



# POLICY BRIEF #6

## Building sustainable bauxite mining communities: a framework.

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This policy brief is sixth in a series of seven that forms a policy framework for the management and utilization of Guyana's bauxite resources within the guidelines of the country's Green State Development Strategy (GSDS). The brief responds to two of the stated terms of reference guiding this project: the submission of

- policies and strategies to increase the direct social and economic benefits to the bauxite communities from bauxite mining; and
- policies and strategies for the development of the bauxite communities in Guyana.

### A. SCOPE

The sustainability and wellbeing of bauxite mining communities (BMC) are critical considerations in the policy framework for the management and utilization of Guyana's bauxite resources.

BMCs in Guyana include, collectively, (i) the communities associated with the historical and current mining of bauxite, (ii) the emerging communities, where bauxite projects are at the mineral exploration/evaluation or early mine development stage, and (iii) future communities, where untapped commercial bauxite resources exist.

The historical BMCs developed and evolved synchronously with the development of the bauxite companies; their fates have been inextricably linked. The current state and status (social, environmental and economic challenges, and bauxite legacy issues) of the historical BMCs and the projections for the emerging and future communities (within the GSDS) suggest that a new, enabling perspective is required.

This brief proposes that the development of sustainable BMCs, supported and empowered by Sustainable Bauxite Mining practices, provides that enabling framework.

## B. BACKGROUND

Bauxite mining has been practiced in Guyana for over 100 years beginning in 1916. With the known and probable reserves (Brief #4) and the importance of the resources nationally and globally, it is likely to be around for, at least, another 100 years. The availability of this vast historic experience affords the nation the opportunity to craft informed and pre-emptive strategies for bauxite mining and the development of BMCs going forward.

Bauxite mining, like most mining, traditionally occurs in remote areas, away from established, developed centers. Mining communities are created and evolve in support of, and in association with, mine development. Mining is a resource-depletion process that has a fixed and limited life-span<sup>1</sup>. The life-span is a function of the nature of the deposit and economics of the specific mineral. The fate of mining communities is therefore characterized by uncertainty and fluctuating fortunes.

Mining communities could evolve through the life cycle/span of the mine from essentially worker/mining camps to potentially independently-functioning communities. However, mining communities generally do not thrive successfully beyond the life of mine or deposit, unless there are specific closure-planning or other socio-economic circumstances and drivers.

The continuation and sustainability of bauxite communities beyond the associated mines is a major concern of this review.

### WHAT IS A SUSTAINABLE MINING COMMUNITY?

A sustainable mining community is one that meets its present needs while protecting and enhancing the ability of future residents to define and meet their own needs by purposefully ensuring:

**Environmental sustainability** (achieved through sound policies, laws and institutions to promote sustainable mining practices and the sound environmental management of mining).

**Economic sustainability** (achieved through measures to keep the mine profitable and to foster economic spin-offs and investments within the community during the mine life and long after mining has ceased).

**Social sustainability** (achieved through mechanisms aimed at ensuring community acceptance of mining projects; transparency and local participation in major mining decisions; ever increasing local content opportunities; high levels of corporate social responsibility; and revenue sharing between central and local governments).

**Cultural sustainability** (achieved through measures to protect heritage sites and the cultural and other human rights of Indigenous people within the footprint of the mining operation).

<sup>1</sup> The average life span of bauxite mines worldwide is 34 years based on a range of 12 – 117 years (Global Bauxite Perspective – Light Minerals 2010)

The world is strewn with abandoned mining towns or communities that did not survive the mine. But, there are other bauxite and mining communities that continue to thrive beyond the active life or the peak performance of the associated mines. Examples include Bauxite, Arkansas; Butte, Montana; Bisbee, Arizona; and, of course, Linden, Guyana.

The sustainability (survival and success) of mining communities beyond the life of the associated mine/deposit is a function, mainly, of (i) the nature of the deposit and geography of the area, (ii) the business decisions and social responsibility of the mining company, (iii) the policies of the national and regional governments, (iv) the motivation and ability of the local/worker community to engage in shaping its own destiny, and (v) the socio-economic importance of the communities in the region or country.

Linden is a perfect example: It has become an important administrative center, a critical transportation and access hub for the interior mining and forestry sectors. But the impacts of past and current mining activities continue to challenge the health and sustainability of the community.

