
Brazil: Hydro Alunorte's Alumina Tailings Dam. A Disaster Foreshadowed

The growth of mineral extraction and metallurgical production, along with the consequent proliferation of toxic waste tailings dams, has occurred at the same rate as the emptying and bursting of tailings dams in several parts of the world.

Despite its downturn, the mining industry has grown—both in terms of volume of minerals extracted and financial gain—with the opening and expansion of new mines and refineries worldwide. With regard to aluminum and financial flows, for example, exports from Brazil grew from around 129,033 tons in 2000 to 930,206 tons in 2017. (1)

In 2017, in the state of Pará, Brazil alone, 5,014,443 tons of alumina and 208,906 tons of aluminum were exported from the port of Vila do Conde (municipality of Barcarena). The company, Hydro Alunorte, was responsible for all of this economic flow (from the export of aluminum).

Alunorte's plant in Barcarena, owned by Norsk Hydro, is considered the largest alumina refinery in the world, in addition to having all the technologies—technical, scientific, political and economic—for the extraction, production and distribution of the mineral. This implies **complete control over the aluminum chain of production**—from the extraction of bauxite, to refinement of alumina, to its transformation into primary aluminum and laminate products, to its exportation.

Norsk Hydro is **a Norwegian multinational company** with 2.69 billion shares issued, 34.7% of which belong to the Norwegian State. Other notable shareholders include State Street Bank and Trust Comp (United States), Clearstream Banking (Luxembourg), HSBC Bank (Great Britain), J. P. Morgan Bank Luxembourg (Luxembourg), Banque Pictet e Cie (Switzerland), J.P Morgan Chase Bank (Great Britain) and Euroclear Bank (Belgium).

Based on data from 2017, an average of 14% of Hydro Alunorte's production (from Barcarena) goes to the Brazilian domestic market, and the remaining 86% is for export. **Currently, the company exports mainly to Canada, Norway, Iceland, Russia, the United States, United Arab Emirates, Latvia, Japan and Mexico** (2).

In 2010, Hydro bought (for US \$4.9 billion) the assets related to the production of bauxite, alumina and aluminum from one of the world's largest mining companies, Vale—which will receive US \$1.1 billion and a 21.6% share in Hydro, valued at US \$3.1 billion (3). This acquisition included the bauxite mining operations in Paragominas, Pará, the majority share in the world's largest alumina refinery—Alunorte, in Barcarena—and a 51% share in Brazil's leading aluminum company, Albras (now a joint venture between Norsk Hydro and Nippon Amazon Aluminium Co. Ltd).

In 2013, Hydro bought 407,122,241 shares of Vale for US \$1.656 billion. Thus, Vale's 21.6% stake fell to 2.0% of the shares authorized and issued by Hydro. That same year, Hydro **merged with SAPA Aluminium** for a value equivalent to US \$3.381 billion. In that context, there was an expansion of Hydro Alunorte's productive activities, as well as its waste dams.

What Are Mining Tailings Dams?

In order to store the waste products of mineral extraction, mining companies build what are called tailings dams, also known as waste ponds. These wastes contain high concentrations of chemicals, as well as mud deposits, finely ground stones and water that remains after the metals are separated from the minerals. As mineral deposits are exploited, tailings dams are built; therefore as the mine grows, so do the dams.

The growth of mineral extraction and mineral-metallurgical production over the last century—and the consequent proliferation of these dams—occurred at the same rate as **the emptying and break of tailings dams in various parts of the world** (4). The most notorious dam rupture in Brazil, of the Samarco Mineração S.A. company, occurred in November 2015 in the municipality of Mariana, in Minas Gerais, followed by the Brumadinho disaster in 2019.

The consecutive emptyings of Hydro Alunorte's tailings dam in Barcarena, Pará state, also stand out. The most dramatic cases have been the disasters that occurred in April 2009 and February 2018. All of these ruptures occurred in very close succession.

The 2017 Dam Safety Report by the National Water Agency (ANA, by its Portuguese acronym) states that there are **753 industrial waste retention dams and 790 mining tailings dams in Brazil** (5).

The Norsk Hydro Alunorte Disasters

Hydro Alunorte has two tailings dams (DRS1 and DRS2/seized). Yet, the company refuses to call its place of waste a “dam,” calling it instead a bowl or deposit; therefore, these dams do not appear on the 2019 National Mining Agency list. In public discourse, as well as in the very process of environmental permitting, these areas are treated as Solid Waste Deposits (DRS, by its Portuguese acronym).

The company's aforementioned process of self-definition began with the inauguration of Alunorte in 1995. According to Alunorte's 2009 annual report (the year of the major disaster caused by overflow from the waste dam), the first DRS cell was opened in 1995, covering approximately 15 hectares. In 2009, the “dam” already took up about 130 hectares. **When it overflowed, this waste reached the Mucurupi river and its tributaries, directly affecting the lives of almost 100 families who live in the area, and indirectly affecting thousands of other families who depend on the rivers.** These families were left without water to drink or for domestic use, and they could not even fish for food; furthermore, the water wells that the affected families used were also contaminated with heavy metals.

