

## NIPEPE GRAPHITE FACTORY, NIASSA

# Industrialization, value chains and the right to development

- The graphite factory in Nipepe, in the Niassa province, emerges at a time when Mozambique faces the dual challenge of diversifying its production base and breaking with the historical pattern of dependence on low value-added primary exports. Since 2018, the country has consolidated itself as one of the largest African producers of graphite, mainly due to the Balama megaproject in Cabo Delgado, operated by Syrah Resources. However, between 2019 and 2023, more than 90% of Mozambican graphite was exported as raw concentrate, with minimal processing within the national territory, limiting the capture of internal value, the creation of industrial capacities, and local production chain development.





**Nipepe represents a historic opportunity for Mozambique to redefine its place in global critical mineral supply chains. The project has the potential to break with the primary extractive model, strengthen national industrial capacities, and contribute to more balanced territorial development in the north of the country.**

In this context, Niipepe represents a strategic turning point for three main reasons:

1. A shift in the production paradigm: a partial shift from the “extract and export” logic to “process and add value within the national territory”.
2. Active participation in the energy transition: graphite is a critical input for lithium-ion batteries, and global demand is expected to grow between 300% and 500% by 2035, according to the International Energy Agency (IEA).
3. Potential for territorial rebalancing: the possibility of transforming Niassa, historically marginalized, into an industrial hub linked to green supply

chains and a low-carbon economy. However, as studies on Balama demonstrate, transformative impacts are not automatic. Without robust governance, binding local content policies, contractual transparency, and social and environmental safeguards, there is a risk of creating an industrial enclave that is efficient for export but weak in distributive benefits, community participation, and human development.

In light of the Right to Development, Niipepe should be evaluated not only as a private investment, but as a test of the Mozambican state’s capacity to convert mineral wealth into social well-being, national productive capacities, and inclusive and sustainable territorial development.

## 1. Context: Natural resources and the Right to Development

Mozambique possesses significant reserves of high-quality graphite in Balama and Montepuez (Cabo Delgado) and Niipepe (Niassa). However, recent trends confirm the resource paradox: extractive expansion without an equivalent structural transformation of the economy.

CDD reports on Balama<sup>1</sup> show that, despite significant tax revenues and local job creation, structural problems persist:

- Insufficient compensation for affected communities;
- Controversial and poorly planned re-settlements;
- Limited community participation in decision-making;
- Low integration of small and medium-sized local enterprises into supply chains;
- External technological dependence

and weak knowledge transfer.

In light of the United Nations Declaration on the Right to Development (1986), Niipepe should be evaluated in two interconnected dimensions:

1. As a strategic industrial project;
2. As a mechanism for expanding human, institutional, and territorial capacities in Niassa and Northern Mozambique.

Four structuring criteria are derived from this approach:

- Substantive participation of the affected communities;
- Equitable distribution of economic and social benefits;
- Building local productive capacities;
- Intergenerational environmental sustainability.

<sup>1</sup> Center for Democracy and Human Rights (CDD). Million-dollar deals without benefits for the communities: Tirupati Graphite buys Suni Resources and begins exploiting graphite in Balama and Montepuez. Maputo, Apr. 2023. The text documents asymmetries between corporate profits and local benefits, resettlement challenges, precarious employment, and weak integration of communities into the graphite value chains in Cabo Delgado. See <https://cddmoz.org/wp-content/uploads/2020/07/Negocios-milionarios-sem-beneficios-para-as-comunidades-Tirupati-Graphite-compra-Suni-Resources-e-passa-a-explorar-grafite-de-Balama-e-Montepuez.pdf>

Thus, the Right to Development functions as a cross-cutting analytical lens for evaluating Nipepe, since the project will only be successful if it expands economic freedoms,

productive capacities, and decision-making power of local communities and institutions, and not just if it generates tax revenue or export volumes.

## 2. Graphite and global value chains: EU, USA and China

Graphite has ceased to be merely a conventional industrial mineral and has become a strategic input for the energy transition, especially for lithium-ion batteries used in electric vehicles.<sup>2</sup> Stationary energy storage and digital technologies. This shift has profoundly reconfigured global value chains, moving the focus of the debate from “access to resources” to “control of critical processing, refining, and transformation steps.”

According to the International Energy Agency (IEA)<sup>3</sup> global demand for graphite, driven by the electrification of transport and the expansion of renewable energy storage systems, is projected to grow very significantly in the coming decades in the context of the energy transition. In climate scenarios aiming for net-zero emissions by mid-century, the demand for graphite could increase up to four times in relation to current levels by 2040, reflecting the growing role of clean energy technologies in the total demand for critical minerals. These dynamics reveal that, more than a simple increase in the volume extracted, the global trend favors greater demands for quality, purity, and processing of the material, creating a potential opportunity for producing countries that develop local industrial capacity.

