

Case Study Report Mariana Dam Break: Affectation of the Krenak Indigenous People

Igor Araujo Magalhaes De Assis¹, Janeci De Sousa Sidrao², Jonathan Dantas Pessoa^{3*}, Jorge Luis De Oliveira⁴, Jose Afonso Parente Feijo Junior⁵, Lazaro Luiz Dias Do Carmo Junior⁴ and Leidy Dayane Dos Santos Rodrigues⁶

¹Military Firefighter of the State of Bahia

²Military Police Officer of the State of São Paulo

³Civil Police Officer of the State of Pernambuco

⁴Military Police Officer

⁵Military Police Officer of the State of Ceara

⁶Dourados Municipal Guard, State of Mato Grosso do Sul

*Corresponding Author

Jonathan Dantas Pessoa, Civil Police Officer of the State of Pernambuco.

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1. Introduction

This case study report will deal with the environmental disaster that occurred in the Municipality of Mariana, Minas Gerais, where it will be analyzed, based on a bibliographic research of scientific articles and news reports selected qualitatively based on the relevance and reliability of the sources of information, the facts that occurred, the main people involved in this event, with a focus on the Krenak people who, as a result of the historical violence that was typically practiced against indigenous people in Brazil, are especially vulnerable to this type of environmental violence, the damage caused and the respective criminal offenses that were committed in the case under analysis.

In addition, we will provide information about the responses of the various state agencies that acted after the damaging events discussed here, as well as a critical assessment of the resolution of the Mariana disaster to date.

Understanding the events of one of Brazil's greatest environmental disasters is essential so that we can outline preventive and repressive measures to prevent events like this from happening again, as a way of guaranteeing the effectiveness of the collective right to an ecologically balanced environment, and avoiding the future victimization of people who may be directly affected by tragedies of this type.

2. Brief History of the Case

On November 5, 2015, at approximately 4:20 pm, the Fundão dam dike, located in the city of Mariana/MG, collapsed and broke, releasing approximately 35 million cubic meters of iron mining

waste into the environment, compromising 663.2 km of the Rio Doce in the states of Minas Gerais and Espírito Santo, which harmed the water quality, natural vegetation and ichthyofauna in that region [1].

About forty minutes after the dam burst, the mud traveled approximately 10 kilometers and in a matter of seconds destroyed 80% of the 257 buildings in the Bento Rodrigues District, leaving 329 families homeless and 19 people dead. The mud also destroyed 1,469 hectares of natural vegetation, including permanent preservation areas, degrading the habitat of several species of local fauna due to the impact on the quality of the Doce River and riparian vegetation [1].



Figure 1: Houses in the Bento Rodrigues District Covered in Mud. Source: Antonio

2.1 Cross/ Brazil Agency (09/11/2015).

The Fundão dam, owned by Mineradora Samarco/SA, was intended to receive waste from the iron ore extraction process, operating through a method traditionally used throughout the world known as hydraulic landfill, where the waste separated from the iron during the mining process is drained to the dams by gravitational action, with the water filtered by the sand located in the front part of the dam [2]. Although this waste drainage technique is the most widely used in the world, it is worth noting that there are other more modern techniques for dealing with mining waste, but since these techniques are more expensive, companies end up not implementing them, although experts consider these modern methods to be safer.

The rupture of the Fundão dam was the result of Samarco's negligence, since a report prepared before the tragedy indicated that the contact of the tailings pile with the aforementioned dam was causing destabilization in it and increasing the erosion process, there was even a recommendation from the Minas Gerais State Environmental Foundation that repairs be carried out on the Fundão Dam, which was ignored by Samarco [3].

3. Those Involved

The Fundão Dam collapse claimed the lives of 19 people, as well as leaving hundreds of people who lived in the Bento Rodrigues district homeless, which also happened to families in other districts of Mariana, also affecting the population of several other cities in

the Eastern Region of Minas Gerais up to Espírito Santo that were affected by the lack of drinking water.

In addition to these, riverside communities, including the Krenak indigenous people who have traditionally lived on the banks of the Rio Doce, were also particularly affected by the environmental damage resulting from the collapse of this dam.

