MG), in addition to the filing of lawsuits by the Public Prosecution Service of the State of Espírito Santo (MPE/ES), the Labor Public Prosecution Service (MPT), the State of Minas Gerais and the State of Espírito Santo.

In the case of the directly impacted Krenak natives, together with the Tupiniquins, in the state of Espírito Santo, the damage had an even more deleterious effect, as pointed out by authors Mattos and Mattos (2017):

In the specific case of the Krenak Natives, the breach of the Samarco dam in Mariana has also had numerous harmful consequences to their culture. Even before the dam broke in November 2015, it was on the banks of the river that they performed their rituals and parties, baptized their children, and gathered herbs for medicine and handicraft material. After having been stained by mud, they consider that Doce has died; consequently, their cultural manifestations end up being deeply compromised, so that they can hardly go back to their origins.

As part of the complex process that began after the initial moment of the filed cases aimed at compensate those affected by the disaster, besides forcing those responsible to initiate an environmental restoration project, as described by ADAMS et al., 2019 (2019, p. 41), it required that they differentiated the impacted indigenous populations, due to their specific natures. The Doce River was then selected as a “planning unit” for environmental damage recovery actions, which could not be restricted to water bodies alone, taking advantage of the hellish scenario to propose, for example, the eradication of dump yards and the financing of sanitary sewage works (ADAMS et al., 2019, p. 41).

The Federal Government and the States of Minas Gerais and Espírito Santo filed a Public Civil Action on November 30, 2015, as the result of a joint strategy of the three federative entities, which concluded that the myriad actions proposed since the beginning of the environmental calamity would eventually render “the outlook for all of the actions” unfeasible (ADAMS et al., 2019, p. 42). Based on reports and studies conducted by ministries, autonomous agencies, regulatory agencies, and federal and state technical bodies, they concluded that strict liability in tort was not only with Samarco SA, but also with Vale do Rio Doce, because it was found out that this company also dumped tailings in Fundão Dam, which

had breached. A lawsuit was filed against Samarco S.A. and Vale do Rio Doce S.A. grounded on strict liability in tort, and against Samarco S.A. parent, the foreign company BHP Billiton, as indirectly responsible for the tragedy (ADAMS et al., 2019, p. 42-43):

Admittedly, without the financial contributions (or accountability) of the controlling multinational giants, SAMARCO, whose activities were and still are under a stopover, would not be able to afford the estimated multi-million amounts to fund the necessary medium and long-term actions to repair the damage caused by the accident. ACP issued precautionary and provisional remedies to compel the companies to take urgent measures to prevent further damage and immediately reduce the impact of pollution on the rivers, other watercourses, conservation units and forests, and also on the affected population.

The complaint also contained the requirement for an immediate deposit of R\$ 2 billion to ensure the deployment of contingency palliative measures and reduction of the impact of mud and pollutants, in addition to the establishment of a capital fund capable of ensuring restoration of environmental and social conditions in the affected areas. In addition, the lawsuit provided for making mining licenses and mining concessions to the mining companies unavailable in order to ensure compensation of damages, a measure that avoided compromising the companies' shareholder's equity (ADAMS et al., 2019, p. 43).

Among the more than 70 pleadings contained in the public civil action complaint, it was required that “a technical and financial support program for fishermen, indigenous peoples, traditional populations and small farmers is established, as a way of ensuring their subsistence and alternative income sources” (ADAMS et al., 2019, p. 44).

The preliminary injunction was granted, ordering the deposit of R\$ 2 billion and freezing the assets of the parent companies, as well as several performance commitments and other legal consequences, such as “suspension of the possibility of capital payouts, interest on net equity, bonuses or any other form of shareholder remuneration”. Vale do Rio Doce was considered a “direct polluter”, and the two parent companies – Vale and BHP Billiton S.A. – were considered as indirect polluters (ADAMS et al., 2019, p. 45-46). It was from the granting of this injunction that, according to the authors, the agreement – the largest in the environmental area in Brazilian history – involving all affected federative entities and other plaintiffs, besides representatives of the affected populations, began to be established, achieving its final approval in August 2018.

In addition to the federative agreement, which turned out to be possible, the authors note that a transactional solution was escalated because, after the granting of the preliminary injunction, there was an “opening for talks” with the companies (ADAMS et al., 2019, p. 46). In addition, there was an international precedent in the case of the Gulf of Mexico explosion of the *Transocean*-owned *Deepwater Horizon* platform operated by *British Petroleum* (BP), where a consent decree was drafted by the US Federal Government and the states of Alabama, Florida, Louisiana, Mississippi, and Texas, and concluded four years after the disaster (ADAMS et al., 2019, p. 58).

In Brazil, the agreement, made feasible by means of a Transaction and Conduct Adjustment Agreement (TTAC), was ready in March 2016, four months after the disaster. The adjustment gave rise to the establishment of a foundation, the Renova Foundation, a non-profit private legal entity, to manage and operate the remedies, compensations, mitigations and indemnities agreed upon.