### *European Union*

The European Union has sought to reduce its dependence on external suppliers through

the European Critical Raw Materials Act (2023). This policy is not limited to guaranteeing access to minerals; it seeks to reshape the very geography of value chains, encouraging:

- Processing and refining within the EU;
- Strategic partnerships with producing countries that adopt high environmental and social standards;
- Long-term supply contracts based on sustainability and traceability.

For Mozambique, this creates an ambiguous opportunity. On the one hand, the EU could be a preferential market for graphite processed locally in Nipepe. On the other hand, if Mozambique does not develop its own industrial capacity, it risks being merely a supplier of raw materials to European factories, reproducing a historical dependency in a new “green” guise.

### *United States*

The US strategy focuses primarily on security of supply and diversification of sources outside of China. The main focus has been on ensuring stable access to graphite, rather than promoting industrialization in producing countries.

This implies two risks for Mozambique:

1. Incentives for exporting concentrate without local processing;
2. Pressure for quick supply contracts, but with weak technology transfer.

<sup>2</sup> Mozambique Information Agency (AIM). Mozambique plans to produce 329,040 tons of graphite for electric vehicles in 2024. See in: <https://aimnews.org/2023/10/21/mocambique-preve-produzir-329-040-toneladas-de-grafite-para-veiculos-eletricos-em-2024/>

<sup>3</sup> International Energy Agency. Global Critical Minerals Outlook 2024. View at: <https://iea.blob.core.windows.net/assets/ee01701d-1d5c-4ba8-9df6-abeac9de99a/GlobalCriticalMineralsOutlook2024.pdf>

## China

China follows a logic of complete vertical integration: it controls various stages of the chain, from extraction in third countries to purification, manufacturing of graphite anodes, and final battery production.

The Niipepe model fits more clearly into this strategy, as it prioritizes processing in the producing country, but under Chinese technological and financial leadership. This can generate gains in employment and skills, but also creates the risk of technological dependence if there is no:

- knowledge transfer clauses;
- systematic training of Mozambican personnel;
- Participation of national companies in the supply chain.

## Strategic implication

The diversity of strategies (EU, US and China) opens up three possible paths for Mozambique:

1. Traditional extraction route: Export concentrate and remain at the base of the chain.
2. Processing path dependent: to process locally, but without national technological expertise.
3. Strategic industrialization path: to use Niipepe as a platform to develop its own capabilities, local suppliers and technical knowledge.

The transformative impact of Niipepe will depend on which of these paths the Mozambican state deliberately chooses.

## 3. Graphite in Mozambique: Limits of the Extractive Model

Balama has become one of the world's largest graphite projects, with an installed capacity exceeding 350,000 tons/year. However, accumulated experience reveals structural limitations:

1. Productive volatility and external dependence<sup>4</sup>

Between 2021 and 2023, production fluctuated significantly due to international prices and global corporate decisions, affecting local revenues and job stability.

2. Low national value aggregation

Most of the graphite was exported as concentrate, with advanced processing carried out outside of Mozambique (mainly in China).

3. Predominantly low-skilled jobs  
Although thousands of temporary and permanent jobs have been created, studies by the CDD<sup>5</sup> show that the majority of technical and management positions remained in the hands of expatriates.

4. Recurring community conflicts<sup>6</sup>

Protests in Balama were related to:

- compensation deemed insufficient,
- problematic resettlements
- and the perception of unequal distribution of benefits.

These problems show that the challenge was not only technical, but above all political, institutional, and related to the governance of natural resources.

<sup>4</sup> Center for Democracy and Human Rights (CDD). Graphite overproduction in Balama leads to the suspension of production by Syrah Resources. See: <https://cddmoz.org/wp-content/uploads/2020/07/Excesso-de-producao-de-grafite-em-Balama-leva-a-suspensao-da-producao-da-Syrah-Resources.pdf>

<sup>5</sup> Studies cited in this policy brief. For further information, please see: [www.cddmoz.org](http://www.cddmoz.org)

<sup>6</sup> Center for Democracy and Human Rights (CDD). Subsidiary of the Australian company Syrah Resources. Illegally evicts 23 workers. See: <https://cddmoz.org/wp-content/uploads/2020/07/Subsidiaria-da-australiana-Syrah-Resources-expulsa-ilegalmente-23-trabalhadores-naturais-de-Cabo-Delgado-apos-greve-de-2022.pdf>.

