



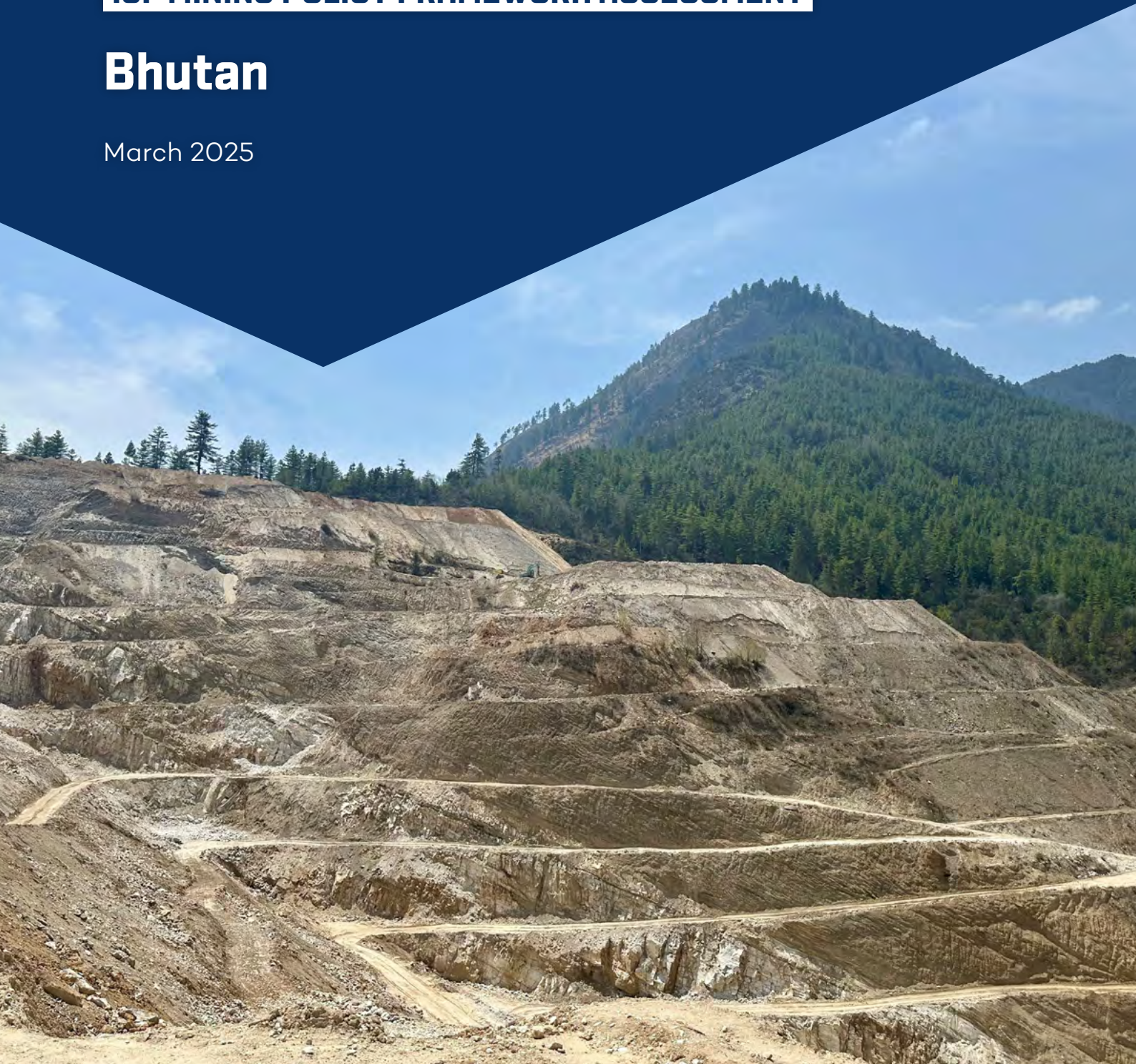
**IGF** 20  
YEARS

INTERGOVERNMENTAL FORUM  
on Mining, Minerals, Metals and  
Sustainable Development

## IGF MINING POLICY FRAMEWORK ASSESSMENT

# Bhutan

March 2025



Secretariat hosted by



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### **IGF Mining Policy Framework Assessment: Bhutan**

March 2025

Written by IGF Secretariat.

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Cover photo by Carlos Ortega

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## About the MPF Assessment Series of Reports

Developed by the member states of the Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development (IGF), the Mining Policy Framework (MPF) represents the commitment of the IGF members to ensure that mining activities within their jurisdictions adhere to good international practice with respect to environmental, social, and economic governance and promote the generation and equitable sharing of benefits in a manner that will contribute to sustainable development.

IGF is working with its member states to help them implement practices consistent with the IGF's MPF. The first MPF assessments were carried out in 2014, and the IGF has conducted more assessments through the years in response to member requests. All assessments are public on the IGF website: [www.igfmining.org/miningpolicyframework](http://www.igfmining.org/miningpolicyframework).

The MPF assessment process is made up of two main steps. First, the MPF assessment team evaluates relevant national, regional, and international laws, policies, conventions, and administrative frameworks for mining and minerals development and management relative to the six themes of the MPF:



Law, Policies, and Institutions



Environmental Management



Financial Benefits



Post-Mining Transition



Socio-Economic Benefits



Artisanal and Small-Scale Mining

This work is done through both desk- and field-based research involving diverse stakeholders. The assessment identifies key strengths and gaps in the country's mining laws and policies, as compared to good international practice outlined in the MPF, which helps measure the progress of the member state in implementing the MPF through its existing government measures.

Building on the outcomes of this assessment process, the second phase of the project involves working with the participating government to develop a capacity-building and technical support program that addresses key gaps in the hopes that these strengthened capacities and increased understandings can enhance national legislation and policies, thereby optimizing the contribution of the mining sector to sustainable development.

This assessment, conducted at the request of the Government of Bhutan, evaluated the degree to which the standards of the MPF were integrated into existing national laws and policies. It is hoped that by identifying the strengths and gaps present in existing mining laws and policies, the assessment will help the Bhutan government improve its governance of the mining and minerals sector, inform capacity-building efforts, and allow for monitoring progress over time.

This report presents the IGF assessment for Bhutan. The authors would like to thank their colleagues from the Government of Bhutan, particularly those at the Ministry of Energy and Natural Resources, specifically the Department of Geology and Mines, for their help and support with this project. A special thanks to Phuntsho Namgyal, Tashi Phuntsho, Chabilal Dhital, Yonten Phuntsho, Nedup Wangmo, Dawa, Tshering Dorji, and N.B. Dhital for their invaluable help and support in conducting this assessment.





## Executive Summary

This report presents an assessment of Bhutan's readiness and capacity to implement the Mining Policy Framework (MPF) of the Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development (IGF). The IGF Secretariat conducted the assessment between February and August 2024. The process involved an extensive desk-based review of key domestic and international laws and policies (see Appendices) and a week-long field visit to Bhutan. During this field visit, the project team met with a broad array of stakeholders from government, civil society, academia, international organizations, and the private sector to discuss Bhutan's mining laws and policies. The assessment phase of this project concludes with this report.

The Royal Government of Bhutan has identified the mining sector as one of the five jewels of the economy, highlighting its potential to significantly drive the country's economic development (EDP, 2016). The assessment team identified the following **key strengths** in Bhutan's mining laws and policies:

- Mining has a prominent place in government plans and is underpinned by the development philosophy of Gross National Happiness.
- Sustainability principles are at the core of the country's mining governance, with culture, a central aspect of Bhutan, being effectively managed in the mining sector.
- Bhutan has a strong regulatory framework for environmental protection where forests are strictly protected, water is managed at the watershed level, and waste, air, and noise from the mining sector are regulated.

The assessment team identified the following **key gaps** in Bhutan's mining laws and policies:

- Bhutan's legal framework in the mining sector, while foundational, has become fragmented and needs to be updated.
- The clearance system is onerous due to fragmentation and bureaucratic processes.
- The monitoring of mining operations is weak due to inadequate resources.
- Although several initiatives address community concerns in mining, systems for consultations, engagement, and the distribution of benefits to communities are inadequate in the permitting process and throughout the mining life cycle.
- The administration and distribution of revenues would benefit from clearer and more modern mechanisms for revenue management and distribution systems as the mining sector grows.

A more detailed description of key strengths and gaps is presented in Table 1.

**TABLE 1.** Key strengths and gaps of each pillar of the MPF

MPF theme	Level of progress toward MPF standards	Strengths	Gaps
Laws, policies, and institutions	MEDIUM	<p>Sustainability principles are at the core of the country's mining governance.</p> <p>Bhutan's mining regulations integrate some international good practices.</p> <p>The roles and responsibilities of institutions involved in mining governance and management in Bhutan are clearly defined and publicly accessible.</p> <p>There is interministerial collaboration.</p>	<p>The Mines and Minerals Management Act (MMMA) 1995 needs to be reviewed and updated to make it consistent with existing regulations and guidelines.</p> <p>The clearance system is onerous.</p> <p>Public engagement and participation in the permitting process are inadequate.</p> <p>Geological mapping and surveying are insufficient.</p> <p>Monitoring is weak due to inadequate resources.</p>



MPF theme	Level of progress toward MPF standards	Strengths	Gaps
Financial benefits	MEDIUM	<ul style="list-style-type: none"> <li>• Bhutan’s fiscal regime is based on law, and it is clear and simple for both investors and the government administration.</li> <li>• When designing its fiscal regime, Bhutan has incorporated some aspects of its mining policy and mining law.</li> <li>• Bhutan’s fiscal regime has elements of progressivity.</li> <li>• Bhutan’s fiscal regime offers cost-based tax incentives rather than profit-based tax incentives.</li> <li>• There is a large degree of transparency around state-owned mining agencies.</li> </ul>	<ul style="list-style-type: none"> <li>• There is no evidence that the Government of Bhutan has used an economic model to assess the total economic impact of its mineral royalties, fees, Corporate Income Tax, and tax incentives applicable to the mining sector, as well as the costs associated with its other policy goals.</li> <li>• There are some empirical criteria based on which the Department of Geology and Mines establishes the minimum floor price (MFP) for the royalty calculation and the period of validity for the established MFP.</li> <li>• There is a need for stronger administrative mechanisms to monitor the value and volume of minerals produced and exported.</li> <li>• There is some evidence that Bhutan provides oversight mechanisms for the management and use of mining revenues and transparent rules regulating revenue-allocation decisions.</li> <li>• There is limited transparency around fiscal charges and revenue management mechanisms.</li> <li>• There are no measures against tax base erosion and profit shifting (BEPS) in domestic law.</li> </ul>



MPF theme	Level of progress toward MPF standards	Strengths	Gaps
Socio-economic benefits	MEDIUM	<ul style="list-style-type: none"> <li>• Mining is subject to the development philosophy of Gross National Happiness and has a prominent place in government plans.</li> <li>• Culture is a central aspect of Bhutan and is effectively managed in the mining sector.</li> <li>• There are several initiatives to better engage with communities.</li> <li>• Legislation provides for local content requirements.</li> <li>• Gender equality is promoted, and women's rights are protected.</li> <li>• Mining legislation addresses occupational health and safety.</li> </ul>	<ul style="list-style-type: none"> <li>• Compensation for resettlement would benefit from detailed regulation.</li> <li>• Communities are not systematically consulted during the life of mining projects.</li> <li>• There is a disparity in socio-economic benefits across communities.</li> <li>• There is a lack of detail in local content policies and data to enable decision making for the mining sector to expand.</li> <li>• Road and bridge infrastructure is deficient for mining activities.</li> </ul>



MPF theme	Level of progress toward MPF standards	Strengths	Gaps
Environmental management	HIGH	<ul style="list-style-type: none"> <li>• Bhutan has a strong regulatory framework for environmental protection.</li> <li>• Bhutan recently set ambient air quality and noise standards.</li> <li>• The Environment Commission recently set standards for water quality and effluent discharge.</li> <li>• Bhutan manages its water sources at a watershed level.</li> <li>• Bhutan conserves over half of its territory as protected areas.</li> <li>• Waste disposal plans are required in mining regulations.</li> <li>• Disaster Management Committees are required under law.</li> </ul>	<ul style="list-style-type: none"> <li>• Dust emissions affect mining communities.</li> <li>• Water sources are negatively impacted by mining activity.</li> <li>• The application of the mitigation hierarchy is not explicitly required under legislation.</li> <li>• Planning for disasters does not include the active participation of mining communities.</li> <li>• Local communities are not systematically consulted before and engaged during the development of environmental management plans.</li> <li>• Monitoring and enforcement are weak due to inadequate resources and personnel.</li> </ul>
Post-mining transition	MEDIUM	<ul style="list-style-type: none"> <li>• Bhutan requires Mine Restoration Plans (MRPs) in their legal framework.</li> <li>• Progressive reclamation is required under regulations and guidelines.</li> <li>• An Environmental Restoration Bond provides financial assurance for mine closure.</li> </ul>	<ul style="list-style-type: none"> <li>• The financial assurance mechanism does not consider closure costs.</li> <li>• Bhutan's Mine Restoration Guidelines are too prescriptive.</li> <li>• There is no mechanism in place to progressively reimburse mining entities for the Environmental Restoration Bond when they undertake progressive reclamation works.</li> <li>• No independent technical reviews of MRPs are required.</li> <li>• Public consultation and engagement during MRP development is not thorough.</li> <li>• The guidelines for the content of MRPs lack several sections that are common to closure plans.</li> </ul>





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## Acronyms

<b>ASM</b>	artisanal and small-scale mining
<b>B2C2</b>	Bhutan Biological Conservation Complex
<b>BEPS</b>	base erosion and profit shifting
<b>CapEx</b>	capital expenditure
<b>CIT</b>	corporate income tax
<b>CSR</b>	Corporate Social Responsibility
<b>DECC</b>	Department of Environment and Climate Change
<b>DGM</b>	Department of Geology and Mines
<b>EIA</b>	environmental impact assessment
<b>EMP</b>	Environmental Management Plan
<b>ERB</b>	Environmental Restoration Bond
<b>ESIA</b>	environmental and social impact assessment
<b>FDI</b>	foreign direct investment
<b>FMFS</b>	Final Mine Feasibility Study
<b>GDP</b>	gross domestic product
<b>GNH</b>	Gross National Happiness
<b>HDI</b>	Human Development Index
<b>IGF</b>	Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development
<b>IISD</b>	International Institute for Sustainable Development
<b>IMF</b>	International Monetary Fund
<b>MMMA</b>	Mines and Minerals Management Act 1995
<b>MFP</b>	minimum floor price
<b>MMMR</b>	Mines and Minerals Management Regulation 2022
<b>MPF</b>	Mining Policy Framework
<b>MRP</b>	Mine Restoration Plan
<b>NCWC</b>	National Commission for Women and Children
<b>NLCS</b>	National Land Commission Secretariat
<b>OHS</b>	occupational health and safety
<b>SOE</b>	state-owned enterprise
<b>SMCL</b>	State Mining Corporation Limited
<b>UNDP</b>	United Nations Development Programme



# 1.0 Introduction

Bhutan is a landlocked country in South Asia with a small non-metallic mining sector. It is composed mostly of small and medium quarries and mines, representing approximately 2.21% of the national GDP (National Statistics Bureau, 2024a). Environmental conservation is very important for the country, as its constitution provides for a minimum of 60% forest cover across its territory for all time. In fact, Bhutan's current forest cover is nearly 70%, and its protected areas cover more than 50% of the country (National Statistics Bureau, 2024a). However, to diversify its economy by increasing the mining sector's contribution to national GDP, Bhutan must first modernize its mining legislation, regulations, and guidelines and then ensure their appropriate implementation, monitoring, and enforcement.

This assessment report presents the context for the implementation of the Mining Policy Framework (MPF) in Bhutan. It also focuses on key policy and legislative strengths and gaps, using the thematic areas of the MPF as a reference. It is important to note that, due to artisanal mining being absent in Bhutan, Pillar 6 of the MPF, which covers artisanal and small-scale mining (ASM), is not assessed as part of this report.