Ituni is the reverse of Linden: the deposit was played out before the establishment of the area as an important commercial or administrative center.

## **C. HISTORICAL AND EMERGING BAUXITE MINING COMMUNITIES**

### **Historical Bauxite Mining Communities (HBCs)**

The three historic bauxite communities (Linden, Ituni, and Kwakwani) were created in service and support of the bauxite mining industry—Linden and Ituni, in 1917 and 1943, respectively, by the Demerara Bauxite Company (DEMBA), Kwakwani in 1942, by the Berbice Bauxite Company. The historical bauxite mining communities were originally essentially company towns<sup>2</sup>. Their essential social and physical infrastructures still reflect the influence of the mining companies.

The historical mining operations experienced transitions in ownership over the years. These transitions were accompanied by a change in approach to and relationship with the associated community. Linden, for example, saw the transition from Demba, through Guybau, Guymine, Linmine, Omai Bauxite, and finally Bosai Minerals. There are demonstrable great differences in the social responsibility towards the community by the various operators/owners. It should be noted that the changes in ownership occurred at different stages in the life-cycle of the associated mines, in the global changes in the bauxite industry and in the social and economic development of Guyana.

It should also be noted that, as the laws then did not require it, none of the owners/entities practiced the required closure planning and implementation. This is a

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<sup>2</sup> A **company town** is a place where practically all stores and housing are owned by the one **company** that is also the main employer. **Company towns** are often planned with a suite of amenities such as stores, churches, schools, markets and recreation facilities. (Wikipedia)

major contributor to the “legacy issues” that challenge and undermine the sustainability of the HBCs.

After a period of local/state ownership, Guyana’s bauxite deposits are being exploited/mined by transnational companies. This pattern of ownership and operation will most likely continue in the future (Brief # 3).

The HBCs have transitioned from communities totally in service of the associated mining company to independent communities governed by local government organs (CDCs and municipalities) that now have the responsibility for their health, wellbeing, and sustainability.

Ultimately, therefore, the sustainability of the BMCs, also is, and will be, dependent on the effectiveness and maturity of local governance directly, and the national policies and strategies indirectly.

This transformation of mining communities must be expected, encouraged and facilitated by the primary stakeholders, namely mining companies, national and local government, NGOs and regulatory bodies. The transformation can now be guided by sustainable principles and overviews such as the GSDS.

Some of the mining-related environmental and social challenges faced by the HBCs with operating mines predate the current owners and operators. These include legacy issues such as mined out-areas, abandoned mines, physical hazards, ecological and hydrological disruption; ownership, control and stewardship of lands within the communities, limited economic diversity and opportunity. The environmental conditions and impacts, and related concerns are addressed in Brief #7 (Environmental and Geo-hazard Management).

The non-resolution of the legacy issues is inimical to the sustained development of the HBCs. However one of the stated objectives of the GSDS (Section B5.2) is the evaluation of financial securities for the reclamation of mines sites.

Currently, the National Industrial and Commercial Investments Limited (NICIL), which is not an operator, owns and controls considerable amounts of mining and non-mining tracks of land in and around Linden, Kwakwani and Ituni. Some are of high commercial and mining value and others are in strategic locations with respect to continued development of the communities. There is very limited monitoring. Extensive squatting

**Legacy issues within Historical Bauxite Mining Communities in Guyana include:**

- **mined-out areas and abandoned mines,**
- **physical hazards,**
- **ecological and hydrological disruption,**
- **land ownership and control issues, and**
- **limited economic diversity and opportunities.**

contributes to land degradation, erosion and contamination of water bodies. While NICIL exercises its authority to develop or dispose mining properties, the question about the responsibility for reclamation and mitigation of the ongoing impacts on local communities remains unaddressed.

The utilization, development, sale, distribution of these lands must consider or reflect the development plans and strategies of the local governments and communities.

An inventory of these sites/properties for the possible transfer to the associated communities is urgently needed. The recent conflict pertaining to lease of 500 acres of land in the old Kara Kara mines in Linden underscores the need for the evaluation of the potential uses of the properties and the transfer of properties to community ownership and control (Kaiteur News, May 2019).<sup>3</sup>

### **Emerging Bauxite Mining Communities**

Guyana's bauxite deposits are currently being exploited/mined by transnational companies. Therefore the development and sustainability of the emerging and future mining communities will reflect the attitudes and development strategies of the transnational companies under the guidance of national policies and oversight.