## 4. Niipepe as an inflection point in the development model

With an estimated investment of USD 200 million and a processing capacity of 200,000 tons/year, Niipepe introduces three qualitative changes:

1. It shifts the focus of the debate from “extracting and exporting” to “processing and adding value”;
2. It allows for the creation of more skilled jobs in engineering, industrial

chemistry, and maintenance;

3. It opens up space for an industrial corridor, Balama–Niipepe–Northern Ports, linking mining, processing, and logistics.

This coordination is strategic to prevent Niipepe from functioning in isolation as an industrial enclave.

## 5. Employment, skills and territorial effects

The project anticipates approximately 1,000 direct jobs, with the potential for up to 5,000 total jobs, including indirect ones. However, the actual impact depends on three conditions:

1. Systematic technical training for Mozambicans, through partnerships with

Vocational Training Institutes (IFPs), universities and professional centers;

2. A binding local content policy, both for suppliers and for contracting;
3. Territorial production chains, including services, logistics, food, and light metalworking.

## 6. Right to Development: operational criteria

The Right to Development is an inalienable human right proclaimed by the United Nations Declaration on the Right to Development (1986), according to which every person and all peoples have the right to participate in, contribute to, and benefit economically, socially, culturally, and politically from development in which all human rights and fundamental freedoms can be fully realized.<sup>7</sup>

This right is not limited to economic growth, but incorporates a broad process of expanding human capabilities, active participation and equitable distribution of benefits, while imposing on States the primary responsibility of formulating policies that promote the well-being of the population and the communities involved.

In light of this normative definition and its

central principles, such as active participation, fair distribution of benefits, and the full realization of human rights, the evaluation of the Niipepe project must go beyond traditional measures of production and profit. Instead, it should be articulated with indicators that allow us to assess whether the project effectively translates the Right to Development into concrete results for the communities and for territorial and human development in Niassa.

Thus, the recommended indicators for operationalizing this right in Niipepe include:

- Percentage of national workers in technical and management positions;
- Volume of contracts awarded to local small and medium-sized enterprises (SMEs);

<sup>7</sup> United Nations Human Rights. General Assembly resolution 41/128: Declaration on the Right to Development (04 December 1986). See at: [https://www.ohchr.org/en/instruments-mechanisms/instruments/declaration-right-development?utm\\_source](https://www.ohchr.org/en/instruments-mechanisms/instruments/declaration-right-development?utm_source)

- Investment in community infrastructure (energy, water, roads);
- Existence of functional community complaint and dialogue mechanisms, with active participation;
- Independent and transparent environmental monitoring, with public

disclosure of results.

These indicators translate the Right to Development into concrete metrics that reflect economic outcomes and respect for the principles of participation, equity, and fair benefits for local communities, in line with the normative objectives of the 1986 Declaration.

## 7. Risks and conditions for success

### Structural risks

- Lack of local skills;
- Energy and logistical fragility in Niasa;
- Poor coordination between central, provincial, and district governments.

### Decisive conditions

- Inclusion of Niipepe in the National Industrialization Strategy;
- Formal and binding articulation Balama–Niipepe, with logistical, produc-

tion and institutional coordination between the two projects;

- Contractual transparency and genuine community participation, including public disclosure of key contractual terms, prior and ongoing consultations with affected communities, accessible complaint and dialogue mechanisms, and community involvement in the social and environmental monitoring of the project.

## 8. Conclusion and recommendations

Niipepe represents a historic opportunity for Mozambique to redefine its place in global critical mineral supply chains. The project has the potential to break with the primary extractive model, strengthen national industrial capacities, and contribute to more balanced territorial development in the north of the country.

However, this potential will not materialize automatically. The experience of Balama demonstrates that, without robust governance, transparency, and community participation, industrialization can coexist with inequality, local conflicts, and technological

dependence.

From the perspective of the Right to Development, Niipepe will only be successful if:

- to generate distributive benefits for local communities;
- expand national technical capabilities;
- to promote territorial production chains;
- and to ensure intergenerational environmental sustainability.

In short, Niipepe could mark a historic turning point if it is governed as a national development project, and not just as a private investment geared towards export.

## 9. Operational recommendations

1. Integrate Nipepe into a national policy for critical minerals aligned with industrialization;
2. Create a local development fund linked to graphite production;
3. Establish mandatory targets for local content and technology transfer;
4. Formalize logistical and productive coordination between Balama–Nipepe–Northern Ports;
5. To guarantee contractual transparency, binding community consultation, and independent environmental safeguards.

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*Inspirar e impulsionar ações para proteger os direitos humanos, fortalecer a democracia e promover a justiça.*


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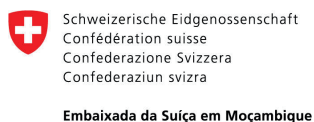
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