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MICC POLICY NOTE

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Review of Philippine Large-Scale Metallic Mines:
Going Beyond Compliance Towards Sustainability

In the 1970s, the mining and quarrying sector accounted for 1.4 percent of the country's Gross Domestic Product (GDP), while the share of mineral exports reached as high as 24.5 percent of total exports. However, from the 1980s until the 1990s, the sector began to decline due to various environmental and economic causes, such as the financial crisis and the occurrence of mining incidents (Israel 2010). At present, mining has one of the lowest contributions to national economic growth, accounting for less than one percent of the country's GDP (PSA 2021).

As the country grapples with the economic downturn brought about by the COVID-19 pandemic, revitalizing the mining sector is seen as an opportunity to expand the economy and bolster revenue sources, as depicted in the issuance of Executive Order (EO) No. 130, s. 2021.[1] Mining can become a real catalyst of sustainable and inclusive development when the stakeholders collaborate by establishing and implementing appropriate actions and reforms in the sector.

I. State of the Philippine Mining Industry

The Philippines is a highly mineralized country. About 30 percent (9 million hectares) of its total land area has high mineral potential and only 2.42 percent of the highly mineralized zones are under mining development (MGB, 2020). Globally, the Philippines ranks 3rd in gold, 4th in copper, 5th in nickel, and 6th in chromite deposits.

While the mining and quarrying sector only accounts for one percent of the country's GDP (average from 2000-2020), it appears to be more significant in regional economic growth at 2.42 percent. Among all regions, the highest share to mining and quarrying was recorded in Region IV-B MIMAROPA (27.9%), followed by Cordillera Administrative Region (15.4%) (PSA 2020).

The full potential of the mineral sector has yet to be realized as the Philippine mining industry, particularly surface mining, continues to be mired in issues and challenges. The extractive nature of surface mining brings forth crosscutting impacts on people and the environment. Legal and institutional frameworks (See Box 1) have been set as safeguards against these negative impacts but substantial gaps remain.

The 2016 Department of Environment and Natural Resources (DENR) mine audit revealed violations committed by 30 out of 41 existing mines. This issue prompted the Mining Industry Coordinating Council (MICC) to undertake a more thorough review of the performance of existing mine operations pursuant to Section 3 of EO 79, s. 2012.[2] The results of the Review contain policy recommendations for the DENR toward more responsible mineral development. Trade-offs in the industry are inevitable, hence there is a need for an objective and science-based evaluation of the mining operations.

Box 1. Mining Legal Framework

1987 Philippine Constitution

Article XII Section 2. The exploration, development, and utilization of natural resources shall be under the full control and supervision of the State.

Article X Section 7. Local governments shall be entitled to an equitable share in the proceeds of the utilization and development of the national wealth within their respective areas, in the manner provided by law, including sharing the same with the inhabitants by way of direct benefits.

Environmental Impact Statement System (Presidential Decree 1586). Establishing an Environmental Impact Statement System, including other environmental management-related measures and other purposes.

Local Government Code of 1991 (Republic Act No. 7160) Section 2. Local governments units shall be given more powers, authority, responsibilities, and resources.

The Philippine Mining Act of 1995 (RA 7942). All mineral resources in public and private lands within the territory and exclusive economic zone of the Republic of the Philippines are owned by the State. It shall be the responsibility of the State to promote their rational exploration, development, utilization, and conservation through the combined efforts of government and the private sector in order to enhance national growth in a way that effectively safeguards the environment and protect the rights of affected communities.

The Indigenous Peoples' Rights Act of 1997 (R A 8371). An act to recognize, protect and promote the rights of indigenous cultural communities/ indigenous peoples, creating a National Commission on Indigenous Peoples, establishing implementing mechanisms, appropriating funds therefore, and for other purposes.

EO 79, s. 2012. Institutionalizing and implementing reforms in the Philippine mining sector providing policies and guidelines to ensure environmental protection and responsible mining in the utilization of mineral resources.

EO 130, s.2021. Amending Section 4 of EO 79, s. 2012, institutionalizing and implementing reforms in the Philippine mining sector, providing policies and guidelines to ensure environmental protection and responsible mining in the utilization of mineral resources.