The current emerging community is Sand Hills that is associated with the First Bauxite Company at Bonasika in Region 3. Sand Hills is a small community (population 800) with limited economic resources, and social and infrastructural development; logging and sand mining are the primary sources of employment.

As opposed to the HBCs, the emerging community at Sand Hills and future communities should benefit from and be guided by (i) more pre-emptive and progressive approaches to community development, (ii) higher levels of corporate social responsibility (CSR), (iii) a more evolved national regulatory and oversight regime, and, (iv) the new worldwide sustainable approach to bauxite mining. The emerging community at Sand Hills is set to benefit from the new and evolved approaches to mining. The project, for example, is governed by an Environmental and Social Impacts Assessment and an Environmental Management Plan which include closure, and community engagement plans.

**The transformation of Sand Hills and all other emerging and future bauxite communities into independent self-sustaining communities must be anticipated, encouraged and facilitated by the local and national governments, the mining companies, NGOs and other primary stakeholders.**

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<sup>3</sup> Kaiteur News <https://www.kaiteurnewsonline.com/2019/05/17/overseas-based-linden-company-bullish-on-development-condemns-nicils-pussyfooting-on-lease-issue/> 17 May 2019

First Bauxite Inc's community engagement program includes rebuilding the primary school, funding of scholarships for secondary and tertiary education, and provision of electricity and potable water for the community. It should be stated that similar services were provided in Linden by the Demba in the early stages in the development of Linden and Ituni.

The transformation of Sand Hills (and all emerging or future bauxite communities, for that matter) into an independent, self-sustained community must be anticipated, encouraged and facilitated by the primary stakeholders. This anticipated transformation should be guided and informed by the historical processes in the HBCs and the anticipated life-span of the Bonasika Mine Project.

## **D. SUSTAINABILITY STRATEGIES IN BAUXITE MINING**

Bauxite deposits worldwide were formed by the same process (weathering) and generally mined by the same large-scale open-pit method, involving large tracts of land. Bauxite communities worldwide therefore face the same challenges and impacts produced by bauxite mining<sup>4</sup>.

Various approaches and strategies were developed to address the challenges and impacts associated with bauxite mining. These could be used to inform the development of policies and implementation of strategies in support of sustainable BMCs in Guyana.

The current state, status and concerns about the HBCs (Linden, Ituni and Kwakwani), and the projected emerging and future bauxite communities must be viewed from **a common enabling perspective**. This Brief proposes that the common enabling perspective or reference for the development of Sustainable Bauxite Communities (SBCs) in Guyana should be constructed from:

1. the Green State Development Strategy,
2. the National Mineral Sector Policy Framework and Actions (2019 – 2029), (NMSPFA)<sup>5</sup>,
3. the “Towards Sustainable Mining Initiative”<sup>6</sup> and
4. the recently established Sustainable Bauxite Mining Guidelines<sup>7</sup>

### **1. Green State Development Strategy (GSDS): Vision 2040**

The GSDS, as detailed in the eight development objectives, provides one of the enabling perspectives for developing Sustainable Bauxite Mining Communities (SBCs). The plan

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<sup>4</sup> Lee Kya et al 2017. Environmental and Occupational Health Impact of Bauxite Mining in Malaysia

<sup>5</sup> MNR, 2018, National Mineral Sector Policy Framework and Actions (2019 – 2029)

<sup>6</sup> MAC, 2015 Towards Sustainable Mining

<sup>7</sup> World Aluminium, 2018, Sustainable Bauxite Mining Guidelines

for the sustainable management of the natural resources also provides the basis for the sustainable mining.



“The central objective of the (GSDS) is development that provides a better quality of life for all Guyanese derived from the country’s natural wealth – its diversity of people and abundant natural resources (land, water, forests, mineral and aggregates, biodiversity)”.

The development objectives with critical reference to development of SBCs are summarized subsequently in Table 1, GSDS Objectives Relevant to development of Sustainable Bauxite Mining Communities.