With regard to the Doce River Krenak, the agreement provided for a) the creation of a Technical Advisory Board of the Interfederative Committee (CIF) including the eleven managed chambers already in April 2016, which was called “Natives, Peoples and Traditional Communities” (ADAMS et al., 2019, p. 81); b) participation in the Observer Forum, an external venue for TAC monitoring (ADAMS et al., 2019, p. 86); c) insertion of a specific program among the 23 planned socioeconomic programs, called “Program for the Protection and Improvement of the Quality of Life of Indigenous Peoples” (ADAMS et al., 2019, p. 98), which would include the participation of natives and FUNAI, without prejudice to the proper forms of social organization, customs, usages and traditions of the affected indigenous peoples, including the Krenak (ADAMS et al., 2019, p. 118). In addition, according to an account published by Renova Foundation in December 2017, 1,233 indigenous families (the publication did not mention their several ethnicities) were receiving emergency financial assistance consisting of a minimum wage plus twenty percent per dependent and a basic food staple basket, totaling an average of around R\$ 1,200.00 (ADAMS et al., 2019, p. 129).

These initial measures, however, were not immune to criticism, which led to a second adjustment being attempted by the Federal Prosecutor’s Office in January 2017, and a Preliminary Adjustment Agreement (TAP) from that body was signed with the mining companies (ADAMS et

al., 2019, p. 142). After that, the Public Prosecutor's Offices from the States and the Federal Public Prosecutor's Office decided to execute the Transaction and Adjustment of Conduct Agreement – TTAC, previously signed between the federal and Minas Gerais government, under certain conditions, which gave rise to an addendum to the first addendum, which was signed in June (ADAMS et al., 2019, p. 142-146) and confirmed in August 2018 (VALENTE, 2018).

According to the authors, the second adjustment improved the TTAC governance model and created rules in the negotiation process for the renegotiation of socioeconomic (23) and socio-environmental (19) programs. There will also be a last step, aimed at the renegotiation of some points of these same programs. In the already approved first stage, which related to the governance process, the “centrality of the person affected”, the strengthening of the joint and articulated action of those involved in the protection of the rights of these same persons were made clearer; it also ensured greater transparency for actions and broader and more adequate access to information (by contracting consulting services for the victims, for example), while also extending protection to indigenous people and quilombola community members (ADAMS et al., 2019, p. 144).

The agreement and its addendum, now with the participation of public prosecutor bodies, is in full swing; it is scheduled to be implemented along 15 (fifteen) years, and it can be extended each year until its full implementation (ADAMS et al., 2019, p. 209). During that time, the indigenous peoples, particularly the Krenak, will be able to follow on and participate in their development. In the next chapter, we will address the issue of development and indigenous peoples, so that Mariana's case can be considered according to this reflection. Then, we will consider corporate responsibility for violating human rights and for protecting them, from the perspective of solidarity or third generation rights.

### **3 THE CONCEPT OF DEVELOPMENT AND THE NATIVES AND THE SOLIDARITY PARADIGM**

In the context of the restoration of democracy in Brazil, the Brazilian native peoples added a chapter to the Charter containing two provisions that express the rule and principles to be observed by Brazilian society regarding coexistence with indigenous societies. This achievement is highly relevant from a legal and political point of view, since for almost

500 years the Brazilian state has refused to acknowledge the cultural and linguistic diversity of indigenous peoples and, in addition, has done little in relation to their original rights to traditional territories.

Even so, despite attempts at assimilation and denial of indigenous identities, according to IBGE (2010), there are still around 800,000 indigenous persons, with their cultural, historical, territorial and worldview. These peoples received the Federal Constitution with hope because, for the first time, the State, while acknowledging their diversity, signaled for the recognition of fundamental rights to territory and development, insofar as it assigns to indigenous peoples the right to social organization, and physical and cultural reproduction (AGUILERA URQUIZA, 2016).

The economic and legal situation of the more than two hundred indigenous peoples in Brazil, whose lands are under their usufruct but are owned by the Federal Government and together account for 13% (thirteen percent) of the national territory, can be summarized in the last decade as

[...] on the one hand, territorialized peoples legally recognized as having an invaluable socio-cultural heritage, with material assets in the form of land and natural resources, and knowledge about the environment; on the other hand, peoples who, by virtue of the same territorialization processes that led to this condition, often live in situations of extreme poverty, without resources to produce sufficient income to support the vegetative growth they have to face (SOUZA LIMA, 2010, p. 22).

