



BETWEEN RHETORIC AND PRACTICE: BNDES, SIGMA LITHIUM AND LITHIUM MINING IN THE JEQUITINHONHA VALLEY

ABOUT IDEC:

Idec (Instituto Brasileiro de Defesa do Consumidor) is a Brazilian civil society organization created in 1987 with the aim of defending consumer rights, including the rights of public service users, the fight for fair and balanced economic relations, and the expansion of access to essential goods and services. Idec is a consumer association that operates in complete independence from governments, companies, and political parties.

ABOUT THE SUSTAINABLE CONSUMPTION PROGRAM:

The Sustainable Consumption Program is based on the premise that the prevailing systems of production and consumption have been based on the destruction of nature and the intensification of inequalities and social conflicts, compromising planetary health and threatening our and future generations. Through a systemic vision and approach, connecting sustainable and responsible consumption in an interdisciplinary manner and from its structural issues, the program aims to contribute to the construction of a society where social justice walks hand in hand with the safeguarding of nature.

ABOUT THE RESPONSIBLE BANKS GUIDE:

The Responsible Banks Guide (GBR, its acronym in Portuguese) is a project by Fair Finance International that assesses the policies of Brazil's eight largest banks across a range of issues, such as consumer protection, climate change, the environment, human rights, and others. The GBR is conducted by a coalition formed by Idec, Instituto Sou da Paz, Conectas Direitos Humanos, Oxfam Brasil, and World Animal Protection.

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Summary

This study evaluates contradictions between the institutional policies disclosed by BNDES and its practices in financing lithium extraction projects in the Jequitinhonha Valley by the company Sigma Lithium¹.

From a methodological standpoint, this study principally relies on secondary documentary sources, such as analyses of socio-environmental responsibility policies of Sigma Lithium and the National Bank for Economic and Social Development (BNDES), as well as official documents from Brazilian public institutions. Relevant audiovisual materials on the subject were also considered, such as the documentary "À beira do abismo - a batalha por matérias-primas: a mineração de lítio no Brasil (On the edge of the abyss - the battle for raw materials: lithium mining in Brazil)," which contributed to understanding the possible impacts. Additionally, the study follows the international case study methodology of Fair Finance International, which includes engagement with organizations mentioned in the research.

Among the most relevant findings of this report are:

- There is a possible contradiction between the sustainability discourse and the actual practices of Sigma Lithium. While the mining company presents itself as a pioneer in the production of "green lithium" and aligns its image with ESG principles, local communities report human rights violations, environmental degradation, and lack of transparency.
- The use of resources from the Climate Fund, maintained by the Ministry of the Environment (MMA) for financing the expansion of Sigma Lithium's operation in the Jequitinhonha Valley, raises concerns about the role of BNDES. On one hand, the bank adopts strict socio-environmental evaluation criteria, but on the other hand, it apparently fails to



¹ The company is composed of two main entities: Sigma Lithium, based in Canada and holding the *parent company*, and Sigma Mineração S.A. or Sigma Brasil, a wholly-owned subsidiary of the *parent company*, holder of the mining titles and responsible for controlling all Brazilian operations.

require concrete proof of Sigma Lithium's policies or responses to the demands of the affected communities.

- The complaints from the affected communities point to potential negative impacts on territorial rights and environmental justice.
- Global investors and buyers are also responsible for preventing potential violations of socio-environmental rights, as they participate in the project's value chain.

If the allegations made by the communities are proven and the company does not provide justifications in the future for the points related to its Human Rights Policy, its Code of Conduct, and other findings of the present study, the following recommendations are presented:

To Sigma Lithium:

May Sigma Lithium demonstrate, through public reports, that it conducts meaningful consultation processes, ensuring the informed participation of all communities affected by the project, with effective consideration of the demands and positions of these communities; commit to the free, prior, and informed consent of indigenous and quilombola peoples impacted by the project, in accordance with the United Nations Declaration on the Rights of Indigenous Peoples and ILO Convention 169;

That, as per the commitment expressed orally in a meeting held with the institutions, it guarantees communication channels in Portuguese and in clear and accessible language, ensuring access to information in a transparent and continuous manner.

Review its internal human rights policies to ensure independent legal advice to impacted communities and incorporate commitments against retaliation to human rights defenders;

That, if the complaints made by the communities are proven, it repairs damages caused by its activity;

That it publishes audited and detailed ESG reports, in Portuguese and English, that provide measurable proof of its greenhouse gas emissions, pollutant emissions, air and water quality monitoring, water usage, and official records of the results of its social investments.

To BNDES:

That in addition to observing the Fiocruz Conflict Map, consider in its preliminary analysis process for granting funding, public complaints from communities

affected by the companies' activities;

That, following the commitment expressed in the letter, a new visit to the Sigma Lithium project region be conducted to engage in dialogue with the affected communities.

In addition, ensure robust monitoring mechanisms by requiring sustainability reports in Portuguese, in line with GRI Indicator 14 already required by the bank, including auditable data, impact indicators, and responses to complaints and demands from affected communities.

May it strengthen its institutionalized ombudsman, ensuring its practical effectiveness with the traditional, indigenous, and quilombola communities directly impacted by the project. Ensuring that these mechanisms are widely publicized, in accessible language and appropriate to the sociocultural context, to ensure that the population understands their rights and can, in fact, use them, thus guaranteeing the right to participation and protection against human rights violations, effectively.

Verify the truthfulness of the information contained in the aforementioned complaints, and in the event of contractual non-compliance, apply the corresponding penalties to the offenders. Furthermore, for the future, deny financing to projects that may violate human rights until the violating actions are demonstrably reversed by the credit applicant and the affected communities have their suffered damages repaired.

To the State of Minas Gerais:

Conduct a technical visit to the territories of Araçuaí, Itinga, and Coronel Murta to investigate the possible damages caused by Sigma Lithium;

If the reported damages are effectively proven, act in a manner to demand their full reparation by the company and its financiers;

Ensure the protection of traditional territories and the active participation of communities affected by mining in regional development plans.

Develop an air quality monitoring plan and a toxicological study in the regions affected by Sigma Lithium's enterprise.



To investors and buyers

Demand greater transparency from companies and include, in their contracts, clauses for continuous environmental and social monitoring, with independent verification mechanisms and participation of the impacted communities.

The present study received generous contributions from the Movimento dos Atingidos por Barragens (Movement of People Affected by Dams - MAB), the Movimento pela Soberania Popular na Mineração (Movement for Popular Sovereignty in Mining - MAM), the Mining Observatory, and the Study Group on Environmental Themes (Gesta/UFMG), through the individuals Andréa Zhouri and Klemens Laschefske, to whom we express our gratitude for the exchanges.

1. Introduction

The Canadian mining company Sigma Lithium was founded in 2012 and, ten years later, began the construction of the mine and the necessary infrastructure for lithium exploration between the municipalities of Araçuaí and Itinga, in the Jequitinhonha Valley, Minas Gerais.

In 2024, the Brazilian Development Bank (BNDES) granted financing of approximately R\$486 million to the company's Brazilian subsidiary³, to install a mineral processing unit in the region where the complex operates. This resource came from the Climate Fund, linked to the Ministry of the Environment (MMA), aimed at mitigating climate change.

The present study analyzes the socio-environmental responsibility policies and practices of the mining company and the Brazilian Development Bank in relation to public complaints made between 2023 and 2024 by communities near the enterprise.

The first complaints emerged in 2023, made by the Movement of People Affected by Dams (MAB)⁴, which requested the annulment of the authorization for mineral research by Sigma Lithium in the Environmental Protection Area of Chapada do Lagoão, in Araçuaí (MG). According to the MAB, there was no prior, free, informed, and good faith consultation with the quilombola communities in the region, a guarantee provided for in Convention 169 of the International Labor Organization, an international instrument adopted by Brazilian legislation.

2 https://sigmalithiumresources.com/operations/#project_summary

3 Information available at: [https://agenciadenoticias.bnDES.gov.br/industria/BNDES-aprova-R\\$-4867-milhoes-para--Sigma-Lithium-beneficiar-litio-de-forma-sustentavel/](https://agenciadenoticias.bnDES.gov.br/industria/BNDES-aprova-R$-4867-milhoes-para--Sigma-Lithium-beneficiar-litio-de-forma-sustentavel/). Accessed on: 07/14/2025.

4 Information available on the MAB website: <https://mab.org.br/2023/05/06/mp-recomenda-a-anulacao-de-pesquisa-de-mi-neradora-sigma-em-aracuai-mg/>. Accessed on 05/30/2025.

In July 2024, traditional communities and indigenous peoples affected by the mining company's operation, as well as social movements⁵, reported during the extraordinary meeting of the Environment and Sustainable Development Commission of the Legislative Assembly of Minas Gerais that there was no prior consultation regarding the opening of roads, drilling studies for lithium location in the territory, use of river water, and so many other actions that precede the start of mining activity. Representatives of the Piauí do Poço Dantas community stated, for example, that the road connecting the community to the city was altered without prior notice⁶.

At the meeting, an indigenous leader declared that:

[...] This company Sigma, to build its platform, cut down more than 500 trees! Angico, Aroeira, other plants, other types of vegetation, impacting, of course, the local fauna and flora, right? [...]⁷

[...] My community is about 10 km from the platform in a straight line, and they [Sigma] say to us, "oh, it doesn't have any impact, you're far away, you're far from progress, you're far from development," you know? Because they say that lithium, folks, is the mineral they are calling the mineral of energy transition. It's not just here in the Jequitinhonha Valley, [it's] throughout Latin America, throughout South America! They are destroying all the indigenous communities, from Chile, Bolivia, Peru, Colombia. Lithium is destroying because it is the material, it is the mineral that calls... it is

⁵ Some of the communities and peoples present were: Aranã Indigenous People, Cinta Vermelha Indigenous Village, Quilombo Giral de Araçuaí, Córrego do Narciso Quilombola Community, and Poço Dantas Community.

⁶ The extraordinary meeting can be found on the website [<https://www.almg.gov.br/atividade-parlamentar/comissoes/reuniao/?idCom=799&&idTipo=2&&dia=05&&mes=07&&ano=2024&&hr=10:00>] of the Legislative Assembly of Minas Gerais. Accessed on 03/14/2025.

⁷ Speech delivered by an indigenous leader during the extraordinary meeting of the Commission on Environment and Sustainable Development. Minute: 48'06" <https://www.almg.gov.br/atividade-parlamentar/comissoes/reuniao/?idCom=799&&idTipo=2&&dia=05&&mes=07&&ano=2024&&hr=10:00>



essential for this blessed, or cursed, energy transition that is not meant to benefit us! It is not to benefit Mother Earth, because we indigenous people, we see the earth as a mother, the soil, the subsoil is sacred to us! Right? We can't be destroying like they do, and contaminating the waters, people! [...]⁸

The representative of the Rural Workers' Union of Araçuaí and quilombola reports about Sigma Lithium:

They are arriving and invading properties, without asking anyone if they can or cannot, they are tearing down fences, they are tearing down people's fences, and then they come in with machines knocking everything down and excavating in their own way [...]⁹

The children are also sleeping in the classroom, the children are not developing, people, because they are not sleeping, due to the noise of the machines working, because the mining company works day and night, right? [...]¹⁰

The representative of the MAB and the Córrego do Narciso quilombola community, after reporting on the difficulties of traveling on the region's potholed roads, says:

What kind of development is this? We are not against lithium exploitation like many people claim about the movement of those affected by dams [MAB] [...] We are in favor of community involvement, the communities have the right to this wealth because it is on our land, what is on our land... we have the right to have a decent home, we didn't build houses for the mining company to crack, because we didn't have the technique and engineers like the mining companies say, the engineers say "your houses are cracked because your houses weren't prepared to receive impact" of course it wasn't prepared to receive impact, it was prepared for people to live in! Because there were people there, there were people there when you arrived [...]¹¹

⁸ Statement made by an indigenous leader during the extraordinary meeting of the Commission on Environment and Sustainable Development. Minute: 49'38" <https://www.almg.gov.br/atividade-parlamentar/comissoes/reuniao/?idCom=799&&id-Tipo=2&&dia=05&&mes=07&&ano=2024&&hr=10:00>

⁹ Statement made by a quilombola representative during the extraordinary meeting of the Commission on Environment and Sustainable Development. Minute: 56'56" <https://www.almg.gov.br/atividade-parlamentar/comissoes/reuniao/?idCom=799&&id-Tipo=2&&dia=05&&mes=07&&ano=2024&&hr=10:00>

¹⁰ Speech delivered by a quilombola representative during the extraordinary meeting of the Commission on Environment and Sustainable Development. Minute: 58'00" <https://www.almg.gov.br/atividade-parlamentar/comissoes/reuniao/?idCom=799&&id-Tipo=2&&dia=05&&mes=07&&ano=2024&&hr=10:00>

¹¹ Speech delivered by a representative of the Movement of People Affected by Dams during the extraordinary meeting of

We are not against mining company A, mining company B, mining company C, but we want respect! And talking about respect is talking about a decent school, talking about health, talking about education, talking about roads, talking about a developed city, because the mining plans they made, they already saw that they are not examples. They already saw that it didn't work, so why not do it differently, right State? Why not listen to the people, right State? Why not listen to the communities? Why not consult the peoples? [...] We want mining that can be ours, worthy of an energy transition that our country participates in, not making a stage for other countries abroad. Having respect for indigenous peoples, having respect for traditional peoples and communities [...]¹²

Lithium mining in the Jequitinhonha Valley is not new. In 1991, the Companhia Brasileira de Lítio (CBL) began operating in the region, adding a new chapter to the history of resource exploration in the Valley, which dates back to the colonial period. More recently, in the wave of expanding incentives for energy transition and efforts for sustainable development, Sigma Lithium established itself in the region with the proposal to produce "Green Lithium" (as named by the company itself), which, as we will see throughout this report, is aligned with the international promotion of the "Lithium Valley" by the state government of Minas Gerais.

The company is composed of two main entities: Sigma Lithium, based in Canada and holder of the holding company, and Sigma Mineração S.A. or Sigma Brasil, a wholly-owned subsidiary of the holding company, holder of the mining titles and responsible for controlling all Brazilian operations¹³. The executives of the mining company-

Environment and Sustainable Development Commission. Minute: 74'56" <https://www.almg.gov.br/atividade-parlamentar/comissoes/reuniao/?idCom=799&&idTipo=2&&dia=05&&mes=07&&ano=2024&&hr=10:00>.

12 Speech delivered by a representative of the Movement of People Affected by Dams during the extraordinary meeting of the Commission on Environment and Sustainable Development. Minute: 77'56" <https://www.almg.gov.br/atividade-parlamentar/comissoes/reuniao/?idCom=799&&idTipo=2&&dia=05&&mes=07&&ano=2024&&hr=10:00>.

13 According to the National Mining Agency, "mining titles are the documents

they have vast experience in the financial market, which is reflected not only in their corporate strategies but also in the group's corporate structure¹⁴.

Until the time of this study's preparation, the shareholder control of Sigma Lithium is exercised, mainly, by the A:10 Investimentos fund, which holds about 43% of the shares, potentially influencing governance and operations - even to the detriment of minority shareholders. For more information, see chapter 4.

Sigma claims that ESG (Environmental, Social, and Governance)¹⁶ initiatives come first¹⁷. However, the data presented in the study challenge this narrative.

Based on public complaints and the use of the Climate Fund to finance the operation of Sigma Lithium, the Responsible Banks Guide investigated the possible controversies between the institutional policies disclosed by the company and BNDES and their practices. This report gathers the findings of this investigation and is divided into five sections. The first contextualizes mining in the Jequitinhonha Valley. The second section analyzes, comparatively, the policies and practices of Sigma Lithium, aiming to verify possible violations of human, climate, and socio-environmental rights, as well as potential violations of its own commitments. The third and fourth sections address, respectively, the role of BNDES and the state of Minas Gerais in the potential contribution to the occurrence—and also in the possible solution—of human and socio-environmental rights violations involving communities and traditional peoples affected by lithium extraction in the Jequitinhonha Valley. Finally, the last section conducts an analysis of Sigma Lithium's policies and practices in light of the discussion on **greenwashing**.

granted by ANM and MME (Ministry of Mines and Energy) that entitle their holder to the utilization of the mineral resource.” Two documents are issued, the Research Permit, which, as the name suggests, allows for mineral research, and the Mining Concession, which authorizes the exploitation of the mineral. Available at: <https://www.gov.br/anm/pt-br/assuntos/exploracao-mineral/titulos-minerarios>. Accessed on: 03/27/2025

14 According to information provided on the company's website. Available at: <https://ir.sigmalithiumresources.com/corporate-governance/board-of-directors>. Accessed on 08/05/2025.