The Secretariat of the Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development (IGF) conducted an MPF assessment in 2024 using the following methodology:

- Research: a review of laws, policies, regulations, and contracts governing Bhutan's mining sector, as well as relevant literature (February and March 2024).
- A visit to Thimphu to conduct interviews with stakeholders and relevant parties from the government, civil society, and the private sector (April 2024).
- Field visits in April 2024 to (i) Gidaphug Marble Mine, (ii) Bjemina Stone Quarry, and (iii) Chunaikhola Dolomite Mine.
- Preparation of this report (May to July 2024).
- Final assessment report (September 2024).





## 2.0 Bhutan Country Overview

### National Context

Bhutan is a small landlocked nation in South Asia. Bhutan has a population of 780,000 (International Monetary Fund [IMF], 2024). Situated in the eastern Himalayas, Bhutan is bordered by India to the south and China to the north. It connects to the Indian market via West Bengal and Assam. It is part of the South Asian Association for Regional Cooperation. Its capital is Thimphu, and its territory is divided into 20 *Dzongkhags* (districts).

**FIGURE 1.** Administrative map of Bhutan



Source: National Land Commission of Bhutan, 2024.





The country follows the philosophy of Gross National Happiness (GNH), an alternative way of measuring development. GNH prioritizes equitable and sustainable socio-economic development, good governance, environmental conservation, and the preservation and promotion of cultural heritage, as well as the spiritual roots of Vajrayana Buddhism, which has heavily influenced the national culture. The GNH heritage was pioneered by His Majesty the King Jigme Singye Wangchuck, who was the king of Bhutan from 1972 until his abdication in 2006, after which he transitioned the country into a democratic constitutional monarchy. GNH is an index used by the Bhutanese to measure the well-being of its citizens (as opposed to using the GDP).

In terms of logistics and connectivity, the country is connected regionally through highways and internally by a comprehensive road network of 18,343.47 km and 383 bridges (as per the National Statistics Bureau, 2023).

According to the UN Development Programme's (UNDP's) Human Development Index (HDI), Bhutan is classified as medium, with a rank of 125. Overall, Bhutan has demonstrated positive trends in human development, life expectancy, education, and income over the past decade. The steady improvement in the HDI score reflects the country's progress in key development areas. The rise in life expectancy and mean years of schooling indicates better health and educational outcomes. However, there is a disparity between the genders, with lower literacy and educational attainment levels for women (Kuensel, 2023). The gross national income per capita has generally increased, indicating economic growth. Although there was a setback in 2020, likely due to the impact of the COVID-19 pandemic, gross national income per capita went back up by 2022.

In general, poverty is found in districts in mountainous areas bordering India and in the central part of the country and districts bordering China. Poverty varies across *Gewogs* (towns), even within the same district (National Statistics Bureau, 2023b) and between genders. Women who lead rural households in Bhutan due to divorce or widowhood are among the most disadvantaged members of society (Asian Development Bank, 2011).

The country implements its development strategies through Five-Year Plans. The current plan, the 13th Five-Year Plan (2024–2029), focuses on transforming the Bhutanese economy by emphasizing the interconnected pillars of people, progress, and prosperity, or the “3Ps.”

Domestically, corruption remains a significant challenge for which a zero-tolerance policy is in place. The Anti-Corruption Act of Bhutan 2011 provides the legal and regulatory framework for this (Anti-Corruption Commission of Bhutan, 2016). Bhutan has also ratified the UN Convention Against Corruption and has made great progress in anti-corruption since this ratification in 2015, with a current Corruption Perceptions Index ranking of 26 (Transparency International, 2023), gaining one point from its ranking in 2015 and four points from its ranking in 2014 and maintaining a large gap in comparison with its neighbours (India is ranked at 93 and China at 76).



## Economic Context

Bhutan is considered a middle- (UNDP, 2022) or a lower-middle-income country (World Bank, 2024b) (depending on the source) with a GDP per capita of USD 3.11 billion (IMF, 2024). Bhutan's economic landscape is defined by its unique blend of traditional practices and modern industries, with hydropower and tourism standing out as the primary revenue streams. Hydropower has been a cornerstone of Bhutan's economy, generating substantial revenue through electricity exports to neighbouring countries, predominantly India. Tourism, meanwhile, leverages the country's rich cultural heritage and pristine natural landscapes, attracting a growing number of international visitors each year. Five industrial parks near the Indian border enhance market access. The workforce is young and English-speaking, and travel is competitively priced, with easy access to skilled foreign workers from neighbouring countries.

Bhutan's trade dynamics are heavily influenced by its geographic and economic relationships. Its international market access is strengthened through memberships and agreements such as the Agreement on South Asia Free Trade Area (SAFTA), the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC), the Generalized System of Preferences (GSP), and the World Customs Organization Kyoto Convention (Ministry of Industry Commerce and Employment, n.d.). It has free trade agreements with India and Bangladesh, providing duty-free access to 34 products. Approximately 80% of Bhutan's imports come from India, reflecting the close economic ties between the two countries. Thailand is another significant trading partner, accounting for about 10% of imports, particularly in consumer goods. Additionally, Japan supplies automobiles and machinery, while Bangladesh contributes textiles to Bhutan's import mix.

The country has policies that support investment. The Fiscal Incentives Act of 2017 offers tax exemptions and equal treatment for foreign direct investment (FDI), including sales tax and customs duties exemptions. Additionally, businesses can carry forward losses for 3 years. These measures collectively enhance Bhutan's economic integration and attractiveness to investors. In 2019 and 2020, the government revised its FDI policy to create a more conducive investment climate and expand investment opportunities. Key features of the new policy include allowing FDI in production and manufacturing, including mineral processing and beneficiation, with a minimum project cost of BTN 50 million (~USD 595,778) and permitting up to 74% foreign ownership. The policy also enhances access to convertible currency and introduces a single-window service with a simplified approval system.

## Environmental Context

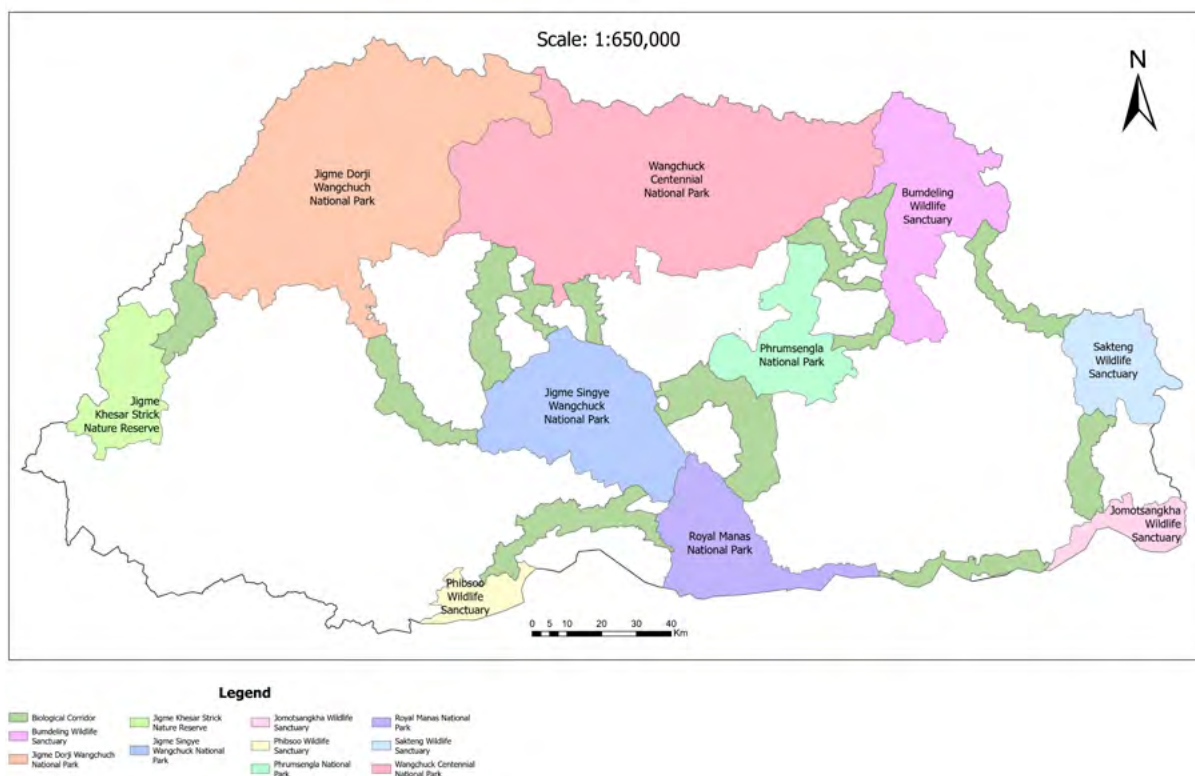
Bhutan is renowned for its commitment to environmental conservation and sustainability, deeply rooted in its cultural and spiritual values. As a testament to this commitment, Bhutan has become the world's first carbon-negative country (World Population Review, 2024). However, this achievement is also largely due to its ecological disposition: it has vast and dense forest cover (more than 70% of the country's land area) that absorbs more carbon dioxide than the nation emits. As part of its commitment, the country has a constitutional mandate to maintain at least 60% forest cover at all times (Kingdom of Bhutan, n.d., Article 5.3).

Furthermore, as part of the Eastern Himalayas, biodiversity forms a large part of Bhutan's environmental context. It hosts diverse species and ecosystems ranging from subtropical plains to alpine meadows and is home to a wide variety of flora and fauna. According to the



Bhutan Biodiversity Portal (n.d.), the flora of Bhutan records 4,523 species of seed plants in eight families of gymnosperms and 218 families of angiosperms, with more than 5,000 species expected to occur in the country. Close to 200 species of mammals are known to exist in the country, including 27 globally threatened species.

**FIGURE 2.** Protected areas of Bhutan



Source: Department of Forest and Park Services, 2023 (reprinted with permission).

In 1993, the government identified nine protected areas, which included four national parks, four wildlife sanctuaries, and one strict nature reserve. It later established biological corridors in 1999. The government's bold and innovative vision is to use these corridors as a cost-effective, reliable strategy to conserve meta-populations of wide-ranging species, promote gene flow for all species, and allow species to adapt to climate change. Originally, 12 corridors spanned a total area of 3,660 km<sup>2</sup>, linking all nine of Bhutan's protected areas. However, three of these corridors were incorporated into the Wangchuck Centennial National Park when it was created in 2008 (Bhutan Biodiversity, 2024). With the addition of Bumdeling-Sakteng biological corridors, nine biological corridors cover 60.2 km.

Bhutan's water supply is abundant, with most of its fresh water sourced from streams, springs, and wetlands, which are fed by glaciers and rainfall during the monsoon season. However, climate change-related fluctuations in temperature and rainfall have increased the risk of flash floods, glacial lake outbursts, and droughts. In fact, recent studies have revealed the threat of water sources drying up and water availability becoming an increasing challenge for communities, with the World Bank projecting above-average warming, droughts, and heat waves that will severely impact the lowlands (World Bank, 2021). In addition, a study by the Forest Department's Watershed Management Division revealed that 35% of the country's water sources are drying up (Kuensel, 2021).



Moreover, Bhutan is particularly dependent on its water sources, as a large part of its economy relies on the export of hydroelectric power. Currently, Bhutan possesses enough water to supply its population while generating and exporting hydroelectricity, but the extremely rugged terrain makes water sources difficult to access for the general population, which means there is a risk of the public increasingly losing water accessibility as scarcity grows.

## Social Context

Bhutan is one of the least populated countries in the region (UNFPA, 2024). The population is relatively young, with about 72% between the ages of 15 and 64, 22% younger than 15, and 6% above the age of 65. In Bhutan, 54% of the population lives in rural areas (World Bank, 2024a). Bhutanese society lives in relative peace. The country ranks as the 17th most peaceful country on the Global Peace Index (Institute for Economics & Peace, 2023).

Preservation and promotion of culture is one of the four pillars of GNH. Cultural heritage in Bhutan recognizes tangible and intangible assets (people, village, skills, tradition). The official religion is Buddhism, and it is practised by the majority of the population. The second major religion is Hinduism. The constitution (articles 3 and 4) highlights the importance of spiritual and cultural heritage. It declares Buddhism as the spiritual heritage of the country because it promotes “principles and values of peace, non-violence, compassion and tolerance” (Kingdom of Bhutan, n.d.). For cultural heritage, it mandates the state “to preserve, protect and promote, among others, monuments, places and objects of artistic or historic interest, dzongs, lhakhangs, goendeys, ten-sum, nyes, and language” (Kingdom of Bhutan, n.d.), among others.

The country implements its development strategies through Five-Year Plans. However, the lack of data on gender and Indigenous persons creates uncertainty as to whether the development through the 12 completed Five-Year Plans has been equitable and sustainable.

Regarding gender, the UNDP HDI places Bhutan among the countries with medium- to high-quality achievement of equality between women and men. In Bhutan, women and men are granted largely equal legal rights and status. The government established the National Commission for Women and Children (NCWC) in 2004 to lead the promotion and protection of the rights of women and children in the country. With an increasing number of responsibilities, in 2008, the NCWC was upgraded to an agency under the government (NCWC, n.d.). One of its functions is to develop gender-responsive and child-sensitive policies. In recent years, the government has also enacted relevant legislative and policy documents to promote gender equality, including the National Gender Equality Policy 2020. Among others, this policy promotes the knowledge of gender equality in Bhutanese communities, as well as within the government.



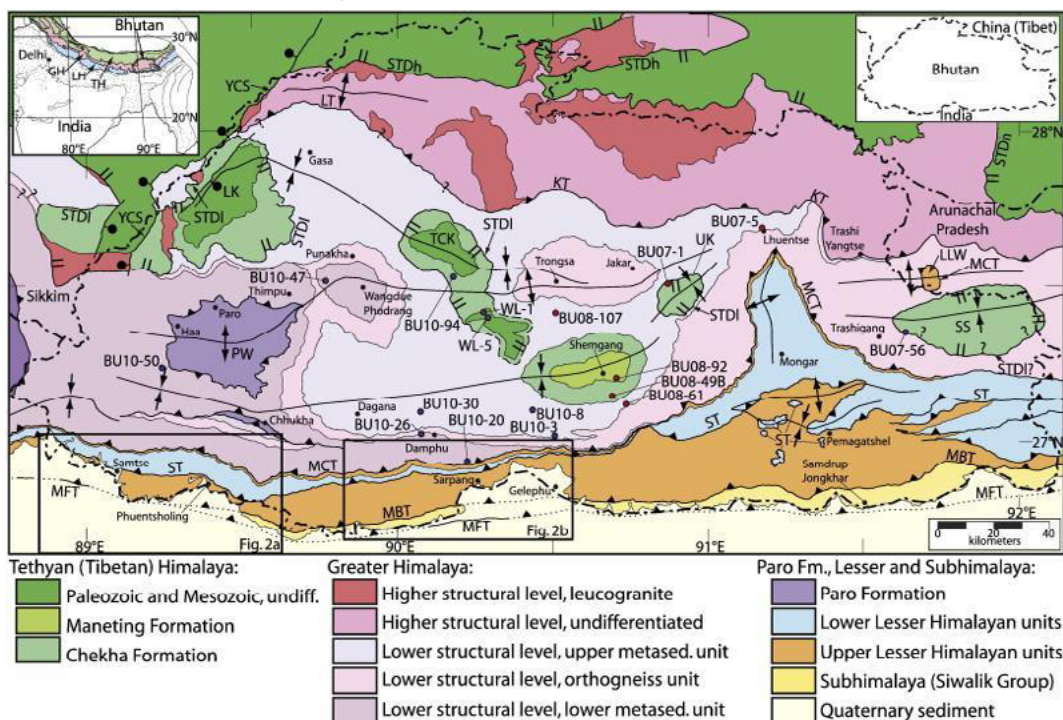


### 3.0 Bhutan's Mining Sector

The search for mineral deposits in Bhutan started in the early 1960s (1963) with the support and technical assistance of the Geological Survey of India. Subsequently, extensive mineral prospecting and geological mapping fieldwork discovered several mineral deposits worthy of commercial exploitation.

Years of extensive geological research programs have proven that Bhutan possesses a range of commercially exploitable minerals, such as dolomite, limestone, marble, gypsum and ferrosilicon-grade quartzite, talc, pockets of low-grade coal, small amounts of shale, and slate. There are also occurrences of copper, gold, lead-zinc, tungsten, and graphite deposits. Field studies have also indicated the presence of semi-precious minerals. Compared to other Himalayan regions, the Bhutan Himalaya seems to be better endowed with mineral resources.