The MICC has already completed two phases of the "Objective, Fact-Finding, and Science-Based Review of the Performance of Mining Operations" or the MICC Mining Review. The first phase, which was conducted in 2018, covered mining operations that failed the 2016 DENR mining audit. The

[1] Amending Section 4 of Executive Order No. 79, s. 2012, Institutionalizing and Implementing Reforms in the Philippine Mining Sector, Providing Policies and Guidelines to Ensure Environmental Protection and Responsible Mining in the Utilization of Mineral Resources.

[2] *Section 3. Review of the Performance of Existing Mining Operations and Cleansing of Non-Moving Mining Rights Holders.* To ensure compliance with environmental standards, laws, rules, and regulations, and to rationalize the management and utilization of minerals toward sustainable development, a multi-stakeholder team led by the DENR shall conduct a review of the performance of existing mining operations.

second phase, carried out in 2020, included those that passed the same audit. Covering five key aspects (See Box 2), the Review aimed to (a) identify gaps and issues that limit mining from contributing effectively to national and regional development; and (b) recommend interventions and policy measures that will ensure a more responsible mining sector. The Review looked into the guidelines and parameters outlined in the specific mining contract and other pertinent laws, taking into account the valid exercise of the State's police power to serve the common good, especially the poor.

Box 2. Key Aspects Evaluated in the Mining Review

Legal – Compliance with mining laws, rules and regulations, and other applicable laws; adequacy of the previous quarry permits, licenses, and contracts issued

Technical – Appropriateness, adequacy, and efficiency of mining methods and technology employed, compared with international industry standards

Environmental – Assessment of environmental practices

Social – Assessment of Social Development and Management Program (SDMP) implementation

Economic – Contributions of mining to livelihood, employment, and local revenue; cost-benefit analysis of the selected mining operations

The findings and recommendations discussed in this document were based on the data available during the Review. Any development or actions taken by the companies following the Review are not reflected in the aforesaid findings and recommendations. Notwithstanding, the findings and recommendations from the Review have resulted in the implementation of 11 newly devised policies (See Box 3) and the crafting of other pertinent policies geared toward addressing some of the identified issues and enhancing the performance of the mining industry.

Box 3. Policies Formulated on the Basis of MICC Mining Review Results for Phase 1 and 2

Issuance	Description
Phase 1	
1. Memorandum Circular (MC) No. 2018-02	Guidance for Compliance Monitoring and Rating/Scorecard of Mining Permits/Contracts
2. DENR Administrative Order (DAO) No. 2018-18	Establishing a Centralized Management and Coordinative Mechanism at the Regional Offices of the DENR, MGB and Environmental Management Bureau, and Designating the DENR Regional Director as the Regional Executive Director Providing Overall Command of Regional Operations
3. DAO No. 2018-19	Guidelines for Additional Environmental Measures for Operating Surface Metallic Mines
4. DAO No. 2018-20	Providing for a New Guidelines in the Evaluation and Approval of the Three-Year Development/Utilization Work Program
5. DAO No. 2019-19	Guidelines on the Disposition of Residual Stockpiles Sourced From Small-Scale Mining Operation Pursuant to Presidential Decree No. 1899 and Temporary Small-Scale Mining Contracts Under Department of Environment and Natural Resources Administrative Order No. 2012-07, the IRR of EO 79, s. 2012
6. MGB MO No. 2020-001	Guidelines for Care and Maintenance Program for Mining Projects
7. MGB MC No. 2020-008	Revised Guidelines on Offshore Mining
8. MGB MC No. 2020-010	Harmonizing the Mining Production Capacity Threshold or Limit of a Mining Permit/Contract and the Pertinent Environmental Compliance Certificate
Phase 2	
1. DAO No. 2021-11	Guidelines in the Processing and Issuance of Permits for the Cutting, Removal, and Relocation of Naturally-Growing Trees
2. MGB MC No. 2021-006	Safety Health, Environment, and Social Development and Management (SHES) Manual
3. DAO No. 2021-25	Implementing Rules and Regulations of EO 130, s. 2021 entitled: Amending Section 4 of EO 79, s. 2012, Institutionalizing and Implementing Reforms in the Philippine Mining Sector, Providing Policies and Guidelines to Ensure Environmental Protection and Responsible Mining in the Utilization of Mineral Resources