Speaking of development among peoples in the second condition, that is, peoples deprived of land and natural resources such as the Guarani and Kaiowá of Mato Grosso do Sul, as pointed out in the latest publication of the *Report of the Special Rapporteur on the Rights of Indigenous Peoples Mission to Brazil* (UN 2016) is almost perverse, given their recognized level of poverty and severe deprivation imposed by land dynamics throughout their history, always to their disadvantage. As for the former, especially the Amazonian peoples, whose lands were signposted in a major international cooperation effort in the 1990s (SOUZA LIMA, 2010, p. 16), it is possible to take the events of the last decade in order to verify how the process of exploitation of these same territories has taken place, and the theoretical view about that. To this end, the text “Povos indígenas no Brasil contemporâneo: De tutelados a ‘organizados’?”, “Indigenous peoples in contemporary Brazil: from protected to ‘organized’?”, by professor Antônio Carlos de Souza Lima (2010), is very enlightening, as it adopts an approach that seeks to assess how much such peoples have been appropriating financial resources and projects that are made available to

them and/or demanded by them, so that the idea of development – whether incorporating their own references or not – has been elaborated among them in the last decade.

Making a historical digression, Souza Lima (2010, p. 15-50) draws attention to the Republican period, when the first government service for indigenous peoples was established in 1910, the Indian Protection Service (SPI), name which it was given after 1918 (formerly, the Service for Protection of Indians and Localization of National Workers – SPITLN). At that moment, “the foundations of a patronage and demeaning dependence of indigenous peoples on state agents were laid. Moreover, the use of this technique of excessive and asymmetrical generosity came from the colonial period” (SOUZA LIMA, 2010, p. 27). Thinking about development among Brazilian indigenous peoples having as precedent this kind of relationship – patronizing, demeaning, asymmetrical – with non-indigenous society points to the extreme difficulty of matching the concept of development, which tends to support the capitalist mode of production, with another one arising from the natives themselves.

However, in the 1950s, said Indian Protection Service (SPI) entered a new phase, with the coming of “young professionals involved with the issues of their discipline – social and cultural anthropology”, so that they “established a new outlook, a utopia where indigenous peoples could be the sign of their own difference” (SOUZA LIMA, 2010, p. 28-29). This re-elaboration of the role of the state in the relationship with indigenous peoples resulted, already in the 1950s, according to Souza Lima (2010, p. 30), in “the idea that the lands occupied by the natives should ensure them a self-managed and gradual social transformation, in harmony with their mode of relating to nature and in the direction they deem fit”.

Then came, after the establishment of three indigenous parks, including that of Xingu (1961), the termination of that service, and the establishment of a foundation still existing today, the National Natives Foundation, FUNAI (1967). The legal regime was still protective, and remained so until 1988, when it was terminated by the new Constitution. This gives an idea of the obstacles faced by the natives in validating any self-management and development initiative of their own, either in Western or non-Western patterns.

Moreover, the issue of development related to indigenous peoples in the world was being dealt with academically and in the form of activism. A milestone in that process was the Meeting of Experts on Etho-Development

and Ethnocide in Latin America, held in Costa Rica in 1981, at which time the proposal of the so-called ethno-development proposal was drafted by Mexican anthropologist Rodolfo Stavenhagem (SOUZA LIMA, 2010, p. 34). The concept of ethno-development proposed by the Mexican went against the criticism of scholars on the impacts of developmental policies on Latin American indigenous peoples, going the opposite way, namely, to include “the sociocultural differential of a society, that is, its ethnicity” (STAVENHAGEM, 1984 apud AZANHA, 2002, p. 31).

In Stavenhagem’s definition, “ethno-development means that an ethnicity, whether indigenous, tribal or otherwise, has control over their own lands, resources, social organization and culture, and is free to negotiate with the State for the establishment of relations according to their interests”.

Interpreting the concept above and transporting it to the Brazilian reality, Azanha (2002, p. 32) laid down some parameters, which, if achieved, could indicate that development would finally respect the view of those societies on their own economies and social organization:

Accordingly, “ethno-development”, when referring to Brazilian indigenous societies, would involve the following indicators: a) population increase, with fully-attained food security; b) increase in the level of education, in the “language” or Portuguese, of the young villagers; c) a demand for goods of the “whites” fully met by means of their own internally generated resources in a non-predatory way, with relative independence from external market requirements for raising financial resources; and d) full mastery of relations with the Government and government agencies, to the point that the indigenous society should define these relations, imposing the way in which they should be established.

At present, regarding the theme of ethno-development, indigenous peoples are already being considered within the scope of the Brazilian federal government’s multi-annual development plans. As we see it, part of the protectionist legacy remains, to the extent that development among indigenous peoples is intrinsically dependent on the provision of public funds, and autonomous and self-management initiatives outside this approach are rare. At any rate, the shift in focus from previous welfare policy, as seen above, to a perceived incentive for development is already an advance towards overcoming the purely protectionist outlook in favor of one promoting or inducing development.