**FIGURE 3.** Geological map of Bhutan



Source: Long et al., 2011.





Although the history of small-scale pocket mining in Bhutan dates back to the late sixties, past records show that coal, slate, and dolomite minerals were first exploited in the late seventies, followed by mining of gypsum and limestone for the manufacture of cement and carbide. Subsequently, in the early nineties, high-grade quartzite was mined for the manufacture of ferrosilicon.

However, despite significant growth in the mining sector, core activities like geological mapping and mineral exploration are still in early stages. Besides the mineral deposits identified until now, there have been no other mineral deposit findings of significant economic value.

The mineral sector contributed BTN 5,513.92 million to the country's GDP in 2023, which is roughly 2.21% of the country's GDP (National Statistics Bureau, 2024a). Mining is a significant source of formal employment and livelihoods (Ministry of Industry Commerce and Employment, n.d.). The sector provides employment to around 2,339 people, mostly Bhutanese, as per the *Second Quarterly Labour Force Survey Report 2024* (National Statistics Bureau, 2024b). The employment opportunities provided by the mining sector have impacted the livelihoods of many communities in the remote and undeveloped regions of the country. In most cases, the income of one individual supports the livelihood of an entire family.

As per the latest statistical records (National Statistical Bureau, 2023b), Bhutan hosts 89 mines and quarries, of which

- 55 extract construction materials,
- 11 are quartzite mines,
- seven are limestone mines,
- five are coal mines,
- one is a dolomite mine, and
- the remaining 10 extract other minerals.

In addition, recent data updates show that there are 117 large and medium mineral-based industries and about 225 cottage and small mineral-based industries.

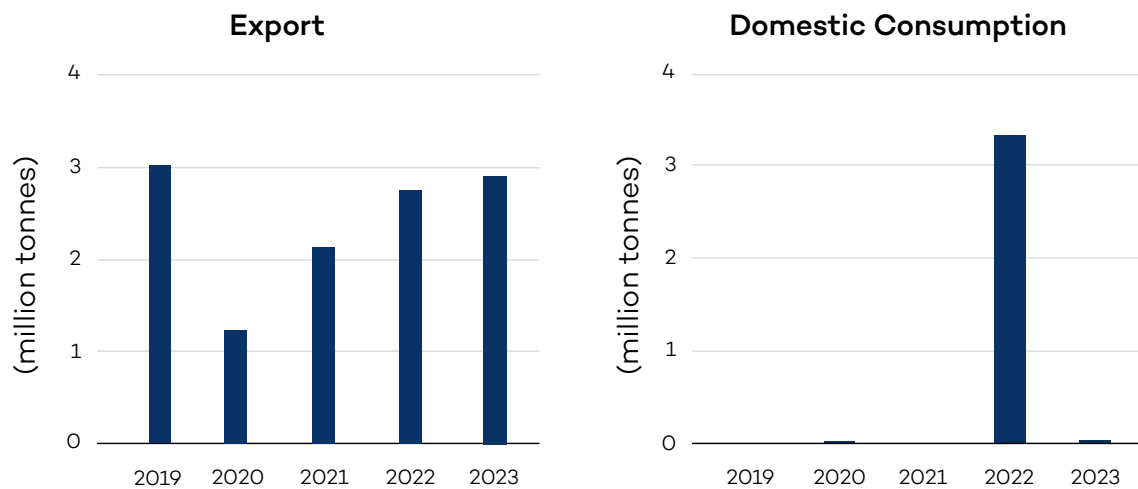
At present, dolomite, limestone (cement and chemical grade), gypsum, quartzite, coal, marble, construction materials (gneiss, low-grade quartzite, low-grade marble, etc.), and talc are being mined. With improvements in the technology for mining and metallurgical processes, including communications and other infrastructure, identified mineral deposits—such as Gongkhola copper, Genekha lead-zinc, Chelela graphite, and Bhurkhola-Dholpani tungsten deposits—may become techno-economically feasible for future mining. Detailed studies and exploration activities are already being carried out for mineral deposits, which may lead to new mineral discoveries.

Bhutan has been cautiously making efforts and taking measures to balance the mining operations by state-owned mining agencies and the private sector. State-owned mining agencies currently mine coal, dolomite, and gypsum in the country. The private sector would like to increase its involvement in the mining sector.

Dolomite is the most significant mineral resource, with extensive mining operations primarily serving the Indian market. Bhutan currently produces about 3 million tonnes of dolomite annually.



**FIGURE 4.** Dolomite production (export and domestic consumption data in tonnes)



Source: Data is drawn from Department of Geology and Mines, 2024.

The government is interested in growing its mining sector to help diversify the economy and provide new employment opportunities. Graphite, for example, is a potential growth opportunity for Bhutan. While graphite, a critical mineral, will remain state-controlled, the government is open to FDI for downstream processing and beneficiation to enhance technological capabilities.

Some graphite deposits are located in culturally or environmentally sensitive areas, adding complexity to balancing economic development with cultural and environmental preservation.

Most minerals in Bhutan are sold in raw form with minimal value addition. In 2019, the top 10 exported commodities, mostly mineral-based, accounted for over 50% of exports, with a value totalling USD 345 million. From 2017 to 2019, Bhutan exported mineral products to at least 30 countries, including 13 in Europe and Asia, three in North America, and one in Africa. In 2020, mineral product exports reached 11 countries: with USD 232.53 million in India, Bangladesh, and Nepal; USD 3.65 million in seven countries in Europe; and USD 0.55 million in one country in the Middle East (Ministry of Industry Commerce and Employment, n.d.).

## Industrial Mineral Deposits

### Dolomite

Indications from numerous superficial geological studies conducted during the initial stages of prospecting and mapping have discovered reserves of flux-grade dolomite along the southern foothills of Bhutan. As the Indian market lies close to the vast dolomite reserves, Bhutan has been engaging in to India since the late 1970s.

Over the years, the only dolomite mine has been operated by the state in a bid to enhance revenue earnings through smart marketing. In the last 3 decades, the export of dolomite to India has increased from 0.1 million tonnes in 1980 to over 3 million tonnes in 2023 (National Statistics Bureau, 2023a).



The only company currently in control of dolomite mining is the State Mining Corporation Limited (SMCL), a subsidiary of Druk Holdings & Investments. It is a state-owned company that operates the only dolomite mine at Chunaikhola, which falls under the jurisdiction of the Samtse Dzongkhag (district). The annual production targeted during the past several years is close to 3.0 million tonnes, and since the operation is totally export-oriented with very negligible internal consumption, the company has been able to achieve its target consistently (National Statistics Bureau, 2023a).

## Limestone

Bhutan also has substantial reserves of limestone that are being used for the manufacture of carbide, as well as the manufacture of Portland cement. These limestone deposits mostly adjoin the dolomite deposits. The major limestone deposits of Marung Ri and Kerung Ri of Nanglam are currently being exploited by the Nanglam-based Dungsam Cement Corporation Limited. The plant, set up about 10 years ago, has an installed capacity of 1 million tonnes of cement manufactured per year (National Statistics Bureau, 2023a).

## Quartzite

Bhutan has significant deposits of low- and high-grade quartzite, and there are numerous ferrosilicon plants set up in the industrial estate of Pasakha near the border town of Phuentsholing, which is also the economic hub of Bhutan. A few of these ferrosilicon plants have captive quartzite mines that cater to the annual raw material demand and supply other smaller ferrosilicon plants that do not have their own captive mines (Bhargava, 1995).

## Other Industrial Minerals

Gypsum, coal (sub-bituminous to bituminous), and talc are the other industrial minerals benefiting the government and local communities. The Khotakpa Gypsum Mine in Pemagatshel Dzongkhag is state-owned and currently operated by SMCL, bringing substantial revenue and taxes to the government. Coal deposits in southeast Bhutan occur



Shimamo Quartzite Mining Site. (Norbu Gyeltshen)



erratically as thin, lenticular, and irregular lenses and are mined by SMCL. Similarly, talc deposits occur as erratic lenticular pockets but provide employment and small income earnings to local communities (Bhargava, 1995).

## **Metallic Minerals**

Bhutan has known occurrences of metallic resources, such as copper, tungsten, lead-zinc, low-grade iron ore, tin, gold and graphite. Among these, copper is the most abundantly found metallic resource but has yet to be considered for economic exploitation due to the remoteness and inaccessibility of the deposits. The harsh and rugged mountain terrain of Bhutan makes it extremely challenging to develop and economically exploit the mineral deposit (Bhargava, 1995). The situation is practically the same for most of the other metallic resources.

**TABLE 2.** Mineral reserves/resources and locations in Bhutan

Mineral	Location	Dzongkhag	Reserve/resources (category) (in million tonnes)				Average grade	Nearest town/ highway	Remarks
			Proven	Probable	Possible	Inferred			
Copper	Gongkhola/Black Mountain area	Sarpang		2.24	-		1.51% of Cu	Trongsa/ Gelephu	Reserve calculated up to a depth of 120 m.
Lead/zinc	Chakula/Romegangri/ Genekha	Thimphu	3.116	0.514	-		Pb: 1.41% Zn: 6.06% Pb + Zn: 7.48%	Thimphu	Chakula is over 3,000 m in elevation.
Tungsten	Bhurkhola/Dholpani	Sarpang	-	4.26	-		0.24% of WO <sub>3</sub>	Gelephu	Both locations are within reach of the nearest highway.
Coal	Bhangtar/Deothang/ Kharung-Leshing Re/ Jagartala/Gerua- Dimala Khola/Kalapani	Samdrup Jongkhar	-	0.245	0.904		Bitumen, sub- bituminous, anthracitic	Samdrup Jongkhar	-
Graphite	Khepchishi, Chelela	Paro/Haa	6.13	39.58	-	8.03	10% to 25% non- carbonate carbon, 3% carbonate carbon, 70% to 85% ash	Haa/Paro	-





Mineral	Location	Dzongkhag	Reserve/resources (category) (in million tonnes)				Average grade	Nearest town/ highway	Remarks
			Proven	Probable	Possible	Inferred			
Iron ore	Maure	Dagana	-	2.97	-		25%–46% of Fe	Lhamoizingkha	Inferred reserves only. No detailed study has been conducted.
Dolomite	Khanabhurty, Pagli/ Gomtu, Kalesore, Dhanese, Manas, Dechling and Narphung	Samtse, Sarpang, Pema Gatshel, and Samdrup Jongkhar	51.33	-	-	15,979	28%–30% CaO & 20%–21% MgO	Samtse, Gelephu, Nanglam, Samdrup Jongkhar	99% is inferred reserve but can be used for industrial purposes.
Gypsum	Khothakpa, Cherungri, Uri, Khar, Omsi Ri	Samdrup Jongkhar	125.484	0.034	-	22.43	SO <sub>3</sub> : 37.49% Gypsum: 75.478% Anhydrite: 11.185% Impurities: 14.415%	Samdrup Jongkhar	-



Mineral	Location	Dzongkhag	Reserve/resources (category) (in million tonnes)				Average grade	Nearest town/ highway	Remarks
			Proven	Probable	Possible	Inferred			
Limestone	Pagli-Titi, Nganglam, Mirchang-Badena, Rashong, Tokaphung, Tsebar, Khanku, Rongri, Genekha, Ha Wangcha, Chilungkha	Samtse, Samdrup Jongkhar, Chukha, Trashigang, Pemagatshel, Paro, Sarpang, Thimphu, Haa	78.682	70.549	-	32.260	33%–53% CaO & 0.5%–4% MgO	-	-
Quartzite	Tintali, Pedzekha	Samste, Chukha	5.710	-	-	-	97%–98.5% SiO <sub>2</sub> , 80%–140% Al <sub>2</sub> O <sub>3</sub> , 0.10%–0.4% Fe <sub>2</sub> O <sub>3</sub>	-	-
Talc	Pa Chu-Seti Khola, Khempa, Tanuwa, Pagli-Saritar, Molabanse, Lapchekha, Sukti khola, Budheni-Tin Doban	Samtse/ Sarpang	-	-	-	0.139700	Low to high grade	-	-

Source: Bhargava, 1995.



## Key Mining Laws, Policies, and Institutions

Bhutan is a democratic constitutional monarchy with the King as Head of State and the Prime Minister as Head of Government. Until the 1950s, Bhutan operated as an absolute monarchy, with the sovereign known as the Druk Gyalpo (“Dragon King”). Throughout the latter half of the 20th century, the monarchs gradually relinquished their power. In 2008, King Jigme Khesar Namgyel Wangchuck, the fifth in a royal line established in 1907, finalized the transition of governmental authority to a popularly elected, multiparty, bicameral legislature.

Historically, the Bhutanese legal system was based on religious and temporal laws (Needup & Karim, 2023). Bhutan’s government was autocratic, lacking law codes, courts, and other common features of public administration. Significant changes started under King Jigme Dorji Wangchuck (who reigned from 1952 to 1972), who established the national assembly (Gyelyong Tshogdu) in 1953 and the Royal Advisory Council in 1965. The Council of Ministers, created in 1968, along with the Royal Advisory Council and representatives from the clergy, formed Bhutan’s cabinet (Norbu & Karim, 2024). Bhutan also operates on a system of participatory democracy. This transition was not driven by popular demand or revolutionary pressures. Instead, it stemmed from a proposal by the king, who believed that Bhutan could undergo this change voluntarily and without external pressure (Iyer, 2015), as opposed to what happens in many countries where constitutions are drafted during tumultuous times, influenced by political pressures and interests.

Bhutan’s decentralization started in 1981 with the formation of the Dzongkhag Yargay Tshogdu (District Development Committee) and expanded in 1991 with the Gewog Yargay Tshogchung (Block Development Committee) (Dhakal, 2022). Local governments play crucial roles in democratic governance, ensuring that they operate effectively and are integral to the political system.

## Key Government Institutions

### Department of Geology and Mines

Under the Ministry of Energy and Natural Resources, the Department of Geology and Mines (DGM) is the primary regulatory body in mining and mineral development in Bhutan. Mandated by the Mines and Minerals Management Act 1995 (MMMA 1995), its role is to contribute to sustainable socio-economic development in the kingdom through geoscientific studies and scientific management of mineral resources. The department’s mandate includes formulating policies, regulations, and strategies; offering technical advice; conducting geological mapping and geoscientific studies; overseeing and regulating mineral resources and mining activities; and maintaining data on these activities. The department is therefore responsible for approving mineral exploration activities, processing and issuing mining leases, approving mine and environmental management plans, monitoring compliance with mining regulations, and collecting royalties and other mineral levies. It is headed by a director and is organized into four functional divisions: the Mineral Policy & Cadastre Division, the Geological Survey Division, the Geohazards Division, and the Mining Division (Ministry of Energy and Natural Resources, n.d.).



Meeting between the IGF team and the DGM. (Ugyen Wangchuk)

## Department of Environment and Climate Change

Also mandated under the Ministry of Energy and Natural Resources, the Department of Environment and Climate Change is responsible for approving environmental impact assessment (EIA) reports and issuing environmental clearances in accordance with several legislative frameworks. The department is organized into three divisions: the Climate Change Division, Environment Assessment and Compliance Division, and Waste Management Division. It is presided over by the governing body, the Environment Commission, which is the highest decision-making and coordinating body on environmental protection, conservation, and improvement in Bhutan. Its mandate includes, among others, developing, reviewing, and revising environmental policies, laws, and standards (National Environment Commission, 2024).

## Department of Forests and Park Services

This department also falls under the Ministry of Energy and Natural Resources. It is responsible for issuing forestry clearances in accordance with the Forest and Nature Conservation Act of Bhutan 2023 and the Forest and Nature Conservation Rules & Regulations 2023. Its mission is to manage and conserve Bhutan's biological resources. It is also tasked with implementing the constitutional requirement of permanently maintaining at least 60% of Bhutan's land under forest cover (Department of Forests and Park Services, n.d.). It is responsible for regulating requirements of forest clearance for exploration of mining activities.