<b>Table 1 GSDS Objectives Relevant to Sustainable Bauxite Mining Communities</b>		
Reference Section (GSDS)	Development Objectives	Application to Sustainable Bauxite Mining Sustainable Mining Communities
B	<b>SUSTAINABLE MANAGEMENT OF NATURAL RESOURCES</b>	
B2.1	Amend the Water and Sewerage Act.	This is critical for the management/restoration of mined-out spaces.
B3.4,	Strengthen Community Reporting, and Verification (CMRV).	Bauxite communities empowered and provided with the resources to be informed stakeholders and engaged throughout in all phases of development, formulation and vetting.
B5	<b>Precious Metals, Mineral and Aggregate Resources</b>	
B5.2	Research and study options for using financial securities to rehabilitate mining sites.	Necessary for reclamation and use of mining spaces and for addressing of other legal issues in support of environmental and economic sustainability.
B5.3	Review and update mining laws for enforcement and monitoring.	Monitoring of mining and implementation of the EMPs based on established criteria with respect to established criteria and indicators is supportive of sustainable (bauxite) mining and mining communities.
	<b>SUPPORT ECONOMIC RESILIENCE</b>	
C	<b>GREEN AND INCLUSIVE ECONOMIC DIVERSIFICATION</b>	

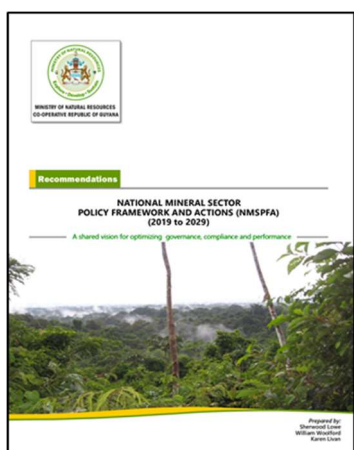
<b>Table 1 GSDS Objectives Relevant to Sustainable Bauxite Mining Communities</b>		
Reference Section (GSDS)	Development Objectives	Application to Sustainable Bauxite Mining Sustainable Mining Communities
C1  C 1.1	<b>Resource extraction for sustainable development.</b> - <b>Mining</b>	Sustainable Bauxite Mining and establishment of SBCs are supported by "The mining sector adopting greener and safer operating practices, minimizing waste and negative environmental and social impacts and rehabilitating degraded sites in a timely manner to other productive or recreational uses."
C1.1.3,	Incentivize adoption of more efficient, safer and environmentally friendly techniques	High levels of productivity and sustainability achieved through the adoption of advanced technology and management best practices.  Effective enforcement of mining regulations is critical to the practice of sustainable mining.
C1.1.5	Encourage the use of advanced technology and employ more sophisticated monitoring techniques to reduce the costs of enforcement	
C1.1.6	Make investments in critical infrastructure	
	<b>Labour Market Regulation</b>	
C4.2.9	Apply internationally recognized labour occupational safety and health (OSH) standards and better working conditions as new ways of work and employment emerge	Labour issues which continue to plague the industry in the HBCs (DPI Guyana 2019) <sup>8</sup> are addressed as part of the sustainable bauxite mining practices and in support of development of SBCs.
E	<b>RESILIENT INFRASTRUCTURE, GREEN TOWNS AND URBAN PUBLIC SPACES</b>	This provides a useful reference for closure planning and the development of bauxite communities.
E6	<b>Inclusive and Green Urban Settlements</b>	
H	<b>GOOD GOVERNANCE, TRANSPARENCY AND KNOWLEDGE MANAGEMENT</b>	
H1	<b>Governance and Citizen Participation</b>	

<sup>8</sup> DPI, Guyana: Govt meets with RUSAL to resolve workers issues. February 21, 2019



Table 1 GSDS Objectives Relevant to Sustainable Bauxite Mining Communities		
Reference Section (GSDS)	Development Objectives	Application to Sustainable Bauxite Mining Sustainable Mining Communities
H17	Strengthen citizen participation and inclusion	Citizen participation and oversight are important to the development of sustainable mining and to the good governance of mining communities.
H18	Modernize the legal and regulatory framework for civil society organizations (CSOs)	
H4	Land Governance	
H4.1	The governance of land is given the highest priority	Post-mining ownership and use of mining properties within and beyond the communities are important to economic and social sustainability of mining communities.
H4.7	Better oversight and control of mining operations is a priority	Regulatory engagement and oversight is a grounding pillar of sustainable mining and the development of SBCs.