Given these starting points, which are considered as premises for thinking about development related to Brazilian indigenous peoples, it is important to correlate the concept of development between economists, the



quintessential theorists of that branch of knowledge, and the one that would be useful to today's minority societies, which are quite different from each other and who have the right to remain so. In economics, the concept of development was first studied by authors ranging from Adam Smith (1776), Thomas Malthus (1798), David Ricardo (1817) to Karl Marx (1867). The concept has always been approached as an important phenomenon for the consolidation of the capitalist system (SANTOS, 2012, p. 47),

[...] However, it is in the 1940s that development is given the status of a scientific research object, with the emergence of Development Economics. With it, a whole theoretical and methodological framework was built to describe and promote development as something close to an industrial, urban and wealthy society, through the accumulation of monetary income.

After these early conceptualizations, a concept based on a broader view has been admitted, for example, like the one found in Amartya Sen (2000, p. 17), which describes development as “a process of expanding the actual freedoms that people enjoy”. With this, the 1998 Nobel laureate economist wants to differentiate himself from the “narrower views of development, such as those that identify development with GDP growth, personal income growth, industrialization, technological advancement or social modernization”.

The discussion on “sustainability” came up initially through the so-called Meadows Report, written by scientist Donatella H. Meadows and her team, from the US-based Massachusetts Institute of Technology (MIT), for whom “development and the environment must absolutely be addressed as one and the same problem”. This report was presented in 1972 at a Club of Rome meeting (CLUBE DE ROMA..., 2014) in Stockholm, derived from an academic study called “Limits of Growth”, which puts forward a systemic view on some issues, at that time already global in scale: income distribution, rural exodus, excessive exploitation of natural resources, etc. (VARGAS et al., 2016, p. 103). The theoretical and research seed planted by the Meadows Report has been confirmed by the UN World Commission on Environment and Development, and their Brundtland Report, entitled “Our Common Future”, 1987, which lays down the concept of sustainable development: “[...] It meets the needs of the present without compromising the ability of future generations to meet their own needs” (UN, 1987 apud SILVEIRA; SANCHES, 2017).

In less than five decades, however, the so-called sustainability has been questioned by authors who are beginning to see contradictions between the terms “development” and “sustainable”. Serge Latouche (2009, p. 8-9) considers that “development, an ethnocentric and ethnocidal concept, was imposed by the seduction, combined with the violence of colonization and imperialism”. The French author is a leading figure of a new theory called *degrowth*, and harshly criticizes the theory of development. For Latouche, “development is a toxic word, regardless of any adjective they attach to it”.

However, although development has more than one concept, extending to include human development, according to the index of human development jointly created by Indian economist Amartya Sen (PNUD BRASIL, 2019), one can see significant distinctions regarding populations worldwide, and even more so if indigenous societies are heard toward formulating their own reference frameworks. In this sense, possibly envisaging the multiplicity of indigenous thoughts on the subjects of economy, social organization, and physical and cultural reproduction, Convention No. 169 of the International Labor Organization (ILO), when dealing with Indigenous and Tribal Peoples around the world, provided in its Article 7 the right of indigenous peoples to define their development priorities:

Interested peoples will have the right to set their own priorities in the development process to the extent that they affect their lives, beliefs, institutions, spiritual well-being and the lands they occupy or use for other purposes, and to control their own economic, social and cultural development as much as possible. In addition, they will participate in the formulation, implementation and evaluation of national and regional development plans and programs that can directly affect them.

Under this international law provision, which Brazil welcomed in 2004<sup>4</sup>, indigenous peoples, in addition to the prerogative to be consulted (Article 6) on projects and undertakings that affect their territories, must also have autonomy in deciding their own priorities regarding the economic, social and cultural development of their communities and territories. In Latin America, however, the domestic law contributes the most to making this international law feasible is that of Ecuador<sup>5</sup> as, since 1998 and undergoing a constitutional reform in September 2008, the Ecuadorian

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4 Decree 5,051/2004.

5 According to Isabela Figueroa (2006), “The Ecuadorian Constitution is the most advanced in Latin America in terms of the recognition of collective rights. Guided by parameters of international law, it established the multicultural State and dedicated one of its chapters to the collective rights of indigenous and Afro-Ecuadorian peoples. Its enactment in 1998 opened new perspectives for the claim of these rights in court and their development in the laws of the country”.

charter has incorporated a biocentric (and no longer anthropocentric) view of law, introducing in its system the concept of “rights of nature”. In its preamble it celebrates “nature, the *Pacha Mama*, of which we are a part and that is vital to our existence”, besides calling upon the “wisdom of all cultures that enrich us as a society” (ECUADOR, 2008).

Boaventura de Sousa Santos, in a comment to the Brazilian edition of the book by Alberto Acosta (2016), an Ecuadorian who was one of those responsible for putting the indigenous outlook in the constitution of that country, ponders:

[...] by incorporating *Buen Vivir* into its constitution, Ecuador has emerged from the cage of dependence and political and ideological underdevelopment: it has established itself as a nation on a par with others, determined to share the causes for which it is worth fighting, if there really is to be a future.