## The Dzongkhag Land Lease Committee and National Land Commission Secretariat

In accordance with the Land Act of Bhutan 2007 and the Land Lease Rules & Regulations 2018, the Dzongkhag Land Lease Committee and National Land Commission Secretariat (NLCS) regulate land use in Bhutan. The Dzongkhag Land Lease Committee processes leases for State Reserved Forests in mining to be approved by the NLCS, executes lease deeds, and collects surface rents. The NLCS is charged with ensuring secure land tenure, facilitating



reliable access to land information, and conducting nationwide land-use zoning. This work includes mapping and managing industrial land use, where mine sites are categorized. The NLCS also facilitates land market operations and coordinates with the DGM to integrate mining cadastre data within a national geographic information system (GIS). The Land Act authorizes the DGM to conduct exploration and inform the NLCS.

## **Department of Local Governance and Disaster Management**

This department, structured into four divisions, aims to strengthen local governments through legislative work, stakeholder sensitization, and training sessions. Part of the work focuses on community engagement and social accountability; other work enhances disaster readiness and reviews disaster management plans, educating the public on safety measures, and monitors the implementation of disaster risk reduction activities (Department of Local Governance and Disaster Management, n.d.).

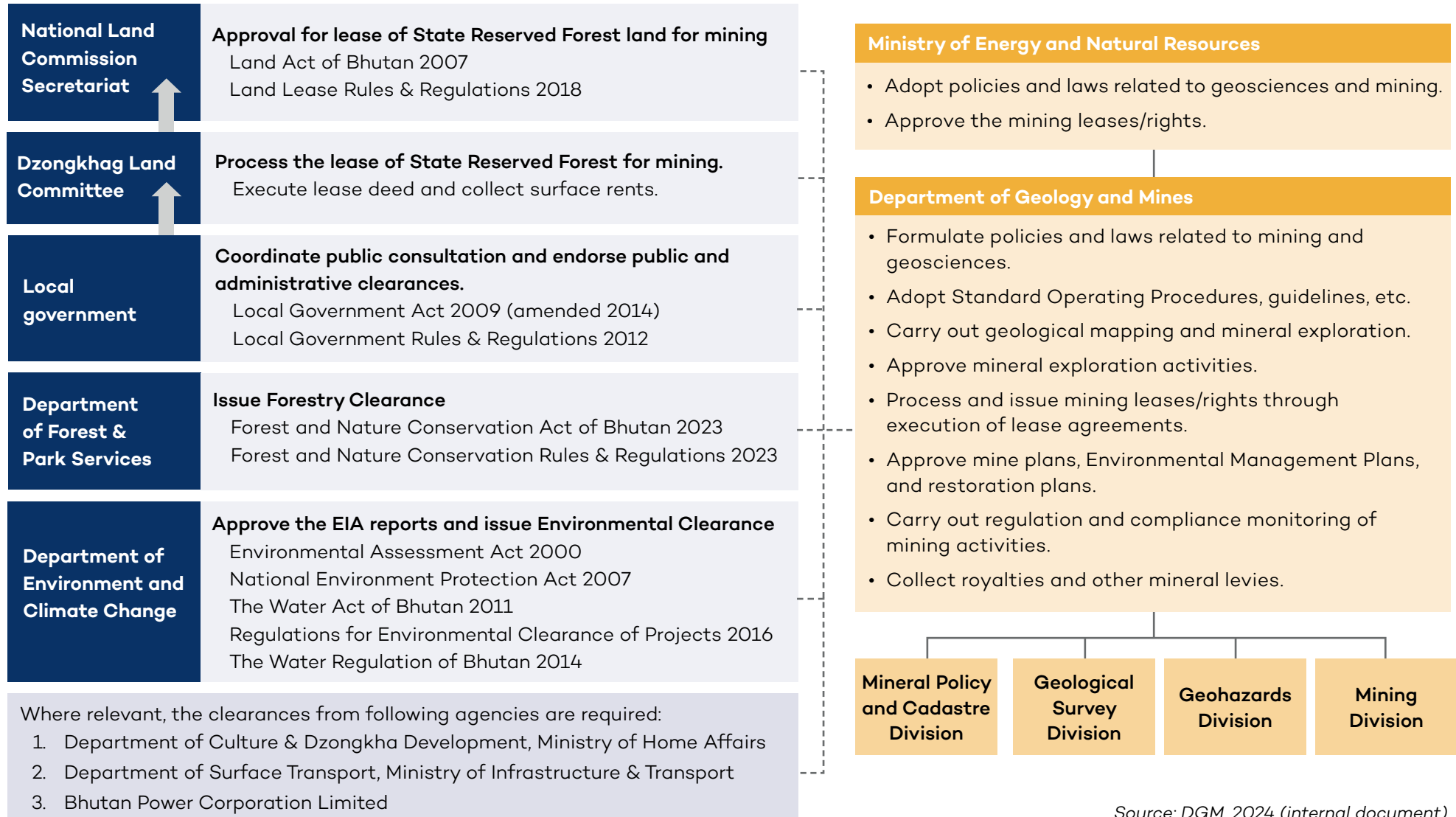
## **Other Relevant Agencies**

In addition to the already listed institutions with core roles in mining regulations, others that need to be either consulted or that give clearance when required include (i) the Department of Culture & Dzongkha Development (Ministry of Home Affairs), which aims to preserve and promote Bhutan's cultural heritage and integrate it into national development; (ii) the Department of Surface Transport (Ministry of Infrastructure & Transport), whose Design and Geo-Tech divisions collaborate with the DGM on feasibility studies (Ministry of Infrastructure and Transport, 2016); and (iii) Bhutan Power Corporation Limited (BPC), which focuses on efficient electricity supply services and supports the country's power sector development (Bhutan Power Corporation Limited, 2024).





**FIGURE 5.** Institutional structure and related regulations for the mining sector



Source: DGM, 2024 (internal document).



## Mining Legislation

The Government of Bhutan has identified the mining sector as one of the five jewels of the economy, highlighting its potential to significantly drive the country's economic development (Royal Government of Bhutan, 2016). The government recognized the mineral sector due to its potential as a base for industrialization and economic diversification. Despite this, it also recognized that the sector remains underdeveloped and faces numerous contemporary challenges, such as promoting modern mining, community development and participation, environmental management, and sustainable mining practices.

To address these issues, the government initiated several reforms, starting with the approval of the Mineral Development Policy in May 2017. The Mineral Development Policy provides a strategic roadmap to attract investment while ensuring good governance and transparency while addressing the sector's contemporary challenges. As part of implementing these policy directives, the government has begun revising its mining laws.<sup>1</sup> The Mines and Minerals Bill 2020, a revision of the MMMA 1995, was submitted to parliament in 2020 but not passed into law<sup>2</sup> due to disagreement between the two houses of parliament on how to update the MMMA 1995.<sup>3</sup>

Several rules, regulations, and guidelines currently regulate mining legislation in detail. The most important legislation and regulations applicable to mining are listed below:

- **The Constitution of Bhutan:** Bhutan's constitution, the country's supreme law, mandates that mineral resources are vested in and are properties of the state, and as a consequence, the state must also regulate it by law (Section 12, Article 1). Natural resources can be used "to ensure intergenerational equity and reaffirm the sovereign rights of the State over its own biological resources" (Section 4, Article 5). The constitution also designates every citizen a guardian of the environment, mandating protecting nature, its rich biodiversity, and preventing pollution as fundamental duties for each Bhutanese citizen. The government itself is tasked with actively improving the environment and safeguarding Bhutan's unique wildlife. Notably, the constitution mandates that a minimum of 60% of the country remain forested, ensuring a significant portion of Bhutan stays protected for future generations.
- **MMMA, 1995:** This act is the primary legislation governing mineral exploration, mining, and related activities in Bhutan. It vests ownership of all mineral resources in the state, outlines the procedures for obtaining prospecting, exploration, and mining licences, and provides for rights and obligations of mining licence owners throughout the life of the project.
- **The Mines and Minerals Management Regulations, 2022 (MMMR):** These regulations provide more detailed information on the application process for prospecting, exploration and mining licences, and the rights and obligations of licence holders. They also establish environmental and safety standards for mining operations.
- **Surface Collection Rules and Regulations, 2024:** These rules regulate and manage surface collection and dredging of stones, boulders, and sand from land surface of stones, and riverbeds to facilitate the sustainable sourcing of construction materials

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<sup>1</sup> MPF Assessment Request Letter submitted by the Royal Government of Bhutan (unpublished).

<sup>2</sup> Kick off meeting notes (unpublished).

<sup>3</sup> Meeting with Secretary of MOENR notes (unpublished).



for both rural and commercial purposes and to streamline procedures for enhanced efficiency and transparency.

- Mineral Exploration Guidelines, 2023: These guidelines provide details on requirements, procedures, specifications, and standards for mineral exploration works in Bhutan, including guidelines for obtaining exploration permits, the rights and obligations of permit holders, and monitoring of exploration works.
- Guidelines for Leasing Mines and Quarries, 2022: These guidelines streamline the leasing process for mines and quarries and bring clarity to the application processes, standards, rights, and obligations of the applicants. They also delineate the role of the different stakeholders involved in the leasing processes.
- Guidelines for Short-Term Quarries, 2022: These guidelines regulate extracting construction materials for specific projects. They also regulate extracting construction materials for specific projects with the requirements and procedures for obtaining permits, ensuring safety standards, and implementing measures to mitigate environmental damages.

## Environmental Laws

The main environmental legislation applicable to mining:

- Environmental Assessment Act of Bhutan, 2000: This act outlines procedures for evaluating the environmental impacts of strategic plans, policies, programs, and projects, as well as for identifying measures to mitigate negative effects and enhance environmental benefits.
- National Environment Protection Act of Bhutan, 2007: This act establishes a robust framework for environmental conservation and protection through the Environment Commission or its successors, designates responsible authorities, and forms advisory committees to independently oversee and promote sustainable development in a fair and balanced way.
- Waste Prevention and Management Act of Bhutan, 2009: The act looks to protect and sustain human health through protecting the environment by reducing waste generation at the source; promoting waste segregation, reuse, and recycling; motivating waste disposal in an environmentally sound manner; and enhancing effective functioning and coordination among implementing agencies.
- Water Act of Bhutan, 2011: This act's purpose is to establish suitable institutions to ensure that the water resources of Bhutan are protected, conserved and managed in an economically efficient, socially equitable, and environmentally sustainable manner.
- Regulation for Environmental Clearance of Projects, 2016: This regulation defines responsibilities and procedures for the implementation of the Environmental Assessment Act, 2000, concerning environmental assessment processes.
- Climate Change Policy, 2020: The goals of this policy are to offer strategic direction to maintain Bhutan's carbon neutrality and safeguard the well-being of its people by adapting to climate change in a timely and effective way.
- Mines Restoration Guidelines, 2021: These provide guidance for the preparation of the Mine Restoration Plan (MRP), specify restoration procedures and requirements, assist



Trucks in Gomtu Dolomite Mining Site. (Norbu Gyeltshen)

in compliance monitoring and reporting requirements, and deliver clear timelines for restoration and mine closure.

- Forest and Nature Conservation Act, 2023 and related regulations: The object of this act is to protect, conserve, and enhance the environment and forests of Bhutan. This is particularly relevant to mining, an activity that tends to have a high impact on forests and nature.

## Tax Laws

Tax legislation applicable to mining:

- Income Tax Act of the Kingdom of Bhutan, 2001: This act establishes rules governing Corporate Income Tax, Business Income Tax, and Personal Income Tax, including general provisions related to tax administration and the settlement of disputes and appeals.
- Fiscal Incentives Act of Bhutan, 2021: This act has rules governing direct incentives; indirect tax incentives, including sales tax and customs duty exemptions to businesses in high-priority sectors such as mining, tax exemptions, and concessionary tax rates for approved businesses in high-priority sectors; and investment allowances. The objective of the act is to stimulate economic growth, foster private sector development, and generate employment.
- Customs Duty Act of Bhutan, 2021: This act revises the customs duty for goods classified in the Bhutan Trade Classification.
- Goods and Services Act of Bhutan, 2020: This act establishes rules around taxes that will be paid in relation to the goods and services tax, including its valuation and application, cases for exemption and zero-rating, input tax credits, and refunds. The objectives of the act were to modernize the taxation system to facilitate the development of a vibrant economy and to broaden the taxation base to raise



adequate internal revenue to finance developmental plans and programs for achieving the goals of self-sufficiency and GNH.

- Revised Taxes and Levies Act of Bhutan, 2016: This act revises different taxes and levies, including the revision of the Personal Income Tax, Sales Tax and Customs Duty, and the revision of the Royalty on Minerals and Mineral Rent, as well as other applicable regulations.

Other regulations applicable to mining:

- Local Government Act of Bhutan, 2009 and regulations: The act establishes local governments in each of the 20 *Dzongkhags*, overseen by the Ministry of Home Affairs. The act details the roles and responsibilities of local government members, prioritizing transparency and public participation through open meetings and information disclosure. It ensures local governance aligns with national policies while addressing specific community needs and fostering grassroots development.
- Labour and Employment Act of Bhutan 2007 and related regulation on Occupational Health and Safety (OHS): This act outlines all the requirements of OHS for labour in Bhutan, including mining. Regulation on Occupational Health, Safety and Welfare, 2022 provides standards for the use of explosives and blasting. Working conditions are further regulated by the Regulations on Working Conditions 2022. Specific mining OHS requirements fall under the MMMA 1995 and MMR 2022.
- Disaster Management Act of Bhutan, 2013: The purpose of this act is to establish and enhance institutional capacity for disaster management, integrate disaster risk reduction into broader frameworks, and promote a coordinated approach to disaster management with a focus on community involvement.

## International Commitments

Bhutan has engaged with the international community mostly on environmental issues. The country's environmental protection and conservation commitments are evidenced through the ratification of conventions focused on biodiversity (Convention on Biological Diversity), climate change (United Nations Framework Convention on Climate Change; Paris Agreement), and cultural heritage (World Heritage Convention). Additionally, Bhutan demonstrated its commitment to responsible management of hazardous waste by ratifying the Basel Convention.

On human rights, Bhutan has prioritized gender equality (Convention on the Elimination of All Forms of Discrimination Against Women), child rights (Convention on the Rights of the Child), and protection against racial discrimination (Committee on the Elimination of Racial Discrimination).

The signed and ratified international agreements and commitments relevant to the mining sector include those listed in Table 3.



**TABLE 3.** International agreements and commitments relevant to the mining sector

Document	Ratification date
International Convention on the Elimination of All Forms of Discrimination Against Women	18/12/1979
Convention on the Rights of the Child	20/11/1989
Ramsar Convention on Wetlands	07/09/2012
United Nations Framework Convention on Climate Change	09/05/1992
Convention on Biological Diversity	05/06/1992
Convention concerning the Protection of the World Cultural and Natural Heritage	16/11/1972
United Nations Convention to Combat Desertification	14/10/1994 Accession
Paris Agreement	12/12/2015
Basel Convention on the Control of Transboundary Movements of Hazardous Wastes	26/08/2002

Source: Authors.



## 4.0 Assessment: Bhutan and the MPF

The MPF assessment is organized according to the following five themes of the MPF:



Law, Policies, and Institutions



Environmental Management



Financial Benefits



Post-Mining Transition



Socio-Economic Benefits

Each of the following subsections offers a short summary of the theme, the key legislation and policies applicable to the theme, and the strengths (where implementation is advanced) and gaps (where implementation needs more progress) within each theme.

### Laws, Policies, and Institutions

The first thematic area of the MPF focuses on national mining laws, policies, institutions, and geological information. It encourages a mature, modern legislative regime with clear lines of responsibility and accountability and highlights the types of laws and policies that serve as a foundation for good governance and sustainable development. The MPF standards featured in this thematic area fall into the following categories:

- generation and access to geological information
- institutional frameworks and capacities
- mining policies, codes, agreements, and standards
- permitting and licensing process

### Key Laws and Policies

- The Constitution of the Kingdom of Bhutan
- Mines and Minerals Management Act, 1995 (MMA)
- Mines and Minerals Management Regulations, 2022 (MMMR)
- Surface Collection Rules and Regulations, 2024
- Local Government Act of 2009 and regulations



- Environmental Assessment Act of Bhutan, 2000
- National Environment Protection Act of Bhutan, 2007
- Land Act of Bhutan, 2007
- Forest and Nature Conservation Act of Bhutan, 2023
- Revised Taxes and Levies Act of Bhutan, 2016
- Waste Prevention and Management Act of Bhutan, 2009
- Regulation for Environmental Clearance of Projects, 2016
- Forest and Nature Conservation Rules and Regulation, 2023
- Waste Prevention and Management Regulation, 2012
- Mineral Exploration Guideline, 2023
- Mines Restoration Guidelines, 2021
- Guidelines for Leasing of Mines and Quarries, 2022
- Guidelines for Short-Term Quarries, 2022
- Guidelines for Surface Collections of Minerals, 2020

## The Permitting Process

The government holds exclusive ownership rights over all minerals, regardless of whether they are found on private or government land. The leasing system in Bhutan involves a rigorous, multi-step process by the DGM and needs clearances from various government agencies. The MMMA of 1995 and the MMR of 2022 are the main instruments governing the leasing system. These instruments are completed by guidelines adopted by the DGM, including the Mineral Exploration Guidelines 2023, Guidelines for Leasing of Mines and Quarries 2022, Guidelines for Short-Term Quarries 2022, Guidelines for Surface Collection of Minerals 2020, and Surface Collection Rules and Regulations 2024.

