

Committee: Environmental Council

Issue: Promoting the use of sustainable mining practices

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Position: Deputy President

PERSONAL INTRODUCTION

Dear delegates,

I am very honored to be one of the Deputy Presidents of the Environmental Council at the 6th Deutsche Schule Thessaloniki Model United Nations. My name is Valentina-Olga Stefanou, I'm currently an IB2 student at Pinewood American International School of Thessaloniki and so far, I have attended four conferences as a delegate meanwhile this is my first time being a Deputy President, which means that this is a completely novel experience to me

To some of you, being a delegate must be a novel experience too, something that all of us have been through in the past and were intimidated by the skilled veterans attending the conference. However, no matter what you should strive to prepare yourself to the best of your ability through research, research, research, and many, many notes but no worries, as this study guide will serve as a basis for your research journey. The keyword is "basis", as you should under no circumstances use this study guide as your only source of information but rather as a research starting point, helping you excel at the fruitful debates around this topic. Remember that the more prepared you are, the smoother the conference will go both for your co-delegates and for the President and the Deputy Presidents too!

In case you have any questions or need help in general, the solution is only one text away, so don't hesitate to take advantage of my email address, which is vstefanou@pinewood-school.gr.

Looking forward to meeting every single one of you,
Valentina-Olga Stefanou

TOPIC INTRODUCTION

Minerals acquired from mining were some of the first valuable materials humans have been processing and trading from the onset of human civilization, utilizing minerals that were vital in creating sharp tools like chert or obsidian, or pottery and other utensils by using clay. Ancient civilizations like the Romans depended on such activities due to the need for warfare production and later, especially in the Renaissance period, the revenue of the European countries heavily depended on miners in the New World for instance.

Today, as we are living in an era of increasing industrialization growth, it is no surprise that mining practices serve to fulfill great demands for natural resources and development in the economic sector. But as every action has a reaction, so do the practices of mining severely impact the environment, affecting ecosystems and civilizations on a global scale.

Mining activities are certainly not the only ones to blame for the environmental crisis, however, they are one of the main reasons our planet's environment is in a critical state. For that reason, it is important to consider the legal frameworks of each country individually and what applies to all the countries on an international level, the transparency and corporate responsibility of mining companies, and any illicit activities they might be involved in. Having said that, it is easy to conclude that the current global economic, social, and environmental state raises the need for international cooperation and to start reconsidering the sustainability of mining practices and take urgent action.

DEFINITION OF KEY TERMS

Sustainable mining practices

“Appropriate, safe, and reasonable mining practices that also conform to all applicable laws and regulations by using modern methods and equipment.”¹

¹ “Good Mining Practices Definition.” *Law Insider*, www.lawinsider.com/dictionary/good-mining-practices#:~:text=More%20Definitions%20of%20Good%20Mining%20Practices&text=Good%20Mining%20Practices%20means%20mineral.

stone tools.⁶ Mining started to be defined as an industry as the civilizations started to become increasingly advanced around 10,000 years ago, as they were discovering how to apply heat to manipulate materials in a beneficial way, pottery being the leading instance of this phenomenon. Another factor that contributed to the creation of the whole mining industry was the advancement of metalworking and more specifically smelting, due to which metals like gold and silver became valuable in many cultures. In the Bronze Age people started discovering how liquidating bronze and then letting it cool to become a solid would allow them to shape it using hammers, a technique called cold working while in the Iron Age they realized how charcoal significantly impacted the quality of iron when combined with the latter in small quantities.

The valuable results of mining have been partially responsible for disputes happening between Athens and Sparta in ancient Greece regarding the extraction of silver from the Laurion Mines meanwhile Romans were utilizing this activity to create war materials. Europe's rise as the leading power of the world for a few centuries demanded payments in material for allowing the exploitation of natural resources located in areas of defenseless tribes and this is how the mining industry became what we know today.

⁶ "9.1.2: The History of Mining." *Geosciences LibreTexts*, 28 Aug. 2022, [geo.libretexts.org/Bookshelves/Geology/Mineralogy_\(Perkins_et_al.\)/09%3A_Ore_Deposits_and_Economic_Minerals/9.01%3A_Mineral_Commodities/9.1.02%3A_The_History_of_Mining](https://geo.libretexts.org/Bookshelves/Geology/Mineralogy_(Perkins_et_al.)/09%3A_Ore_Deposits_and_Economic_Minerals/9.01%3A_Mineral_Commodities/9.1.02%3A_The_History_of_Mining)

Types of mining

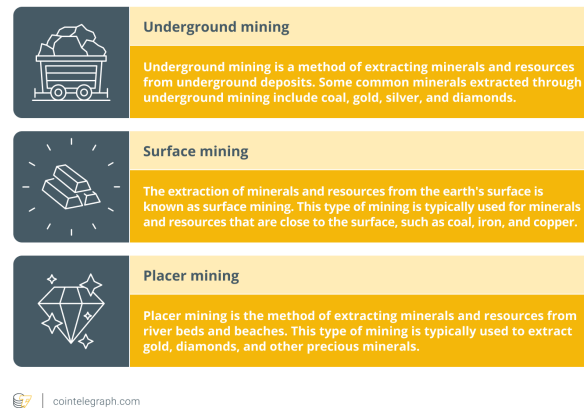


Figure 1: The types of mining⁷

According to Dexter Perkins, the abundance of minerals in particular areas resulted in the prosperity of the civilizations located there. In the case of the discovery of mineral deposits, the result is the appearance of new communities and industries; once these deposits become depleted, the whole place becomes abandoned, and the cycle starts all over again; this has been true not only for the past but stands true until today. To understand the importance of mining today, we only have to check how many minerals go into the making of a smartphone. The number exceeds almost 75 elements and some of the most important ones are copper, tin, and iron .⁸