In any case, it is necessary to think about how the concept and economic practice that are called development reach and impact indigenous peoples, and what is the responsibility of companies – and States in their regulatory and supervisory mission – to the sustainability of business and productive practices. As the right to development is a third generation human right, thus including the idea of solidarity, as Silveira and Sanches (2017) argue, it is not difficult to embrace other ways of considering development than that dictated by Western society and culture. As those authors say, companies and society are also called to account, due to third generation human rights or solidarity rights, which is a development or instrumentalization of law, now in its solidarity dimension, namely,

[...] that deriving from the third dimension of human rights, that is, the functionality of diffuse rights, whether consumerist, environmental or otherwise. Therefore, if the second generation of human rights brought social function alongside social rights (gender), the third one introduced the solidarity function alongside the so-called diffuse rights. [...] We differentiate the phrases according to the type of compatibility between law and interests, besides the hegemonic driver value of legal relations (SILVEIRA; CATTI PRETA, 2011, p. 312).

As companies are quintessential inducers of productive processes, at least in capitalism, although supported by state incentives, it is only fair that they should also be jointly and severally responsible for the maintenance of the environment, which is an asset of everyone. When they cause damage to level of the Mariana disaster, this responsibility becomes even more evident and, as shown by the signing of the Transaction and Conduct Adjustment Agreement (TTAC), reparation, mitigation,

restoration, and compensation for damages caused are entirely ascribed to the polluting companies long enough for the affected communities to socially, economically and environmentally reestablish themselves.

In the case under discussion, it is known that mining companies have a huge responsibility for the environmental heritage since their activity in Brazilian soil is intensive, Brazil being one of the largest producers and exporters of minerals in the world (FERNANDES; ALAMINO; ARAUJO, 2014, p. 1). In past last 10 years [1994-2014], production value has grown 550% and scheduled investments from 2012 to 2016 amounted to \$75 billion (FERNANDES; ALAMINO; ARAUJO, 2014, p. 1).

In this situation, where the amount of investment funds is significant, it cannot be conceived that the mineral extraction industry remains as one of the anthropic activities that cause the most negative socioeconomic and environmental impacts (FERNANDES; ALAMINO; ARAUJO, 2014, p. 1), without constitutional provisions being enforced. The rule contained in Article 170 of the 1988 Charter lays down as fundamentals of economic order as the valuation of human labor and *laissez-faire*, and states that its purpose is to ensure a dignified existence for everyone, according to the dictates of social justice. Moreover, among the principles of the economic order is the defense of the environment “including by means of differentiated treatment according to the environmental impact of products and services and the processes by which they are prepared and provided (BRASIL, 1988, Art. 170, VI).

In the case of mining, the negative environmental effects of mineral extraction (mining and prospective mining) are associated with the various phases of mineral exploration, from prospecting to the shipment and processing of ore. It is also common for it to affect the way and quality of life of populations established in and around the mining area (FERNANDES et al., p. 2). Insofar as the Mariana disaster is concerned, it is even more necessary to demand that part of the profits from the business activity be used to meet social rights in the long run, also because this entails direct and indirect liability for damages actually caused, so that both the redistribution of wealth among the affected parties and the human development of affected populations should be goals considered with a view to respecting human rights, in accordance with the Ruggie principles.

The so-called Ruggie Report (the name of its creator) was approved in June 2011 by the United Nations (UN), and specifically addresses the responsibility of companies not to violate and to protect human rights (ILO,

2011). According to Silveira and Sanches (2017), in an article published on the Internet, the Ruggie framework includes, among two other principles, “the responsibility of companies to respect human rights and ensure that investigative processes are held when violations are reported, as well as to take remedial and punitive measures, when necessary”.

## CONCLUSION

This paper dealt with the biggest environmental disaster in Brazil and the mining industry in the world in the past 100 years, and which eventually involved the Krenak natives 300 km downstream of the ruptured dam, the amount waste dumped into the Doce River basin, which is vitally important to them, being monumental.

The first chapter dealt with the disaster and introduced the Krenak, who live along the banks of the Doce River, and their history. Following that, the text was intersected to explain how the deluge-sized disaster affected the indigenous peoples, and what has been done to date to repair and compensate for these damages. Thirdly, we presented the central thesis of the text, which is the question of development, indigenous peoples, and the interface between the different Western and indigenous peoples' thoughts on development.