The process begins with an application to the DGM. Eligibility criteria stipulate that mining activities are reserved for Bhutanese citizens, registered companies in Bhutan, or proprietors of licensed firms (Guidelines for Leasing of Mines and Quarries 2022). This ensures that mining operations are conducted by entities with a deep understanding of Bhutan's culture and a vested interest in the sustainable development of Bhutan's mining sector.

To obtain a mining lease, a comprehensive mine feasibility study must be conducted before a mining lease can be approved. This study must include a final mineral deposit assessment report that thoroughly covers technical, financial, environmental, and social impact analyses (Article 22, MMMA). **A Pre-Feasibility Study (PFS)** is to be submitted within two months of the application (Guidelines 2022, section 3.2.3). **The Final Mine Feasibility Study (FMFS)** is required to incorporate three key components: a Mine Plan, an Environmental Management Plan, and an MRP (MMMA, 1995, Article 22).

The **Mine Plan** outlines the operational aspects of the mining project, including details on the proposed extraction methods, production schedules, equipment to be used, and overall management strategies for the mining operations.

The **Environmental Management Plan (EMP)** addresses environmental considerations and outlines impact mitigation strategies (MMMA, 1995, Article 23). It must adhere to a format determined by the regulatory division and include a detailed site-specific EIA. This assessment involves baseline sampling and analysis of environmental parameters such as



soil quality, water quality, air quality, noise levels, and biodiversity. Additionally, it examines the potential effects of mining activities on human habitation, land use, water resources, and biodiversity. The EMP aims to identify potential environmental risks and impacts and propose mitigation measures and management plans to address them.

The **MRP** focuses on post-mining rehabilitation and restoration, and it ensures that the land used for mining activities is returned to a condition that is safe, stable, and suitable for future use, whether for ecological restoration or alternative land uses. The detailed framework is provided in the Mine Restoration Guidelines 2021 (Refer to Pillar 6 of the report for further details). There is a slight incoherence in the timeline between the MMMA and the Mine Restoration guidelines. An MRP is required with the FMFS, but another plan is also required 2.5 years before the mining lease expires. Considering mining leases are usually granted for 5 years, this means the MRP is effectively updated every 5 years. However, it is important to use terms such as “preliminary plan” while referring to the prescription in the MMMA, “plan updates” when referring to periodic 5-year updates of the plan (for every lease renewal), and “final plan” for the definitive plan to be submitted by mining entities prior to the commencement of closure activities. This means that the legal framework does not explicitly provide for periodic updates of MRPs or the associated financial assurance.

The DGM mandates that applicants prepare and submit an FMFS report and the **Terms of Reference** for the **EIA** of the proposed mine or quarry (Guidelines for Leasing of Mines and Quarries, 2022, Section 3.2.8.2). The applicant must submit an application for environmental clearance along with the EIA and FMFS reports for new proposals or 6 months prior to the expiration of the previous environmental clearance for an operating mine.

## Sectoral Clearance System and Acquisition

Several clearances might be required as part of the leasing process, depending on the type of mineral, its location, and the types of activities required for its exploitation. An environmental clearance from the Department of Environment and Climate Change (DECC) and a Land Lease Certificate from the NLCS (Land Act of Bhutan 2007 and Land Lease Rules & Regulations 2018) are the mandatory clearances for most mining leases or permits.

Mining entities in Bhutan are mandated to obtain and present social clearance from local communities as part of their mining lease application process. The clearances are managed by the local government authorities through the *Dzongkhag* administration. The *Dzongkhag* is therefore in charge of coordination of community consultation and enforcement of the Local Government Act 2009 (amended 2014) and Local Government Rules & Regulations 2012.

A forestry clearance might be required from the Department of Forest & Park Services (Forest and Nature Conservation Act of Bhutan 2023 and the Forest and Nature Conservation Rules & Regulations 2023). Mining entities might be required to obtain additional clearance from other departments, such as the Department of Culture & Dzongkha Development, the Department of Surface Transport, and BPC Limited, when relevant.

The Guidelines for Short-Term Quarries provide for a permitting process that derogates from general rules applicable to permitting in the mining sector, following a rationale of streamlining and speeding up the permitting process for such quarries. Consequently, local procurement requirements, impact monitoring, and socio-economic plans may not be sufficiently emphasized. It is unclear to what extent the guidelines derogate from the MMMA 1995 and MMR 2022 in these respects.

**TABLE 4.** Bhutan Permitting and Clearance System

Permit/ Lease type	Description	Eligibility	Term	Community consultation	Environmental assessment requirements	Clearances
Exploration Permit	Grants the right to prospect and explore for potential mineral deposits using advanced techniques beyond basic surface prospecting. Both prospecting and exploration are subsumed under the permit.	The applicant shall be a Bhutanese citizen, proprietor of a licensed firm or a company (MMMR, 2022, Section 11 Mineral Exploration Guidelines, 2023, Section 18).	3 years	Not formally required but encouraged for transparency.		Landowner consent for private land. Additional clearances depend on specific exploration activities (e.g., use of explosives).





Permit/ Lease type	Description	Eligibility	Term	Community consultation	Environmental assessment requirements	Clearances
Mining Lease	Grants the right to commercially extract specific minerals from a defined area.	Applicant to be Bhutanese citizens and companies. Requires a successful exploration permit demonstrating mineral presence. Maximum of 2 leases at any given point of time (MMMR, 2022, Section 24; 2.3 Guidelines for Leasing of Mines and Quarries, 2022).	15 years maximum	Not formally required in the permitting process in the MMMA but is a requisite under the Mines Restoration Guideline 2021.  Public clearance is required for land lease, forestry clearance, and environmental clearance as per Section 213 of the Local Government Act 2009 and its Regulations, and Regulations for Environmental Clearance of Projects (RECOP) 2016	Mandatory EIA and environmental clearance.	Land acquisition or permission for use of public or private land. Additional clearances based on specific mining operations (e.g., water use permits, blasting permits, forestry permits).
Quarrying Lease	Grants the right to extract building materials (stone, etc.) from a defined area.	Open to Bhutanese citizens, firms, and companies. Limitations on number of leases per entity may apply. (MMMR, 2022, Section 33; 2.4 Guidelines for Leasing of Mines and Quarries 2022).	Expected economic life or 15 years maximum	Not formally required in the permitting process in the MMMA, but requisite under Mines Restoration Guideline 2021, MMMR 2022 (Chapter 11). Public clearance is required for land lease and environmental clearance.	EIA and environmental clearance required based on proposed quarrying methods and location.	Land acquisition or permission for use of public or private land.



Permit/ Lease type	Description	Eligibility	Term	Community consultation	Environmental assessment requirements	Clearances
Surface Collection Permit	Grants the right to collect building materials (stone, sand, etc.) and minerals from a defined area.	Open to Bhutanese citizens, firms, and companies. (Limitations on the number of collection permits per entity may apply Section 33 of MMR 2022, Section 2.4 of Guidelines for Leasing of Mines and Quarries 2022, and Section 35 of the Surface Collection Rules and Regulations 2024).	1 year for minerals; up to 5 years for sand, stone, and boulders	Not formally required in the permitting process in the MMMA 1995, but public consultation is required for issuance of environmental clearance, as per RECOP 2016.	Only Initial Environmental Examination required, and environmental clearance required.	Forestry clearance required.

Source: Compiled by the authors.



## Strengths

**Sustainability principles are at the core of the country's mining governance.** The country prioritizes sustainable development over pure economic gains. The constitution underscores the importance of environmental conservation and the utilization of natural resources to ensure intergenerational equity and the equitable treatment of all *Dzongkhags* through sustainable practices and policies (Government of Bhutan, n.d., Articles 5, 9, 25). The preamble of the MMMA stresses the need for mineral resources development in a manner that is compatible with the social and economic policies of the government and within the framework of sustainable development, protection of the environment, and preservation of the kingdom's religious and cultural heritage. The involvement of multiple departments in the permitting process ensures a comprehensive review, prioritizing the preservation of nature, optimizing benefits for communities, protecting cultural values, and upholding constitutional principles (the Department of Forests and Park Services protects forests; the *Dzongkhag* administration protects sacred sites, etc.). This approach can prevent irresponsible mining practices and allow it to attract investment from responsible mining entities.

**Bhutan mining regulations integrate some international good practices:** While Bhutan's mining sector is predominantly small to medium scale, its permitting system imposes regulations with high standards often associated with large-scale operations. This approach aims to ensure environmental and social responsibility throughout a mine's life cycle. For example, mining lessees are required to submit an EIA and obtain a social clearance from communities. These processes entail an analysis of the existing social and environmental conditions and potential risks and impacts of mining activities, along with proposed mitigation measures and management plans.

The regulations also require addressing potential social impacts like cultural heritage preservation, community health and safety, resettlement considerations, and economic displacement.

Additionally, mining entities must identify opportunities and propose programs within their permit submissions that promote sustainable, equitable, and inclusive benefits throughout the mine's operation and beyond through a mandated corporate social responsibility (CSR) program (MMMR, 2022, Chapter 11). Through the CSR requirements, mining entities must develop special programs to support directly affected communities and procure locally available goods and services while prioritizing local employment and skills development. These programs are negotiated through formal agreements with local communities detailing community development projects and their implementation schedules.

Furthermore, mine closure plans are mandatory, including the provision of a restoration bond. Permits are renewed only after satisfactory evaluation of permit conditions.

However, despite the commendable comprehensiveness of these regulations, challenges remain: the permitting process does not always function in a timely, transparent, non-arbitrary, and consistent manner. Communities and mining entities lack clear guidelines for community consultation, leaving the effectiveness or the results of the CSR initiatives dependent on the strength and organization of community leaders.

**The roles and responsibilities of institutions involved in mining governance and management in Bhutan are clearly defined and publicly accessible.** This transparency fosters accountability



within the mining sector by ensuring that each entity's duties are well documented and understood by the public (for more details, see Section 3.0 Key Government Institutions).

**There is inter-ministerial collaboration.** At the institutional level, the DGM engages with several ministerial departments to enhance the operational management of permit systems and establish a collaborative platform. This system has significantly improved information sharing and transparency between ministries and enhanced service delivery efficiency. For instance, regular consultations have been established with the NLCS; DECC; Department of Labour, Employment and Industry; Department of Forests and Park Services; Department of Law and Order; and Department of Surface Transport. However, additional collaboration between government agencies responsible for implementing the fiscal regime is needed. Establishing formal channels for exchanging information on changes in mining licences and areas of operation could strengthen this coordination.

Additionally, the DGM has collaborated with public education institutions to establish partnerships that have facilitated the recruitment of required professionals for the DGM. Moreover, to address the shortage of technical training institutions, the DGM has taken the initiative to train specialized agents (DGM and private) to meet the needs of the mining sector.

## Gaps

**The MMMA, 1995 needs to be reviewed and updated to make it consistent with existing regulations and guidelines.** Bhutan's primary mining legislation, the MMMA, 1995, along with its subsequent regulations, has provided the framework for managing the country's mineral resources for nearly 3 decades. While the government has tried to modernize its mining legal framework through regulations and guidelines in recent years, there are inconsistencies between the 1995 act and the various regulations and guidelines that have been developed over the years. These inconsistencies can lead to confusion and inefficiencies in the permitting process, complicating compliance for mining companies and oversight by regulatory bodies.

The MMR 2022, Surface Collection Rules and Regulations 2024, and various guidelines—such as the Mineral Exploration Guidelines 2023, Guidelines for Leasing of Mines and Quarries 2022, Guidelines for Short-Term Quarries 2022, the Mine Restoration Guideline 2021, and Guidelines for Surface Collection of Minerals 2020—have been introduced, which creates a need to consolidate these fragmented regulations into a coherent framework.

**The clearance system is onerous.** The licensing process in Bhutan requires separate clearances from multiple agencies. The clearance processes operate independently, with limited communication and information sharing between agencies. This fragmentation increases bureaucratic processes and increases the turnaround time. Consequently, the permitting system becomes lengthier and less efficient. Additionally, community consultations are often ineffective and fragmented, as each clearance requires separate engagement processes. This disjointed approach prevents meaningful and comprehensive community input, which is important to maximize the benefits of mining in the communities. Further, the results of the EIA are not shared with communities during the public/social clearance process.

**Public engagement and participation in the permitting process is inadequate.** The current legal framework for mining leases in Bhutan lacks a specific provision for mandatory community consultation during the permitting process. Section 213 of the Local Government Act (2009) mandates that “all national agencies shall conduct periodic consultations with a



Local Government before any project or program is implemented in the jurisdiction of such Local Government.” This is evident in both the MMMA of 1995 and its subsequent regulations, the MMR of 2022. However, the Mines Restoration Guideline of 2021 partially addresses this gap. It mandates mining entities to consult with affected communities to identify desired post-mining land use before restoration planning begins (Chapter 2, Section 5). This highlights a discrepancy. While the Restoration Guideline encourages consultation, it falls outside the permitting process.

In addition, The Guidelines for Short-Term Quarries 2022 provide for a permitting process that deviates from general rules applicable to permitting in the mining sector, following a rationale of streamlining and speeding up the permitting process for such quarries. Permits are typically for parameters under 10 acres and a maximum of 5 years or the project period, whichever is earlier. While the guidelines incorporate the MMMA of 1995 and the MMR of 2022 by reference, it may be useful to clarify to what extent they deviate from them in these respects. For instance, the guidelines do not provide for local procurement or for impact monitoring, reporting, and management with specific regard to local communities; they also do not provide for a regular update of socio-economic plans.

The *Dzongkhags* and *Gewogs* are in charge of coordinating community consultation and enforcement of the Local Government Act 2009 (amended 2014) and Local Government Rules & Regulations 2012, primarily for land leases. However, the same public consultation process is not well connected to the requirements of the environmental clearances. As a result, the communities are deprived of essential information to be consulted on the impacts and mitigation measures of mining operations. This process is also mandatory, even if mining operations are not impacting the communities, creating unnecessary delays in clearances. Furthermore, there is no clarity on the definition of impacted communities, specifically in terms of proximity or distances of the proposed mining activities.

**Geological mapping and surveying are insufficient.** In the 2016 Economic Development Policy document, only 40% of the country was mapped and prospected at a 1:50,000 scale. Geological data generation has improved since then, and as of 2023, approximately 59% of the country has undergone geological mapping and prospecting at this scale (DGM, 2023), but much more is needed. Transitioning to a 1:25,000 scale would provide more precise information on geological formations, structures, and mineral deposits, essential for a thorough assessment of the country’s mineral potential. Given the country’s goal to increase the contribution of mining to the economy, the generation of geological data is essential. This detailed data is crucial for attracting investments and enhancing the management and development of resources. It would facilitate better land use and infrastructure planning, as well as inform strategic decisions in the mining sector.

**Monitoring is weak due to inadequate resources.** Monitoring of mining operations is mostly delegated to regional offices. These offices are insufficiently resourced. Technical capacities are lacking to monitor the diverse and complex number of issues that mining operations encompass. Additionally, equipment and financial resources are needed for effective inspections of mining operations.