The Krenak Indigenous Land is located between the cities of Resplendor and Conselheiro Pena, on the left bank of the Doce River. The current Krenak Indigenous Land has 4,039.82 hectares, where around 430 people live [4]. The relationship between the Krenak people and the Rio Doce, known as Uatu, was not only one of subsistence, but also of spiritual and affectionate relationships [5] In this context, the collapse of the dam was more than the loss of a resource necessary for the survival of these people, but the death of a relative, given that for the Krenak there is no division between nature and man.

The disaster discussed herein not only made it impossible for the Krenak to have access to water for their consumption and basic needs, or for the development of fishing activities, but the death of the river is the death of the Krenak, since the environmental violence reported here constitutes an offense to the cultural heritage of these people, by violating their way of life and a significant part of the cultural identity and spiritual and historical connections of this population with the aforementioned river [5].

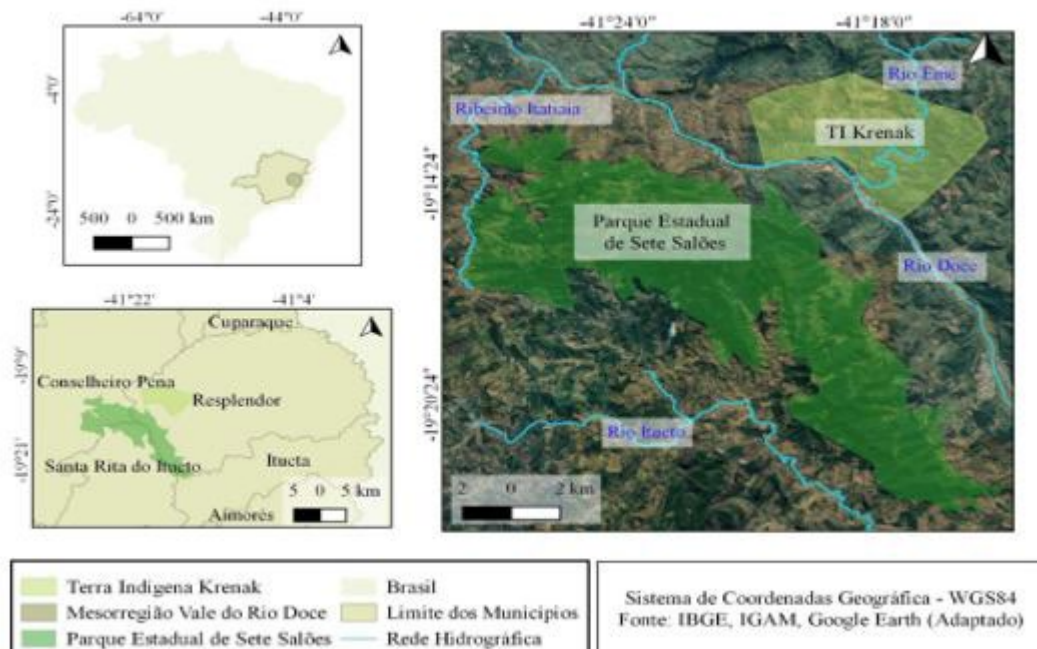


Figure 2: Position of TI Krenak

Source: Fontes and Paula, 2021.

Indigenous leader Ailton Krenak, in an interview with researchers from the Socioenvironmental Institute one year after the collapse of the Mariana dam, spoke about the extent of the damage suffered by the Krenak people and the local population:

November 5th [2016] marks one year since thousands of families were suddenly separated from the body of the river. The municipalities along this basin have a population of one and a half million people, directly affected by the toxic mud spilling over the Rio Doce. “Directly” means that, indirectly, we can put this figure at around ten million. But what about biodiversity? The Rio Doce Basin was cauterized. Now, that 800 km corridor is a dead end. And it surprised all of us that, in the first 15 days of that serious disaster, people came out in defense of Vale and Samarco, saying: 'Ah, let's restore the Rio Doce'. Now, what we have, in fact, is that the Rio Doce Basin has been assaulted by mining activities and also by the implementation of pulp and ore processing industries (INSTITUTO SOCIOAMBIENTAL, 2016).