## 2. National Mineral Sector Policy Framework and Actions (2019 – 2029)



The NMSPFA provides a framework and strategy for the development to Guyana's mineral sector covering the period 2019-2029 within the context of the GSDS.

The development objectives with critical reference to development of Sustainable Bauxite Mining Communities are summarized subsequently in Table 2 (NMSPFA Objectives Relevant to development of Sustainable Bauxite Mining Communities).

<b>Table 2 NMSPPFA Objectives Relevant to Sustainable Bauxite Mining Communities</b>		
Reference Section	Objectives	Application to Sustainable Bauxite Mining Sustainable Mining Communities
<b>A Comprehensive Local Content Policy Specific to the Non-oil Mining Sector</b>		
<b>National Charter on CSR, with separate Community Development Agreements</b>		
P 72 - 73)	Promote/ensure Corporate Social Responsibility and commitment to sustainable development of the associated community	Development of SBC requires Sustainable Mining Practices which includes community participation and engagement
<b>Revenue Sharing with Mining Communities.</b>		
P 73-75	Promote economic independence and share the benefits directly with the community that is impacted with the mining related activities.	The success of SBC depends on the direct support and engagement with all aspects of the related mining project. The community must have dependable access to resources throughout the life-span of the operations and beyond.
<b>Regional Cumulative Environmental Impact Assessment and Management</b>		

### 3. Towards Sustainable Mining (TSM)

Towards Sustainable Mining (TSM), an initiative from the Mining Association Of Canada (MAC), allows mining companies to “turn high-level environmental and social commitments into action “at the mining sites; it is highly community oriented and responsive, providing communities with valuable information on all phases of the operation including environmental management and biodiversity. The initiative focuses heavily on Accountability, Transparency, and Credibility.

**Guiding Principles:** Demonstrated commitment to sustainable development; a responsible approach to social, economic and environmental performance aligned with the evolving priorities of the communities of interest.

**Community of Interest Advisory Panel (COI):** An independent, multi-stakeholder group comprised of individuals from Aboriginal groups, host, environmental and social NGOs, and labour and financial organizations that provide oversight of the development and implementation of the TSM.

## TSM Guiding principles specific to Community Engagement /Empowerment

- Respect human rights
- Respect the cultures, customs and values of people
- Compliance with all laws and regulations in each country; adherence to these to TSM Guiding Principles and best international practices.
- Support the capability of communities to participate in opportunities provided by new mining projects and existing operations.
- Responsive to community priorities, needs and interests through all stages of mining (exploration through closure).
- Minimize the impact of operations on the environment and biodiversity, through all stages of mining
- Work with communities of interest to address legacy issues
- Provide lasting benefits to local communities through self-sustaining programs to enhance the economic, environmental, social, educational and health care standards they enjoy.

## 4. Sustainable Bauxite Mining



The principles of sustainable bauxite mining practices as documented in the “Sustainable Bauxite Mining Guidelines” are proposed and supported by three Bauxite Industry Associations: Australian Aluminium Council (AAC), Brazilian Aluminum Association (ABAL) and the International Aluminium Institute (IAI).

“Sustainable bauxite mining is not a single “one-size fits all” prescriptive process but one that involves managing risks with best available technologies appropriate to the circumstances of the specific mine”<sup>9</sup> (World Aluminium, 2018).

The stated principles address the reduction of environmental impacts (biodiversity, land and water), promotion of community engagement, and rehabilitation and closure activities.

The Principles include:

- Ethical business practices and sound governance
- Sustainable development considerations in decision making
- Respect for human rights
- Effective risk management
- Health and safety performance
- Environmental performance

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<sup>9</sup> World Aluminum, 2018. Sustainable Bauxite Mining Guidelines

- Conservation of biodiversity and land use planning;
- Social contribution, and
- Engagement and transparent reporting.

Application of sustainable bauxite mining practices is essential to the development of SBCs and ensuring maximum benefits to the affected/associated community. It should be noted that sustainable bauxite mining practices and the mining of other minerals share common governing principles. The integration of the principles and guidelines into bauxite mining practices can improve the sustainability of the operations.