Specifically with regard to the Mariana disaster, it was found that, when dealing with the tragedy, the government and the companies that caused the damage made no distinction regarding the indigenous peoples, including acknowledging the peculiarities of the relationship between the Doce River and the Krenak population, whose physical and cultural life takes place on its margins, in addition to other ethnicities, such as the Tupiniquim, who live in the neighboring state of Espírito Santo, and were also affected by the tragedy. In the case of the affected indigenous peoples, especially the Krenak, the responsibility of the mining companies goes beyond the mere reparation aspect, to become a case of a need for restoration of violated Human Rights, because the contamination and the unfeasible condition of access to Doce River, or “Uatú”, compromise the very physical and spiritual existence of that population. The reparation is required from any angle we look, and a particular concern is for such companies to more closely observe the way of life of these populations, so as to also incorporate their vision of development in their production practices.

The idea of this paper was to open the discussion and produce further

research on the concept of development for indigenous peoples and how much it relates to that understood as sustainable development, as well as to address the issue of corporate responsibility for the production of this type of development. The proposal of world players – such as the UN – is that development should generate less negative externalities, hence the phrase “sustainable development”. The proposal of the natives is that it be more inclusive of other ways of thinking, other cosmologies, encompassing visions such as ethno-development and biocentrism, which would ultimately serve the perspective of solidarity, a third generation human right.

### BIBLIOGRAPHY

ACOSTA, A. *O bem viver: uma oportunidade para imaginar outros mundos*. São Paulo: Elefante, 2016.

ADAMS, L. I. L. et al. *Saindo da lama: a atuação interfederativa concertada como melhor alternativa para solução dos problemas decorrentes do desastre de Mariana*. Belo Horizonte: Fórum, 2019.

AGUILERAURQUIZA, A. H. *Antropologia e história dos povos indígenas em Mato Grosso do Sul*. Campo Grande: UFMS, 2016.

AZANHA, G. Etnodesenvolvimento, mercado e mecanismos de fomento: possibilidades de desenvolvimento sustentado para as sociedades indígenas no Brasil. In: SOUZA LIMA, A. C.; BARROSO-HOFFMAN, M. (Orgs.). *Etnodesenvolvimento e políticas públicas: bases para uma nova política indigenista*. Rio de Janeiro: Contra Capa, 2002. p. 29-37.

BRASIL. [Constituição (1988)]. *Constituição da República Federativa do Brasil de 1988*. Brasília, DF: Presidência da República, [2016]. Available at: <[http://www.planalto.gov.br/ccivil\\_03/Constituicao/Constituicao.htm](http://www.planalto.gov.br/ccivil_03/Constituicao/Constituicao.htm)>. Access on: 13 ago. 2019.

CLUBE DE ROMA e o relatório “Os limites do crescimento” (1972). *Pensamento Verde*, 2 jan. 2014. Available at: <<https://www.pensamentoverde.com.br/sustentabilidade/clube-roma-relatorio-limites-crescimento-1972/>>. Access on: 13 ago. 2019.

DENNY, D. M. T.; TRINDADE, A. G.; JESUS, C. R. D. Desastre de Mariana: uma análise de Direito Ambiental, Minerário e Marítimo. *Anais Jornada Jurídica: Revista Eletrônica Direito e Sustentabilidade da*

*Universidade Paulista*, São Paulo, v. 1, p. 18-41, 2016.

DECLARAÇÃO do Rio de Janeiro. *Estudos Avançados*, São Paulo, v. 6, n. 15, p. 153-159, 1992. Available at: <[http://www.scielo.br/scielo.php?script=sci\\_arttext&pid=S0103-40141992000200013&lng=pt&nrm=iso](http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0103-40141992000200013&lng=pt&nrm=iso)>. Access on: 9 ago. 2019.

ECUADOR. Asamblea Constituyente. *Constitución del Ecuador; de 20 de octubre del 2008*. Available at: <<http://www.stf.jus.br/repositorio/cms/portalStfInternacional/newsletterPortalInternacionalFoco/anexo/ConstituicaoDoEcuador.pdf>>. Access on: 12 ago. 2019.

FERNANDES, F. R. C.; ALAMINO, R. C. J.; ARAUJO, E. (Eds.). *Recursos minerais e comunidade: impactos humanos, socioambientais e econômicos*. Rio de Janeiro: CETEM/MCTI, 2014.

FERREIRA, S. R. B. Marcas da colonialidade do poder no conflito entre a mineradora Samarco, os povos originários e comunidades tradicionais do Rio Doce. In: MILANEZ, B.; LOSEKANN, C. (Orgs.) *Desastre no Vale do Rio Doce: antecedentes, impactos e ações sobre a destruição*. Rio de Janeiro: Letra e Imagem, 2016. p. 267-307.

FIGUEROA, I. Povos Indígenas versus petrolíferas: controle constitucional na resistência. *Sur – Revista Internacional de Direitos Humanos*, ano 3, n. 4, p. 48-79, 2006.

FREIRE, C. A. R.; GURAN, M. *Primeiros contatos: atrações e pacificações do SPI*. Rio de Janeiro: Museu do Índio, 2010.