15 The A:10 Investments fund is a private equity fund. Private equity funds, like A:10, are generally formed by investors seeking to acquire a majority or significant stake in companies, with the aim of optimizing their management, enhancing growth, and subsequently selling the stake for a profit. It is possible to access the A10 Investments website itself (available at: <https://www.a10invest.com/pt>). Accessed on: 04/07/2025).

16 Term coined in 2004 in a publication by the Global Compact in partnership with the World Bank, called "Who Cares Wins." The aim of the term is to achieve sustainable and responsible development through the adoption of 3 fundamental pillars in business and investment decisions. The environmental pillar raises awareness about environmental impacts, the social pillar ensures respect for communities and human rights, and the governance pillar addresses management practices, transparency, and ethics. Available at: <https://www.gov.br/investidor/pt-br/penso-logo-invisto/asg-a-nova-di-mensao-da-sustentabilidade-financeira-ambiental-social-e-governanca>. Accessed on: 03/27/2025.

17 Statement made by the company on its website "At Sigma Lithium, ESG comes first. This has been a priority for our company since its founding and the principles behind it guide everything we do." (our translation). Available at: <https://sigmalithiumresources.com/environmental/>. Accessed on 04/07/2025.

Methodology

This report aims to investigate possible contradictions between the socio-environmental and human rights policies and commitments of Sigma Lithium and BNDES, in light of the complaints made by communities in the Jequitinhonha Valley.

To this end, 19 documents were analyzed based on two main criteria: officiality (institutional and official materials) and thematic relevance (focused on the environment, human rights policies, financing policies, and codes of ethics). These contents are available on the websites of both institutions, Sigma and BNDES, and include, among others, environmental impact reports, financial statements, financing policies, and whistleblowing policies. It is worth noting that a qualitative analysis of all the data collected in these documents was conducted, therefore, this study presents interpreted data.

Due to resource limitations for conducting field visits, a bibliographic and documentary review was carried out from public sources - among these books, scientific articles, journalistic materials, and television documentaries - to discuss the context of lithium mining in the Jequitinhonha Valley and the complaints made by traditional indigenous and quilombola communities.

The data collection regarding the complaints made against the company Sigma Lithium was conducted secondarily from official documents of Brazilian public institutions, such as the recordings and records of the Legislative Assembly of the State of Minas Gerais, the 2023 Annual Activity Report of the Coordination of Inclusion and Social Mobilization, and materials from the Brazilian and international press. Among the main journalistic sources are reports from Folha de S. Paulo and the documentary "À beira do abismo: a batalha por matérias-primas: a mineração de lítio no Brasil"¹⁸, produced by the German regional television channel SWR Fernsehen.

The international methodology of Fair Finance International's case studies provides for active engagement with financial institutions

The documentary is public and can be accessed through this link:
<https://www.youtube.com/watch?v=ZzvYhXmQTSk>.

, with the aim of contributing to the improvement of their environmental, social, and economic policies, understanding the constructive role these institutions can play in building fair and sustainable finance. Therefore, the preliminary version of this study was sent on April 17 to the presidency, the environmental department, and the socio-environmental board of BNDES. The study was also sent to the presidency and the sustainability board of Sigma Lithium. Both institutions were given an initial period of 15 days to acknowledge the content of the report and contribute with responses to the complaints reported here, and they could also indicate any inconsistencies that might be identified.

BNDES responded to the submission of the first version of the study. Subsequently, a meeting was held between the Consumer Defense Institute, Oxfam Brazil, and diverse bank boards to clarify the process of authorizing financing to Sigma Lithium. After this meeting, the bank sent us a letter on June 13, 2025, recording the information provided to us and adding that they contacted Sigma Lithium to respond to the points raised in this report. On August 18, 2025, after the final version of the study was sent on August 6, 2025, the bank sent another letter in response to the updates of the study.

The Government of the State of Minas Gerais responded to the final version of the study on 08/18/2025 and stated that it will forward the document and the recommendations made to the competent authorities.

Sigma Lithium, in turn, responded to the first version of the study on 04/30/2025, with an extrajudicial notification, in which it threatens the organizations that drafted the preliminary version of the document with a possible criminal lawsuit in case of disclosure of the content. In the document, the legal representatives of the mining company claim that the information in the study is defamatory in nature, but do not provide any answers to the questions raised by civil society or the public complaints from the communities.

On June 13, 2025, the same day the BNDES bank sent its response letter, the Vice President of Institutional and Governmental Relations at Sigma Lithium, Mrs. Ligia Pinto, contacted Idec, formally introducing herself via email and clarifying that Idec's email with a meeting request and a copy of the study had been mistakenly forwarded to the Investor Relations (IR) department within the company. According to reports, this incorrect internal forwarding caused the delay in response, as the request should have been directed directly to the Vice Presidency of Institutional Relations. Thus, she requested the scheduling of a meeting in the most convenient format, on a date possible for both parties, informing that she would not be available on June 16, nor between July 7 and 10. However, the contact did not mention the extrajudicial notification sent by the company to Idec on April 30, 2025.

In light of this, Idec consulted partner organizations about the attempt to contact.

On June 16, the Senior Manager of Institutional and Governmental Relations, Mrs. Gisela Mattoso returned the contact, requesting a phone conversation from IDEC with the Vice President of Institutional Relations at Sigma, Mrs. Ligia, to be held on the same day, on the occasion when a company board meeting would take place. The request was made with little time for a response from Idec, and contradicted the information of unavailability for contact, which had already been informed, on June 13, by Mrs. herself. Ligia.

On June 25, Mrs. Gisela got in touch again, reiterating the availability of Mrs. Ligia to talk with the organization, and informing that she had made contact on June 13 and 16.

In light of this, on June 26, Idec, through an email sent by its Executive Director, inquired whether the company was aware of the notification sent by Sigma Lithium's legal team to IDEC and whether it agreed with the threatening tone, through legal action, present in its content, in order to understand the scenario and context of the meeting (which was not yet clear), considering that such extrajudicial notification had not been mentioned in the emails received, which caused surprise among the organizations involved in the current study. It also took the opportunity to inform that any conversation should occur with the presence of all partner organizations that collaborated on the report about the company's operation financed by BNDES, thus, any meeting would require the organization of a joint schedule and, therefore, it was not possible to meet the request for a meeting on the same day, as requested by the Senior Manager.

On June 26, the Vice President of Institutional Relations of the company responded to Idec, claiming ignorance of any extrajudicial notification previously sent by Sigma's legal team, committing to check with the responsible area, and making herself available for dialogue.

Subsequently, on June 27, Idec responded to the email, sending the received notification to the company, clarifying that notifications with the same content were sent to other entities and individuals, always on behalf of the company, and requesting internal investigation and confirmation, or denial, of the dispatch of the notification so that the organizations could understand the terms under which the meeting would take place.

After sending the final version of the study on August 6, 2025, on August 18, 2025, the bank sent another letter in response to the study updates, reaffirming commitments such as visiting communities near the Sigma Lithium project, requiring a sustainability report from the company following GRI standards, and especially, the GRI 14 indicator for the mining field, and specifying that it was aware of complaints from 2024, but authorized the financing after analyzing the Environmental Control Program (PCA), minutes, and photographs of the company's meetings with the community.

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In a new email, dated June 30, the Vice President of Institutional and Governmental Relations at Sigma, Ms. Ligia, reiterated that the scheduling request, accompanied by the report produced and previously sent by Idec, was the subject of an internal mistake

In a new email, dated June 30, the Vice-President of Institutional and Governmental Relations at Sigma, Ms. Ligia, reiterated that the scheduling request, accompanied by the report produced and previously sent by Idec, was the subject of an internal mistake, having been mistakenly forwarded to the Investor Relations (IR) department, instead of being directed to the Vice Presidency of Institutional Relations.



It was also reported that it had been contacted shortly before the email was sent to assist some institutions. According to her, such an error resulted from a bureaucratic mistake, with possible involvement of the company's Legal Department because of this, apologizing for the incident. In light of this, nothing was mentioned about the notification sent by Sigma to Idec, only reiterating the openness to dialogue, with the aim of clarifying information about the content of the report.

In possession of the information provided by BNDES and always seeking to work with transparency, Idec found itself obliged to update the study in order to integrate the events that have occurred since the initial version, as well as to provide a new deadline for the parties to be informed before the publication of the present study.

Even in the face of a history of intimidation and threats of litigation against human rights protection organizations, including consumer defense — which is the statutory mission of the Institution — after the updated version of this report was sent, all parties involved had until August 16, 2025, to submit considerations and responses, with new responses from BNDES and the State of Minas Gerais on 08/18/2025.

Sigma requested an extension of this deadline, which was granted until August 19, 2025. On the same date, a meeting was held between members of Idec and Oxfam Brazil with the Vice President of Institutional Relations at Sigma Lithium, Ms. Ligia Pinto. During the meeting, the Sigma representative again requested an extension of the response deadline. However, the organizations informed that it would not be possible to grant another postponement, but offered the possibility that, by August 20, some institutional commitments could be forwarded that could be assumed more quickly.

As no documents or formal statements were sent by the agreed date, this report incorporates only the information and statements presented by the institutional representative of Sigma Lithium during the aforementioned meeting, which are:

1. In the meeting, Ms. Ligia Pinto informed that the study is under review by directors of Sigma's environmental and social areas and made general comments about its content.
2. Regarding the public hearings in Araçuaí and Itinga, she stated that the company provided five vehicles to ensure the presence of the communities.
3. Concerning the health impact reports published by the press, she explained that Sigma consulted data from the SUS, local hospitals, and internal reports, concluding that there was no correlation between the company's activities and the recorded respiratory diseases. She emphasized that some allegations were individual and lacked technical support.

4. Regarding institutional communication, the VP acknowledged shortcomings, especially on the website, which was initially structured for international investors. She admitted that the Portuguese version is under development and that the page is not used to respond to public complaints, preferring these to follow formal channels with the Public Prosecutor's Office. Nevertheless, she emphasized the existence of an independent toll-free (0800) hotline for receiving complaints.
5. Concerning financing by the Climate Fund, she stated that the choice was strategic, to reinforce the image of clean production and alignment with the energy transition, even though there were alternatives in private banks. She highlighted that the company is capable of maintaining its activities with its own revenues, should the BNDES change its support line.
6. In relation to dialogue with communities, the VP informed that, in addition to the consultations required by law, Sigma has a voluntary engagement protocol with groups potentially recognized as traditional, including quilombolas in more remote areas. She acknowledged that there is no legal obligation for prior consultation due to the absence of territorial demarcation, but highlighted that the company adopted a schedule validated by the state government to maintain this dialogue. She also mentioned that Public Prosecutor's Office attorneys accompanied the process, with documentary analyses and field visits, without any prohibitive decision on operations.
7. The VP also highlighted environmental measures adopted, such as techniques to prevent dust dispersion and planning for waste disposal to reduce visual impact on neighboring communities. It was emphasized that licensing bodies, the Public Prosecutor's Office, and BNDES itself have already verified the operation through documents and on-site visits.

However, we commit to publishing, in full, the company's response as soon as the document is finalized and sent to the organizations responsible for this study.

2. The role of the state of Minas Gerais in lithium mining in the Jequitinhonha Valley

The Jequitinhonha Valley covers an area of 85,000 km², between the north of the State of Minas Gerais and the southernmost part of Bahia. Historically, the region has been a site of mining activities, playing a significant role in the national economy (SOUZA; HENRIQUES, 2011). However, the intensity of these activities did not translate into economic gains and regional development – its low human development index (HDI), for example, led the region to be known for years as the "Valley of Misery."¹⁹ For this reason, between the 1960s and 1970s, economic development plans (PND) were implemented with the aim of changing the region's economic reality. The State encouraged, for example, eucalyptus plantations²⁰, which are still used today for energy generation and biofuels, such as charcoal utilized in steel plant furnaces²¹.

The exploitation of lithium followed the development plans for the Valley region. The Companhia Brasileira de Lítio (CBL) began operations in 1991, in yet another extractive initiative supported by the State under the justification that it was necessary to bring development to the region.

The installation of Sigma Lithium in the Jequitinhonha Valley, therefore, continues the series of developmental projects that characterize the region's economy. The Canadian mining company itself incorporates this role, as stated in its Environmental Impact Report:

"The company develops important social programs in the region that aim to contribute to environmental education, encourage entrepreneurship, boost local economic development, and the organization

¹⁹ Campos, Lúisa. Projeto Vale do Lítio transformará o Jequitinhonha em polo de exploração para benefício externo. *Cáritas Minas Gerais*, Belo Horizonte, 21 dez. 2023. Available at: <https://mg.caritas.org.br/noticias/projeto-vale-do-litio-transformara-o-jequitinhonha-em-polo-de-exploracao-para-beneficio-externo/>. Accessed on: August 6, 2025.

²⁰ For more information on bank financing for eucalyptus monoculture in the Jequitinhonha Valley, see the study supported by the Responsible Banks Guide at this link <https://guiadosbancosresponsaveis.org.br/media/ng1jqtxq/relato-rio-final-cav-1.pdf>

²¹ In the bioenergy sector of Aperam, a stainless steel factory, the company states it focuses on the "production and commercialization of charcoal, wood, seedlings, and seeds. All sourced from renewable eucalyptus forests in Minas Gerais." Regarding the use of water by eucalyptus, the company says on its website: "Like any vegetation, eucalyptus needs water and nutrients to survive. Studies show that it consumes the same amount of water as native forests." Learn more at: <https://www.aperam.com/pt-br/ambiente/bioenergia/>. However, reports by the NGO CAV (Vicente Nica Center for Alternative Agriculture) highlight the socio-environmental impacts of eucalyptus plantations in the region, particularly the water scarcity faced by some local communities. Despite these reports, the company will have its FSC (Forest Stewardship Council) certification, which attests to good forestry practices, reviewed by the international audit ASI (Assurance Services International). The report by Repórter Brasil provides detailed information. Available at: <https://reporterbrasil.org.br/2025/04/aco-verde-aperam-seca-veredas-vale-jequitinhonha/>. Accessed on 04/07/2025.

of meetings to discuss and make important decisions that impact the most relevant issues for the affected populations" (RIMA, 2024, p.12)²²

However, the communities' complaints about the company's activities call into question the benefits for the residents—especially indigenous and traditional peoples—of the Jequitinhonha Valley. It is observed that the mining company seems to adopt a development model that, according to reports from local communities, may be associated with a possible deterioration in the quality of life of the region's inhabitants, while also generating increased gains—both financial and political—for the company itself.

This stance is supported by the state government of Romeu Zema, governor of Minas Gerais from the Novo Party, who is engaged in reissuing policies that reinforce the Jequitinhonha Valley as a sacrifice zone for the development of the state and the country.

The politician reinforced this logic by presenting, in New York, United States, in 2023, the region as the "Lithium Valley"—a discursive bet to distance the imagery built around the "Valley of Misery" and make way for a mining "Eldorado," marked by optimism, hope, and the promise of sustainable development. The "Lithium Valley" project was launched by the governor at NASDAQ²³ and aims to attract foreign investors for the exploitation of the mineral, which is intended for the production of electronics outside the country.

On the occasion, Zema stated that he wants "[...] the Jequitinhonha Valley to become the technology valley for battery production" (Agência Minas, 2023), adding that lithium would be part of the clean energy generation.²⁴ However, these investments, despite supposedly being based on green and sustainable economic development, seem to have reinforced

22 SIGMA Lithium., *Relatório de Impacto Ambiental: Ampliação do Projeto Grotão do Cirilo – Pegmatito Xuxa*. p.12. Available at: <https://sigmalithiumresources.com/wp-content/uploads/2024/11/RIMA-Sigma-Ampliacao-Xuxa.pdf>. Accessed on: 04/07/2025

23 The *National Association of Securities Dealers Automated Quotations* (NASDAQ) is an American stock exchange, the second largest in the world after the *New York Stock Exchange* (NYSE).