## **E. POLICY RECOMMENDATIONS**

Policy recommendations (Table 3) are guided by the enabling frameworks discussed in Section D and are organized under the four main components of sustainable development:

1. Environmental sustainability
2. Economic sustainability
3. Social sustainability
4. Cultural sustainability.

**TABLE 3: Recommended Policy framework**

POLICIES	INSTRUMENTS AND MECHANISMS	DESIRED RESULTS AND BENEFITS
<p><b>Environmental sustainability</b> (see Brief #7 for details).</p>	<ul style="list-style-type: none"> <li>- Project-specific Environmental Impact Assessments (EIAs) for mining of bauxite, kaolin, clays and other materials/minerals (Responsibility: mining companies).</li> <li>- Regional Cumulative Environmental Effects Assessment and associated Environmental Management Plans for the bauxite mining districts (Responsibility: the EPA).</li> <li>- Projects designed specifically to deal with legacy issues and man-induced geohazards, such as erosion and river siltation (Responsibility: EPA, GGMC, RDC #10).</li> </ul>	<p>All past, current and anticipated environmental impacts caused by mining in the region (in particular, but not only, bauxite mining) and other economic activities, such as logging, are managed in a holistic and integrated manner by the EPA, GGMC, the regional administration, and the extractive industry.</p> <p>Management is based on a ranking of risks and vulnerabilities of environmental assets, such as rivers and watersheds, forests and other ecosystems, and fauna and flora.</p> <p>Legacy issues, such as old mine pits and gully erosion, are targeted by special restoration/rehabilitation projects.</p>
<p><b>Economic sustainability</b></p>	<ul style="list-style-type: none"> <li>- Regional and community economic development plans (based on exploiting local resources, opportunities, spin-offs, and comparative advantages; and on ensuring sustainable livelihoods for residents). (Responsibility: central and local governments).</li> <li>- Resolution of land ownership and control issues, starting with an inventory of mining and non-mining lands.</li> <li>- Sharing of bauxite revenues between central and regional governments (Responsibility:</li> </ul>	<p>Bauxite communities are able to capitalize on the presence of bauxite operations and resources in their district to establish a local economy that is diversified and robust enough to withstand the vagaries of the mining industry and the eventual cessation of mining.</p> <p>Government is able to tax mining entities to the fullest extent possible without discouraging private investors. Revenues so received are shared with the local and regional governments through direct transfer in the form of, for example, a regional natural resources fund.</p> <p>The contributions of companies to local development are optimize through negotiated comprehensive local content</p>

	<p>central and local governments).</p> <ul style="list-style-type: none"> <li>- Local content agreements specific to bauxite mining in Linden, Indigenous communities and elsewhere.</li> <li>- Written corporate social responsibility (CSR) charters between mining companies and local communities.</li> <li>- More effective tax collection systems for all mining activities (bauxite, sand, loam, etc) and other private company activities.</li> </ul>	<p>and CSR policies.</p>
<b>Social sustainability</b>	<ul style="list-style-type: none"> <li>- CSR charters, inclusive of Codes of Conduct for companies on sustainable mining.</li> <li>- Sharing of government bauxite revenues with associated mining communities.</li> <li>- Involvement of community participation in major company and government decision-making through structured consultative mechanisms (for example: through company board membership and multi-stakeholder committees).</li> <li>- Region-specific local content agreements.</li> </ul>	<p>Bauxite communities, including Indigenous villages, continue to view bauxite and other mining in a positive light. Both local and foreign investments in mining are therefore welcome and encouraged.</p> <p>Protocols and other mechanisms are established to facilitate transparency of company actions and public consultations on key decisions</p> <p>Conflicts between companies and communities, should these occur, are handled within established guidelines and do not lead to extreme detrimental actions on the part of either party. The social license for mining remains valid. Resource nationalism does not emerge.</p>
<b>Cultural sustainability</b>	<ul style="list-style-type: none"> <li>- CSR charters, inclusive of Codes of Conduct for companies on respecting heritage sites and Indigenous Rights.</li> </ul>	<p>Mapping of heritage sites is undertaken and guidelines enshrined on their preservation.</p> <p>Indigenous communities and representatives must be involved from the onset in all matters that bear on their</p>

		land rights, cultural and other human rights. Written instruments must encode all agreements and understandings.
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