Meeting at Gidaphug Marble Mine. (Ugyen Wangchuk)

## Financial Benefits

The MPF's second thematic area focuses on the optimization of financial benefits through taxes and royalties derived from exploration through to mine closure in a way that reflects the value of mineral resources to society and can be used in support of the sustainable development of the nation. The MPF standards featured in this thematic area fall into the following categories:

- fiscal regime design
- fiscal regime administration
- management and distribution of financial benefits
- fiscal transparency

## Key Laws and Policies

- Income Tax Act of the Kingdom of Bhutan, 2001
- Fiscal Incentives Act of Bhutan, 2021
- Rules on the Fiscal Incentives Act of Bhutan, 2021
- Customs Duty Act of Bhutan, 2021
- Goods and Services Act of Bhutan, 2020
- Revised Taxes and Levies Act of Bhutan, 2016
- MMR, 2022
- MMMA, 1995



## Taxation, Royalties, and Other Revenue Sources

Bhutan has been receiving revenues from its mining sector, mainly non-metallic projects, through its state-owned mining agencies.<sup>4</sup> The direct allocation of proven mineral reserves or leasing of mines to companies has only been possible since the enactment of the MMR 2022 and under the condition of enhancing domestic processing within the country (Chapter 28). This is the reason why Bhutan does not have a set of tools that determine how the revenues from mining projects are shared between the government and companies<sup>5</sup> apart from two tax incentives granted to mining to “stimulate economic growth, foster private sector development and generate employment”<sup>6</sup>: an investment allowance and a sales tax and customs duty exemption on the import of machinery and equipment.

Table 5 describes the main tax instruments applicable to all industries, including those applicable to mining where it exists, as well as relevant fiscal incentives.

**TABLE 5.** Bhutan’s fiscal regime

Instrument	Description	Source
Corporate income tax (CIT)	<p>The rate of income tax for companies under full tax liability shall be 30% on net profits after deducting allowable expenses and depreciation. Losses can be carried forward for 3 years.</p> <p>Non-residents in Bhutan receiving income sourced in Bhutan pay taxes on a gross basis, including</p> <ul style="list-style-type: none"> <li>• Income from interest and royalty at the rate of 5% and</li> <li>• Income from dividends at the rate of 10%.</li> <li>• 3:1 debt-to-equity ratio applies.</li> </ul> <p>Bhutan does not have unilateral provisions to avoid double taxation. It has signed tax treaties with only two countries, India and Bangladesh, both of which have methods to avoid double taxation.</p>	Chapters 3, 4 and 9 of the Income Tax Act, and General Provisions, Chapter 2

<sup>4</sup> The ministry will allocate proven mineral reserves directly to state-owned mining agencies, considering factors such as their broader economic benefits, high export potential in raw form, ability to generate significant revenue, capacity to ensure a reliable and affordable supply of minerals within the country, and the sustainable development of mineral resources (MMMR, 2022, Article 27, Chapter 5).

<sup>5</sup> There have been efforts to introduce a mining fiscal regime. See Chapter IX Mines and Minerals Bill of Bhutan 2020: <https://www.moenr.gov.bt/wp-content/uploads/2017/07/MM-Bill-of-Bhutan-2020-FINAL.pdf>

<sup>6</sup> Preamble of the Fiscal Incentives Act of Bhutan, 2021.



Instrument	Description	Source
CIT holidays	<p>Under the CIT Law, the ministry may grant exemptions and tax holidays to certain companies on satisfaction and in the public interest.</p> <p>Under the Fiscal Incentives Act, 2021, mining does not qualify as a “High Priority Sector”; therefore, it is not exempted from CIT, nor does it benefit from a concessionary rate.</p>	Chapter 3 of the Income Tax Act, and Part I, Direct Tax Incentives, Chapter 2 of the Fiscal Incentives Act, 2021
Capital expense (CapEx) allowance	<p>An investment allowance may be granted to a mining company under a specified percentage not exceeding 100% of the amount of the fixed capital expenditure incurred for an approved project. The certificate of approval should include</p> <ul style="list-style-type: none"> <li>• the items of fixed CapEx incurred in Bhutan for the approved project,</li> <li>• the percentage of the amount of the fixed CapEx that shall be granted the investment allowance, and</li> <li>• the qualifying period, which shall not exceed 5 years.</li> </ul> <p>There is no limit to carrying forward losses derived from the investment allowance.</p> <p>It is prohibited to sell the asset that is benefiting from the investment allowance.</p>	Chapter 3 of the Fiscal Incentives Act 2021, and its Rules
Royalties and mineral rent	<p>A lessee shall pay an ad-valorem royalty and mineral rent for exports per tonne.</p> <p>For royalties, there are different rates applicable to non-metallic minerals—for instance, 6.5% for dolomite, 8% for limestone and marble—and a general rate for “any new mineral” of 6.5%.</p> <p>For mineral rents, the lessee should pay an amount equivalent to 10% of the projected export royalty or the domestic royalty, whichever is higher.</p> <p>Ad-valorem royalty rates for exports will be applied to the higher of either the minimum floor price (MFP) at the country exit point or the invoiced value.</p> <p>There are some empirical bases on how to determine the MFP apart from the fact that it shall be established by the DGM at least once a year.</p> <p>A lessee shall pay unit-based royalty and Mineral Rent per tonne for domestic consumption of minerals.</p>	<p>Chapter 4, Revision of Royalty and Mineral Rent, of the Revised Taxes and Levies Act of Bhutan 2016</p> <p>Annexure IV of Revised Taxes and Levies Act of Bhutan 2016.</p> <p>Chapter 5, Mineral Levies, of the MMMA 1995.</p> <p>Chapter 6, Royalty, Mineral and Lease Rent, of the MMR 2022.</p> <p>Annexure V of MMR of Bhutan 2022</p>



Instrument	Description	Source
Sales tax and customs duty exemption	Mining qualifies as a high-priority sector for the purpose of the sales tax and customs duty exemption on the import of equipment and machinery. The mining equipment and machinery should be directly related to the activity specification provided in the licence.	Chapter 6 of the Fiscal Incentives Act, 2021, and Rules
Distribution of mining revenues	<p>The state has a constitutional duty to ensure equitable distribution of natural resource revenues among regions. There are no regulations that describe how the revenue, management, or distribution systems work. During interviews, it was highlighted that “mining royalties form part of the government revenue and subsequently form part of government expenditure.”</p> <p>In terms of the budget process, the Macroeconomic Framework Coordination Committee determines the resource envelope for the budget year. Then, upon the approval of the Cabinet, the Ministry of Finance issues the budget call notification. Based on the proposal submitted by the budgetary agencies, the Ministry of Finance prepares the national budget for approval by the cabinet and parliament.</p> <p>The Government of Bhutan uses an IT-enabled, web-based system for efficient revenue administration.</p> <p>The Government of Bhutan does not have a resource revenue fund.</p>	Art. 9(8) Constitution of the Kingdom of Bhutan
Mechanisms for management and use of mining revenues and transparent rules regulating revenue-allocation decisions	<p>Collection of mining revenues such as royalties are expressed in the government consolidated accounts and are published in the annual budget and annual financial statements.</p> <p>All the expenditures are met from the Government Consolidated Fund account, and there are no specific areas on when mining revenues are spent.</p>	Budget Report Sections 43 to 73 of the Public Finance Act, 2007 Constitution of the Kingdom of Bhutan Interviews



Instrument	Description	Source
Systems to manage macroeconomic volatility	<p>The constitution mandates that recurrent expenditure has to be met from internal resources.</p> <p>In addition, it requires that debt be sustainable and not place undue burden on future generations.</p> <p>The Public Debt Management Policy 2023 mandates Central Government Debt to be maintained within 55% of GDP. Fiscal policy target mandates fiscal deficit to be maintained within 5% of GDP.</p> <p>Having reserves is a requirement under the constitution.</p>	<p>Budget Report FY 2023-24</p> <p>Constitution</p> <p>Interviews</p>
State-owned enterprises (SOEs)	<p>There are rules regarding requirements to form an SOE, its objectives, shareholders' responsibilities for the SOE, the board, and chief executive of the SOE, and general responsibilities.</p>	<p>Sections 74 to 98 of the Public Finance Act, 2007</p> <p>Annual Report of SMCL</p> <p>Performance Audit Report on the Operation of SMCL</p>

Source: Authors.

## Strengths

**Bhutan's fiscal regime is based on law, and it is clear and simple for both investors and the government administration.** The set of tax instruments applicable to mining is clearly set out in different laws, including the Income Tax Act of the Kingdom of Bhutan, 2001, the Fiscal Incentives Act of Bhutan, 2021 and associated Rules, the Revised Taxes and Levies Act of Bhutan, 2016, and the MMMA 1995 and MMR, 2022.

**When designing its fiscal regime, Bhutan has incorporated some aspects of its mining policy and mining law.** In particular, the fiscal regime has considered goals such as attracting private investment through the granting of mining tax incentives—mainly the investment allowance and the sales tax and customs duty exemption. Yet the fiscal regime does not reflect other key policy objectives established in Bhutan's mining law—for instance, the promotion of domestic processing or environmental and social cost mitigation.

**Bhutan's fiscal regime has elements of progressivity.** Given the existence of a CIT and an ad-valorem royalty, the mining fiscal regime adjusts how much revenue the government collects according to the profitability of mining projects. Yet, depending on further fiscal modelling analysis and benchmarking, there could be opportunities to make the system more progressive by adding tax instruments whose rates increase as mining investments' rates of return increase (e.g., sliding scale royalty rates, resource rent taxes, and variable profit taxes).





**Bhutan's fiscal regime offers cost-based tax incentives rather than profit-based tax incentives.** Bhutan's fiscal regime includes an important cost-based incentive—an investment allowance that decreases investors' capital costs. This type of incentive is better suited to mining investments than tax exemptions—which do not exist in Bhutan's current fiscal regime to date—because it allows taxpayers to recoup their investment through appropriate deductions from their taxable income or directly from their tax bills, and it defers tax to later stages in a project's life rather than during the initial critical years when capital is most needed. In addition, it is easier to anticipate the revenue cost of the incentive because it is based on the amount of investment. Income tax holidays create opportunities for investors to increase their income during the tax-free period by speeding up the rate of production and reducing taxable income in future years. Lastly, a condition to grant mining tax incentives is to carry out any transactions with associated businesses on an arm's-length basis.<sup>7</sup>

**There is a large degree of transparency around state-owned mining agencies.** According to the law, an SOE shall prepare an annual report, including the audited financial statements. SMCL, an SOE in Bhutan formed in December 2014 that produces gypsum, dolomite, coal, and construction materials, publishes annual reports and audited financial statements. Both documents include relevant data on the role of SMCL in Bhutan's mining sector, as well as on operations, revenues, expenditures, profitability, governance, and details on related parties and subsidiaries with which SMCL has had transactions. There are opportunities for Bhutan to clarify the rules that govern the financial relationship between the government and SMCL and other SOEs. These clarifications should include the level of ownership that the Bhutanese government has in each SOE, subsidiary, and joint venture. Disclosures related to SOEs are covered by EITI Requirements 2.5, 2.6, 4.2, 4.4, 4.5, 5.1, and 6.2 (EITI, 2023) and are expected.

## Gaps

**There is no evidence that the Government of Bhutan has used an economic model to assess the total economic impact of its mineral royalties, fees, CIT, and tax incentives** applicable to the mining sector, as well as the costs associated with its other policy goals. The fiscal regime should be benchmarked against other comparable jurisdictions—those with similar mineral endowments, investment environments, and institutional and administrative settings—while considering the country's comparative advantages.

**There are some empirical criteria based on which the DGM establishes the MFP for the royalty calculation and the period of validity for the established MFP.** Price is a critical component for calculating an ad-valorem royalty base. According to the law, the ad-valorem royalty rates for export shall be applied on the MPF established at the country exit point or the invoiced value, whichever is higher. For some minerals, there are international prices that could serve as a reference for the DGM to publish an MFP—for instance, the London Metal Exchange publishes different prices for some minerals and metals. An explicit reference to the London Metal Exchange or other sources could be an objective criterion to be used by the DGM, providing certainty and predictability to investors and the government administration.

**There is a need for stronger administrative mechanisms to monitor the value and volume of minerals produced and exported.** There is no evidence that the government investigates the risk of mining entities deliberately undervaluing their mineral exports. No robust mechanisms to monitor the value of minerals produced and exports seem to exist in Bhutan.

<sup>7</sup> Chapter 8 of the Rules of the Fiscal Incentives Act, 2021.



There are clear rules for general revenue management and distribution systems; however, there are no mining-related rules. Given the size of the mining sector in Bhutan, a complex revenue management and distribution system would not be expected. Nonetheless, as the mining sector grows, the government should adhere to budget preparation and publication cycles, with mechanisms for public participation in the budgeting process incorporating mechanisms of equitable distribution of mining revenue among regions. In addition, the government should regulate (according to the constitution's mandate to ensure equitable distribution of natural resources between regions) the distribution of mining payments between central and sub-national governments, where applicable and where possible. Due to the principle of the unified treasury system found in several countries, including Bhutan, it is difficult to trace the management and distribution system of mining revenue.

**There is some evidence that Bhutan provides oversight mechanisms for the management and use of mining revenues and transparent rules regulating revenue-allocation decisions.** As

mentioned above, given the size of the mining sector in Bhutan, an oversight mechanism for the management and use of revenues is not expected at this stage. However, as the mining sector grows, the government may explore the possibility of managing mining revenues, including where they are allocated and the rules governing decisions on when, where, and how the revenues are allocated. There is evidence that annual audits are carried out for mining companies by authorized and competent auditing agencies. The government should periodically trigger independent audits to be conducted and reported, and there should be a clear delineation between the role of the oversight government agencies and the decision-makers in the mining ministry, the finance ministry, and other relevant agencies with potential conflicts of interest.

**There is limited transparency around fiscal charges and revenue management mechanisms.**

Government websites do not disclose fiscal charges paid by mining entities and received by the government or distribution of mining revenues, sub-national transfers, and or how mining revenues are managed and spent. The latter will be relevant for licences granted to private companies since the enactment of the MMR 2022.<sup>8</sup>

**There are no measures against tax base erosion and profit shifting (BEPS) in domestic law.**

While there is no evidence of BEPS scenarios occurring in Bhutan to date—given the lack of multinational corporations operating in Bhutan—its mining fiscal regime could make the system vulnerable to BEPS. For instance, the import customs duty relief that Bhutan grants to investors may incentivize companies to increase the cost of machinery and equipment purchased from related parties to increase their deductible expenses. In that sense, the country's income tax law should include strong anti-tax avoidance measures that apply to the mining sector and adopt the Organisation for Economic Co-operation and Development BEPS actions or other international standards to protect the mining tax base against BEPS.

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<sup>8</sup> Chapter 2 and 4 of the Income Tax Act.



## Socio-Economic Benefits

The third pillar of the MPF recommends balancing the economic gains of mining with social well-being as a cornerstone of responsible mining, ensuring that communities thrive alongside mining activities with opportunities for growth and prosperity. The MPF standards featured in this thematic area fall into the following categories:

- local economic development
- labour rights, employment, training, and skills
- community health, safety, adaptive capacity, and security
- occupational health and safety

## Key Laws and Policies

- The Constitution of the Kingdom of Bhutan
- GNH Policy
- MMMA, 1995
- MMR, 2022
- Surface Collection Rules and Regulations, 2024
- Labour and Employment Act of Bhutan, 2007
- Regulation on Occupational Health, Safety and Welfare, 2022
- Regulations on Working Conditions, 2022
- Local Government Act of 2009 and regulations
- The Land Act of Bhutan, 2007
- The Land Lease Rules & Regulations, 2018
- National Gender Equality Policy, 2020
- Road Rules and Regulations, 2016

## Strengths

**Mining is subject to the development philosophy of GNH and has a prominent place in government plans.** From the development philosophy to the mining legislation, there is an alignment on the socio-economic benefits of mining. Bhutan's development is guided by the philosophy of GNH, which emphasizes the equitable and sustainable development of Bhutan. This development philosophy is then applied through the Five-Year Plans (Ministry of Industry, Commerce and Employment, n.d.), where the mining sector's contribution is subject to its contribution to GNH. In legislation, the constitution is consistent with GNH in underscoring the importance of using natural resources to ensure the equitable treatment of all *Dzongkhags* through sustainable practices and policies. This is further detailed in the mining primary law, the MMMA, when it stresses the need for mineral resources development in a manner that is compatible with the social and economic policies of the government, as well as within the framework of sustainable development and the preservation of religious and cultural heritage.