24 Information about the international launch of the "Vale do Lítio" project can be found through the link <https://www.agenciaminas.mg.gov.br/noticia/governo-de-mi-nas-realiza-lancamento-mundial-do-projeto-vale-do-litio>. Accessed on: 04/07/2025.

land conflicts and socio-environmental impacts.

The use of the territory for raw material extraction reinforces a relationship of economic dependency of the country at an international level and of destructive occupation of Brazilian territories²⁵. According to the data and documents analyzed, the negative externalities of extractive activity are being incorporated by the Brazilian communities affected by mining.

Lithium is present in the daily lives of consumers in Brazil and around the world. In recent years, it has been a key mineral for promoting the energy transition due to its important role in the production of batteries for electric vehicles (EVs) and in renewable energy storage²⁶.

As an essential component of lithium-ion batteries, the mineral offers high energy density, efficiency, and durability, becoming a reference for reducing dependence on fossil fuels and enabling electric mobility. An example of the growing relevance of the mineral is the report "Minerals for Climate Action: The Mineral Intensity of the Clean Energy Transition"²⁷, published in 2020, in which the World Bank pointed out that, to meet international demand, lithium production should grow by 500% by 2050.

According to the Brazilian Geological Service, Chile (46.6%), Australia (28.9%), Argentina (11.2%), and China (7.6%) together hold 95% of the currently identified global lithium reserves. Brazil, until 2022, had only 0.5% of the reserves²⁸.

In Brazil, lithium is mined directly from rocks such as spodumene, petalite, and lepidolite. Leão and Aguiar (2024, p. 99) describe the mining process and its specificities depending on the final use of the lithium.

The main lithium concentrates and chemicals are spodumene, lithium chloride (LiCl), lithium carbonate (Li₂CO₃), and lithium hydroxide (LiOH). Catalysts for lithium-ion batteries (LIB) need to contain lithium carbonate (19% lithium content) or lithium hydroxide (29% lithium content). As battery cells begin to be produced with lower cobalt content or lithium iron phosphate, the trend is towards an increased preference for lithium hydroxide²⁹. Consequently,

25 LOPES DE SOUZA, Lauanda. "Lítio Verde" no Vale do Jequitinhonha: ressurgência de discursos desenvolvimentistas e disputas internacionais. **Revista Mutirô**. Folhetim de Geografias Agrárias do Sul, [S.l.], v. 4, n. 3, p. 221–244, 2024. Available at: <https://periodicos.ufpe.br/revistas/index.php/mutiro/article/view/261584>. Accessed on: February 26, 2025

26 Souza, Danilo. **Minerais estratégicos para a transição energética – o caso do lítio**. Available at: <https://www.oseto-reletrico.com.br/minerais-estrategicos-para-a-transicao-energetica-o-caso-do-litio/>. Accessed on: 04/07/2025.

27 Report available at: <http://documents1.worldbank.org/curated/en/099052423172525564/pdf/P16627806f5aa400508f8c0bdcb0878a3e.pdf>. Accessed on: 08/04/2025.

28 Serviço Geológico do Brasil. **Lítio no mundo**. Available at: <https://www.sgb.gov.br/litio/nomundo.html#:~:text=Chi-le%2C%20Austr%C3%A1lia%2C%20Argentina%20e%20China,al%C3%A9m%20de%20China%20e%20EUA>. Accessed on: 03/28/2025.

29 Graham, John D.; Rupp, John A.; Brungard, Eva, **Lithium in the Green Energy Transition: The Quest for Both Sustainability and Security**, Sustainability, v. 13, n. 20, p. 3, 2021. DOI: 10.3390/su132011274

there is an increase in demand for battery-grade lithium and the advancement of mining companies in new deposits found, as we will see is the case in Brazil. The preference of battery manufacturers for vehicles for lithium hydroxide is justified, as its cathode has a longer driving range, saving on the use of cobalt, which in turn is more expensive³⁰. Lithium carbonate, on the other hand, is more commonly used in consumer electronics and smaller electric vehicles.

The production of electric cars stands out as an industrial initiative to reduce the use of fossil fuels, a more sustainable alternative aimed at the energy transition. The material for the production of the battery necessary for these cars is largely found in countries of the Global South, such as Brazil, Bolivia, Argentina, and Chile.

In Brazil, the "Lithium Valley" project caught the attention of several foreign companies, such as Sigma Lithium, Lithium Resources, Atlas Lithium, and Lithium Ionic/MG Lithium, which have set up in the cities of Araçuaí and Itinga.

To carry out the extraction or processing of minerals, every company needs to obtain environmental licensing³¹. In the case of Sigma Lithium, the licensing occurred at the state level.

In April 2023, the mining company received the operating license, which allowed it to start activities at the Grotão do Cirilo mine³². In December of the following year, the company received a triple environmental license - preliminary, installation, and operational - to expand its operations and begin exploration of the Barreiro mine³³.

30 Ibidem.

31 According to the IBAMA website, environmental licensing is "one of the instruments of the National Environmental Policy." The purpose of licensing is to reconcile economic-social development with an ecologically balanced environment. It is an administrative procedure aimed at ensuring environmental control and sustainable development in the regions where the expansion, implementation, or construction of enterprises that use environmental components, such as air, water, soil, and subsoil, among others, is intended. <https://www.gov.br/ibama/pt-br/assuntos/laf/sobre>. Accessed on: 04/04/2025.

32 See http://sistemas.meioambiente.mg.gov.br/reunoes/uploads/d7hoUXjnpQf2AE7JA-qp3KmwtyHz_MKY1.pdf. Accessed on: 08/04/2025.

33 See <https://sistemas.meioambiente.mg.gov.br/licenciamento/uploads/kwLIC8eObnvck->

In the State of Minas Gerais, licensing is conducted by the State Secretariat for Environment and Sustainable Development. The administrative procedure begins with the State System of Environment and Water Resources of Minas Gerais (SISEMA-MG), which is responsible for the process that starts with the registration of the enterprise in the Environmental Registration System (SCA), followed by the preparation and presentation of environmental studies, such as the EIA/RIMA (Environmental Impact Study and Environmental Impact Report), when necessary.

These documents are analyzed by SISEMA technicians, who assess the environmental impacts and propose mitigating or compensatory measures. After the analysis, a Preliminary License (LP) is issued, which approves the location and design of the project, the Installation License (LI), which authorizes the start of construction, and the Operation License (LO), which allows the operation of the enterprise. The entire process must be conducted in accordance with current environmental legislation, aiming for sustainable development and the preservation of the environment.³⁴

According to the booklet of the Environmental Themes Study Group (GESTA) of UFMG, "the activities are divided into classes from 1 to 6. The classes are defined according to the relationship between the size (size and production) and the polluting/degrading potential of the planned interventions.³⁵ In this same evaluation, the enterprises are subjected to a risk assessment of their activities' impact on conservation units, whether there is a need for suppression of the Atlantic Forest, or if there are changes in watercourses; in these cases, there is an increase of weight 1 or 2 in the risk classification of impacts.

Activities that affect recognized Indigenous and quilombola lands are prohibited, and those that impact traditional peoples and communities must conduct a free, prior, and informed consultation with the groups. According to ILO Convention 169, this consultation must observe the consultation protocol developed by the communities themselves.

In the technical note, signed by research centers linked to the Federal University of Minas Gerais (UFMG), State University of Montes Claros (Unimontes), Federal University of the Jequitinhonha and Mucuri Valleys (UFVJM), and London South Bank University, sent to Minas Gerais environmental agencies, researchers indicate that Sigma Lithium has requested several licenses for a single project, which constitutes a fragmentation of the environmental licensing. In their technical evaluations, they state that this should contribute to "avoiding integrated analysis of the impacts,

DiQ8zR-0dBMLtl8Moj.pdf. Accessed on: 0/08/2025.

34 Government of Minas Gerais. Conselho Estadual de Política Ambiental. DELIBERAÇÃO NORMATIVA COPAM N° 217, DE 06 DE DEZEMBRO DE 2017. Belo Horizonte: SIAM, 2017. Available at: <https://www.siam.mg.gov.br/sla/download.pdf?id=Norma=45558>. Accessed on: Aug 4, 2025; GESTA UFMG. Lugares de Direitos: conhecendo o licenciamento ambiental, 2024. Available at: <https://conflitosambientaismg.lcc.ufmg.br/producao-academica/categoria/cartilhas/>. Accessed on: 04/07/2025.

35 GESTA UFMG. Lugares de Direitos: conhecendo o licenciamento ambiental, 2024, p.12. Available at: <https://conflitosambientaismg.lcc.ufmg.br/producao-academica/categoria/cartilhas/>. Accessed on: 04/07/2025.

simplify and accelerate the environmental regularization procedures.³⁶ Moreover, the socio-environmental studies necessary for the issuance of the license seem to be conducted without the participation of the communities, by technicians and auditors hired by the companies themselves.³⁷

In already existing territorial conflict situations, many companies manage to receive the licensing, claiming that they will adopt measures to remedy such irregularities once they are already in operation (LASCHEFSKI, 2024, p. 202).

In other situations, the actions of the public authorities seem to delay the necessary procedures for prevention and repair activities. During the extraordinary meeting of the Environment and Sustainable Development Commission of the Legislative Assembly of Minas Gerais, on July 5, 2024, Deputy Beatriz Cerqueira requested a technical visit to the territories of Araçuaí, Itinga, and Coronel Murta, which should be carried out by the Environment Commission, the Ministry of the Environment through the National Secretariat of Traditional Peoples and Sustainable Rural Development, with the participation of Helder Magno da Silva from the Federal Prosecutor's Office/MG³⁸, who stated that environmental licenses have not considered the cumulative effects of mining activities, which can be harmful to the people and nature.³⁹

The event would be important to verify the current situation of traditional communities, but, as of the date of publication of this report, it had not been scheduled.

36 UFMG. Análise EIA/RIMA Sigma Lithium. Belo Horizonte: Laboratório de Conflitos Ambientais – UFMG, 2025. 16 p. Available at: https://conflitosambientaismg.lcc.ufmg.br/wp-content/uploads/2025/04/Análise-EIA_RIMA-Sigma-Lithium-16042025.pdf. Accessed on: August 1, 2025.

37 The Technical Note from the Environmental Conflicts Laboratory at UFMG states that the licensing ignored the free, prior, and informed consultation with the communities, as required by ILO Convention 169, and 'primarily used secondary socioeconomic data and information collected by Sigma itself, compromising the necessary independence for processes of this nature.' UFMG. Análise EIA/RIMA Sigma Lithium. Belo Horizonte: Laboratório de Conflitos Ambientais – UFMG, 2025. 16 p. Available at: https://conflitosambientais-mg.lcc.ufmg.br/wp-content/uploads/2025/04/Análise-EIA_RIMA-Sigma-Lithium-16042025.pdf. Accessed on: August 1, 2025.

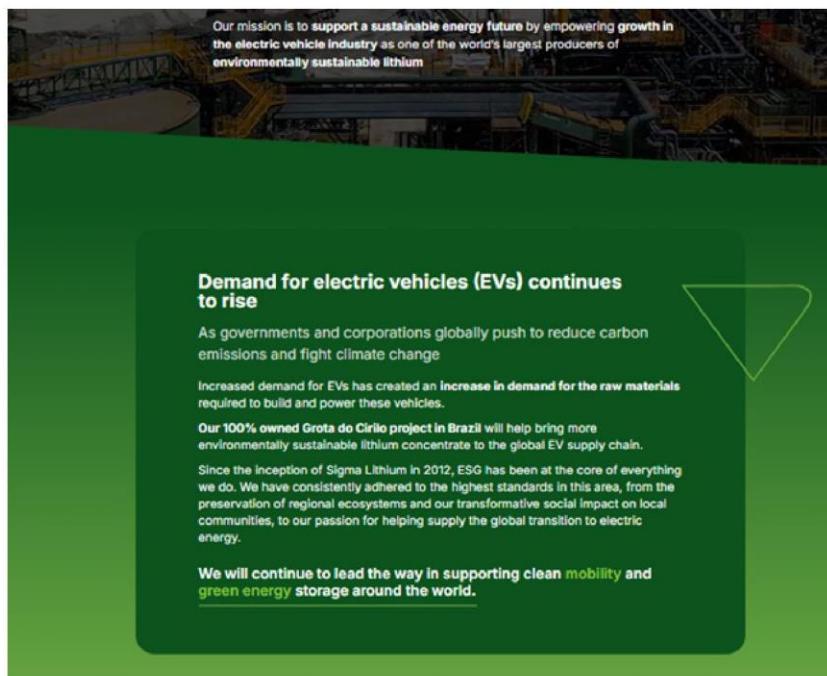
38 Available at: <https://www.almg.gov.br/atividade-parlamentar/comissoes/reuniao/?id-Com=799&idTipo=2&dia=05&mes=07&ano=2024&hr=10:00>. Minute: 2:24:49. Accessed on: 08/06/2025.

39 Available at: <https://www.almg.gov.br/atividade-parlamentar/comissoes/reuniao/?id-Com=799&idTipo=2&dia=05&mes=07&ano=2024&hr=10:00>. Minute: 2:16:30. Accessed on: 08/06/2025.

3. Sigma Lithium's Actions and Policies

The company Sigma Lithium began its activities in 2012, in the Grotão do Cirilo region, near the municipalities of Araçuaí and Itinga. The mining company promotes itself as an institution committed to the energy transition and a supporter of the expansion of electric vehicles through the sustainable extraction and production of lithium. Therefore, it emphasizes that its operations follow ESG standards with the achievement of Net Zero ^{by 2023}, recycling of waste, reuse of water, preservation and development of agroforestry, and generation of energy by 100% green hydropower.

Image 1 - The company describes its mission



Source: Sigma Lithium company website, "About us" section, Accessed on: 02/21/2025

According to the NetZero platform from the University of Oxford, there is an international scientific consensus that, to avoid the worst climate damages, global net emissions of carbon dioxide (CO₂) caused by humans need to fall by about 45 percent from 2010 levels by 2030, reaching net zero around 2050. Global warming is proportional to cumulative CO₂ emissions, which means the planet will continue to warm as long as global emissions remain above zero. This implies that climate damages caused by global warming will continue to increase as long as emissions persist. Available at: <https://netzeroclimate.org/>. Accessed on: March 27, 2025.

Image 2 - The company presents its goals



Source: Sigma Lithium company website, "About us" section, Accessed on:

02/21/2025⁴²

As mentioned in the **Methodology** section, in addition to the information provided on the Sigma Lithium company website, this study drew inputs from the documentary "**On the Edge of the Abyss – The Battle for Raw Materials: Lithium Mining in Brazil**", produced by the regional German television channel SWR Fernsehen, in partnership with the professor from the Federal University of Minas Gerais, Klemens Laschefski, which presents the company's operations in the territory.

The documentary includes interviews with the CEO of Sigma Lithium, Ana Cabral, and the Director of International Relations and Business Development, Daniel Abdo, who accompanied the recording process, presenting the company and its procedures, as well as answering questions posed by the professor. Like this study, the documentary aims to investigate whether lithium mining by Sigma

Lithium is indeed green and sustainable.

In the documentary, Ana Cabral states that the

42 Page available through the link <https://sigmalithiumresources.com/about-us/>. Accessed on: February 21, 2025.

43 The documentary is public and can be accessed through this link <https://www.youtube.com/watch?v=ZzvYhXmQTSk>.



company's product is actually a "green and sustainable lithium concentrate⁴⁴." The process of extracting lithium, a mineral that will indeed be used for the production of electronics, is not carried out on Brazilian territory.⁴⁵ The company claims to produce at least 20 million tons of this lithium product per year, about 60 thousand tons per day.⁴⁶ The material is obtained through surface explosions that, according to previously mentioned reports, make a very loud noise, disturbing residents and local wildlife⁴⁷. In the documentary, Sigma states that a prior simulation is conducted to calculate the necessary amount of explosives for this procedure and thus reduce the carbon footprint⁴⁸

According to the Parliamentary Front for Sustainable Mining, underground lithium mining can cause fewer socio-environmental impacts compared to open-pit mining.⁴⁹ In the aforementioned documentary, when questioned about the choice of surface extraction and its impacts, Sigma Lithium stated that open-pit mining is more attractive, while the underground method is very expensive, indicating a possible mismatch between the company's socio-environmental concerns and a choice that primarily considers economic factors to dismiss mining methods that cause fewer socio-environmental impacts initially⁵⁰.

