



INTERGOVERNMENTAL FORUM
on Mining, Minerals, Metals and
Sustainable Development

CURRENT STATUS OF MINE CLOSURE READINESS: ARE GOVERNMENTS PREPARED?

INTRODUCTION

Mine closure and the post-mining transition have become increasingly important to governments, industry, and society. The number of mines anticipated to close in the coming years is increasing, and we are collectively placing more emphasis on the sustainable management of mineral resources and land use. Governments and regulators have been implementing and revising mine closure policies, regulations, and guidance documents, but are those changes meeting the challenge? Are governments ready to implement those changes as more mines close? And what are the barriers to advancing the management of the post-mining transition that is expected by a socially and environmentally concerned society?

To address these questions and others, and to follow-up on Mining Policy Framework (MPF) assessments undertaken by the Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development (IGF) that have consistently identified the post-mining transition as an area of weakness in mining governance, the IGF undertook a survey of its government members in 2019 and early 2020 to assess their readiness for mine closure. The results of this survey combined with the 14 MPF assessments that have been completed by the IGF since 2014 show that while governments are aware of the importance of mine closure and the post-mining transition, many do not have the policies, regulations, enforcement, or capacity to manage mine closures. Given that hundreds of additional medium- to large-scale mines are likely to close in the next couple of decades¹ and that mine closure planning should start before mining begins, it is clear that many governments need to improve their policies, guidelines, and capacities to more effectively manage mine closure and the post-mining transition.

This briefing note summarizes the results of the IGF member survey and MPF assessment findings along several mine closure themes, including closure plans, financial assurance, social closure, and records of closed or abandoned mines. This is followed by a discussion

¹ Brock, D. (2020, April). ICMM's integrated mine closure: Good practice guide – then and now. *AUSIMM Bulletin*. <https://www.ausimm.com/bulletin/bulletin-articles/icmms-integrated-mine-closure-good-practice-guide--then-and-now/>



of the main challenges governments and regulators face and some steps that governments can take to advance the effective management of mine closure.

IGF MEMBER SURVEY AND MPF ASSESSMENTS

The IGF conducted a survey of its members between mid-2019 and early 2020 to assess their current policies, regulations, and practices related to mine closure and the post-mining transition. Seventeen countries responded, spanning North America, Europe, Africa, Asia, and Oceania. The IGF has also completed 14 MPF assessments since 2014, covering countries in North and South America, Asia, and Africa. Thirteen of those assessments are from countries that did not respond to the survey. An MPF assessment involves assessing a country's existing laws, policies, and regulations against a suite of best practice standards that are outlined in the MPF—one of which is the post-mining transition.² Taken together, the survey and MPF assessments outline the current state of mine-closure readiness for 30 countries that span all regions of the world. These jurisdictions also span the full range of development as measured by the Human Development Index (HDI), indicating that the data are representative of the state of closure readiness for countries at different stages of development (Table 1). The HDI was also used to assess whether there is a correlation between a country's level of development and the state of mine closure policy readiness.

TABLE 1. GEOGRAPHIC DISTRIBUTION AND HDI OF SURVEY RESPONSES AND MPF ASSESSMENTS

Region / continent	Survey responses	MPF assessments	Total responses and assessments (%)
Africa	4	6	33
Asia	6	2	27
Europe	5	0	17
North America	1	3	13
South America	0	2	7
Oceania	1	0	3
Total	17	13	100
HDI (2020)*			
Very high	6	1	23
High	5	4	30
Medium	2	3	17
Low	4	5	30
Total	17	13	100

*United Nations Development Programme. (2020). *Human development report 2020*. <http://hdr.undp.org/en/2020-report>. The HDI is a statistical index that considers life expectancy, education, and per capita income as a means of ranking human development. It is divided into four categories: very high, high, medium, and low.