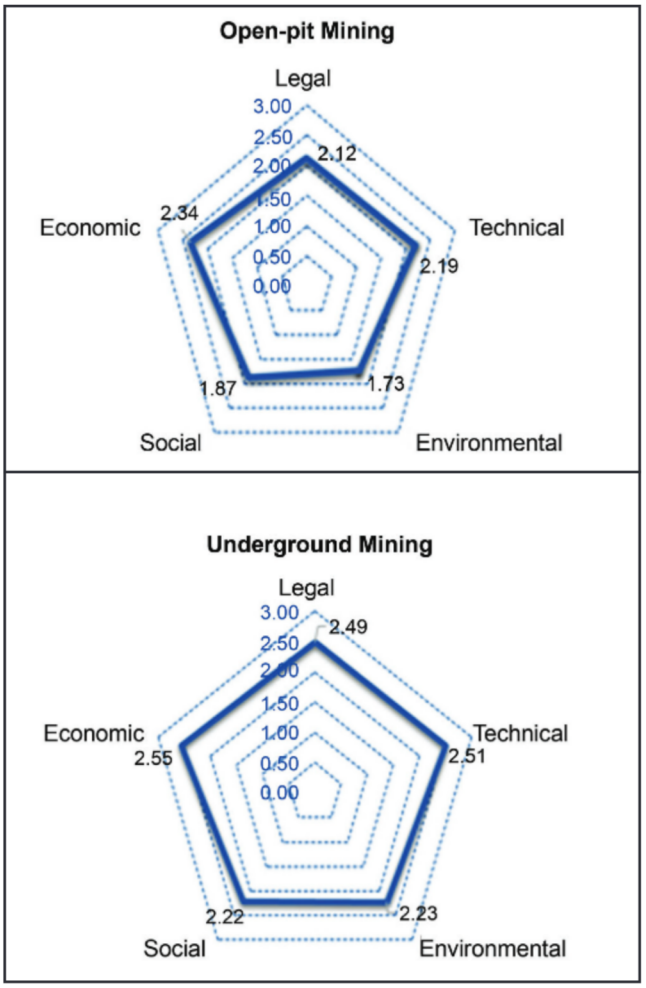
This policy note briefly examines the performance of the Philippine mining sector based on the key findings from the Mining Review and further recommends directions towards sustainability and inclusive development that will benefit the community even after the life of mine.

Key Findings of the Mining Review

Sustainability pentagons were used to reflect the overall assessment of the performance of these mining operations based on sustainability parameters identified for each of the five key aspects (i.e., legal, technical, environmental, social, and economic). These show the areas where the company is exhibiting an exemplary performance worth emulating and identify the gaps wherein the company fell short in undertaking sustainable mining practices that are technically feasible, environmentally compliant, socially acceptable, and financially viable.

The companies' performance was evaluated using a rating scale of 0 to 3, where 0 is not acceptable, 1 needs significant reforms, 2 requires minor reforms, and 3 is acceptable. As shown in Figure 1, the environmental aspect is the most distorted, which implies its need for significant improvement on management measures, while the economic aspect has the highest scores exhibiting good practices.

Figure 1. Sustainability Pentagons for Open Pit and Underground Mines[3] Covered in Mining Review Phases 1 and 2



Source: MICC Mining Review Reports

[3] Open pit and underground mining are the two main types of mining methods employed by large-scale metallic mines in the Philippines. Among the mines covered in the review are 34 open pit (i.e., nickel, chromite, and magnetite) and 11 underground (i.e., gold, copper, and silver) mines.

A. Legal Aspect: Going Beyond Checklist Compliance

Rules, laws, and regulations bind mining operations, particularly in managing tenement areas; upholding environmental, health, and safety standards; and promoting social development in host and neighboring communities. However, ensuring the effectiveness of these policies hinges on the enforcement, monitoring, and assessment of compliance of mining companies. This entails going beyond mere legal checklist review towards assessing the actual compliance of mining operations with the specific provisions of their respective contracts. In particular, the weak enforcement of laws has resulted in the failure of six companies to meet the conditions set in their respective mining contracts and environmental compliance certificates (i.e., implementation of pollution abatement measures provided in the environmental management plans). The practice wherein mining companies operate without mandatory plans and permits (e.g., Special Tree Cutting and Earth-Balling Permit and Water Permit) has also become common. The paltry fines imposed by existing laws, rules, and regulations on mining violations (i.e., relative to the costs of adopting mitigation measures) have been proven ineffective in preventing environmental pollution.