The company's operation consists of two stages, as explained by Sigma's Communications Director, Daniel Abdo. First, the extraction of spodumene through explosions, and then the redirection of the product to what the company calls the "Green Tech Plant" or "Planta de Tecnologia Verde", an area with South African technology where lithium concentrate is obtained

44 The statement can be found in the documentary starting at 55" seconds, at the link <https://www.youtube.com/watch?v=ZzvYhXmQTSk>.

45 According to the National Mining Agency, lithium is an alkali metal that cannot be found in its pure form in nature, therefore, it is found within pegmatites (coarse-grained rock) which will have in their composition between 5 and 7% of the element, this is the lithium concentrate extracted from the soil in Minas Gerais, for example. Available at: <https://www.gov.br/cetem/pt-br/iv-seminario-litio-brasil/apresentacoes/mariano-laião-e-mathias-heider-anm.pdf>. Accessed on 04/04/2025. Now, the extraction process will occur through the production of lithium carbonate (Li_2CO_3) which will be transformed into lithium hydroxide (LiOH) used in battery production. The extraction process of LiOH from the ores involves grinding, heating, acid leaching, and purification. More information available at: www.gov.br/cetem/pt-br/iv-seminario-litio-brasil/apresentacoes/paulo-braga-caroline-brígido-cetem.pdf. Accessed on: April 4, 2025.

46 The statement can be found at 8'22" minutes of the documentary. Link <https://www.youtube.com/watch?v=ZzvYhXmQTSk>.

47 At 22'53" minutes, it is possible to find the statement of two residents of the region about the noise of the explosions. Link <https://www.youtube.com/watch?v=ZzvYhXmQTSk>.

48 The information can be found at 7'40" minutes of the documentary. Link <https://www.youtube.com/watch?v=Zz-vYhXmQTSk>.

49 For information on the impact of underground mining, see the publication by the Parliamentary Front for Sustainable Mining through the link <https://mineracaosustentavel.org.br/mineracao-subterranea/>

50 The statement can be found at 8:59 minutes of the documentary. Link <https://www.youtube.com/watch?v=Zz-vYhXmQTSk>.

through cleaning and separation, to then be exported. The practices implemented in this process, such as crushing, are the same used in diamond mining. Abdo details this process, as we see below:

Sigma is a producer of lithium concentrate, therefore, our company consists of two parts. One part involves the extraction of lithium, which we carry out through open-pit mining, in hard rock deposits. Then, the ore obtained from these mines is processed in our “Green Tech Plant” through a process of separation and cleaning until obtaining the lithium concentrate. [...] This is the first system of its kind in South America. It is truly a miracle (our emphasis)⁵¹.

Although the main objective of the company is to demonstrate that its mining can be sustainable, some actions by Sigma raise doubts about this.

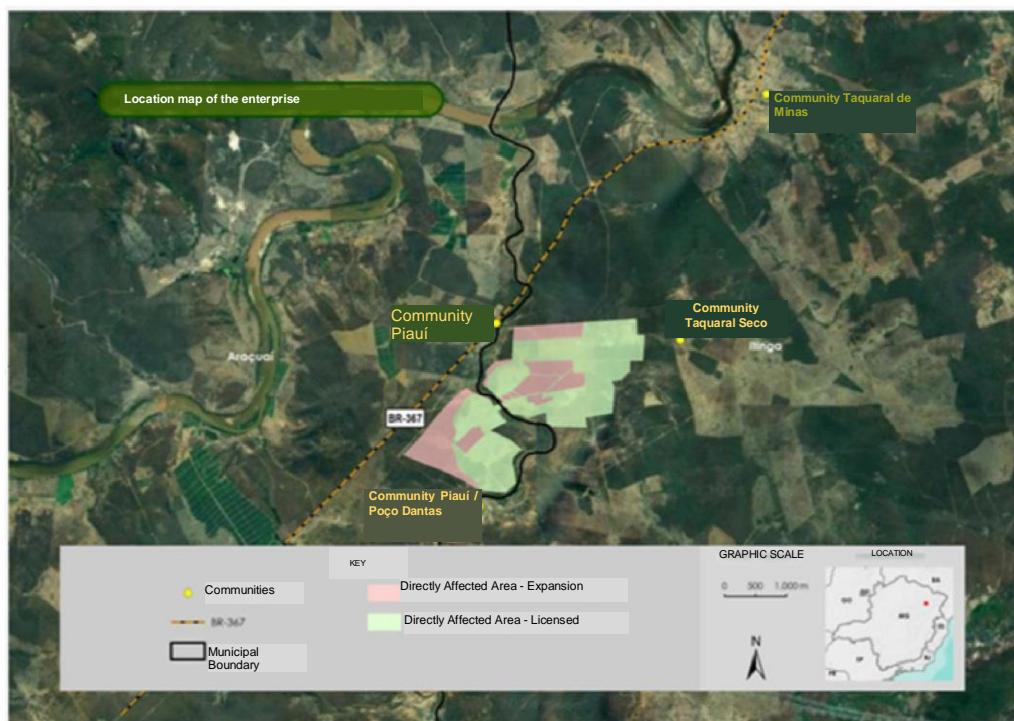
When we talk about sustainability, we are not only referring to environmental preservation but also to social sustainability, that is, greater equity in income distribution, reducing economic inequality⁵². The communities living near the pits of the Sigma Lithium mining company largely occupy territories where there are lithium reserves. The company's expansion plans begin with the construction of a new industrial unit, Plant 2⁵³, with which they intend to quadruple their activity and will directly affect these communities.

51 The explanation can be found at 11:55 minutes into the documentary. Link.

52 SOUZA, João Valdir Alves de.; NOGUEIRA, Maria das Dores Pimentel. Apresentação, p.25. In: **Vale do Jequitinhonha: Desenvolvimento e Sustentabilidade**. Belo Horizonte: PROEX/UFMG, 2011.

53 The expansion will include, for example, the increase of existing waste piles, the installation of a tailings pile, mineral deposit installation, and a fueling station. More information can be found in the Environmental Impact Report (RIMA): Expansion of the Grotto do Cirilo Pegmatite Xuxa Project through the link.

Image 3 - Expansion of the exploration area of Sigma Lithium



Source: Relatório de Impacto Ambiental: Ampliação do Projeto Grota do Cirilo – Pegmatito Xuxa, 2024, p.

11

The expansion, already licensed by the government of the state of Minas Gerais, aims to "supply society with lithium ore for the manufacture of electric batteries, in addition to generating jobs and improving the quality of life for the region of Araçuaí, Itinga, as well as for the surrounding communities." As noted on the map above, with the expansion of operations, the facilities of Sigma Lithium, which are already nearby, will come even closer to at least three communities.

The company states that "the continuation of production requires the expansion of the pits and, consequently, some more areas for the disposal of waste and tailings, which will result in the need for the suppression of native vegetation."⁵⁵ Still in the Environmental Impact Report, Sigma Lithium commits to compensating for this vegetation suppression:

54 SIGMA Lithium., Relatório de Impacto Ambiental: Ampliação do Projeto Grota do Cirilo - Pegmatito Xuxa. p.12. Available at: <https://sigmalithiumresources.com/wp-content/uploads/2024/11/RIMA-Sigma-Ampliacao-Xuxa.pdf>. Accessed on: April 7, 2025.

55 Ibidem

The expansion of the project will require the removal of native vegetation, which will be done in a regulated manner. This includes a forest inventory, species identification, consultation on threatened and legally protected species, and forest compensation projects. These measures will ensure the legality of the process, the collection of forest fees, and the protection of species. (RIMA, 2024, p. 86)⁵⁶

The document also states that the expansion aims to contribute to economic development, prevent illegal mining, increase the region's HDI, and encourage environmental education and entrepreneurship. On the other hand, while the mine is in operation, the native vegetation will be suppressed, without presenting calculations on the environmental effects and the microclimate. Even with the assessment of the likely negative impact, that is, with mitigation measures, page 73 of the document states that the generation of inconvenience and disturbance to the population will be of medium significance.

The predicted impacts are already being experienced by the affected communities. In the previously mentioned German documentary, some residents of the region complain about the difficulty sleeping due to explosions during the early morning⁵⁷ and a member of the (MAB) shows how the company has been advancing increasingly towards quilombola territories⁵⁸.

The expansion financed by BNDES will enhance such effects not only on housing, access to water, and sources of subsistence but also on the health of local communities.

The community of Piauí Poço Dantas, in the municipality of

56 Ibid, p. 86.

57 At 22'53" minutes, it is possible to find the statement of two residents of the region about the noise of the explosions. Link <https://www.youtube.com/watch?v=ZzvYhXmQTSk>

58 At 30 minutes into the documentary, the MAB member takes the team and the professor to the communities threatened by the expansion of mining activities. Link <https://www.youtube.com/watch?v=ZzvYhXmQTSk>

Araçuaí made complaints⁵⁹ to the newspaper Folha de São Paulo, alleging⁶⁰ that the explosions for lithium extraction have caused cracks in the houses, increasing the risk of collapse, and have caused the malacacheta mineral dust⁶¹ to reach the interior of their homes, increasing the risk of respiratory problems⁶².

This study obtained access to legal proceedings initiated by residents of the Poços Dantas Region against Sigma, addressing violations of neighborhood rights due to air and noise pollution resulting from explosions. In its defense, Sigma attached some technical reports from the year 2024, monitoring air quality and noise standards, in order to indicate that everything is within regularity, with no data proving that the detonations generate noise, smoke, and/or any other type of damage to the communities, emphasizing the regularity of the explosions for lithium mining.

In addition, it is important to highlight that Sigma filed a lawsuit⁶³ against Folha de São Paulo, due to this published article, requesting changes to its content and presenting documents with the aim of demonstrating that, in reality, the damages pointed out by the community - and mentioned in the report - do not exist. It is worth mentioning that the preliminary injunction was denied by the Judge and the process is ongoing.

59 Folha de São Paulo. Comunidades do Vale do Jequitinhonha vizinhas da mineração de lítio queixam-se de doenças. Available at: <https://www1.folha.uol.com.br/ambiente/2024/11/comunidades-do-vale-do-jequitinhonha-vizinhas-da-mi-neracao-de-litio-queixam-se-de-doencas.shtml>. Accessed: April 04, 2025.

60 Ibidem. Accessed: April 07, 2025

61 Malacacheta é um mineral de sílico-aluminato de potássio, ferro ou magnésio, também conhecido como mica. Available at: <https://repositorio.usp.br/directbitstream/661425b6-cdb1-4702-85b0-a7e36a2b2839/3139984.pdf>, p.4. Accessed on: April 08, 2025.

62 According to data on Hospital Morbidity from SUS, the municipality of Araçuaí had, in 2024, 880 records of elective and emergency care for respiratory diseases, in 2023 the number was 732, and in 2022 there were 714 attendances. The municipality of Itinga, in isolated research, has no recorded data. Data available at: <http://tabnet.datasus.gov.br/cgi/tabcgi.exe?sih/cnv/nimg.def>. Accessed on: April 07, 2025

63 Case No. 1182298-94.2024.8.26.0100, pending in the 38th Civil Court of the Central Court of the District of São Paulo/SP.

Image 4 - Cracks in the houses of the communities



A resident of the Piauí Poço Dantas community points to the crack in the wall of her house. The residents claim that the fissures appeared after the start of explorations by Sigma Lithium. Source and image: GUATELLI, C. Comunidades do Vale do Jequitinhonha vizinhas da mineração de lítio queixam-se de doenças.

Folha de São Paulo newspaper, São Paulo, November 8, 2024.

Although there are no studies connecting lithium extraction to the incidence of respiratory problems in the region, a study conducted in the northern region of Chile, a country with strong mining activity, analyzed the impact of proximity to mining pits on children's respiratory health.

Entitled "***Proximity to mining industry and respiratory diseases in children in a community in Northern Chile: a cross sectional study***" (Fernández-Cantón et al., 2016)⁶⁴, the article evaluated 288 children living in a rural community near open-pit gold and copper mines, using explosions—the same method used by Sigma Lithium for lithium mining in the Jequitinhonha Valley—to understand if their health was impacted by the particles generated by mining.

⁶⁴ Available at: <https://pubmed.ncbi.nlm.nih.gov/27266511/>. Accessed on: June 27, 2025.

The study demonstrated that the proximity of residences to the pits was associated with a higher prevalence of asthma, rhino conjunctivitis, and recurrent bronchitis. The main atmospheric pollutants identified were total suspended particles (TSP) and inhalable particles smaller than 10 micrometers (PM10), both small enough to penetrate deeply into the respiratory system, provoking inflammation, airway hyperresponsiveness, and respiratory infections. The Bayesian spatial modeling used in the research revealed that the risk of respiratory diseases was considerable up to a radius of 1,800 meters from the mines.

This data is crucial for understanding the scenario in the Jequitinhonha Valley. Based on information from Sigma Lithium's own EIA (Environmental Impact Report)⁶⁵, it is observed that communities such as Ponto do Piauí, Piauí Poço Dantas, and Taquaral Seco are located, respectively, less than 500, 1,000, and 1,600 meters from the extraction areas and waste piles. This proximity is concerning, especially when considering the aforementioned Chilean study, which points to significant health risks for populations residing in areas so close to mining enterprises.

In addition, the article points out that explosions and ore transportation are the main sources of particle emissions, which directly aligns with reports from communities in the Jequitinhonha Valley, who mention daily explosions and the presence of fine dust (malacacheta, a PM10 and PM2.5 mineral) inside their homes. In the absence of any public air quality monitoring plan or independent toxicological study, these populations remain vulnerable to a type of insidious, invisible, and potentially lethal pollution.

In the Folha de São Paulo report, a community health agent reports:

[...] everyone here complains about sleep problems, in some cases needing medication to sleep and antidepressants. But what worsened the most with this mining company were respiratory problems. Many children and elderly people with recurrent pneumonia.⁶⁶

The statement of a resident from the region, found in the same report mentioned above, demonstrates how the mining company's activities are close and interfere with the dynamics of the territory:

Yesterday I was fishing with a colleague, and they [mining operators] set off three explosions at once. We had to tie the shirt over the face due to the stench of smoke and dust that covered us. The children have panic and pneumonia.⁶⁷

⁶⁵ SIGMA Lithium., Relatório de Impacto Ambiental: Ampliação do Projeto Grotão do Cirilo - Pegmatito Xuxa. p.69. Available at: <https://sigmalithiumresources.com/wp-content/uploads/2024/11/RIMA-Sigma-Ampliacao-Xuxa.pdf>. Accessed on: April 07, 2025

⁶⁶ The statement can be found in the Folha de São Paulo report. Available at: <https://www1.folha.uol.com.br/ambiente/2024/11/comunidades-do-vale-do-jequitinhonha-vizinhas-da-mineracao-de-litio-queixam-se-de-doencas.shtml>. Accessed: April 04, 2025.

Regarding these allegations about respiratory problems present in the Folha S.Paulo report, Sigma Lithium states that the facts were not verified by the press. That there is no evidence of verification with the hospital, or a request to the company for health data of its employees. The company says that the newspaper did not certify whether there were sick people in their individual interviews, that the data on the increase of respiratory diseases were of children at specific times, and also corresponded to the increase in the city's population. Furthermore, it claims that the sick people did not reside near the Sigma enterprise.⁶⁸

Additionally, according to the report, the pile of unusable materials around the pit—which, upon the mine's closure, should be returned to the place from where they were taken—is advancing closer and closer to the stream that supplies the community.⁶⁹

Regarding the waste pile, the institutional representative of Sigma stated in meeting⁷⁰ that environmental measures such as techniques to prevent dust dispersion and planning the disposal of waste in a way that reduces visual impact on neighboring communities are adopted. And emphasized that licensing bodies, the Public Prosecutor's Office, and BNDES itself have already verified the operation through documents and on-site visits.

The lack of transparency in the systematic monitoring of water around the Sigma Lithium project in the Jequitinhonha Valley makes it difficult to understand the degree of compromise of the local community's only water source, in addition to the water tanks provided by the company.

67 Ibidem.

68 Sigma Lithium. Meeting via videoconference with Idec and Oxfam Brazil, August 19, 2025. Not published.

69 According to the report, in August 2024, the pile had already advanced 550 meters towards the Piauí Poço Dantas community and the Piauí stream, and in some places, only 60 meters separated it from the stream and 90 meters from some houses. Folha de São Paulo. Comunidades do Vale do Jequitinhonha vizinhas da mineração de lítio queixam-se de doenças. Ibidem. Accessed: April 7, 2025.