**Culture, a central aspect of Bhutan, is effectively managed in the mining sector.** The constitution and the GNH philosophy enshrine the importance of cultural heritage in its text. Economic activities in the country, like mining, can impact cultural heritage and must be balanced with its preservation and protection. Cultural heritage includes “monuments, places and objects of artistic or historic interest, Dzongs, Lhakhangs, Goendeys, Ten-sum, Nyes,” among others (Section 1, Article 4, Constitution). In practice, if any mining activity is being planned near a cultural heritage site, specific clearance is needed from the Department of Culture and Dzongkha Development under the Ministry of Home Affairs. The government also acknowledges culturally sensitive areas (especially sacred lands) and the importance of their preservation when authorizing mining operations.

**There are several initiatives to better engage with communities.** Given the small and medium scale of mining in Bhutan, the sector operates in relative agreement with its communities. Basic rights, such as freedom of speech, are respected. Several initiatives are pursuing better community engagement, including in the mining sector. The government is able to link communities through communications systems that gather their opinions and needs, for example, through communities’ focal points. Local governments, integral to the political system, play crucial roles in coordinating public consultations and endorsing clearances for sectors like mining. Civil society is also able to work through community-based service centres to train communities on several technical issues, as well as for advocacy work.

**Legislation provides for local content requirements.** The MMR (Chapter 11) provides a good basis for socio-economic benefits to local communities through different local content requirements. It provides affected communities with preferential employment, as well as opportunities for training and upgrading skills. It also requires that mining companies support local businesses, give preference to affected local communities in awarding mining contracts and hiring equipment and machineries, and procure locally available goods and services. Every operation needs to develop a program to support affected communities and draw agreements detailing community development projects and implementation. Infrastructure built through mining operations must be made available to communities free of charge (MMMR, Section 131). The requirements are linked in the law to mining companies’ CSR, requiring a designated focal person in the company, which allows the government to plan the development of regions in alignment with public efforts.

**Gender equality is promoted, and women’s rights are protected.** Bhutan’s government is making significant advances in gender equality. Although not specific to the mining sector, gender-related legislation and policies are applicable to the mining sector, including the National Gender Equality Policy 2020, the Child Care and Protection Act 2011, and the Domestic Violence Prevention Act 2013. All policies in Bhutan are also screened with a gender perspective, and the GNH aims to value the growth and development of men, women, and children separately. Non-governmental organizations in the country, like Respect, Educate, Nurture & Empower Women (RENEW), promote the protection of women and children, including in mining areas.

**Mining legislation addresses occupational health and safety.** The MMA and the MMR cover OHS for the mining sector, together with the general labour legislation (Labour and Employment Acts of Bhutan 2007, Chapter IX). Companies are mandated to comply with health and safety regulations for workers and in the vicinity of mines (MMA, 1995, Section 37 (i)), manage the safe use and storage of explosives in mines, submit reports on accidents occurring in mines, (Section 37 (vii)), and immediately report serious accidents that may be



further investigated to assess company's compliance (MMMA, 1995, Sections 38 to 41). A system of inspections and sanctions is in place to ensure law enforcement.

## Gaps

**Compensation for resettlement would benefit from detailed regulation.** According to the Land Acquisition and Compensation Rules and Regulations 2022, land acquisition and involuntary resettlement must be demonstrated to be in the public interest and generally entail the remedies of registering a land substitute or payment of cash compensation (para. 6). The Land Acquisition and Compensation Rules and Regulations 2022 provide that compulsory (national priority) land acquisition must be demonstrated to be in the public interest, but it is not clear whether acquisitions for the purpose of mining activities fall within this definition. At the same time, it appears to state that the acquisition of private land is always subject to “fair compensation” and not land substitution (para. 14).



Quartzite miner. (Norbu Gyeltshen)

This lack of definition has impacts on compensation in the cases of involuntary resettlement for mining activities. The compensation mechanism turns out to be partial in cases where mining is on private land because there is no land substitute, only fair compensation—and there is no definition of what “fair” is.

**Communities are not systematically consulted during the life of the mining projects.** As mentioned in Pillar I, legislation on community consultation during the permitting process is not clear and is ineffective in practice. The government does not require mining entities to regularly undertake, during the life of the projects, meaningful consultations with affected communities in the design of its community development activities, creating discontent in mining communities. There are no standard procedures for community consultations. When companies seek the opinion of the community, its process depends on the local leader—and since these are elected, decisions about the procedure become political. Consultations are sometimes reduced to convincing a few influential stakeholders, like the elected local leader, bypassing a larger public opinion. There are no measures to ensure consultation is inclusive of women or marginalized groups, and promises made to communities to obtain social clearance are not properly documented or always subsequently respected.

**There is a disparity in socio-economic benefits across communities.** While some communities benefit from mining, others do not. Mining activities impact the lives of communities surrounding operations, including impacts on other economic activities, such as agriculture, livestock, or damages to road infrastructure. All communities expect to see benefits from mining activities. Income from mining, which should serve to benefit mining communities, does





not often reach the communities. For example, CSR in law and in practice does not directly compensate for mining impacts in communities. Mining communities also lack grievance mechanisms to register concerns and facilitate the resolution of grievances from communities.

**There is a lack of detail in local content policies and data to enable decision making for the mining sector to expand.** The 2017 Mining Development policy emphasizes adding value to the available resources. In geological mapping, the government focuses on minerals that can form a basis for future industrial investment and economic diversification (UNDP, n.d.). However, in planning the growth of the country's mining sector and moving up in the mineral value chain, the government must generate relevant data to ensure socio-economic benefits. This data is needed to develop a local content policy—currently present in the MMR but lacking specific criteria—that is adjusted to the mining sector growth objectives. Data could support the optimization of employment opportunities for local communities and nationals planning the needed infrastructure for more mining operations and help them understand the demand and available supply of goods and services, among others. More and better-quality data, including disaggregated data for gender and ethnic groups, is needed to address its employment challenges and for decision making about the future of mining in Bhutan.

**Road and bridge infrastructure is deficient for mining activities.** There are over 18,000 km of roads in Bhutan of various categories: national highways, district roads, subdistrict roads, etc. Road infrastructure in a mountainous country such as Bhutan, without other transport connection systems, is essential for its development. The Roads Act refers to “Mining and Exploration Roads” as those constructed and maintained by mining companies for the purposes of mining activities.

In practice, the general road infrastructure capacities are deficient for mining activities. For example, mining trucks currently exceed the carrying capacity of roads and bridges. There is a lack of maintenance of road infrastructure and bridges to the desired level of development of the sector. If new mines do open, based on the 13th Five-Year Plan, better road and bridge capacities will need to be built to support the development of mining as well as growing communities' needs.

## Environmental Management

Effective management of air and noise, water, waste, and biodiversity, as well as proper emergency preparedness and response, supports sustainable development. This allows society to benefit from mining while protecting the environment and the ecosystem services needed to support communities.

The themes covered under this pillar include the following:

- adoption of standards for air quality and noise
- planning of surface and groundwater resources management with a watershed-level approach
- avoidance and minimization of potential adverse effects on biodiversity and ecosystem services
- management of mine waste, including hazardous materials and waste
- development and implementation of an emergency preparedness and response program prior to the commencement of operations



## Key Laws and Policies

- Mines and Minerals Management Act, 1995
- Environmental Assessment Act, 2000
- National Environment Protection Act, 2007
- National Strategy on Integrated Solid Waste Management, 2007
- Waste Prevention and Management Act, 2009
- Water Act, 2011
- Disaster Management Act, 2013
- Water Regulations, 2014
- Waste Prevention and Management Regulations, 2012
- Disaster Management Regulations, 2014
- National Integrated Water Resources Management Plan, 2016
- Regulation for Environmental Clearance of Projects, 2016
- Waste Prevention and Management Regulations (Amendment), 2016
- Disaster Risk Management Strategy, 2017
- Water Quality Standards, 2018
- Climate Change Policy, 2020
- Environmental Standards, 2020
- Second Nationally Determined Contributions, 2021
- Mines and Minerals Management Regulations, 2022
- Surface Collection Rules and Regulations 2024
- Forest and Nature Conservation Act, 2023
- Forest and Nature Conservation Regulations, 2023

## Strengths

**Bhutan has a strong regulatory framework for environmental protection.** The constitution requires that a minimum of 60% of the country's land be maintained for all time. In accordance with this, forest cover currently sits at nearly 70% of Bhutan's total land.

**Bhutan recently set ambient air quality and noise standards.** The Environment Commission set ambient air quality and noise standards in 2020. The Climate Change Policy from 2020 calls for greenhouse gas emissions to be decoupled from mining through the integration of higher value chains in manufacturing, improved efficiency, and energy diversification, while the latest Nationally Determined Contributions published in 2021 make clear the country's commitment to lowering greenhouse gas emissions.

**The Environment Commission recently set standards for water quality and effluent discharge.** It also set environmental standards in 2020 that establish water quality criteria and industrial effluent discharge standards. Meanwhile, the National Integrated Water Resources Management Plan was published in 2016, when climate and river basin modelling was performed to generate information on the present and future states of climate and hydrology. This plan identified



Tiger's Nest Monastery. (Carlos Ortega)

hydrological basins and analyzed water availability and demand for each basin with full stakeholder engagement and participation. Moreover, the Forest and Nature Conservation Act of 2023 states that mining and quarrying are prohibited in declared critical watersheds.

**Bhutan manages its water sources at a watershed level.** The Department of Water oversees the source, availability, quantity, and quality of surface and groundwater resources with a watershed management approach. To date, water basins have been mapped, outlining four major basins and five sub-basins, a water security index for one basin, and a plan to develop a Water Master Plan at the national and district levels as part of the next Five-Year Plan. Additionally, the Department of Water states that mining upstream of water sources will not be cleared socially.

**Bhutan conserves over half of its territory as protected areas.** Bhutan has the highest percentage of protected land in Asia, with over 50% of the country's land presently under protection through the Bhutan Biological Conservation Complex (B2C2). The B2C2 comprises all protected areas, including their core and buffer zones, and the biological corridors that connect them. In that respect, the Forest and Nature Conservation Act of 2023 declares that mining and quarrying are prohibited in core zones of protected areas, with only quarrying for rural use by local communities allowed in protected areas but outside their core zones. Furthermore, the act includes a list of protected species of flora and fauna.

**Waste disposal plans are required in mining regulations.** The Mines and Minerals Management Regulations of 2022 require mining operators to submit a waste disposal plan as part of the FMFS, where they must describe in detail how they will manage tailings and waste dumps, including the configuration and stability of the waste dumps. Similarly, the 2022 Guidelines for Short-Term Quarries require a basic development plan to include an EMP that considers the details of waste management and treatment, as well as the configuration and stability of waste dumps.



**Disaster Management Committees are required under law.** Bhutan has a National Disaster Management Authority, which was formed by the Disaster Management Act of 2013, requiring every district to have a Disaster Management Committee, with at least three people per community being trained by their respective committees. In addition, the Disaster Management Regulations of 2014 established a Critical Disaster Management Facility and an Emergency Operation Centre, which are required to be well-equipped to collect, update, and analyze data and disseminate information on potential and actual disasters.

## Gaps

**Dust emissions affect mining communities.** Dust emissions cause some issues in mining-adjacent communities, where quarrying and mining vehicle circulation and operating activities release dust particles into the atmosphere that can easily reach local communities, disturbing people, crops, and livestock. This problem is particularly significant during the dry season when high winds frequently lift dust from the ground and disseminate it across long distances.

**Water sources are negatively impacted by mining activity.** Communities have complained that water sources, such as springs, are being negatively impacted by blasting activity in mines and quarries. This especially affects the quality and quantity of natural spring water used by local communities. Since there are no monitoring committees formed by community members, it is difficult to supervise if mining entities appropriately manage water sources.

**The application of the mitigation hierarchy is not explicitly required under legislation.** Although environmental regulation is strong, there are no national requirements to apply the mitigation hierarchy. This means that environmental management planning is not focused on following the steps of avoidance, minimization, rehabilitation, and offsetting to achieve no net loss across all activities throughout the mine life cycle.

**Planning for disasters does not include the active participation of mining communities.** Even though disaster management committees exist at the district level as part of the national disaster management system, these are not involved in planning for mining disasters. This is the exclusive purview of the DGM, which means that local communities are not engaged in the development of emergency preparedness and response programs for the mining sector. In addition, drills are not conducted regularly, and when they are, they only involve mine workers, excluding members of mining communities.

**Local communities are not systematically consulted before and engaged during the development of environmental management plans.** Public consultation and direct engagement are not common in most of the different themes of environmental management in Bhutan's mining sector. Local communities are not usually consulted prior to developing air and noise, water, waste, or biodiversity management plans, which means they cannot have direct input into how these plans are designed and implemented. Furthermore, local communities are not engaged in monitoring and review efforts during the quarrying and mining life cycle, which means they do not have influence over how management plans are updated and improved.

**Monitoring and enforcement are weak due to inadequate resources and personnel.** Direct government monitoring of environmental management regulations does not occur regularly because of a lack of financial resources and a shortage of available competent professionals. This means that mining entities are not frequently directly supervised in some respects, which can lead to bad practices going unnoticed. Moreover, even though offences



and penalties are clearly laid out in the various environmental regulations, insufficient resources hinder their enforcement.

## Post-Mining Transition

To be consistent with sustainable development, a mining operation must develop its closure plan before mining commences and update and implement it throughout its life cycle. This process should include the conversion of former mine sites into other productive uses so that the environment and local communities may benefit from them.

The themes covered under this pillar include the following:

- adoption of legislation for mine closure
- adoption of legislation for financial assurance for mine closure
- management of abandoned mines

## Key Laws and Policies

- Mines and Minerals Management Act, 1995
- Mines Monitoring Tools, 2019
- Guidelines for Surface Collection of Minerals, 2020
- Mines Restoration Guidelines, 2021
- Guidelines for Leasing of Mines and Quarries, 2022
- Guidelines for Short-Term Quarries, 2022
- Mines and Minerals Management Regulations, 2022
- Surface Collection Rules and Regulations, 2024
- Mineral Exploration Guidelines, 2023

## Strengths

**Bhutan requires mine restoration plans in their legal framework.** MRPs are included in the legal and regulatory frameworks governing the mining sector. These are required as part of the FMFS, and their updated version must be submitted 2.5 years before the mining lease expires, which happens every 5 years in practice. The Mines Restoration Guidelines adopted in 2021 provide the format and contents that MRPs must follow and include, providing quarrying/mining entities with specific guidance on what type of document they must produce and submit for approval. According to these guidelines, rehabilitation includes supporting slope stabilization, landscaping, relaying preserved topsoil, planting diverse native species, and adequately maintaining and protecting plantation areas.

**Progressive reclamation is required under regulations and guidelines.** When areas have no prospect for future use or further mining, the progressive reclamation of areas affected by mining is explicitly required under the Mines Restoration Guidelines of 2021. These areas include abandoned benches, areas closed due to stability factors, abandoned ramps and roads not to be used in the future, overburden dump sites, and any other areas not to be





Rehabilitation at Bjemina Stone Quarry. (Ugyen Wangchuk)

disturbed again for mining. In addition, the guidelines state that the government must monitor restoration work, and quarrying/mining entities must submit regular progress reports for review and approval by the competent authority.

**An environmental restoration bond provides financial assurance for mine closure.** Financial assurance is required through the Mines and Minerals Management Regulations enacted in 2022, which describe the method by which an Environmental Restoration Bond (ERB) must be calculated. This method considers the mine's surface area, overburden/waste, and production as the three factors to consider when determining the ERB's amount. This mechanism gives the government access to financial means for restoring areas where mining entities have not completed the activities committed to in the approved MRP.

## Gaps

**The financial assurance mechanism does not consider closure costs.** Although the Mines and Minerals Management Regulations describe how to calculate the ERB, the formula only considers three variables (surface area, waste, and production) and uses absolute currency values to apply to each variable. This means that the formula does not consider other important factors that can influence the cost of closure works, such as escalation and contingency provisions, management costs, and uncertainty ranges. Furthermore, the set currency values do not allow the ERB to account for inflation, which makes the allotted financial assurance lose value over time. In addition, the ERB is not required to be revised when the MRP is updated, and it does not directly reflect actual closure costs, even though the Mines Restoration Guidelines provide some detail on how to determine these costs.