Existing bureaucratic processes coupled with gray areas in related policies also contribute to non-compliance. For instance, the lengthy approval process and delays in the issuance of mandatory plans and permits pave the way for the proliferation of the aforementioned practice, which allows mining companies to operate while waiting for the approval of required permits. Gray areas in existing policies also leave the mining operators susceptible to potential rent-seeking practices. For example, there is tenement overlap with watersheds and other reservations, which is true for mines that have been operating prior to the establishment of the reservations and may have gotten mineral patents over portions of such areas.

Also critical in the effective monitoring and assessment of compliance of mining operations are the regular monitoring of submission and the proper documentation and management of mining-related reports, including those on the Environmental Protection and Enhancement Programs, Safety and Health Programs, and Social Development and Management Programs (SDMP).

B. Technical Efficiency and Financial Stability

Mining is efficient when, among other things, it is technically sound, cost-efficient, and compliant with global standards. It entails having sufficient capital to adapt and adjust to financial and market risks, adequate infrastructure, a safe working environment, and competent management. However, many mining operations in the country remain challenged by various issues.

The first issue is compliance with international standards. Several management systems standards are applicable and recommended for mining operations (e.g., ISO 9001, ISO 50001, ISO 2015). However, the Philippine government only requires compliance with ISO 14001 Environmental Management Systems as specified in DAO 2015-07. While most companies reviewed are at par with international standards of operation, there remain two companies that are non-ISO compliant and in need of improvement.

The Review also found that six companies performed poorly in ensuring occupational safety and health, leading to a higher frequency of accidents, deaths, and loss/damage, among others. The factors attributed to this poor performance include (a) absence of a designated safety engineer, safety and health induction/orientation, and emergency response team; (b) insufficient warning signs at the mine site and causeway; and (c) lack of medical services and facilities. However, it is also important to note that many of the companies that failed the Review, particularly around 50 percent in Phase 1, were implementing Care and Maintenance Programs.

Operational inefficiency in mining operations influenced the lack of sufficient capitalization, resulting in poor maintenance of mining infrastructure, including roads and sediment transport control measures, and poor health and safety management and practices.

Another important issue is the insufficient assays[4] for companies directly shipping ores for export, opening opportunities for technical smuggling. Some of the effects on the overall mining operation and government include foregone miners' revenue from the unmeasured mineral contents, undeclared taxes and foregone government revenues, and undue competitive advantage for importing countries.

C. Environmental Trade-offs

Most trade-offs in mining occur between the economic and environmental impacts; hence, most issues would arise from the ecological aspect of the Mining Review. Incomplete environmental management planning and non-adherence to their conditionalities constitute many of the violations of mining companies.

Despite the clear guidelines and principles from the DENR Mines and Geosciences Bureau (MGB), some Final Mine Rehabilitation and Decommissioning Plans (FMRDP) examined have vague or unclear goals and targets that could confuse assessments for the final relinquishment. For instance, such FMRDPs identified soil erosion control as a measure but failed to identify the target soil erosion rate during mine closure. Moreover, the areas where the baseline information is collected for environmental impact assessment (EIA) reporting are often disturbed. This situation may lead to improper selection of species to be used for rehabilitation, which can be detrimental to the environment. In this case, the FMR/DPs that will be developed should aim for a reference landscape, which could provide ecosystem goods and services needed by mine-affected communities as the target for rehabilitation.

The nonstrategic placement and inappropriate specifications of sediment control facilities contribute to increased siltation in waterways. The colossal difference in the proportion of 'idle' and productive lands in mining tenements is also seen to limit the potential productivity of the land.

[4] An assay is a set of processes that helps determine the proportions of precious metals in orders and other metallurgy substances such as silver or gold, which could also serve as a point of valuation of minerals for the imposition of taxes and royalties by the government.

Five of the mines reviewed also did not properly handle toxic and hazardous wastes and segregate solid wastes. Thirteen mines also failed to properly monitor air and water quality parameters based on existing guidelines.

Despite the increasing threat of climate change, mining plans still lack in mitigation and adaptation efforts. Consequently, mining infrastructure needs to be climate-proofed.