70 Sigma Lithium. Meeting via videoconference with Idec and Oxfam Brazil, August 19, 2025. Not published

Recent scientific evidence indicates that hard rock lithium mining has a significant potential to degrade water quality.

A study published in 2024 in the journal *Science of the Total Environment*⁷¹ analyzed in detail how open-pit lithium mining can compromise the surface and groundwater of regions near the pits, reinforcing that the mere presence of an active pit and the movement of large volumes of rock material, as in spodumene lithium mining, already represent a critical vector of water compromise.

The article highlights that typical processes of these operations (e.g., rock fragmentation with explosives, waste handling, and the construction of waste piles) generate a substantial increase in turbidity, changes in water pH, and an increase in the concentration of dissolved metals (such as aluminum, manganese, and iron), which can exceed limits considered safe for human consumption or agricultural use.

The study reinforces that, even in areas where water quality is already considered only "reasonable" or "compromised" due to previous natural or anthropogenic factors, such as silting and sedimentation—as the RIMA of Sigma denotes the location of its operations—the introduction of mining tends to accelerate and intensify degradation processes, especially when waste piles are installed near water bodies. The research shows that leachates generated from these piles, when they come into contact with rain and flow into the soil, can reach watercourses through surface or subsurface processes, increasing the risk of contamination by suspended solid metals.

In the context of the Jequitinhonha Valley, a news article from the Mongabay website reports that residents of the affected region claim that the guidance given by Sigma Lithium itself was that residents should stop using the stream water that supplies them⁷², and that, therefore, they would provide a water tank per family monthly. Although we do not find in the company's documents the information that the use of stream water was discouraged, in a project management analysis document we find the information about the monthly supply of a water tank⁷³.

Available at: https://www.sciencedirect.com/science/article/abs/pii/S0048969724074382?utm_source=chatgpt. com. Accessed on: June 27, 2025.

72 Guatelli, Caio. **Mineração de lítio adoece comunidades do Vale do Jequitinhonha**. Available at: <https://brasil.mongabay.com/2024/11/mineracao-de-litio-adoece-comunidades-do-vale-do-jequitinhonha/>. Accessed on: April 07, 2025

73 In the Management's Discussion document, Sigma states that it has a program called Água para Todos (Water for All), which distributes 151 water tanks, which are supplied monthly to the communities neighboring the enterprise. *"To further combat the impacts of water scarcity in the Jequitinhonha Valley region, the Company provided 151 water tanks to date for residents located in the surrounding areas of the G'reentech Plant. The drinking water tanks are refilled monthly with the support of tanker trucks and staff provided by Sigma. By March, we have completed 20 months of water supply in the neighboring communities. This program advances the goals of UN's SDG #6 (Clean Water and Sanitation)"*. SIGMA LITHIUM CORP. MANAGEMENT'S DISCUSSION AND ANALYSIS FOR THE THREE-MONTH PERIOD ENDED MARCH 31,

There are more sensitive points that deserve to be highlighted. According to the 2022 Census overview by the Brazilian Institute of Geography and Statistics (IBGE, 2023), the population of the municipality of Araçuaí was 34,297 people. Of these, 17,484 are women and 80.2% of the population consists of Black, mixed-race, Asian, and Indigenous people. Meanwhile, the municipality of Itinga is composed of 13,745 people, with 6,918 women and 74% being Black, mixed-race, Asian, and Indigenous people. Regarding demographic data, the two municipalities together have 240 Indigenous people and 2,349 quilombolas.⁷⁴ Considering that the majority of the population in the municipalities where the company is located belongs to socially minority groups, the damages that may affect these communities are even more concerning.

Although we do not have primary data on the gender-differentiated impacts caused by Sigma Lithium, the literature on mining impacts indicates that gender inequality intensifies in territories marked by the dynamics of this activity and that such impacts primarily affect Black, Indigenous, quilombola, peripheral women, and community leaders (SILVA, 2024). It is in this sense that Maso (2024) ^{states} that the affected women become resistance in the struggle to make their body-territories visible to the eyes of the large corporations responsible for the destruction of their territories.

Gender violence manifests in various dimensions, whether political, cultural, ecological, or bodily. The structural male domination contributes to the exclusion of women from decision-making positions, reinforces the sexual division of labor, and increases the domestic workload on women, who need to change their ways of life and

2025.. Available at: <https://ir.sigmalithiumcorp.com/static-files/cd00603f-a6c1-4ad7-81f1-c90e11643333>, p.8. Accessed on: August 4, 2025

74 Data available at: <https://censo2022.ibge.gov.br/panorama/>. Accessed on: March 10, 2025.

75 SILVA, Camilla. Mulheres atingidas pela mineração e barragens: impactos e resistências. **Revista Conexão Política**, Teresina(PI), v.10, n.2, p. 96-121, jul./dez.–2021. Available at: <https://periodicos.ufpi.br/index.php/conexaopolitica/article/view/5357>. Accessed on: April 9, 2025.

76 MASO, T. F.; ISAGUIRRE-TORRES, K. R. Conflitos socioambientais da mineração: entre os corpos-territórios das mulheres e as disputas no campo do/no Direito. **Revista Brasileira de Estudos Urbanos e Regionais**, [S.I.], v. 26, n. 1, p. 1-31, jun./2024. Available at: <https://rbeur.anpur.org.br/rbeur/article/view/7456>. Accessed on: April 9, 2025.

consumption in the face of ecological impacts that directly affect daily activities, with greater difficulty accessing water and food, for example.

Moreover, a large part of the workforce hired in mining complexes is male, which affects the reality of the explored area in at least two aspects. The first is the concentration of income among male employees, with women occupying outsourced or general service positions and, therefore, earning less and being exposed to financial dependency. The second aspect is the potential increase in violence and sexual exploitation of women and girls, as argued by psychologist Camilla Veras Pessoa Silva:

The significant increase in the presence of male workers in the territories where extractive enterprises are located expands the demand for the sexual market, prostitution, and sexual exploitation of children and adolescents. The construction sites are surrounded by brothels and leisure facilities that seek to satisfy male sexual desire [...]. (2024, p. 105)

Based on previous experiences, it is necessary to address the negative impacts of mining from a perspective that considers gender and race as central elements for the development of possible mitigation and reparation measures that are, in fact, fair.

Sigma Lithium Policies

From the perspective of socio-environmental responsibility, we can observe that Sigma Lithium's statements do not explicitly guarantee the participation and full consent of the communities impacted by their activities.

Among the policies relevant to social and environmental issues, we highlight the Human Rights Policy and the Code of Conduct. According to the company's human rights policy, its guidelines are based on the Universal Declaration of Human Rights, the United Nations Guiding Principles on Business and Human Rights, and the Performance Standards of the International Finance Corporation (IFC).⁷⁷

In its human rights policy, Sigma Lithium claims to adopt socio-environmental due diligence processes that include the assessment of actual and potential impacts on human rights, monitoring, and control of prevention and mitigation measures

⁷⁷ SIGMA Lithium. Human Rights Policy. Available at: <https://sigmalithiumresources.com/wp-content/uploads/2024/02/POLITICA-DE-DIREITOS-HUMANOS.pdf>, p. 1, Accessed on: April 7, 2025.

adopted, and the receipt and monitoring of internal and external complaints in order to resolve them. Regarding the dealings with local communities, policies are presented aiming at respecting the life and safety of these individuals. Moreover, in a meeting held on August 19, 2025, the vice president of institutional relations at Sigma stated that during the public hearings in Araçuaí and Itinga, the company provided five vehicles to ensure the presence of the communities⁷⁸.

In order to quote exactly what the company claims to do in its relationship with the communities, the guidelines adopted by Sigma Lithium were taken from its human rights policy:

- Respect the right to life and safety.**
- Establish internal processes and mechanisms that ensure a continuous and effective relationship with communities potentially affected by the company's activities.**
- Conduct human rights impact assessments in consultation with interested and affected parties.**
- Integrate the results of your human rights impact assessments into all relevant internal functions and processes and adopt appropriate measures.**
- Strengthen dialogue and engagement with local communities by providing information and maintaining a transparent communication channel.**
- Repair real and potential impacts caused by the company's activities, directly or indirectly.**
- Avoid the involuntary physical or economic displacement of families and communities in the**

78 Sigma Lithium. Meeting via videoconference with Idec and Oxfam Brazil, August 19, 2025. Not published

processes of company expansion. If no other alternatives are found, the company will follow the best human rights practices, especially the IFC performance standards.

- Respect territorial rights, self-determination, self-governance, and the way of life of indigenous peoples and traditional communities, ensuring access to information, participation, and consultation whenever these groups may be impacted by the company's activities.
- Seek to adopt measures for the dissemination of good practices in respect to the environment, health and safety, children's and adolescents' rights, and working conditions, in cases of small-scale and/or legal artisanal mining in areas internal or adjacent to its operations
- Make social investments that promote respect for human rights in local communities.

(Sigma Lithium Corporation, HUMAN RIGHTS POLICY, p.4)⁷⁹

In the section dedicated to communities, in the Code of Conduct⁸⁰, Sigma Lithium states it is committed to valuing their cultures, histories, and well-being, in addition to prioritizing local labor in its hiring:

We respect the historical, cultural values, and well-being of the communities and regions in which we operate, and we contribute to the improvement of living conditions and sustainable development, promoting initiatives associated with social transformation strategies.

We are focused on identifying the real needs of local communities in order to invest in social, cultural, and environmental projects that are effectively committed to promoting social inclusion, improving quality of life, and environmental conservation. Additionally, we prioritize hiring local labor, aiming to allocate resources in these communities, thus contributing to their socioeconomic development.

In cases where employee relocation is necessary, we will seek to facilitate the allocation of professionals to an area

⁷⁹ Ibidem.

⁸⁰ SIGMA Lithium. Code of Conduct. Available at: https://sigmalithiumresources.com/wp-content/uploads/2024/03/Sigma-Mineracao_Codigo-de-Conducta_final.pdf. Accessed on: April 7, 2025.

appropriate to their training and skills, and preferably close to their workplace, in order to encourage the sustainable development of local infrastructure.

(Sigma Lithium Corporation, Code of Conduct, 2024, p. 11)

In its human rights policy, the company commits to respecting human rights in accordance with documents such as Convention No. 169 on Indigenous and Tribal Peoples (ILO: 1989). When presenting its conduct towards local communities, it emphasizes respect for their territorial rights and self-determination, "ensuring access to information, participation, and consultation," whenever indigenous peoples and traditional communities may be impacted by the company's activities.

In an initial analysis, the company's human rights policy and code of conduct provide guidelines on ensuring the rights of local communities, guaranteeing continuous and transparent communication, preserving and respecting territorial rights and the right to self-determination of peoples, so they can maintain their traditional practices. However, Sigma's policies and website do not explicitly mention a commitment to the Free, Prior, and Informed Consent of indigenous and traditional communities⁸¹.

According to a document from Oxfam USA, this commitment is increasingly considered one of the best practices that ensure the rights of local communities affected, not covered by international legal definitions of indigenous peoples with rights, and is an "**effective mechanism to prevent or mitigate potential impacts on the rights of indigenous [and traditional] peoples affected by their operations.**"⁸²"

The human rights policies, code of ethics, and the entire company website do not clearly provide this information. Access the human rights policy here <https://sigmalithiumcorp.com/politica-de-direitos-humanos/>, the code of ethics here <https://sigma-lithiumcorp.com/wp-content/uploads/2024/03/SGML-2021-Code-of-Business-Conduct-and-Ethics.pdf>, and the policy website here <https://sigmalithiumcorp.com/esg-reports/>. Accessed on: August 1, 2025.

82 OXFAM AMERICA. Recharging community consent: How lithium mining companies fail to secure meaningful Indigenous consent in the "lithium triangle", 2023, p.6 Available at: https://webassets.oxfamamerica.org/media/documents/2023_OXF_Recharging_Communi-

The company also fails to ensure that communities have access to legal advisors who can provide guidance and support during consultations and negotiations. Furthermore, Sigma's human rights policy and its code of conduct⁸³ do not mention any commitment to bar retaliation strategies against human rights defenders, used to silence or intimidate individuals and organizations that express critical opinions about their activities. In its human rights⁸⁴ and anti-slavery⁸⁵ policies, the company claims to have a reporting mechanism for human rights violations, which can even be accessed via WhatsApp⁸⁶. However, this mechanism was not found on its website or social media. Our experience in trying to find the complaint channel suggests it is something difficult for communities to access.

The ILO Convention 169 stipulates that whenever any work, action, policy, or program may impact indigenous peoples or traditional communities, they have the right to be consulted in a free, prior, informed, and good-faith manner. This means that the consultation must be conducted without any form of coercion or intimidation; before decision-making, so as not to be a mere formality during the project's progress; and that the peoples must be informed of all social, cultural, environmental, and climatic impacts in an accessible manner, thus having the right to choose their priorities in the development process in accordance with their ways of life, beliefs, institutions, and spiritual well-being⁸⁷.

It is a fact that not all communities affected by the negative impacts of Sigma Lithium's operation are traditional or indigenous, although many reports come from these peoples.⁸⁸ However, the company commits, in its Human Rights Policy, to maintain transparent dialogue channels with local communities and to incorporate the results of this dialogical process "in all relevant internal functions and processes" (p.4).

ty_Consent_Report_FNL-AA.pdf. Accessed on: June 25, 2025.

83 SIGMA Lithium. Code of Conduct. Available at: https://sigmalithiumresources.com/wp-content/uploads/2024/03/Sigma-Mineracao_Codigo-de-Conducta_final.pdf. Accessed on: April 7, 2025.

84 SIGMA Lithium. Human Rights Policy. Available at: <https://sigmalithiumresources.com/wp-content/uploads/2024/02/POLITICA-DE-DIREITOS-HUMANOS.pdf>, p. 6, Accessed on: April 7, 2025.

85 The document that mentions the complaint mechanism of Sigma Lithium is available at: <https://sigmalithium-corp.com/wp-content/uploads/2024/06/Forced-Labour-Report-Sigma-Lithium-Signed.pdf>, p.3. It is worth noting that this consultation of the corporation's website and social media was conducted on August 1, 2025.

86 Ibidem.

87 The ILO Convention 169 can be read in Portuguese through the website of the Observatório de Protocolos Comunitários de Consulta e Consentimento Livre Prévio e Informado (Observatory of Community Protocols of Free, Prior and Informed Consultation and Consent): territorial rights, self-determination, and legal diversity via the link <https://observatorio.direitosocioambiental.org/publicacoes/tratados-declaracoes-internacionais/convencao-169-organizacao-internacional-do-trabalho-oit/>. Accessed on: April 7, 2025.

88 Reports from communities near the Sigma enterprise region can be watched at the extraordinary meeting of the Environment and Sustainable Development Commission of the Legislative Assembly of Minas Gerais through the link <https://www.almg.gov.br/atividade-parlamentar/comissoes/reuniao/?idCom=799&&idTipo=2&&dia=05&&mes=07&&ano=2024&&hr=10:00>. Accessed on: March 27, 2025.

The company representative committed during a videoconference meeting on August 19, 2025, by stating that, despite there being no legal obligation, they have a voluntary protocol to converse, dialogue, and conduct prior, free, and informed consultation in terms as close as they believe are appropriate with traditional and quilombola communities. The company stated that it plans the incidence of social projects that are demanded by some communities that may be titled, and that the project was presented, evaluated, and approved by the Government of the State of Minas Gerais in 2025, and is already in execution⁸⁹.

In addition to this, the Brazilian public debate on due diligence has been advancing to ensure that all people affected by business ventures – whether or not they come from traditional peoples and communities – have the right to consultation, and to consent in cases of indigenous and quilombola peoples.