It is worth noting that **Hydro “took advantage” of the very area where the 2009 overflow took place in order to expand DRS1**, while planning installation of a new structure. In this light, the filing of Environmental Impact Studies and Environmental Impact Reports (EIS/EIR) ends up being mere administrative procedure.

On February 16th and 17th of 2018, one of the Hydro Alunorte overflows occurred, which also emptied toxic waste and heavy metals (lead, chromium and nickel). This disaster reached communities (particularly Bom Futuro, Vila Nova, Burajuba), **secondary water courses and the Pará river.** This was an emblematic case of the systemic denial by the company—and first of all, by the State—who blamed the heavy rains. Conduct Adjustment Terms (TAC, by its Portuguese acronym) for repairs and emergency actions were even signed between the Federal Public

Prosecutor (MPF by its Portuguese acronym), the Pará State Public Prosecutor (MPPA, by its Portuguese acronym) and Hydro Alunorte.

The company used excessive rains as the core piece of their argument—which is a deceptive discursive fabrication. Data from 1977 to 2006 from the Mineral Resources Research Company (CPRM, by its Portuguese acronym) confirm this. When confronted with the data available from the Center for Weather Forecasting and Climate Studies (CPTEC, by its Portuguese acronym) of the National Institute for Space Research (INPE, by its Portuguese acronym), one could confirm that the rains on February 16th and 17th in Barcarena were within the historical patterns, and therefore, cannot be “blamed” for the disaster. Nonetheless, there was no embargo or cancellation of the environmental permits granted to DRS2.

The narrative was created, that the overflows were “normal accidents” or “natural disasters”—comparable to flooding and earthquakes. This ends up creating an isolated event that ignores **the social complexity and the historical, political and economic processes that created the disaster; it also hides power structures and forces that significantly contribute to the production of disasters.**

In this way, the disaster is not simply an isolated element in time and space; rather, it points to the structural relationship between episodes of tailings dam breaks and the economic cycles of mining. Meanwhile, it reveals **the game of interests and the associations among the State and companies, with their “fine-tuned discourse.”**

These disasters are not due to human error or negligence, nor to flaws in laws or systems; rather, they are examples that show that **environmental control structures grant “licenses” to State-concessionary companies to commit environmental crimes.** We can point to the following “licenses”: i) The technical opinion of the Secretariat of the Environment and Sustainability (SEMAS, by its Portuguese acronym), on January 16, 2019, which ensures that Hydro can now operate at 100% capacity; 2) The Public Prosecutor’s (MPF) determination in May 2019 to end the embargo on Hydro Alunorte’s aluminum refinery; the judicial decision enabled the company to resume operations at 100%, whereas it had only been operating at 50% following the disaster (crime) of February 2018; 3) The joint Petition and Protocol of Understanding between Hydro and the MPF about ending the embargo on DRS2 (6). It should be noted that DRS2 was operating without an environmental permit, and it is located within an ecological reserve (environmental protection area).

A Chain of Foreshadowed Disasters and Environmental Crimes

Historically, these environmental crimes and contamination go hand in hand with other disasters. These disasters point to the **increase in expropriations (dispossession/forced evictions)—due to the installations and expansion of industries and major economic agents—which in themselves are “disasters” that contribute directly to the degradation of life in the municipality of Barcarena (7).**

In these areas, which were expropriated in the 2018 Hydro Alunorte disaster, “there was a whole complex social structure made up of countless rural communities, with a native population with strong ties of kinship and religion—who practice fishing, hunting and gathering, as well as small subsistence farming” (8).

These new disasters are related to 1) (new) expropriations/evictions; 2) deforestation; 3) contamination of rivers; 4) impairment of artisanal activities and the fishing economy; 4) private use of streets and roads; 5) increased prostitution and worker mobility (clogging the education and health

sectors); 6) creation of dependence on temporary employment; 7) territorial conflicts (between families and communities); 8) land and real estate speculation; 9) increase in urban violence.

Meanwhile, small-scale rural producers (and their migration to cities) are dwarfed and seen as inferior; histories and lives disappear, and human, ethnic and territorial rights are violated. **These violations are taking place because they are naturalized; this process makes people invisible and legitimizes the social domination of oppressive capitalist systems and policies. As a result, the histories and memories that have been built—of gardens, orchards, fishing, “baths” in the river, beliefs and symbologies—are suffocated.**

Jondison Rodrigues and Marcel Hazeu,

Study Group on society, Territory and Resistance in the Amazon (GESTERRA), Federal University of Pará (UFPA, by its Portuguese acronym)