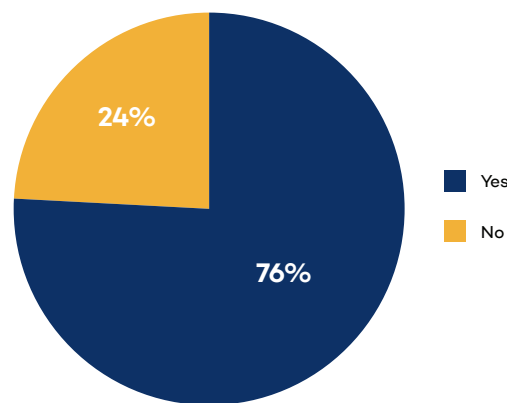
² The MPF reports can be found here: <https://www.igfmining.org/report/>



MINE CLOSURE PLANS

Results indicate that 76% of jurisdictions have a formal legal requirement for industry to submit a mine closure plan as part of mine development, and 24% do not. On its own, this indicates that a large percentage of countries now require mine closure plans for operating mines. However, the MPF assessments show that the level of detail and rigour required in closure plans and the degree of review and scrutiny that the plans receive are highly variable and insufficient in a number of jurisdictions. Some countries only require short, high-level plans with little detail that are reviewed by staff with limited experience in mine closure or environmental or social management and who lack sufficient resources to effectively respond to the submitted plans. In other cases, there is no guidance on what should be included in the plan or how it will be reviewed and factored into permitting and authorizations.

FIGURE 1. SURVEY RESPONSES TO THE QUESTION: ARE MINE CLOSURE PLANS REQUIRED?

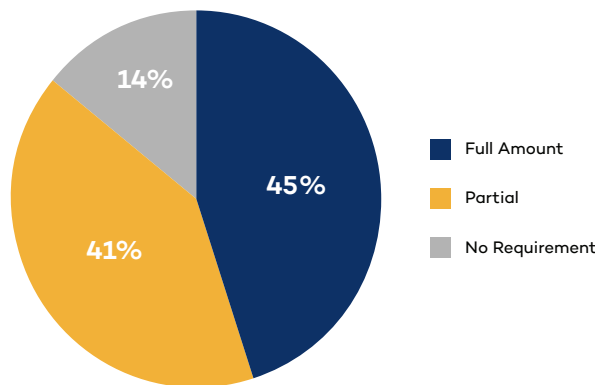


FINANCIAL ASSURANCE

The results from the survey and MPF assessments show that 86% of jurisdictions require some level of financial assurance for operating mines, while 14% do not require any form of assurance. However, only 45% require that the full amount of the estimated closure cost is secured through financial assurance. That puts many jurisdictions at financial, environmental, and social risk if there is a default by a mine operator in fully implementing closure. In the past, some mines with no financial assurance have been abandoned, resulting in unsafe and unacceptable environmental conditions with the financial liability to address these challenges defaulting to government. Even among some of the countries that indicated they hold full financial assurance, there is uncertainty whether the closure costs cover the full cost of closure, and therefore whether government holds sufficient financial assurance. The data also show that there is limited correlation between the requirement for financial assurance and the HDI. While it might be expected that more developed countries have stronger financial assurance policies, that is not borne out by the data. Countries rated as high or very high on the HDI range from requiring full financial assurance to not requiring any financial assurance at all.



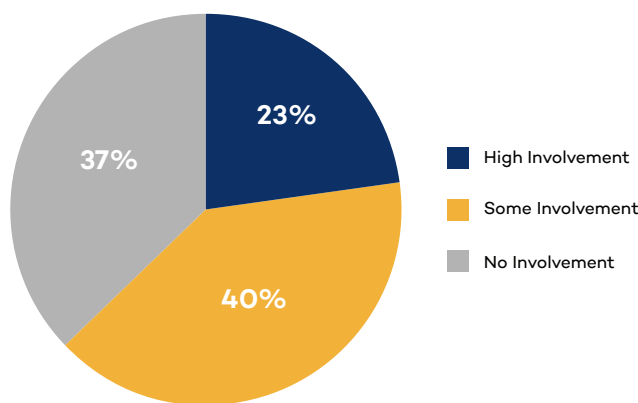
FIGURE 2. SURVEY RESPONSES TO THE QUESTION: IS FINANCIAL ASSURANCE REQUIRED?