This understanding was consolidated in items V, VI, VII, art. 3, of Bill 572 of 2022⁹⁰, which aims to create a national framework on Human Rights and Businesses and establish guidelines for the promotion of public policies on the subject. The aforementioned items determine that:

V. The right to prior, free, informed, and good-faith consultation for affected people, guaranteeing the right to consent;

VI. In the event of a conflict between Human Rights norms, the most favorable norm to the affected person will prevail;

VII. In the event of multiple interpretations of the same Human Rights norm, the interpretation most favorable to the affected person will prevail

89 Sigma Lithium. Meeting via videoconference with Idec and Oxfam Brazil, August 19, 2025. Not published

90 Available at: https://www.camara.leg.br/proposicoesWeb/prop_mostrarIntegra?cod-teor=2148124&filename=PL%20572/2022. Accessed on: April 4, 2025

Even though this bill has not been approved Sigma Lithium has publicly committed – including to its consumers and investors – to conduct consultations, ensure access to information, and the participation of traditional communities and indigenous peoples whenever these groups may be impacted by the company's activities⁹¹. And to listen and respond qualitatively to the demands made by the population of the municipalities in which it operates⁹².

In the meeting held with the company representative, she states that in addition to community meetings, there are minutes of meetings and assemblies, calls, and reports on neighbors who speak individually with the company. She states that there is a toll-free number for anonymous complaints, which is operated by third parties, with content audited by independent technicians⁹³.

However, the affected individuals themselves state that the company has not followed its internal policies and commitments.

In July 2024, during the extraordinary meeting of the Environment and Sustainable Development Commission of the Legislative Assembly of Minas Gerais, leaders representing traditional communities and indigenous peoples affected by the mining company's activities reported that there was no prior consultation regarding the opening of roads, drilling studies for lithium location in the territory, use of river water, and many other actions to prepare for mining activity. Representatives of the Piauí community of Poço Dantas stated, for example, that the road connecting the community to the city was changed without prior notice⁹⁴.

Reinforcing these reports, Professor Klemens Laschefski, who conducts the interviews in the documentary "On the Edge of the Abyss - The Battle for Raw Materials: Lithium Mining in Brazil," narrates that despite meetings with the company, the communities always feel deceived⁹⁵. Moreover, in the documentary itself, a resident states that the "mining companies should have obtained the free and informed consent of the communities beforehand, but none of that happened."⁹⁶.

It is important to emphasize that it is not enough for the meetings to take place. There needs

91 SIGMA Lithium. Human Rights Policy. Available at: <https://sigmalithiumresources.com/wp-content/uploads/2024/02/POLITICA-DE-DIREITOS-HUMANOS.pdf>, p. 4, Accessed on: April 7, 2025.

92 SIGMA Lithium. Code of Conduct. Available at: https://sigmalithiumresources.com/wp-content/uploads/2024/03/Sigma-Mineracao_Codigo-de-Conducta_final.pdf, p. 11. Accessed on: April 7, 2025.

93 Sigma Lithium. Meeting via videoconference with Idec and Oxfam Brazil, August 19, 2025. Not published.

94 The extraordinary meeting can be found on the website [<https://www.almg.gov.br/atividade-parlamentar/comissoes/reuniao/?idCom=799&&idTipo=2&&dia=05&&mes=07&&ano=2024&&hr=10:00>] of the Legislative Assembly of Minas Gerais. Accessed on March 14, 2025.

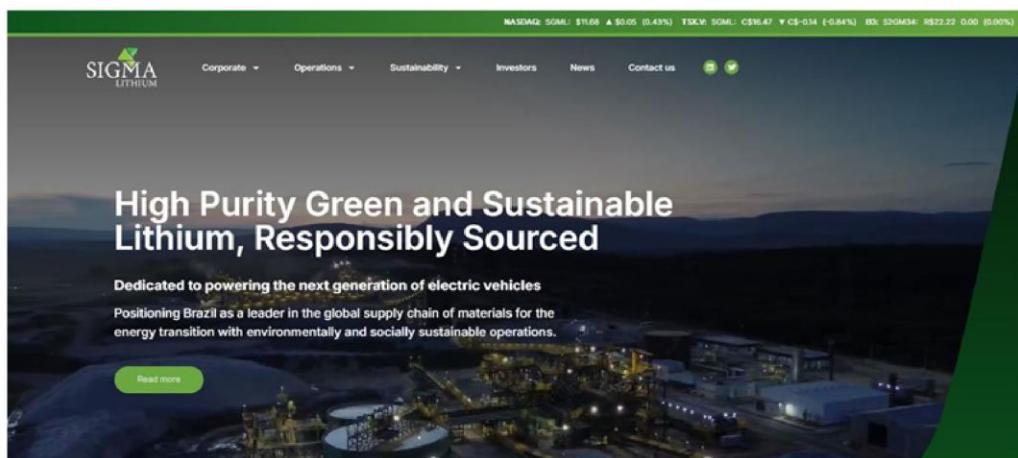
95 As per minute 25:13 of the Documentary. Link <https://www.youtube.com/watch?v=ZzvYhXmQTSk>

96 As per minute 34:33 of the Documentary. Link <https://www.youtube.com/watch?v=ZzvYhXmQTSk>

to be a truly open, clear, and realistic dialogue with the local residents. Only in this way is it possible to find purpose and effectiveness in this so necessary and essential exchange with those affected by the company's actions, whether positively or negatively.

Another fact that draws attention is that the company's own website, described as an information portal, is presented almost entirely in English. If among the company's premises are the guarantee of access to information and the establishment of a transparent communication channel, considering that the communities affected by the company's actions are Brazilian, it is necessary for the company to adopt the Portuguese language on its website. In a meeting held on August 19, 2025, the Vice President of Institutional Relations at Sigma stated that the Portuguese site is in production and under the company's evaluation for publication⁹⁷.

Image 5 - The homepage of Sigma Lithium's website



The homepage, as well as the other tabs, is presented entirely in English.⁹⁸

97 Sigma Lithium. Meeting via videoconference with Idec and Oxfam Brazil, August 19, 2025. Not published.

98 The image can be found on the company's page through the link <https://sigmalithiumresources.com/>. Accessed on August 6, 2025.

Returning to the human rights policy, the company also states that:

If the company confirms that it caused or contributed to negative impacts on human rights, either through due diligence or through reports received via the complaint mechanism channels, *Sigma Lithium Corporation* commits to generating action plans, which include corrective and disciplinary measures, ensuring the proper participation of the affected rights holders, and monitoring the measures taken. (Sigma Lithium, Human Rights Policy, p. 6)

In the same document, Sigma Lithium states it is committed to "repairing actual and potential impacts caused by the company's activities, directly or indirectly." However, so far, there is no public information on the company's official channels that proves concrete actions of reparation or even visits to the communities to investigate the reported complaints. The delivery of monthly water tanks, for example, was not accompanied by technical explanations about the reasons for the recommendation to stop using the local stream, which until then was the only water source in the region.

Without a public, transparent, and participatory diagnosis of water quality, this measure cannot be considered a legitimate form of reparation, but rather an indication of the absence of real dialogue with the communities and the fragility of the company's declared commitment.

During the same meeting, Congresswoman Beatriz Cerqueira, from the Workers' Party (PT), issued Request no. 7,725/2024, which calls for "measures to ensure the right to independent technical assistance for the families of the Poço Dantas Community, in the Municipality of Itinga, in the process of full reparation for being affected by lithium exploitation." The dispatch of the document was made to the CEO of Sigma Lithium Corporation on August 7, 2024, and as of the publication date of this study, no response from the company to the demand of the Commission⁹⁹ has been identified.

In this same extraordinary meeting, Luiz Tarcizio Gonzaga de Oliveira, from the Operational Support Center for Community Support, Inclusion, and Social Mobilization Prosecutor's Offices (CAO-Cimos), reports that, at the time of analyzing the Grotão do Cirilo project by Sigma Lithium, the Public Ministry of Minas Gerais, through an administrative process, attempted to propose measures, with the participation of the affected communities, to repair, compensate, and mitigate the impacts alleged by the communities, and the company itself did not comply with them. With the refusal

⁹⁹ The record of the document can be found on the website of the Legislative Assembly of Minas Gerais through this link <https://www.almg.gov.br/projetos-de-lei/RQN/7725/2024>. Accessed on: April 11, 2025.

of the company, the administrative process was transformed into two civil inquiries, one about the socioeconomic consequences in the municipality of Araçuaí and the second about the consequences of lithium exploitation for the communities surrounding the company's facilities¹⁰⁰.

In July 2024, the second inquiry became the Technical Report produced by the Operational Support Center that "aimed to investigate measures adopted by the Union, the State, and the Municipality of Araçuaí to observe and guarantee the ethnic-racial rights of indigenous peoples, quilombolas, and groteiras-chapadeiras, in light of the existence of mining projects to be implemented in the region." At the time of the publication of this report, we did not have access to the inquiry¹⁰¹.

The company states, through its policy, that it respects traditional communities and peoples and their ways of life, in addition to reinforcing its commitment to dialogue and the investigation of complaints, adopting corrective measures when impacts are proven.

However, there is an absence of an active and effective response to the various reported cases. After the first version of this study was sent to the company Sigma on April 17, the civil organizations responsible for the drafting were subjected to intimidation and threats through criminal action for defamation. However, on June 13 – and after a meeting with BNDES on June 5 – the company resumed contact – detailed information about this fact, including the exchange of communications between the parties, is systematized between pages 14 and 17 of this document. Since then, efforts have been made to reestablish institutional dialogue with the company, with the current version of the study being resent, with the necessary updates and offering the right of reply, as well as reiterating availability for a meeting.

100 The speech can be seen at 1:56 of the recording of the extraordinary meeting, which can be found on the website <https://www.almg.gov.br/atividade-parlamentar/comissoes/reuniao/?id=Com=799&&idTipo=2&&dia=05&&mes=07&&ano=2024&&hr=10:00>.

101 The information about this technical report was found in the legislative diary of Minas Gerais, published on July 13, 2024, and is found in the minutes of the 15th ordinary meeting of the Commission on Environment and Sustainable Development in the 2nd ordinary legislative session of the 20th legislature, on 7/10/2024. Accessed on: April 4, 2025.

4. The role of BNDES and other investors of Sigma Lithium

The National Bank for Economic Development was created in 1952 with the objective of being the formulating and executing body of the country's national economic development policy, with a strong presence in the infrastructure sectors. It was the main agent in the import substitution policy, promoting investments and credit for the capital goods and basic inputs sectors.

BNDES is one of the eight banks evaluated by the Responsible Banks Guide, in the ranking that also analyzes Banco do Brasil, Bradesco, BTG Pactual, Caixa Econômica Federal, Itaú Unibanco, Safra, and Santander. The development bank maintains the lead in the ranking, with an overall score of 5.1/10 in the evaluation of socio-environmental responsibility policies¹⁰². BNDES's leadership in this area, for consecutive years, is due to the fact that it is one of the few that publishes, for example, exclusion lists of potentially environmentally harmful financed and invested activities, socio-environmental questionnaires that are applied to financed companies, and the transparency of its operations, informing the name and region of the companies with which it has established a financial operation.

Although, comparatively, it presents a regular result, the bank still falls short, for example, in providing sufficient information about the requirements imposed on companies to meet the water needs of surrounding communities or local ecosystems, or to mitigate the impacts of water scarcity in the projects it finances or invests in. As mentioned several times by community representatives, the scarce access to water and changes in river courses have considerably affected the people around mining companies.

The climate fund

The Climate Fund was established in 2009 through the National Policy on Climate Change (PNMC) and is an initiative of the Brazilian government to finance projects and actions that contribute to the mitigation and adaptation to climate change, aligned with the international commitments assumed by Brazil under the Framework Convention.

¹⁰² The overall ranking of the latest evaluation of socio-environmental responsibility policies of the main Brazilian banks is available at: <https://guiadosbancosresponsaveis.org.br/guia-dos-bancos/policy-scores-overview/>. Last accessed on: Apr 07, 2025.

of the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol.

BNDES began distributing resources from the Climate Fund in 2011 and structured specific financing lines for different sectors and types of projects, such as renewable energies, energy efficiency, sustainable public transportation, solid waste management, among others. The resources are made available to both individuals and legal entities, including companies, state and municipal governments, and organizations.

In the BNDES financing grant to Sigma Lithium, the Climate Fund Program supports the project aimed at "implementing an industrial unit for lithium concentrate processing, with a production capacity of 250,000 tons/year, within the scope of phase 2 of the Grotão do Cirilo project, located in the municipality of Itinga-MG."¹⁰³

Furthermore, according to the representative of Sigma Lithium (note: Sigma Lithium. Meeting via videoconference with Idec and Oxfam Brazil, August 19, 2025. Not published), the company's objective with the Fund's approval is strategic and to reinforce the image of clean production aligned with the energy transition. They state that they chose the fund, even with alternatives to private banks, and emphasized that the company is capable of maintaining its activities with its own revenues, should BNDES change its support line.

The financing was granted through a direct request from the company Sigma Lithium to BNDES. After submission, the bank conducted a documentary and technical analysis of the request and approved the financing individually. The contract was formalized on October 7, 2024, in the amount of R\$486,765,000¹⁰⁴.

BNDES reported that, as part of the financing process, a Legal Record of the requesting company is prepared. In March 2024, when this analysis was produced, it was concluded

¹⁰³ Information was collected from spreadsheets publicly available by BNDES that record all operations contracted in the direct and indirect non-automatic form from 2002 to 05/31/2025 and can be found here <https://www.bnDES.gov.br/wps/portal/site/home/transparencia/centraldedownloads/central de downloads/!/>. Accessed on: March 18, 2025.

¹⁰⁴ According to information available in the data on BNDES financing operations. https://www.bnDES.gov.br/arquivos/central-downloads/operacoes_financia-mento/naoautomaticas/naoautomaticas.xlsx

that, from a legal standpoint, there would be no impediment to the relationship with the bank, according to the current internal and external regulations. This is because the investigative procedure in question, that is, the civil inquiry by the Public Prosecutor's Office of Minas Gerais, had not yet resulted in a legal action and did not foresee, at that time, the exercise of the right to a full defense and to adversarial proceedings.¹⁰⁵.

However, the bank states in its Financing Guide¹⁰⁶ that companies and projects wishing to establish a direct relationship with the bank must undergo "qualification," which consists of a registration and credit risk assessment.

In the registration analysis stage, BNDES states that among the relevant information for financing approval is the evaluation of negative media records¹⁰⁷. The approval of financing for Sigma Lithium indicates that the complaints made by the communities, already explored in this report, did not significantly influence the bank's decision.

In response to this report, BNDES informed us that Sigma's registration assessment was completed in November 2023 and, at the time, no factors were identified that would prevent the operation under current internal and external regulations. The bank also states that the rating assigned in the registration verification is valid for two years, therefore, until November 2025.

On the other hand, we found that although the evaluation was completed in November 2023, a complaint by MAB to prevent Sigma's lithium mineral research in Chapada do Lagoão, in Araçuaí, was made in May 2023. In the same month, the communities obtained a favorable decision, with the annulment of the authorization issued by the Management Council of the Environmental Protection Area of the region.¹⁰⁸ Regarding this, in the letter sent on August 18, 2025¹⁰⁹, BNDES states that at the time of analyzing the company's operation, it questioned Sigma about complaints of "landscape changes, deterioration of air quality due to the release of particulate matter, and excessive noise caused by explosions," but that the company presented internal policies, the Environmental Control Program that presented actions to mitigate impacts, and documents such as attendance lists and photos of meetings with the communities. It is worth noting that the complaint analyzed by the bank

105 BNDES. Letter sent to Idec in response to the study on Sigma Lithium. São Paulo, June 13, 2025. Unpublished document.

106 The Financing Guide page presents the necessary steps for the process. Access through the link [https://www.bnDES.gov.br/wps/portal/site/home/financiamento/guia/etapas/!/. Accessed on July 30, 2025.](https://www.bnDES.gov.br/wps/portal/site/home/financiamento/guia/etapas/!/)

107 The information can be found on the BNDES website through the link. Accessed on: March 18, 2025. According to information provided in the data on BNDES financing operations. https://www.bnDES.gov.br/arquivos/central-downloads/operacoes_financiamento/naoautomaticas/naoautomaticas.xlsx

108 The information can be verified through the link <https://mab.org.br/2023/05/12/chapada-do-lagoao-mg-anula-auto-rizacao-para-pesquisa-sobre-mineracao/>. Accessed on: June 25, 2025.

109 BNDES. Letter sent to Idec in response to the study on Sigma Lithium. São Paulo, August 18, 2025. Unpublished document.

it is from March 2024, from Cáritas Regional Minas Gerais¹¹⁰, but the justifications and documents presented by Sigma were sufficient to allow the financing.