FUNAI – FUNDAÇÃO NACIONAL DO ÍNDIO. Povo Krenak desocupa estrada de ferro de Vitória a Minas. *Notícias*, 17 nov. 2015. Available at: <<http://www.funai.gov.br/index.php/comunicacao/noticias/3524-povo-krenak-desocupa-estrada-de-ferro-vitoria-a-minas?highlight=WyJrcmVuYWsiXQ==>>. Access on: 18 Dec. 2018.

IBGE – INSTITUTO BRASILEIRO DE GEOGRAFIA E ESTATÍSTICA. *Censo 2010: Tabelas*. Available at: <[https://ww2.ibge.gov.br/home/estatistica/populacao/censo2010/caracteristicas\\_da\\_populacao/tabelas\\_pdf/tab3.pdf](https://ww2.ibge.gov.br/home/estatistica/populacao/censo2010/caracteristicas_da_populacao/tabelas_pdf/tab3.pdf)>. Access on: 13 ago. 2019.

ISA – INSTITUTO SOCIOAMBIENTAL. Krenak. *Povos Indígenas no Brasil*. Available at: <<https://pib.socioambiental.org/pt/povo/krenak>>. Access on: 17 Dec. 2018.

KRENAK, A. “Não foi um acidente”, diz Ailton Krenak sobre a tragédia de Mariana. [Entrevista cedida a] Marília Senlle, Mario Brunoro, Rafael Monteiro Tannus e Tatiane Klein. *Instituto Socioambiental*, 9 nov. 2016. Available at: <<https://www.socioambiental.org/pt-br/noticias-socioambientais/nao-foi-um-acidente-diz-ailton-krenak-sobre-a-tragedia-de-mariana>>. Access on: 18 Dec. 2018.

LAMA tóxica da Samarco contaminou corais do arquipélago de Abrolhos, na Bahia. *Brasil de Fato*, 20 fev. 2019. Available at: <<https://www.brasildefato.com.br/2019/02/20/lama-toxica-da-samarco-contaminou-corais-do-arquipelago-de-abrolhos-litoral-da-bahia/>>. Access on: 10 mar. 2019.

LATOUCHE, S. *Pequeno tratado do decrescimento sereno*. São Paulo: WMF Martins Fontes, 2009.

LITTLE, P. E. Etnoecologia e direitos dos povos: elementos de uma nova ação indigenista. In: SOUZA LIMA, A. C.; BARROSO-HOFFMAN, M. (Orgs.). *Etnodesenvolvimento e políticas públicas: bases para uma nova política indigenista*. Rio de Janeiro: Contra Capa, 2002. p. 39-47.

LOPES, R. A. L. Caso do desastre socioambiental da Samarco: os desafios para a responsabilização de empresas por violações de direitos humanos. In: MILANEZ, B.; LOSEKANN, C. (Orgs.). *Desastre no Vale do Rio Doce: antecedentes, impactos e ações sobre a destruição*. Rio de Janeiro: Letra e Imagem, 2016. p. 373-389.

MATTOS, I. M. *Civilização e revolta: os botocudos e a catequese na Província de Minas*. Bauru: Edusc, 2004.

MATTOS, M. L. O.; MATTOS, N. O. Urbanização em terras indígenas: o impacto da expansão urbana no Médio Rio Doce e o Genocídio Étnico. In: 4º FÓRUM HABITAR, 4., 2017, Belo Horizonte. *Anais [...]*. Recife: Even3, 2017.

MILANEZ, B.; LOSEKANN, C. (Orgs.). *Desastre no Vale do Rio Doce: antecedentes, impactos e ações sobre a destruição*. Rio de Janeiro: Letra e Imagem, 2016.

MILANEZ, B. et al. *Antes fosse mais leve a carga: introdução aos argumentos e recomendações referentes ao desastre da Samarco/Vale/BHP Billiton*. Marabá: Iguana, 2016.



MONTEIRO, M. E. B. Arquivo Nacional disponibiliza para consulta documentação sobre povo indígena Krenak. *Arquivo Nacional*. Available at: <<http://arquivonacional.gov.br/br/component/tags/tag/povo-krenak.html>>. Access on: 18 Dec. 2018.

OIT – ORGANIZAÇÃO INTERNACIONAL DO TRABALHO. *Convenção n. 169 sobre povos indígenas e tribais e Resolução referente à ação da OIT/Organização Internacional do Trabalho*. Brasília: OIT, 2011.

ONU – ORGANIZAÇÃO DAS NAÇÕES UNIDAS. *Agenda 21*. 1989.

ONU – ORGANIZAÇÃO DAS NAÇÕES UNIDAS. Conselho de Direitos Humanos. *Relatório da missão ao Brasil da Relatora Especial sobre os direitos dos povos indígenas*. Trigesima terceira sessão. Item 3 da Agenda. A/HRC/33/42/Add.1. 8 de agosto de 2016. Available at: <<http://unsr.vtaulicorpuz.org/site/index.php/es/documentos/country-reports/154-report-BRASIL-2016>>. Access on: 17 jun. 2018.