SOCIAL CLOSURE: COMMUNITY INVOLVEMENT

The survey and MPF assessment data show that community involvement in developing and implementing mine closure plans and the post-mining transition is highly variable. In about a quarter of the jurisdictions (23%), there is a high level of community involvement, and in another 40%, there is some involvement of communities. However, in 37% of the jurisdictions, there is no involvement of communities. The survey further probed aspects of social closure and found that 59% of jurisdictions have legislation or policy that encourages planning and consideration of social transition and community impacts as part of mine closure, and 41% do not. Similar to financial assurance, it might be expected that more developed countries have strong community engagement requirements, but the data show that there is limited correlation between the HDI and the level of community involvement in shaping mine closure. Given that the people who live near mine sites will likely be the most impacted by the social, economic, and environmental changes associated with mine closure, considerable progress is needed to integrate the social transition into mine closure planning and implementation so that a sustainable community can thrive well after the mine closes.

FIGURE 3. SURVEY RESPONSES TO THE QUESTION: WHAT IS THE LEVEL OF COMMUNITY INVOLVEMENT IN SHAPING MINE CLOSURE PLANS AND THE POST-MINING TRANSITION?





CLOSURE REGISTRY AND RECORDS

The survey of IGF members also considered the question of a closure registry or records of how many mines have closed. The results indicate that 75% of jurisdictions do not have adequate records of the number of mines that have closed and surrendered their mining leases. While the MPF assessments did not address this question directly, they indicate that more than 50% of jurisdictions do not have records of closed or abandoned mines. The existence of such records would allow industry and government to understand the processes that were used to close previous mines, the lessons learned, and the regulatory improvements that may be needed. Important information is lost without appropriate records.

CHALLENGES TO BECOMING MINE-CLOSURE READY

While progress is being made in the management of the post-mining transition, many countries remain unprepared for the environmental, financial, and social aspects of mine closure and therefore are not fully equipped to manage the sustainable development of their mineral resources. The survey and MPF assessments highlighted several outstanding challenges to advancing the state of practice. These are outlined below.

- **Capacity and Experience** – In almost all cases, governments and regulators do not have sufficient human resources and financial capacity to fully implement mine closure policies. This is often worsened by a lack of direct national or international experience with mine closure and with a lack of integration between ministries or departments responsible for mine closure and environmental management. This challenge is likely the single biggest barrier to becoming mine-closure ready, not only in the management of individual mine closures but also in the development and modification of regulations and guidance material.
- **Community Involvement** – Insufficient involvement or consideration of communities in mine closure planning and in the post-mining transition hinders the sustainable development of mineral resources. To ensure productive and safe post-mining land use and economically sound communities, governments should ensure that community members, particularly at the local level but also regionally and nationally, are actively involved in mine closure discussions from pre-operation to post-closure monitoring and relinquishment.
- **Regulations and Guidance** – Many jurisdictions have outdated, incomplete, or weak mine closure or environmental regulations. This includes aspects related to the quality of mine closure plans, the formalization of reclamation/closure obligations, setting closure completion or success criteria, financial assurance, and the treatment of residual environmental risks after a mine is closed. This challenge links back to the limited resources and experience available to many government regulators. However, the MPF assessments indicate that there is limited use of publicly available, current, and detailed international regulations, standards, and guidance on mine closure. Adoption or modification of this material could advance the management of mine closure in the absence of local guidance or while tailor-made national guidance is developed. See Table 2 for a selected list of recent international mine closure guidance documents.



- **Financial Assurance** – With less than half of the countries considered in this briefing note holding full financial assurance, there are considerable risks that current mine sites could be left to government to fully close. Financial assurance policies need strengthening. However, one of the challenges that some jurisdictions face is the ability of domestic financial institutions to manage assurance—and to manage it at arm’s length from government. Where assurance is held outside of the country, the challenge is governments being guaranteed access to funds when legitimately needed.
- **Closure Registry** – Experience with mine closure provides opportunities to learn from past practices and improve the management of future mine closures. With up to three quarters of countries lacking a record of closed or abandoned mines, a significant learning opportunity is lost.
- **Relinquishment** – Many mine closure policies and regulations lack a clear process for the final relinquishment of a closed mine site back to government or the landowner. Even among some of the leading jurisdictions in mine closure management, such as Canada or Australia, the path to relinquishment is often unclear. The survey indicated that only 38% of countries have legislation that considers or addresses the residual or long-term risks associated with closed mines, and likewise, only 38% indicated that financial assurance includes coverage for residual risk. This may lead to a lack of incentives for companies to invest in closure planning and achieve high-level closure outcomes.