D. Social and Economic Impacts

The social acceptability of mining is another critical issue that affects mining activities. Ultimately, social acceptability depends on the magnitude of the perceived net benefits derived by the community from mining activities and the level of access each member of the community has to these benefits.

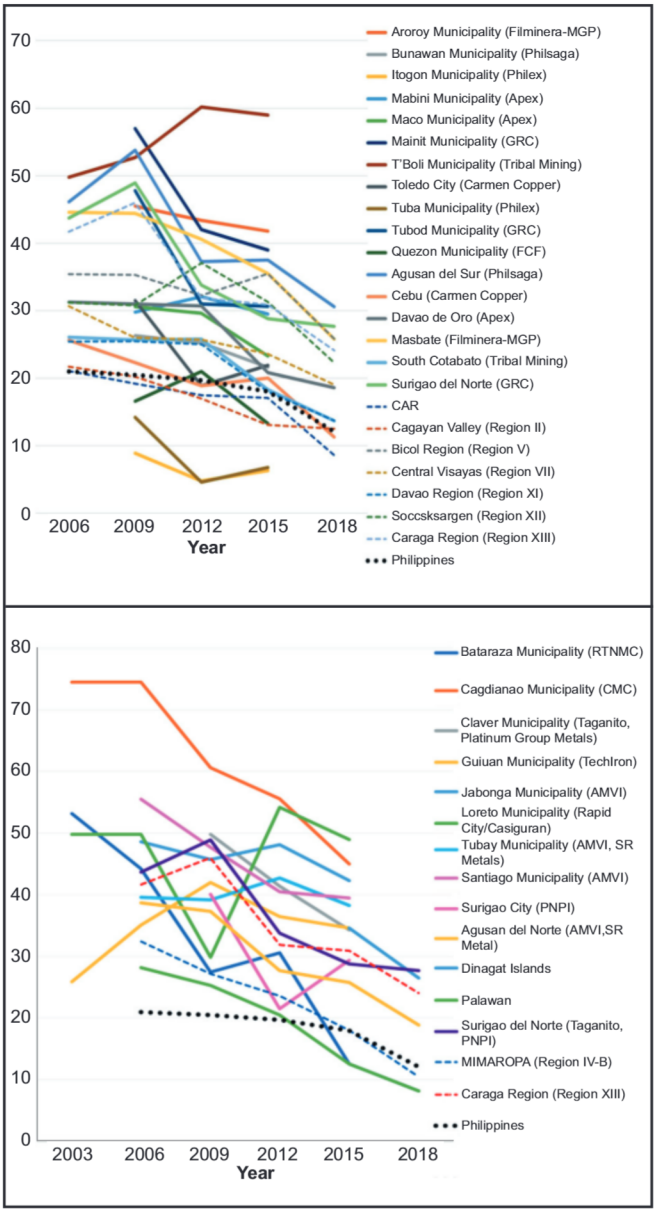
Based on the Review, issues arise when (a) equity distribution is not achieved; (b) there is a lack of transparency in the implementation of social development programs/activities; and (c) effective communication channels have not been established among the mining company, the government, and the host mining communities.

In some areas, particularly involving Indigenous Peoples (IPs), issues concerning the improper management and inequitable distribution of IP royalties have resulted in conflicts within or between concerned Indigenous Cultural Communities. A tendency for communities to be overly dependent on the SDMP was also observed, with some communities expressing concern over sustaining the development gains once mining companies cease their operations.

Despite the relatively minimal contribution to the national economy in terms of gross value added and host local government units' minuscule share to the total tax payments made by companies (i.e., 5.82% and 3.05% for metallic and non-metallic mining companies, respectively) (Espinosa and Chan 2018), mining still has the potential to spur local economic growth by providing livelihood opportunities to the local community through business and employment. In fact, the reduction in poverty incidence has been generally observed in areas hosting mining activities, except for some areas where mining activities are still relatively new (Figure 2). Also, poverty level in two mine sites are still higher than the national average. The Review also found that the majority of the households in mining *barangays* have relatively higher incomes than households in neighboring non-mining *barangays*.

However, some SDMP projects have short-lived impacts and could end following the cessation of mining activities. Therefore, the challenge lies in finding the appropriate measures to sustain the economic gains from mining activities beyond the mine's life.