Years after the Fundão Dam collapse, the Krenak people complain about the lack of dialogue and participation in the renegotiation process to repair the damage caused to the Rio Doce, as the crimes now analyzed caused the indigenous people to lose their right to fish, as well as the loss of their main source of water, and this population demands full reparation for the material and immaterial damages resulting from this tragedy [6].

On the other side are the mining companies responsible for the dam that collapsed. Samarco is a privately held company controlled by two shareholders or owners: the Anglo-Australian BHP Billiton Brasil Ltda. and the Brazilian Vale S.A. According to Fiorott and Zaneti (2017), the company sought profit rather than safety when assuming the risks of the Fundão Dam, given the flaws in the structure, in addition to its use above capacity and changes in the project, circumstances that were already known to the company.

The government's failure to act cannot be ignored, since according to the news portal G1 (2015), the agency that licensed the Fundão Dam was the Minas Gerais State Environmental Foundation (Feam/MG), linked to the State Secretariat for the Environment and Sustainable Development (Semad). Aleixo and Andrade (2016) state that the dam collapse was a “tragedy waiting to happen,” considering that there were conditions that were not met during the licensing process, and yet an extension was granted to the conditions that would prevent irreversible environmental damage. Even so, in 2013, the license was renewed for a period of six years. The government is a party to the case in question, given its obligation to monitor and enforce the legislation, ensuring the safety of people and the preservation of the environment, which in fact did not occur.

4. Action of State Agencies After the Breach

Immediately after the dam burst, several state agencies developed various lines of investigation with the aim of finding answers about the causes and effects of the disaster.

The Minas Gerais Federal Police Department opened a police investigation to determine the crimes and causes of the tragedy. In June 2016, the investigations were concluded after the Superior Court of Justice (STJ) ruled that the case had federal jurisdiction, since the consequences of the tragedy went beyond the borders of Minas Gerais and reached the sea in Espírito Santo. The investigations detailed the causes that contributed to the collapse of the Fundão dam. According to the officer responsible for the investigations, Samarco assumed the risk and prioritized profit over safety. According to the Federal Police, modifications were proven without a plan and, consequently, without due supervision by environmental agencies, resulting in the indictment of eight people, in addition to Samarco, Vale and Consultoria VogBR, for environmental crimes and damage to historical and cultural heritage [7]

The Federal Public Prosecutor's Office (MPF) and the Public Prosecutor's Office of Minas Gerais (MPMG), in a joint investigation, focused their efforts on holding the victims accountable for the socio-environmental and socio-economic damages. The MPMG acted on several fronts, seeking reparation for damages and compensation for those that are irreparable. To this end, it filed a precautionary action to freeze Samarco's assets, worth R\$300 million, in order to secure resources for compensation and reconstruction of the destroyed communities, as well as filing a Public Civil Action, with the aim of ensuring full reparation for the victims of the accident. The Operational Support Center for the Environmental Defense Prosecutors' Offices (CAOMA) was also created, a “task force” that works on the case, and as a result of this task force, in June 2018, a Conduct Adjustment Term (TAC-Governance) was signed, which provides for the participation of people affected by the dam rupture in various decision-making and consultative bodies of the reparation process (MINISTÉRIO PÚBLICO DE MINAS GERAIS, 2020).

In turn, Funai, together with the indigenous people, prepared a term of reference for the purpose of hiring a consultancy firm, by the companies Vale/Samarco/BHP, to study the impacts of the disaster on the lives of the indigenous people and the construction of the Permanent Action Plan. This initiative is a priority for Funai and the Ministry of Indigenous Peoples (MPI) and aims to guarantee the rights of the affected Indigenous Peoples to repair, mitigate and compensate for the impacts and damages suffered (FOUNDATION NATIONAL DOS POVOS INDÍGENAS, 2023).

Samarco has been fined several times for environmental crimes. According to Ibama, the fines are the result of 25 lawsuits filed to investigate environmental violations associated with the collapse. The lawsuits total R\$350.7 million. The agency also issued 73 notifications, with the aim of requiring the adoption of regularization and conduct correction measures, among other actions. According to Ibama, Samarco appealed all the fines. [8].