TABLE 2. SELECTED LEADING MINE CLOSURE GUIDANCE DOCUMENTS

Leading practice guideline	Year	Published by	Notes
Global Review: Financial Assurance Governance for Post-Mining Transition	2021	IGF	A review of financial assurance mechanisms and leading practices with recommendations for government.
<i>Mine Closure: A Toolbox for Governments</i>	2021	World Bank	A guide for government policy-makers and administrators on the information needed to develop a broad governance framework for mine closure.
<i>Mine Closure Plan Guidance – How to Prepare in Accordance with Part 1 of the Statutory Guidelines for Mine Closure Plans</i>	2020	Government of Western Australia	Detailed guidance on the content for mine closure plans in Western Australia. Other useful guidance documents from Western Australia are available here: http://www.dmp.wa.gov.au/Environment/Mine-Closure-Plan-6034.aspx



Leading practice guideline	Year	Published by	Notes
<u>Integrated Mine Closure: Good Practice Guide (2nd ed.)</u>	2019	International Council on Mining and Metals	The leading international guidance document on mine closure; the document is directed at industry but also useful for governments.
<u>Guía de Recursos de Buenas Prácticas Para el Cierre de Minas</u> [Resource guide for good practices in mine closure]	2019	Government of Argentina	Guidance on best practices in mine closure for mines in Argentina.
<u>Mine Closure Checklist for Governments</u>	2018	Asia-Pacific Economic Cooperation Forum	A comprehensive and useful document on all aspects of mine closure for governments.
<u>Mine Rehabilitation: Leading Practice Sustainable Development Program for the Mining Industry</u>	2016	Government of Australia	Useful and practical guidance on planning, implementing, and monitoring mine closure and rehabilitation. It is primarily directed at industry but also useful for governments and other stakeholders.
<u>Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories</u>	2013	Mackenzie Valley Land and Water Board, Canada	A well-organized, clear, and comprehensive guide to mine closure plans for Canada's Northwest Territories that includes sections on northern limitations and considerations that could be adapted for different climatic or ecological regions.

POLICY IMPLICATIONS FOR GOVERNMENTS

Most governments now recognize the importance of managing mine closure and the post-mining transition. Yet, many governments have not developed the policies and guidance needed to effectively manage mine closure. In many countries, there is a need to initiate and implement mine closure policy reform as soon as possible. Governments will continue to have difficulty obtaining the “social licence” to maintain or grow their mining sector if they cannot demonstrate that they are able to manage the environmental and social aspects of mining, including the post-mining transition.



As a first step, governments should consider the policy items outlined in this briefing note as needed: ensure comprehensive mine closure plans are required and developed in line with best practices, fully engage communities over the life of the mine, maintain full financial assurance, make use of leading international standards and guidance, establish processes for relinquishment, and keep records of mine closures. Above all else, governments need to build the leadership needed to manage mine closure by allocating sufficient human and financial resources to ensure the competency gaps within the government are addressed so it can assess the many aspects of closure.

There is also a need for many governments to utilize the expertise in mine closure and the post-mining transition that exists within industry and civil society, including local and international mine operators, consulting companies, development agencies, and non-governmental organizations. Some of the best and most up-to-date expertise on mine closure lies within industry. Working collaboratively with industry and international organizations like the IGF, governments can learn about current best practices, gain lessons from previous closures, and build an understanding of the outstanding challenges. There is also an opportunity to work together to develop clear processes and criteria for the relinquishment of closed mines.

The IGF is available to support member countries with the development of mine closure policies, guidance, and capacity development. This could include a full MPF assessment, a gap analysis of existing closure policies, or support for new policy developments through training and capacity building. The IGF could also facilitate collaborative approaches that work in the best interests of government, the people, and the environment.

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