Figure 2. Impacts on Poverty Reduction: Poverty Incidence of Host Municipalities, Provinces, and Regions



Source: MICC Mining Review Reports

II. Conclusion and Policy Recommendations

The MICC Mining Review identified many shortfalls in mining policies and operations in the country. Still, it also presented several opportunities to scale up good practices to improve the industry's contribution to sustainability. This policy note provides key policy recommendations based on the results and findings of the Mining Review. However, these recommendations and conclusions do not necessarily apply to all mining operations reviewed, as some have already exhibited good practices.

a. **Streamline compliance monitoring and enforcement of regulatory policies.** Legal compliance must not be limited to checking the availability of required documents, but efforts must be made to ascertain conformity. The gaps that restrict the timely submission, processing, and issuance of pertinent documents must also be identified and addressed accordingly. Streamlining compliance monitoring and enforcement entails harmonizing overlapping requirements and establishing a joint system for monitoring mining operations' efficiency, compliance, and environmental and socioeconomic impact. In relation to this, the government must also improve its policy enforcement by ensuring that mining companies are only allowed to operate once they have successfully obtained the necessary permits; satisfied the conditions provided in their respective mining contracts and Environmental Compliance Certificates; and when requirements, such as Feasibility Studies and Declaration of Mining Project Feasibility have been thoroughly reviewed and approved. Further, vertical coordination and provision of support between the national and local governments must be strengthened to facilitate regulatory compliance.

b. **Revisit the mining law to address overlapping and outdated provisions.** RA 7942 should be reviewed to address overlapping policies, particularly concerning land governance. There is also a need to update existing fees, fines, and penalties. The fees must be determined based on a technically sound study that considers the value of negative externalities arising from mining activities. The passage of a legislative measure further rationalizing existing mining revenue sharing schemes and mechanisms is also deemed critical in ensuring a more efficient and equitable tax system for the industry—one that takes into account royalties, windfall profits, retraction of counterproductive fiscal incentives, safeguards against thin capitalization and ring-fencing, and mechanisms that allow host communities/local governments to benefit more from mining activities.

c. **Promote and sustain technical and technological efficiencies in mining.** Technological innovations and mechanisms to ensure efficiency in production and operations and effective environmental management practices can be determined through collaborative efforts from respective government agencies, mining companies, the private sector, and the academe. For instance, capitalization requirements may be revised to strengthen the transparency of ownership and to properly account for market instability. Moreover, best practices should be promoted and scaled up across stakeholders through recognition, program development and adoption, and provision of incentives. Guidelines should also be developed to establish design criteria for infrastructure facilities and services and to monitor occupational safety.

d. **Review the environmental impact statement system to encourage greater accountability.** The EIA process should be updated and the institutional requirements should be evaluated to ensure that recommendations are fulfilled. Moreover, a policy may be crafted towards ensuring the incorporation and implementation of climate change adaptation and mitigation measures in mining plans.

e. **Redesign framework for social development programs and payment and management of IP royalties.** Existing frameworks for developing and implementing the SDMP need to be evaluated and redesigned to further promote community ownership and inclusive development and to improve the contribution of mining towards social and economic development. This can be achieved by strengthening the implementation of a bottom-up participatory approach to planning and the guidelines for the mandatory hiring of community organizers to help develop and implement plans and programs. Actively promoting investments to enhance human, social, and natural capital will also help. The treatment of funds allocated for the implementation of SDMP and other related plans as private funds may also have to be revisited to ensure transparency and accountability in the management and use of these funds. SDMP should undergo periodic social impact monitoring to ensure adaptive management.

   The procedures in paying out the royalties from mining operations must also be rethought and the guidelines for its use must be clearly communicated to the recipients to avoid misinterpretation and conflicts.

f. **Continue the conduct of regular multistakeholder and interdisciplinary review of mining operations.** The conduct of the comprehensive review on mining operations can adequately identify the needs and provide appropriate interventions to address issues, as demonstrated by the Phase 1 of the Review, which influenced the development and adoption of recent policy issuances on mining (See Box 3). In view of these benefits, it is recommended that the review framework adopted by the MICC be institutionalized into the DENR's monitoring and mine auditing processes. Periodic full impact analysis that accounts for all benefits and costs of mining, their incidence, and mechanisms for compensation or penalties should complement the Review.

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