In the preliminary analysis, the stage that follows registration, the bank requests that companies respond to the Socio-environmental and Climate Management Assessment Questionnaire (QSAC).

Questions 11 and 12 of the QSAC deal with the relationship and external communication between the company and stakeholders, in this case, the communities. The first asks: *“Is there periodic disclosure of information related to the socio-environmental risks and impacts related to the company's/project's activities to the external public?”* and the second asks: *“Are dialogue activities carried out with affected communities or surrounding communities?”*¹¹¹

This report did not gain access to the responses sent by the Canadian mining company to the financial institution, but the bank clarified that, in the process of evaluating Sigma's social and environmental risk, the need for improvements in its socio-environmental management was identified, and that, in light of this, a clause was added to the financing contract for the *“preparation and annual publication, on the company's official website, of a sustainability report, written in Portuguese, in accordance with the Global Reporting Initiative (“GRI”) standard, including the GRI 14 sector standard.”* Additionally, the bank also required that the company maintain regularity with the National Mining Agency (ANM).

In the letter dated June 13 in which it responded to the points raised by this study, BNDES expressed concern about the allegations of contamination of the river near the communities. The bank states that *“it asked the company about the reason for offering water tanks to the community”* and received the response that *“the company's voluntary supply allowed the access to good quality water by the*

¹¹⁰ Campos, Luísa. Projeto Vale do Lítio transformará o Jequitinhonha em polo de exploração para benefício externo. **Cáritas Minas Gerais**, Belo Horizonte, 21 dez. 2023. Available at: <https://mg.caritas.org.br/noticias/projeto-vale-do-litio-transformara-o-jequitinhonha- -em-polo-de-exploracao-para-beneficio-externo/>. Accessed on: August 6, 2025

¹¹¹ The BNDES questionnaire can be accessed through the link <https://www.bnDES.gov.br/wps/wcm/connect/site/34343717-845a-405a-bb74-4e38ebfd0596/MODELO-QSAC-Setor+Privado-2.0.xlsx?> Accessed on April 14, 2025.

communities in the project's surroundings and that there is no relationship between mining activity and water quality." Given the seriousness, the bank informed that the company must address the issue in the mandatory sustainability report, as per the contract.

BNDES also stated that it will evaluate, throughout the project and the total financing term, compliance with fiscal, environmental, and social requirements. The Policy for Contracting and Monitoring Socio-environmental Operations states that

the following are verified:

the fiscal, social security, and environmental regularities of the beneficiary and the enterprise;

the fulfillment of any mitigating measures, obligations in terms of conduct adjustment, and conditions present in the contract and environmental licenses;

the monitoring of social and environmental indicators for monitoring and evaluation of the beneficiary and the enterprise, if defined in the contract;

the presentation of the Operating License (or Functioning License) of the supported enterprise, when applicable.

Another instrument to curb the non-compliance with environmental and social legislation is the Ombudsman channel. Through it, any citizen can report to BNDES the possible non-compliance with the legislation in a project, so that the Bank can investigate the matter and apply the measures provided for in the regulations and relevant contracts.¹¹²

In the meeting held between the bank and the Guide for Responsible Banks, the audit of Sigma's environmental studies and the environmental licensing documents sent to the bank were questioned. Regarding this point, BNDES stated it does not have "the competence nor the responsibility to technically evaluate the environmental studies prepared for the projects, as this task falls to the competent environmental agency for issuing the licensing." Regarding the question about the method of lithium extraction by open-pit mining instead of underground mining, the bank also stated that "it does not have the competence for such an evaluation, which is the responsibility of the Mining Regulatory Agency (AMN), prior to the analysis by BNDES" and that the activity is not on its Exclusion and Conditional Support List, so it is not an impediment to financing. However,

¹¹² The information can be found on the BNDES policy website.

the complaints from the communities suggest that the extraction format has posed risks to their health and safety.

If a community wants to file a complaint, they should access the official channel, FalaBR¹¹³, and record the violated actions violations of rights of which he is a victim. In the clarifications provided by BNDES, we were informed that the bank "**has a Customer Service Center, the Citizen Information Service (SIC), and the Ombudsman, which are official means that can and should be accessed for the submission of complaints and suggestions by any citizen, with BNDES having the duty to respond within a timeframe defined by law.**"

It is important that, with the knowledge of the complaints made by the affected communities, BNDES commits to cross-referencing the complaints with the financing requests it receives and to consider them in the analysis process for granting resources. Additionally, the bank should consider implementing a technical team that can independently receive and process such complaints, ensuring equity in the relationship between the financial institution, the affected communities, and the companies.

In the letter sent in June, BNDES reiterated its commitment to social, environmental, and climate responsibilities. The principles governing this policy are:

Principle 1 - Promotion of sustainable development in an integrated territorial concept, which includes economic, social, environmental, and climate dimensions;

Principle 2 - Full respect for human rights, with a positive agenda for the inclusion of diversity and with the fight against and repudiation of any practice of acts that result in any type of discrimination or violation of rights;

¹¹³ Fala.BR is a reporting mechanism of the Office of the Comptroller General (CGU). It accepts anonymous reports and requires a well-detailed written description. It is a mechanism where accessibility seems regular, as it requires good literacy for the interested person to be able to file their report. It is also necessary to know how to identify which public agency the report is intended for.

Principle 3 - Ethics and transparency as pillars of action, providing dialogue with its various audiences and being accountable for its decisions and activities, taking into consideration, whenever possible, the expectations and needs of the interested parties; and

Principle 4 - Action aligned with Brazilian norms and public policies, considering international pacts and agreements that promote sustainable development and the transition to a carbon-neutral economy, such as the Sustainable Development Goals, within the scope of the 2030 Agenda, and the Nationally Determined Contribution, by Brazil, in the Paris Agreement. (BNDES, Social, Environmental, and Climate Responsibility Policy of the BNDES System)¹¹⁴

Given the monitoring activities and prior analysis of the conditions for project implementation, financial institutions share responsibility for the actions and violations of the enterprises to which they have provided financial resources.

If full respect for human rights, dialogue with various groups and stakeholders, and sustainable development integrated into social, environmental, and climate dimensions are principles of the institution, it is also their responsibility to receive and investigate complaints made by communities and traditional peoples, and to contribute to repairing and mitigating the possible negative impacts caused by the company Sigma Lithium – a rule that should also apply to others benefiting from their financial resources.

Investors and buyers of Sigma Lithium

Investors and buyers increasingly require companies' commitment to environmental, social, and governance (ESG) initiatives due to changes in global priorities, societal expectations, and risks associated with disasters and business. Pension funds, asset managers, and large investors have focused on long-term results and, in this sense, recognize that companies with solid ESG practices tend to be more resilient and profitable.

Knowing who the investors and buyers are becomes a difficult task when, in their Code of Conduct, in the items on reliability and treatment of personal data, Sigma Lithium specifies the confidentiality of all its financial operations:

¹¹⁴ The policy can be found on the BNDES website at this link <https://www.bnDES.gov.br/wps/portal/site/home/desenvolvimento-sustentavel/o-que-nos-orienta/prsac-e-seus-instrumentos/politica-responsabilidade-social-ambiental-climatica>. Accessed on: March 18, 2025.

3.7. Confidentiality and Integrity of Information

We must protect Sigma's proprietary information and ensure the confidentiality of the information to which they have access due to their activities. Similarly, we must maintain the confidentiality of all financial information not yet disclosed to the market and the general public, such as strategic matters, privileged or confidential data not known to the market and whose disclosure could affect the Company's business. Examples of such information include: financial results, acquisitions or sales of equity interests, trade secrets, investments, prices, commercial actions, geological research data, market strategies, and related matters.

[...]

3.9. Processing of Personal Data

The processing of Personal Data is subject to various legal and regulatory data protection requirements. Employees must take all reasonable and necessary measures to ensure that third-party personal data is kept confidential and accessed only by people who need this information to perform their tasks. (Sigma Lithium, Code of Conduct, 2024, p.6)¹¹⁵

¹¹⁵ SIGMA Lithium. Code of Conduct. Available at: https://sigmalithiumresources.com/wp-content/uploads/2024/03/Sigma-Mineracao_Codigo-de-Conduta_final.pdf. Accessed on: April 07, 2025

Based on data published by the company itself, reports and news from specialized media, and consultation with development bank databases¹¹⁶, this study identified some of the main buyers and investors of Sigma Lithium.

Sigma Lithium Corp's main shareholder is A:10 Invest, an asset investment fund focused on the electric car production chain, which includes in its portfolio companies oriented towards ESG efforts, committed to reconciling socio-environmental responsibility with high investment returns. As of the date of this study's preparation, the manager holds about 43% of the company's shares, being able to block important corporate transactions or prevent changes of control that could benefit other investors.¹¹⁷ The co-chairman and director of the company, Marcelo Paiva, is also the portfolio manager of A:10.

Sigma Lithium's ESG campaign is its main attraction, investors and companies, – such as **Tesla** –, and from other parts of the world have turned their attention to it and Brazilian lithium.¹¹⁸

In 2021, **BlackRock**, an American company and one of the largest investment managers in the world, announced an investment of 64.2 million Canadian dollars (US\$50.1 million) in Sigma Lithium. With this investment, BlackRock acquired 4.84% of the company's common shares.¹¹⁹

As of September 2024, other shareholders of Sigma included Fitpart Fund Administration Services (4.93%), Nucleo Capital Ltda (3.17%), and Others (44.05%)¹²⁰.

¹¹⁶ The public data were taken from company reports to investors, financial statements, documents made available on the Sigma Lithium Resources website, or sent to regulatory authorities such as the Securities Exchange Commission (SEC). The development banks consulted were the World Bank, Inter-American Development Bank, New Development Bank (BRICS), and Banco de Desenvolvimento de Minas Gerais (BDMG). The media outlets whose reports and news were used are cited throughout the report.

¹¹⁷ Information collected at <https://ir.sigmalithiumresources.com/static-files/a5c8443e-b499-4274-838d-29b9e9fda7ca>, p. 38. Accessed on: April 11, 2025.

¹¹⁸ Estigarribia, Juliana. SIGMA: a mineradora de lítio que atraiu a Tesla e cuja ação disparou 230%. **Bloomberg Línea**, 25 fev. 2023. Available at: <https://www.bloomberglinea.com.br/2023/02/25/sigma-a-mineradora-de-litio-que-atraiu-a- -tesla-e-cuja-acao-disparou-230/>. Accessed on: August 1, 2025.

¹¹⁹ Bouças, Cibelle. BlackRock faz apote de US\$ 50,1 milhões na Sigma Lithium. **Valor Econômico**, São Paulo, 17 dez. 2021. Available at: <https://valor.globo.com/empresas/noticia/2021/12/17/blackrock-faz-apote-de-us-501-milhoes-na-sigma-lithium.ghtml>. Accessed on: April 7, 2025.

¹²⁰ Information collected at <https://ir.sigmalithiumresources.com/static-files/82a2676f-03a8-412c-a027-6149b-d305d71>, p. 34. Accessed on: April 11, 2025.

Image 6 - Presentation for investors in March 2025



On page 50 of the presentation, Sigma demonstrates to its investors the support for the operation of its activities, and its performance in activities focused on the energy transition¹²¹.

Other investors are, firstly, Appian Way, a private equity manager based in the United States, founded in August 2019, and which holds 4.21% of Sigma Lithium's shares. Secondly, Norges Bank Investment Management (NBIM), a branch of Norges Bank that manages the Government Pension Fund Global of Norway¹²³, and which holds about 2.24% of Sigma's shares.¹²⁴ It is worth noting that the Norwegian fund belongs to the government and aims to preserve the

121 The complete presentation can be found on Sigma's website through the link
<https://ir.sigmalithiumresources.com/static-files/837a64fe-a778-4209-9239-313d77a3aa0f>. Accessed on: April 11, 2025.

122 Information available at: <https://www.marketscreener.com/quote/stock/SIGMA-LI- THIUM-CORPORATION-120797077/company-shareholders/>. Accessed on: May 5, 2025.

123 The fund was created by the Norwegian government after the discovery of oil in the country in 1990. According to the site itself, “*From the very beginning, it was decided that oil and gas revenues should be used cautiously to avoid imbalances in the economy*” and that “*As the name suggests, it was decided that the fund should be invested only abroad.*” The explanation for the creation of this fund is “*Oil revenue has been very important for Norway, but one day the oil will run out.*” *The fund’s objective is to ensure that we use this money responsibly, thinking long-term and thus safeguarding the future of the Norwegian economy.* Available at: <a href="https://www-nbim-no.translate.google/en/about-us/about-the-fund/?_x_tr_sl=en&_x_tr_tl=pt&_x_tr_hl=pt&_x_tr_pto=sge#:~:text=O%20fundo%20foi%20criado%20para,beneficiar%20da%20nossa%20riqueza%20petrol%C3%ADa%20fera. Accessed on: May 5, 2025.

124 Information available at: <https://www.marketscreener.com/quote/stock/SIGMA-LI- THIUM-CORPORATION-120797077/company-shareholders/>. Accessed on: May 5, 2025.

economic sustainability in the country.

Although the BNDES financing was sufficient for almost the entirety of the Grotão do Cirilo expansion project, plant 2, Sigma Lithium has also benefited from other financial agreements and loans to fund its expansion. The Development Bank of Minas Gerais (BDMG) is mentioned in the company's financial reports as a source of financing since 2023, with amounts ranging from 768 to 9,499 US dollars¹²⁵.

In addition to loans and financing, Sigma also benefits from government tax incentives, such as the one granted by the Superintendency for the Development of the Northeast (SUDENE) which, on October 4, 2023, allowed the company to reduce its current Corporate Income Tax (IRPJ) expenses by about 75%.

According to a 2021 article from the newspaper Valor Econômico, one of the main buyers of Sigma's lithium product is the South Korean company **LG Energy Solution** (LGES), one of the largest battery producers in the world, manufacturing batteries for electric vehicles, mobility, information technology, and energy storage systems.

There was an agreement between Sigma and LGES for the supply of 100,000 tons of lithium per year, which could reach 150,000 tons, with deliveries starting in 2022¹²⁸. However, in 2024, Sigma received a Notice of Commencement of Arbitration from the LG Group, alleging that the mining company had violated terms of a supply agreement signed in 2021¹²⁹.

The current information is that Sigma's main buyers are regionally diversified and are large global buyers and distributors of lithium or batteries for electric vehicles. Names present in reports and news include **Glencore AG** (Europe), **Mitsubishi Corporation RtM International Pte. Ltd** (Japan and Singapore), and **International Resources Holdings** (United Arab Emirates).¹³⁰

125 Available at: <https://ir.sigmalithiumresources.com/static-files/82a2676f-03a8-412c-a027-6149bd305d71>. Accessed on: April 7, 2025.

126 Taxpayers, and therefore subject to the payment of IRPJ, are legal entities and individuals equivalent to them, domiciled in the country. They must calculate the IRPJ based on profit, which can be actual, presumed, or arbitrated. The IRPJ rate is 15% on the calculated profit, with an additional 10% on the portion of the profit that exceeds R\$ 20,000.00/month.

127 Free translation taken from page 43 of the unaudited interim consolidated financial statements report. The benefit granted by SUDENE came into effect in 2024 and is expected to last ten years.

128 The content of the Valor Econômico newspaper can be accessed through the link <https://valor.globo.com/empresas/noticia/2021/12/17/blackrock-faz-aporte-de-us-501-milhoes-na-sigma-lithium.ghtml>. Accessed on: April 4, 2025.

129 Information found on page 12 of the report on management's discussion and analysis for the three months ended September 30, 2024. Link <https://ir.sigmalithiumresources.com/static-files/a5c8443e-b499-4274-838d-29b9e9fda7ca>. Accessed on: April 4, 2025.

130 Information collected at: <https://ir.sigmalithiumresources.com/static-files/65e20f33-672d-4da7-8abf-2170e9147d3a>.

5. Consumption and Greenwashing

Greenwashing, also known as "green lie," is the practice adopted by companies that disseminate unfounded information about social and environmental sustainability. The practice aims to attract consumers and investors interested in sustainability. However, it is a way to disguise and conceal negative socio-environmental impacts¹³¹.

The Brazilian Consumer Defense Code (CDC) expressly prohibits misleading and abusive advertising¹³². At the same time, the Brazilian Code of Advertising Self-Regulation establishes that advertising with socio-environmental appeal must follow the principles of truthfulness, accuracy, pertinence, and relevance, ensuring that the information transmitted to consumers is verifiable¹³³.

