

## Bauxite Residue Management Governance in the Americas and the Future Global Focus on Critical Minerals

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### Abstract



At its fourth session, in 2019, the United Nations Environment Assembly adopted a resolution on the topic of mineral resources governance and mining (UNEA res 4/19). Following subsequent intergovernmental discussions, in 2022, a follow-up resolution was proposed to cover environmental aspects of minerals and metals management across the full life-cycle (UNEA res 5/12) - this was included as mining is being viewed as critical for the low-energy transition. As part of the implementation of the UNEA 5/12 resolution, intergovernmental regional meetings took place from April to July 2023. The regional meeting for Latin America and the Caribbean (LAC) highlighted that several decades of operations of bauxite mines and alumina refineries in key Caribbean territories (Jamaica, Guyana and Suriname) meet the criteria for attention as part of national sustainability and governance approaches. It is particularly important to address the need for the safe remediation of former bauxite residue disposal sites, their long term management and wherever possible, reuse, or the recovery of the chemical constituents in the bauxite residue. There are four key areas to be addressed for bauxite and alumina operations:

1. Environmental indicators as part of the approach of regional governments.
2. The capability of governments to ensure adequate oversight, especially for risk assessment and the management and monitoring of facilities.
3. Legacy sites and closure planning.
4. To encourage the reuse of the bauxite residue wherever possible in order to maximise the use of natural resources.

The challenge of bauxite residue utilisation from legacy sites has had limited traction in this context, as there are more options for operating sites. There is growing focus in some regions, especially the European Union, to encourage the circular economy by supporting research and pilot scale projects which will hasten bauxite residue reuse options. The LAC region has not pursued such an approach and lacks the financial resources to match the EU funded work. Additionally, the duality of community attitudes against mining and the roles of ENGO's act at a counterpoint to the private-public endeavours to make positive social impacts.

**Keywords:** Bauxite residue management, Environmental Governance, Sustainable Development Goals (SDGs), Risk assessment, Community impacts

### 1. Introduction

At its fourth session, in 2019, the United Nations Environment Assembly adopted a resolution on the topic of mineral resources governance and mining (UNEA Res. 4/19); this was in fact the first resolution on mining of the UNEA [1]. Initially, this resolution requested the United Nations Environment Programme (UNEP) to collate information on practice, gaps and approaches for sustainable management of metal and mineral resources.

Some suggested actions were collated in a report: 'Mineral Resource Governance and The Global Goals: An Agenda For International Collaboration' [2] and this was the basis for subsequent

discussions at the second part of the fifth UNEA, which resulted in the adoption of resolution UNEP/EA.5/12 [3] on the environmental aspects of minerals and metals management. The imperative is recognised as mining is being viewed as critical for the low-energy transition and central to the triple planetary crisis of climate change, biodiversity loss and pollution. Figure 1 below outlines the key discussion areas for the Group of Latin America and Caribbean Countries (GRULAC) from the background document [4].

The resolution specifies the following:

1. **Encourages Member States**, and invites relevant stakeholders along the full life cycle of minerals and metals, from both the public and private sectors, **to align their mining practices and their investments in mining with the 2030 Agenda for Sustainable Development** and with their obligations and decisions under multilateral environmental agreements, as appropriate;
2. Requests the Executive Director, subject to available resources, to **convene transparent and inclusive intergovernmental regional consultations**, including with relevant international organizations, with regional and multilateral environmental agreements, and with relevant stakeholders acting as observers, to feed into a global intergovernmental meeting, **with the aim of developing non-prescriptive proposals to enhance the environmental sustainability of minerals and metals along their full life cycle**, in line with the 2030 Agenda for Sustainable Development;
3. Decides that the intergovernmental regional consultations will: (a) **Take stock of existing activities and actions** in the public and private sectors and by other relevant stakeholders to enhance the environmental sustainability of minerals and metals and identify, among other things, best practices, responsible business practices, standards, guidelines, technical tools, environmentally sustainable technologies and the use of renewable energy in mining; (b) **Identify opportunities for enhanced international cooperation**, including with a view to fostering capacity-building and technological, technical and scientific cooperation in the mining sector, in particular with developing countries; (c) **Identify possible ways forward** for consideration by the Environment Assembly at its sixth session, as appropriate;
4. Requests the Executive Director, through the Global Resource Information Database (GRIDGeneva), to strengthen scientific, technical and policy knowledge with regard to sand, and to support global policies and action regarding the environmentally sound extraction and use thereof;
5. Also requests the Executive Director, subject to the availability of resources, with the engagement of the secretariats of relevant multilateral environmental agreements, organizations and stakeholders, as appropriate, and bearing in mind the launch of the **Global Industry Standard on Tailings Management**, to **compile a report on knowledge gaps in relation to the environmental aspects of tailings management**;
6. Further requests the Executive Director to report to the United Nations Environment Assembly at its sixth session on the progress achieved in the implementation of the present resolution, including through a **summary report on the consultations for consideration by the Environment Assembly at that session**.

Hence, the UNEA resolution 5/12 requests UNEP to convene transparent and inclusive intergovernmental regional consultations (i.e. the process underway now, supported by this Background Paper) to feed into a global intergovernmental meeting, with the aim of developing non-prescriptive proposals to enhance the environmental sustainability of minerals. The scope of resolution 5/12 excludes mineral fuels and includes the full life cycle of minerals and metals, including extraction, on-site and offsite processing, refining, management of mining waste and tailings, rehabilitation of sites and closed or abandoned mines, manufacturing, and recycling.

Figure 1. Specifics of the resolution [4].

It also bears mentioning that despite over seventy years of operations, one of the companies in the Jamaican landscape, which is partially government owned, is the defendant in a case that is challenging that bauxite mining impacts persons' constitutional rights – specifically the right to an environment free from degradation.

#### 4. Conclusion

Many nations of the Americas are emerging economies with sustainable development challenges; however, they are committed to embrace the move towards 'Net Zero', the circular economy and the drive to use the world's resources more effectively. The CARICOM nations with former and present bauxite and alumina operations are grappling with a multiplicity of environmental management issues – primarily in governance. There is a clear need for strong oversight and climate adaptation strategies from the regional governments for bauxite residue management. The regional participation in crafting non-prescriptive proposals in the UNEA 5/12 implementation related activities allows for the inclusion of specific challenges that are experienced at the local level. The evolving role of communities and non-governmental groups is creating the need for innovation in methods and forms of engagement. The CARICOM countries are engaged and defining their niche as the mineral needs of the future become more evident.

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