5. Crimes Committed

If we consider the conduct of those responsible for the collapse of the Fundão dam from a criminal legal perspective, we will notice the multiplicity of criminal violations that were committed in the case under analysis. For the public prosecutor's office, which acted in the case, the crimes committed by those responsible for the disaster were [9].

- Flooding (Art. 254 of the Penal Code);
- Collapse or collapse (Art. 256 of the Penal Code);
- Crimes against wildlife (Articles 29, § 1, I and II, § 4, III, IV, V and VI and Art. 33 of Law 9,605/98;
- Crimes against flora (Arts. 38, 38-A, 40 § 2º, 49, 50, 53, I and II, “c”, “d” and “e” of Law 9,605/98;
- Pollution crime (Art. 54, § 2º, I, III, IV and V of Law 9.605/98).

6. Resolution of Crimes

The collapse of the Samarco dam in Mariana triggered a series of events that revealed profound flaws in the Brazilian judicial system and the country's environmental legislation, demonstrating a worrying lack of punishment for those responsible for what is considered one of the worst environmental disasters in Brazil's history. Years after the disaster, none of the 26 defendants have been effectively punished, as while 15 defendants were found innocent, another 11 still face charges, creating a prospect of impunity. The criminal process, marked by slowness, complexity and lack of structure in the Judiciary, runs a serious risk of resulting in the statute of limitations for environmental crimes, leaving thousands of victims without justice [10].

Despite the actions of the Public Prosecutor's Office, the judicial developments prompt a deep reflection on the effectiveness of the justice system in holding people accountable for large-scale environmental crimes. The disaster under analysis triggered a series of urgent measures, from socio-environmental commitment terms to legal actions to repair the damages and hold those involved accountable, mandatory provision of drinking water, as well as criminal charges against individuals and companies responsible, which initially seemed promising [11].

However, throughout the process, the challenges and obstacles to achieving justice proved significant. A crucial point was the difficulty in implementing emergency measures and the terms of commitment, highlighting the resistance and negligence on the part of the companies involved, even in the face of the devastating consequences of the disaster. The criminal complaint pointed to a series of irregularities and negligence that culminated in the tragedy, including the prioritization of profit over safety and the environment.

The attempt to solve the crimes, however, has been hampered by a number of factors, including the complexity of the case, the number of defendants and witnesses, the lack of structure in the Judiciary and the inadequacy of Brazilian legislation to deal with a crime of such magnitude. In addition, the Covid-19 pandemic has

interrupted the hearings, further delaying the process.

Although some measures have been taken, such as the exclusion of some defendants and attempts to speed up hearings, the process remains at a worrying impasse. The lack of speed and effectiveness in solving the crimes makes it clear that, to date, those responsible have not been held properly accountable.

To truly address these crimes, a joint effort by the justice system, legislators and authorities is needed to ensure that those responsible are brought to justice and that measures are taken to prevent similar disasters in the future. This includes reviewing and updating environmental legislation, strengthening the judicial system and ensuring that cases of large-scale environmental crimes are dealt with with priority and agility. In short, the crimes related to the collapse of the Samarco dam in Mariana have not been solved. The lack of effective punishment for those responsible highlights serious deficiencies in the Brazilian justice system and demonstrates the urgent need for reforms to ensure justice for victims and prevent future environmental disasters.

Decisions such as the suspension of criminal proceedings against some defendants and the exclusion of intentional crimes against the lives of the legal entities reported highlight the slowness and gaps in the legal system. In addition, the delay in trials and the withdrawal of charges in favor of defendants fuel the feeling of impunity and injustice. The uncertain outcome of the Mariana case highlights the urgency of improving accountability mechanisms for environmental crimes. The complexity of relationships between companies, government and civil society, combined with bureaucracy and flaws in the judicial system, poses a challenge to ensuring effective justice and adequate reparations for victims and the affected environment (AZEVEDO and JUNIOR, 2021).

The story of the Mariana disaster therefore invites us to reflect on the need to strengthen institutions and legal instruments to prevent and punish environmental crimes, as well as to ensure the protection of the rights of affected communities and the preservation of ecosystems. Only through an integrated approach committed to environmental justice will it be possible to avoid similar tragedies and promote truly responsible sustainable development.

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