However, **greenwashing** still remains a recurring practice. Companies use ambiguous expressions, dubious certifications without scientific basis, and inaccurate data, making it difficult for consumers to understand and violating their right to transparent information¹³⁴. The lack of clear standards to detect and sanction **greenwashing** contributes to the perpetuation of this problem.

Some forms of **greenwashing** lie in the use of images and audiovisual components associated with nature that do not necessarily relate to the products and services, as well as in the claim of legal compliance. The advertising strategy of the company Sigma Lithium is focused on presenting itself as a sustainable company that extracts "**green lithium**".

131 Information about what *Greenwashing* is can be found in the Manifesto for the Regulation of the Prohibition of *Greenwashing* on the Idec page <https://idec.org.br/manifesto-greenwashing>

132 See articles 6, IV, c/c 37 and 67, CDC/90.

133 See article 36 and annex U, CONAR <<http://www.conar.org.br/codigo/codigo.php>>

134 See article 6, III, CDC/90.

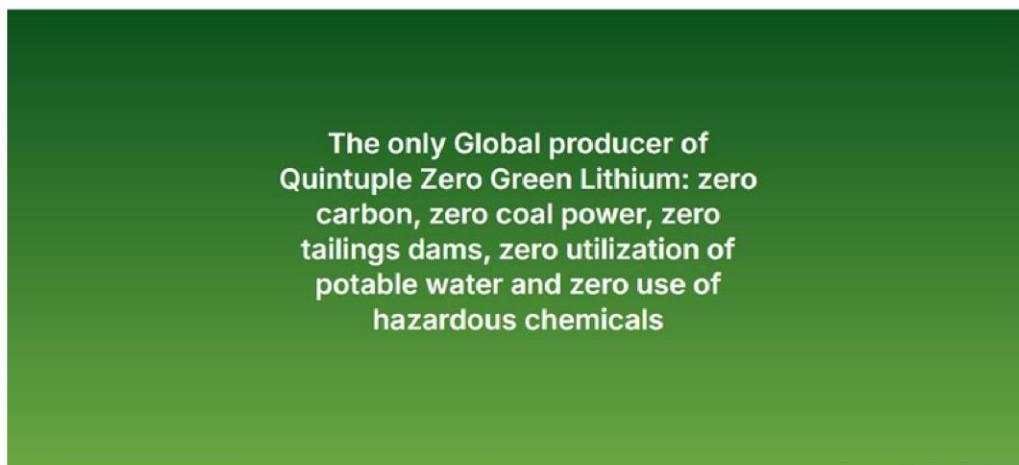
Image 7 - Homepage of the Sigma Lithium website



The text overlaying the images aims to reinforce the company's claims, which in free translation states:

"High-purity green and sustainable lithium, obtained responsibly." Dedicated to powering the next generation of electric vehicles. Position Brazil as a leader in the global supply chain of materials for the energy transition with environmentally and socially sustainable operations¹³⁵.

Image 8 - Still on the homepage of Sigma Lithium's website



Further down on the same page, the company once again asserts its ESG strategies, emphasizing its commitment to the energy transition agenda in a responsible manner. In free translation, the company highlights "The only global producer of Quintuple Zero Green Lithium: zero carbon, zero coal energy, zero tailings dams, zero use of potable water, and zero use of hazardous chemicals"¹³⁶.

¹³⁵ The image can be found on the company's page through the link <https://sigmalithiumresources.com/>.

¹³⁶ The image can be found on the company's page through the link <https://sigmalithiumresources.com/>.

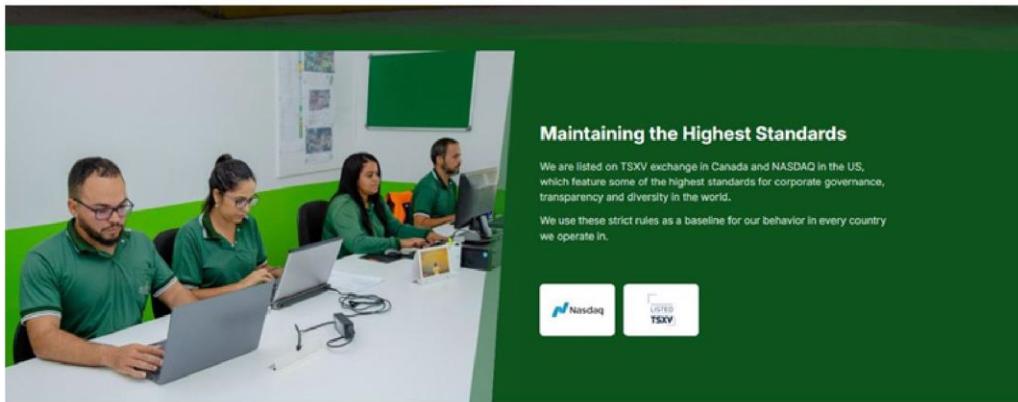
The company operates in a way that takes on various socio-environmental responsibilities. By stating that it does not use hazardous chemicals and does not have tailings dams, the company indirectly refers to the disasters that previously affected and destroyed entire communities, such as the collapse of the tailings dams of the mining companies Vale, BHP Billiton, and Samarco, in Mariana and Brumadinho, in the state of Minas Gerais, whose toxic sludge, an avalanche of mining waste, reached nearby municipalities, causing fatalities, contaminating rivers, destroying environmental preservation areas, ruining the livelihoods of hundreds of families, as well as harming the health of residents, causing intoxication, skin and respiratory diseases.

Positioning itself as a responsible company that works with disaster prevention compared to past failed situations in Brazil is possibly a strategy for acquiring funding and potential clients. The predominantly English-language communication indicates efforts towards the globalization of the brand, which should occur with the help of international legitimacy bodies, such as **NASDAQ and the TSX Venture Exchange** – the Canadian stock exchange – "which present some of the highest standards of corporate governance, transparency, and diversity in the world"¹³⁷, and strengthen the brand's popularity within Brazil, while also contributing to its dissemination and consolidation in international competition (MICHETTI, 2012)¹³⁸.

137 Our translation of the governance page of Sigma Lithium, which lists the stock exchanges where the company is listed. <https://sigmalithiumresources.com/governance/>. Accessed on: August 6, 2025.

138 MICHETTI, Miqueli. Brazilian fashion and globalization: world market and symbolic exchanges. 2012. Doctoral thesis – Universidade Estadual de Campinas, Instituto de Filosofia e Ciências Humanas, Campinas, SP. Available at: <https://hdl.handle.net/20.500.12733/1617230>. Accessed on: April 7, 2025.

Image 9 - International legitimacy bodies



The governance page of Sigma Lithium presents the international legitimacy bodies, and¹³⁹.

Despite the company publishing documents such as its Human Rights Policy—which presents relevant commitments—and other internal regulations (code of conduct, whistleblower policy, transparency and confidentiality, among others), when accessing the page dedicated to ESG information, the consumer does not find substantial reports that provide concrete evidence of implementation, performance indicators, or real impacts of its socio-environmental activities.

There is no ESG report in this location that follows international reporting standards, such as the GRI (***Global Reporting Initiative***) standards, a non-profit organization aimed at promoting transparency regarding the environmental, social, and economic impacts of companies. Additionally, it is noteworthy that Sigma Lithium itself claims to use the IFC (International Finance Corporation) Performance Standards as a reference for respecting human rights¹⁴⁰, standards that are more stringent and require, for example, free, prior, and informed consent from affected communities, with documented and agreed-upon decisions. The absence of reports demonstrating compliance with these standards raises doubts about the alignment between discourse and practice.

In the social aspect, the company once again invests in the image it wants to convey about its efforts with a photo gallery¹⁴¹, however, there is no report in Portuguese on the activities undertaken by Sigma Lithium for the communities near its facilities¹⁴².

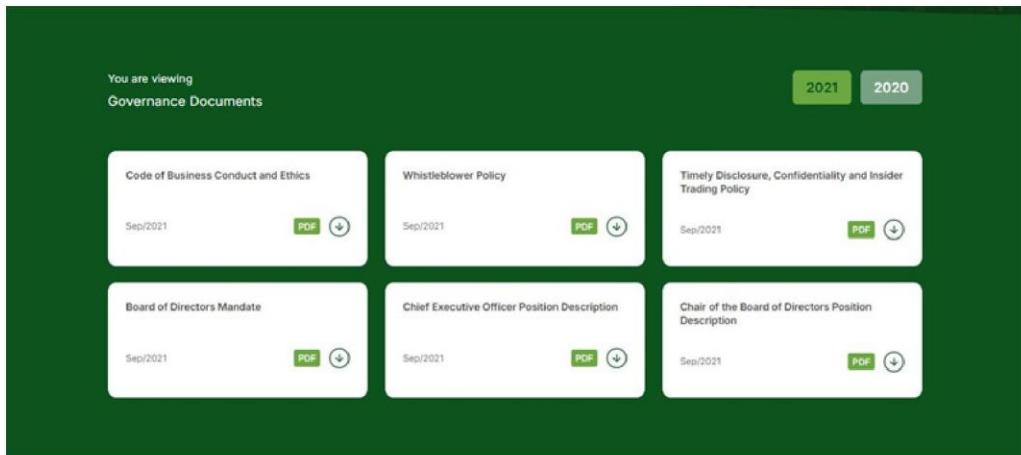
139 The image can be found on the company's page through the link <https://sigmalithiumresources.com/governance/>.

140 SIGMA Lithium. Human Rights Policy. Available at: <https://sigmalithiumresources.com/wp-content/uploads/2024/02/POLITICA-DE-DIREITOS-HUMANOS.pdf>, p. 2, Accessed on: Apr 07, 2025.

141 The company's photo gallery can be found through the link <https://sigmalithiumresources.com/media-gallery/>.

142 Not corroborating for the requirement of evidence see article 36 and annex U, CONAR <http://www.conar.org.br/>

Image 10 - Sigma Lithium's ESG reports page



The documents, dated from the year 2021, do not contain any sustainability reports with detailed and relevant information about the company's ESG initiatives¹⁴³.

Regarding ecological claims, the company states that it offsets carbon emissions in its activities; however, it does not provide more detailed and clear information about the methods and calculations used to support this claim. Concerning water usage, Sigma claims not to use potable water in its activities and to work with a reuse system; however, it does not clarify the source of the water. Environmental control programs and socio-environmental impact studies mention plans with goals and indicators for monitoring surface and groundwater, but they do not present concrete reports on the actual volume of water consumed or reused by the company.

The Sigma Lithium website page, intended for investors, contains some documents in English about the company's financial information. Among them is the "Management's Discussion and Analysis of Sigma Lithium Corporation for the year ended December 31, 2024", which, on page 7, provides a summary of the company's socio-environmental activities and programs.

<codigo/codigo.php>

¹⁴³ The image can be found on the company's page through the link <https://sigmalithiumresources.com/esg-reports/>. Accessed on: March 24, 2025.

¹⁴⁴ The document can be found in the investors' section of the Sigma website through the link <https://ir.sigmalithiumresources.com/static-files/dd7bc51d-0543-42d6-ad-40-9bf882540361>. Accessed on: April 7, 2025.

At least 9 social programs are reported, some with the number of people impacted, and recently implemented programs with future goals for community involvement. However, the information provided by the company lacks verification, such as visual records, official documents capable of evidencing the start of these activities, and even reports from the beneficiaries themselves. Due to the lack of detail and integrated information in ESG reports, Sigma's socio-environmental statements are unclear, making it difficult to assess the truthfulness and effectiveness of its actions.

For example, as already mentioned, there is no precise information about the calculations and methodologies used to claim that the company has zeroed its carbon emissions, nor about which concrete measures were implemented to achieve this goal.

Similarly, the social actions promoted by the company lack detail, without clarifying how, for whom, and with what results they were carried out, raising doubts about Sigma's real commitment to sustainability and socio-environmental responsibility. This absence of information undermines the company's credibility with investors, consumers, and society in general, and also represents a potential risk of **Greenwashing** practices.

6. Final considerations

The study on Sigma Lithium's operations in the Jequitinhonha Valley reveals a possible contradiction between the sustainability discourse and the company's actual practices. While the mining company presents itself as a pioneer in the production of "green lithium" and aligns its image with ESG principles, local communities denounce human rights violations, environmental degradation, and lack of transparency.

The absence of detailed reports on carbon emissions, water usage, and social actions, combined with allegations of cracks in houses, possible river contamination, and disregard for prior consultations and indications of problems of health suggest a possible case of **greenwashing** if the company cannot, or does not want to, publicize documents that prove its mitigation activities.

Although the company had two opportunities to respond to this study, that is, more than four months to present data, documents, and commitments regarding the entirety of this study, it only provided information in a virtual meeting through its Vice President of Institutional

Relations on 08/19/2025. No additional document proving the allegations of your institutional representative has been sent to us so far.

The use of resources from the Climate Fund to finance the expansion of Sigma Lithium's operations raises questions about the role of the National Bank for Economic and Social Development in the construction of the controversy presented in this report. On one hand, the bank claims to adopt strict socio-environmental evaluation criteria, but on the other hand, it apparently fails to require concrete proof of Sigma Lithium's policies or responses to the demands of the affected communities. The omission in the face of complaints is a concerning point to the detriment of territorial rights and environmental justice.

If the allegations made by the communities are proven and the company does not provide justifications in the future for the points related to its Human Rights Policy, its Code of Conduct, and other findings of this study, the following recommendations are presented:

To Sigma Lithium:

1. That Sigma Lithium proves, through public reports, that it conducts meaningful consultation processes, ensuring informed participation of all communities affected by the project, with effective accommodation of the demands and positions of these communities; commits to the free, prior, and informed consent of indigenous and quilombola peoples impacted by the project, in accordance with the United Nations Declaration on the Rights of Indigenous Peoples, and ILO Convention 169;
2. That, as per the commitment expressed orally in a meeting held with the institutions, guarantees communication channels in Portuguese and in clear and accessible language, ensuring access to information in a transparent and continuous manner.

3. Revise your internal human rights policies to ensure independent legal assistance to impacted communities and incorporate commitments against retaliation towards human rights defenders;
4. That, if the complaints made by the communities are proven, it repairs the damages caused by its activity;
5. That it publishes audited and detailed ESG reports, in Portuguese and English, which provide measurable proof of its greenhouse gas emissions, pollutant emissions, air and water quality monitoring, water usage, and official records of the results of its social investments.

To BNDES:

1. That in addition to observing the Fiocruz Conflict Map, it considers in its preliminary analysis process for granting funding, public complaints from communities affected by the companies' activities;
2. That, following the commitment expressed in the letter, a new visit to the Sigma Lithium project region be conducted to engage in dialogue with the affected communities.
3. Additionally, strengthen the monitoring mechanisms by requiring sustainability reports, in Portuguese, with auditable data, impact indicators, and responses to the complaints and demands of the communities.
4. Strengthen its institutionalized ombudsman to ensure its practical effectiveness with the traditional, indigenous, and quilombola communities directly impacted by the project. Ensure that these mechanisms are widely publicized, in accessible language and appropriate to the sociocultural context, to guarantee that the population understands their rights and can, in fact, use them, thus ensuring the right to participation and protection against human rights violations effectively.
5. Verify the truthfulness of the information contained in the aforementioned complaints, and in the event of contractual non-compliance, apply the corresponding penalties to the offenders, as well as, in the future, deny funding to projects that may violate human rights until the violating actions are demonstrably reversed by the credit applicant and the affected communities have their suffered damages repaired.

To the State of Minas Gerais:

1. Conduct a technical visit to the territories of Araçuaí, Itinga, and Coronel Murta to investigate the possible damages caused by Sigma Lithium;
2. If the reported damages are effectively proven, act in a way to demand their full reparation by the company and its financiers;
3. Ensure the protection of traditional territories and the active participation of communities affected by mining in regional development plans.
4. To develop an air quality monitoring plan and a toxicological study in the regions affected by the Sigma Lithium project.

To investors and buyers

1. To demand greater transparency from companies and include, in their contracts, clauses for continuous environmental and social monitoring, with independent verification mechanisms and participation of impacted communities.

As long as companies and governments continue to inadequately engage with the communities of the Jequitinhonha Valley, the so-called "sustainable lithium" may become yet another form of exploitation, where natural resources are converted into social inequality.

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