PNUD BRASIL. *O que é IDH*. Available at: <<http://www.br.undp.org/content/brazil/pt/home/idh0/conceitos/o-que-e-o-idh.html>>. Access on: 13 ago. 2019.

PROTOCOLO de Consulta e Consentimento Wajãpi. Macapá: RCA – Rede de Cooperação Amazônica; Iepé – Instituto de Pesquisa e Formação Indígena, 2015.

REIS, R. C.; GENOVEZ, P. F. Território sagrado: exílio, diáspora e reconquista Krenak no Vale do Rio Doce, Resplendor, MG. *Goia. Geogr.*, Goiânia, v. 33, n. 1, p. 1-15. Jan./abr. 2013.

ROCHA, A. O. *Terras indígenas e unidades de conservação: duas categorias de proteção (etno) ambiental em conflito?* Monografia (Especialização *Lato Sensu* em Direito Público), Escola da Advocacia-Geral da União, Universidade de Brasília, Brasília, DF, 2010.

RUGGIE, John. *Relatório Ruggie*. Disponível em: [https://www.socioambiental.org/sites/blog.socioambiental.org/files/nsa/arquivos/conectas\\_principiosorientadoresruggie\\_mar20121.pdf](https://www.socioambiental.org/sites/blog.socioambiental.org/files/nsa/arquivos/conectas_principiosorientadoresruggie_mar20121.pdf). Access on: 12 ago. 2019.

SANTOS, E. L. et al. Desenvolvimento: um conceito multidimensional. *Revista Eletrônica do Programa de Mestrado em Desenvolvimento Regional da Universidade do Contestado*, Porto, ano 2, n. 1, p. 44-61, jul. 2012.

SEN, A. *Desenvolvimento como liberdade*. São Paulo: Companhia das Letras, 2000.

SILVEIRA, V. O.; SANCHES, S. H. F. N. Direitos humanos, empresa e desenvolvimento sustentável. *Vladmir Oliveira da Silveira*, 5 maio 2017. Available at: <<http://vladmiroliveiradasilveira.com.br/2017/05/05/direitos-humanos-empresa-e-desenvolvimento-sustentavel/>>. Access on: 19 Dec. 2018.

SILVEIRA, V. O.; CATTAPRETA, S. M. Política nacional de resíduos sólidos e a responsabilidade compartilhada entre poder público, setor empresarial e a coletividade. In: SILVEIRA, V. O.; MEZZAROBBA, O. *Empresa, sustentabilidade e funcionalização do Direito*. São Paulo: Revista dos Tribunais, 2011. p. 313-314.

SOUZA LIMA, A. C. Povos indígenas no Brasil contemporâneo: de tutelados a ‘organizados’? In: SOUSA, C. N. I. et al. (Orgs.). *Povos indígenas: projetos e desenvolvimento II*. Brasília: Paralelo 15, 2010. p. 15-50.

VALENTE, J. Justiça homologa acordo com Samarco por tragédia ambiental de Mariana. *Agência Brasil*, 8 ago. 2018. Available at: <<http://agenciabrasil.ebc.com.br/justica/noticia/2018-08/justica-homologa-acordo-com-samarco-por-tragedia-ambiental-de-mariana>>. Access on: 18 Dec. 2018.

VARGAS, F. et al. Desenvolvimento sustentável: introdução e perspectiva teóricas. In: NIEDERLE, P. A.; RADOMSKY, G. F. (Orgs.). *Introdução às teorias do desenvolvimento*. Porto Alegre: UFRGS, 2016. p. 99-107.

VARGAS, T. B. O Estado poluidor-pagador: por uma leitura constitucionalmente adequada da responsabilidade da Administração na tragédia da Barragem em Mariana-MG. In: SGARBOSSA, L. F.; IENSUE, G. (Orgs.). *Direitos humanos & fundamentais: reflexões aos 30 anos da Constituição e 70 da Declaração Universal*. Campo Grande: Instituto Brasileiro de Pesquisa Jurídica, 2018. p. 489-508.

VERDUM, R. *Nota Técnica n. 187: os direitos indígenas no cipoal da transparência*. Brasília, DF: Inesc, 2015. Available at: <<http://www.inesc.org.br/biblioteca/publicacoes/notas-tecnicas/nts-2015>>. Access on: 15 ago. 2018.

WANDERLEY, L. J. et al. Desastre da Samarco/Vale/BHP no vale do rio Doce: aspectos econômicos, políticos e socioambientais. *Ciência e Cultura*, São Paulo, v. 8, n. 3, p. 30-35, jul.-set. 2016. Available at: <<http://cienciaecultura.bvs.br/pdf/cic/v68n3/v68n3a11.pdf>>. Access on: 1 Dec. 2018.

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