**Bhutan's Mines Restoration Guidelines are too prescriptive.** The 2021 Mines Restoration Guidelines are often quite prescriptive, which limits innovation and adaptability to each mine and to other possible post-mining land uses. The very specific nature of parts of the guidance provided may make some parts of restoration requirements hard to implement.





**There is no mechanism in place to progressively reimburse the ERB to mining entities when they undertake progressive reclamation works.** There is no mechanism by which the proponent can benefit from progressive reimbursement of the ERB if they carry out progressive reclamation. This does not incentivize mining entities to comply with the progressive reclamation requirements stated in the Mines Restoration Guidelines of 2021. International good practice calls for a system through which mining entities may recover some of the funds paid to the ERB as their progressive reclamation efforts are approved by the competent authority.

**No independent technical reviews of MRPs are required.** Regulations do not require the independent review of MRPs. Even though the characteristics of Bhutan's mining industry do not pose the risks of tailings dam failures, acid rock drainage, or other significant risks associated with metallic mining, independent technical reviews are very useful for the long-term predictions that proponents make in MRPs. This is especially true when thinking about climate change considerations and looking for acceptance and trust from a wide range of stakeholders.

**Public consultation and engagement during MRP development is not thorough.** Even though the Mines Restoration Guidelines of 2021 require consultation of affected communities to identify post-mining land uses prior to planning restoration works, public engagement when designing, developing, and implementing MRPs is not thorough. Although the country's rugged terrain does not allow for many post-mining land use options that may be beneficial to local communities, their minimal engagement in the process does not let them have a say on which post-mining land uses might be better tailored to their reality, depending on the environment they inhabit.

**The guidelines for the content of MRPs lack several sections that are common to closure plans.** The format and content of the MRP in the 2021 Guidelines (Annex 1) provide good guidance but are missing some sections that are common in closure plans, such as socio-economic baseline conditions, progressive rehabilitation activities, plans for sudden or temporary closure, post-closure monitoring and maintenance, and guidance on how rates are determined to calculate closure costs. The guidelines could benefit from some updating and refinement of the plan requirements.



## 5.0 Conclusions

Bhutan has a unique and strong commitment to sustainability in mining in a waterfall of government commitments, from the national development philosophy and the GNH to granular regulations and guidelines in the mining sector that are guided by the philosophy. Since the last Five-Year Plan, mining has become a central sector for Bhutan's plans for economic diversification and industrialization. The government is aware of the challenges of the projected growth, and it is open to learning and changing to improve policies and the implementation of laws and regulations, including through the request for this assessment.

Overall, regarding **MPF Pillar 1**, which focuses on laws, policies, and institutions, Bhutan incorporates sustainability principles in its laws, from the constitution to mining-specific acts, regulations, and guidelines. The country has ratified most international agreements on environmental protection and conservation, making environmental safeguards a key feature of its mining legal framework. Institutions managing the mining sector are increasingly aware of the need for stronger collaboration and transparency to improve administrative efficiency. However, there is room for improvement. The 1995 MMMA is outdated and inconsistent with its implementing regulations and guidelines. The permitting system and clearance requirements need streamlining to enhance efficiency without compromising meaningful public participation. Communities need greater voice and meaningful participation in mining activities near them, especially in the EIA/ environmental and social impact assessment (ESIA) process during permitting. Finally, to attract investment and improve the sector's contribution to the economy, the government must invest in generating detailed geological data.

Regarding **MPF Pillar 2**, Bhutan's fiscal regime has many strengths. It is based on law, and it is clear and simple for both investors and the government administration. It has incorporated some aspects of its mining policy and mining law, such as the attraction of mining investment. In addition, the regime has elements of progressivity and offers cost-based tax incentives rather than profit-based tax incentives. However, there are opportunities for Bhutan to improve their mining fiscal regime design and administration. Bhutan could consider using an economic model to assess the total economic impact of its mineral royalties, fees, CIT, and tax incentives applicable to the mining sector, as well as the costs associated with its other policy goals. It lacks criteria about what type of tools the DGM should use to establish the MFP for the royalty calculation. Moreover, Bhutan's fiscal regime could be strengthened by incorporating rules to limit opportunities for investors to engage in tax avoidance. In addition, there is a need for stronger administrative mechanisms to monitor the value and volume of minerals produced



and exported, as well as an established coordination system between government agencies responsible for implementing the fiscal regime. Lastly, a more transparent mining revenue management and distribution system is needed. It is critical for Bhutan to secure transparency around fiscal charges, revenue distribution, and management mechanisms.

Socio-economic benefits, **MPF Pillar 3**, are well rooted in the development philosophy of GNH. It has strengths with respect to the legal basis for local content, CSR, and OHS. Cultural heritage is addressed throughout the legislation and is applicable to the mining sector. In general, communities have a peaceful relationship with mining and are also well organized in the country. However, community engagement during the mine life cycle is weak, creating some discontent. Land compensation is partly unfair, and although the basic legal framework for local content and gender equity is in place, it lacks the detail and data to plan for the future growth of the sector. Road infrastructure essential to the connectivity of the country is not suitable for mining, and especially not for the growth of the sector.

In relation to **MPF Pillar 4**, which covers environmental management, Bhutan has a strong regulatory framework for environmental protection based on its constitutional requirement to retain a minimum of 60% of the country's land area under forest cover for all time, which is reflected in the fact that around 70% of the country's territory is currently covered by forest. In addition, over 50% of the country's land area is within protected areas, including their core and buffer zones, as well as biological corridors, which shows how biodiversity is well protected. Nonetheless, some issues that arise from mining activities remain, such as their impact on the quality and quantity of natural spring water sources and the effects of dust dispersal on people, crops, and livestock. Additionally, it is important to note that, considering the current high environmental protection baseline, growing the mining sector in the future could noticeably affect the natural environment.

With respect to **MPF Pillar 5**, which covers the post-mining transition, Bhutan possesses requirements on mine restoration and progressive reclamation, which, considering its small mining sector, is a positive and forward-looking aspect of its legislation and regulations in relation to mine closure and post-mining land use. Nevertheless, some specific requirements for restoration are too prescriptive, which limits options for mining entities to adapt to each mine's characteristics for tailored closure works. In addition, there is no explicitly stated required frequency to update MRPs during a mine's life cycle, other than the link to the mine's lease expiry, which results in an implicit requirement to update it every 5 years. Moreover, the formula to determine the funds allocated for the ERB is outdated and does not include a mechanism to reflect actual mine closure costs. Therefore, for Bhutan's regulations related to the post-mining transition to keep abreast of mining development in the country, it is essential to update some requirements and guidelines to follow current international good practices.





## 6.0 Recommendations

### Recommendation 1: Laws, Policies, and Institutions

The key mining laws and policies in Bhutan need revision and updates to elevate its standards to international good practices. Among others, the following issues should be addressed.

**Revise the MMMA (1995) and associated regulations:** Bhutan's legal framework in the mining sector, while foundational, has become fragmented and outdated over time. The primary legislation, the MMMA of 1995, has not been revised or updated for almost 3 decades. Meanwhile, its subsequent regulations, such as the MMR 2022, were updated, and various guidelines were developed (Mineral Exploration Guidelines of 2023, the Guidelines for Leasing of Mines and Quarries of 2022, the Guidelines for Short-Term Quarries of 2022, the Mine Restoration Guideline of 2021, and the Guidelines for Surface Collection of Minerals 2020). Nonetheless, these have not kept pace with international good practices in mine closure, community engagement, and social responsibility. Also, there is a need to consolidate these fragmented regulations into a coherent framework.

Consolidating the primary legislation for mining would simplify the legal landscape for stakeholders, improve its understanding, and facilitate its administration by the government authorities. Updating the MMMA and its related regulations should follow a clear and coherent policy for the mining sector, for which the legislation will then provide a basis for its effective implementation.

Outside the primary mining legislation, there is an opportunity to improve the ESIA process by integrating the assessments needed for these clearances or, at the very least, ensuring that the results of the ESIA are shared across all relevant agencies.

**Update the Mineral Development Policy (2017):** The Mineral Development Policy has not been updated since 2017, even though the country's priorities for the sector have evolved. Developing a modern strategy is crucial for

- expanding the mining sector beyond non-metallic mining,
- increasing its contribution to national GDP,
- redefining the private sector's role in mineral exploration and exploitation, and
- determining the extent to which the sector should be opened for foreign investment.



Developing a comprehensive strategy is crucial for defining Bhutan's vision for its mining sector, including the role of the private sector in mineral exploration and exploitation and the extent to which the sector should be opened to foreign investment. In developing this strategy, a thorough study on the economic competitiveness of value addition of the existing minerals extracted in the country should be conducted. Understanding the economic viability of such activities, including market access for these products, will ensure that the policies focus on real development possibilities.

**Generate new national baseline geological data:** Producing a geological map on a 1:25,000 scale would provide more accurate information on geological formations, structures, and mineral occurrences essential for a thorough assessment of the country's mineral potential. In addition to field mapping, regional airborne geophysics (magnetic and/or electromagnetic surveys) at a line spacing ranging from 0.5 km to 1 km would enable mapping coverage of large areas quickly and efficiently, especially in regions where access is difficult and where existing regional geological information indicate potential areas for mineral exploration. Regional airborne geophysics surveys can be followed by detailed surveys at a 0.2 km to 0.4 km line spacing for high-resolution mapping in the most prospective areas identified during the regional survey. The generation of accurate geological data is needed for

- enhancing an understanding of the country's geology and resource potential,
- increasing the mining sector's contribution to the economy,
- attracting private sector and foreign investment,
- enhancing resource management and development,
- improving land use and infrastructure planning,
- informing strategic decisions in the mining sector, and
- identifying the country's potential to support the energy transition.

**Improve monitoring of mining operations:** effective oversight ensures that laws and regulations are implemented in mining operations. Monitoring and enforcement mechanisms and agencies in Bhutan need to be sufficiently resourced, both financially and in terms of human resources and equipment. These activities can be funded by mining revenues. The government should conduct periodical and ad hoc inspection visits to mine sites and can use external technical experts when it lacks internal capacities to audit technical activities, such as activities associated with high-risk elements like waste management or closure plans.

## Recommendation 2: Post-Mining Transition

The key institutions governing the mining sector do not have extensive experience in mine closure within their organizations. This results in limited guidance on how to plan for mine closure and ensure the post-mining transition leads to productive and safe alternate land uses, as well as how to assure financial solvency when mining operators are unable to complete restoration works. As part of its mining-related regulatory reforms, the government should consider the following:

**Revise the ERB requirements:** The current formula to determine the ERB funds that the mining entity must deposit into a dedicated account is only based on the mine's surface area, waste, and production and uses absolute currency values to apply to each variable. This means that the ERB formula does not consider inflation adjustments or actual estimated closure



costs for mines. Therefore, it is important to modify the ERB formula to reflect closure costs adequately, considering factors such as escalation and contingency provisions, management and administrative costs, and uncertainty ranges. In addition, there should be a requirement to update the estimated ERB funds each time the MRP is updated.

**Revise the MRP requirements:** The current Mine Restoration Guidelines are often prescriptive, limiting innovation and adaptability to each mine and possible post-mining land uses, which may cause some restoration requirements to be difficult to implement. Consequently, it is important to review and modify mine restoration requirements so that they leave some leeway for project proponents to design and implement mine restoration methods that are properly tailored to the characteristics of the mines they operate as well as their socio-economic and environmental surroundings. In addition, regulations should explicitly require the MRP to be updated a predetermined number of years after the submission of the FMFS.

### Recommendation 3: Socio-Economic Benefits

The main mining legislation, the MMMA and MMR, lacks mandatory requirements for community consultations during the permit application and engagement throughout other stages of the mine cycle. With limited references in secondary legislation and in practice using the Local Governments Act, community consultations are inconsistent, creating discontent within communities. As part of its mining-related regulatory reforms, the government should consider the following:

**Revise the MMMA and MMR to explicitly require community consultations:** The main mining legislation could include requirements for the following:

- Consult with affected communities and other stakeholders during the preparation of their permit applications, providing them with an opportunity to express their views on project risks and impacts and be consulted on the development of mitigation measures. This process would include regularly communicating in a transparent, inclusive, accessible, and culturally appropriate manner at all stages of the assessment and planning process with potentially affected communities for which a permit is sought.
- Consult with affected communities and stakeholders in the design of community development activities during each stage of the mine cycle. This exercise could result in community development agreements as a guarantee of socio-economic benefits to the community.
- Document the nature and results of consultations and make the results accessible to communities.
- Make mining project EIAs and information about social impacts available in a timely manner to offer a basis for community member opinions.

Bhutan has a solid system of local governments that can provide the basis for community consultations. This system could be improved by accelerating timelines and better coordinating with the national authorities participating in the permitting system. It can be used as a platform for appropriate consultation with mining communities during the permitting process and in other stages of the mine's life cycle.





**Deepen local content policies:** Although there is a legislative basis for local content, to ensure the sustainable development of the mining sector, better data (including data that is disaggregated by gender and ethnic group to address historical employment challenges) should be gathered on employment, infrastructure needs, the future demand of goods, services, and skills needed for the expansion of a 21st-century mining sector, as the 13th Five-Year Plan (2023-2028) stipulates. Bhutan has solid foundations for developing communities through its GNH philosophy and Five-Year Plans. A step further in growth and value addition requires granular data to allow for detailed and accurate development planning.



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# Appendix A. List of Laws and Policies Reviewed

- The Constitution of the Kingdom of Bhutan

## Laws

- Mines and Minerals Management Act, 1995
- Environmental Assessment Act, 2000
- National Environment Protection Act, 2007
- Local Government Act, 2009
- Waste Prevention and Management Act, 2009
- Water Act, 2011
- Disaster Management Act, 2013
- Forest and Nature Conservation Act, 2023
- Land Act of Bhutan, 2007
- Income Tax Act of the Kingdom of Bhutan, 2001
- Fiscal Incentives Act of Bhutan, 2021
- Customs Duty Act of Bhutan, 2021
- Goods and Services Act of Bhutan, 2020
- Revised Taxes and Levies Act of Bhutan, 2016

## Regulations

- Mines and Minerals Management Regulations, 2022
- Surface Collection Rules and Regulations, 2024
- Water Regulations, 2014
- Waste Prevention and Management Regulations, 2012
- Local Government Rules and Regulations, 2012
- Disaster Management Regulations, 2014
- Regulation for Environmental Clearance of Projects, 2016
- Waste Prevention and Management Regulations (Amendment), 2016
- Forest and Nature Conservation Regulations, 2023
- Rules on the Fiscal Incentives Act of Bhutan, 2021
- Land Lease Rules & Regulations, 2018
- Water Quality Standards, 2018
- Environmental Standards, 2020



## **Policies**

- Mines Monitoring Tools, 2019
- Guidelines for Surface Collection of Minerals, 2020
- Mines Restoration Guidelines, 2021
- National Strategy on Integrated Solid Waste Management, 2007
- National Integrated Water Resources Management Plan, 2016
- Disaster Risk Management Strategy, 2017
- Climate Change Policy, 2020
- Second Nationally Determined Contributions, 2021

## **Guidelines**

- Mineral Exploration Guideline, 2023
- Mineral Prospecting and Exploration Guideline, 2018
- Mine Restoration Guidelines, 2021
- Guidelines for Leasing of Mines and Quarries, 2022
- Guidelines for Short-Term Quarries, 2022
- Guidelines for Surface Collections of Minerals, 2020





# Appendix B. List of Consulted Stakeholders

## Government

- Department of Geology and Mines
- National Land Commission Secretariat
- Department of Water
- Department of Environment and Climate Change
- Departments of Labour, Employment and Industry
- Department of Forests and Park Services
- National Centre for Hydrology and Meteorology
- Department of Local Governance and Disaster Management
- Department of Culture and Dzongkha Development
- Department of Surface Transport

## Civil Society

- Clean Bhutan
- WWF Bhutan
- Green Bhutan Corporation
- RENEW

## Private Sector

- Bhutan Chamber of Commerce and Industry
- Bhutan Exporters Association
- Gidaphug (marble)
- Bjemina (stone quarry)
- Chunaikhola (dolomite)

## Academia

- College of Science and Technology
- College of Natural Resources



**IGF**

INTERGOVERNMENTAL FORUM  
on Mining, Minerals, Metals and  
Sustainable Development