All that would not happen were it not for the development of mining technology. The first miners had the rough task of having to use their bare hands or stone tools to extract minerals, which were later replaced with fire which would help to rapidly clear tunnels. In the Middle Ages, explosives were used to break rocks and again, were replaced by black power and later with dynamite. Around the 19th century, motorized mining tools like drills, lifts, and steam-powered pumps came to life. General Kinematics mentions that “the Industrial Revolution spurred improvements in explosives and mining equipment. Mechanical drills powered by pistons, then compressed air, significantly

⁷“9.1.3: Mineral Deposits, Ore Deposits, and Mining.” Geosciences LibreTexts, 28 Aug. 2022, [geo.libretexts.org/Bookshelves/Geology/Mineralogy_\(Perkins_et_al.\)/09%3A_Ore_Deposits_and_Economic_Minerals/9.01%3A_Mineral_Commodities/9.1.03%3A_Mineral_Deposits_Ore_Deposits_and_Mining](https://geo.libretexts.org/Bookshelves/Geology/Mineralogy_(Perkins_et_al.)/09%3A_Ore_Deposits_and_Economic_Minerals/9.01%3A_Mineral_Commodities/9.1.03%3A_Mineral_Deposits_Ore_Deposits_and_Mining).

⁸ “9.1.2: The History of Mining.” *Geosciences LibreTexts*, 28 Aug. 2022, [geo.libretexts.org/Bookshelves/Geology/Mineralogy_\(Perkins_et_al.\)/09%3A_Ore_Deposits_and_Economic_Minerals/9.01%3A_Mineral_Commodities/9.1.02%3A_The_History_of_Mining](https://geo.libretexts.org/Bookshelves/Geology/Mineralogy_(Perkins_et_al.)/09%3A_Ore_Deposits_and_Economic_Minerals/9.01%3A_Mineral_Commodities/9.1.02%3A_The_History_of_Mining)

increased the capability and efficiency of mining hard rock. Improvements in other mining processes occurred too. Hand-powered loading and hauling were replaced by electric conveyors, mine cars, and vehicles. Steam-driven pumps solved the problem of water inflow. Candles and oil-wick lamps were improved by gas lamps, and eventually battery-powered lamps. Mechanization and new technology sparked dramatic improvements in mining techniques.”

Today, it is possible to extract minerals without putting people’s lives at stake or excessively using energy and even when machines like explosives, trucks or drills are used, the efficiency of mining activities is much bigger than in the past. Still, there are many dangers regarding these activities, and this is the reason why mining technology should advance further until it becomes completely safe, for the people as well as the environment.⁹

	Mining in the digital era	Mining in the stone age
Technology	Mining in the digital era involves the use of sophisticated algorithms, advanced computing power and specialized hardware	Mining in the stone age relied on manual labor and basic tools
Scale	Mining in the digital era is often conducted at a much larger scale, with data mining algorithms processing vast amounts of information in a matter of seconds	Stone age mining was typically done on a smaller scale due to labor and technology limitations
Resource	The resource being extracted in the digital era is data	In the stone age it was minerals and precious materials that represent the resource
Environmental concerns	Digital era mining consumes significant amounts of energy, and companies are looking for ways to reduce their carbon footprint	Mining in the stone age involved physically extracting minerals, precious metals and stones from the earth using tools like hammers and chisels
Economics	The economics of digital era mining are often more complex, with factors like the price of cryptocurrency, competition among miners, and technological advancements affecting profitability	In the stone age, the value of minerals and precious materials was primarily determined by supply and demand

⁹ “Brief History of Mining & Advancement of Mining Technology.” *General Kinematics*, 23 May 2019, www.generalkinematics.com/blog/a-brief-history-of-mining-and-the-advancement-of-mining-technology/

Figure 2: Mining in the digital era in contrast to mining in the stone age¹⁰

Defining sustainability in the mining sector

Economic and Social

The role of mining in local communities is very significant, as it causes employment generation and larger consumption per capita, meaning that mining provides economic prosperity, however local individuals that may want to work in the industry may be overshadowed by more educated people migrating to these communities solely for the purpose of mining. Such activities can impact indigenous communities even further, as their land might be ruined or be taken away without permission or any ownership rights for the locals meanwhile one can never be sure that a mining site can be absolutely safe, thus it can put many lives at risk, not only of the miners but of the broader community as well.

Environmental aspects

Mining also contributes to a variety of environmental factors, the most prominent of them being the occurrence of direct deforestation within the mining area itself through establishing or expanding extraction sites, tailoring storage facilities, wasting rock dumps, and on-site processing facilities and roads.¹¹ This, of course, leads to habitat destruction too, as in the process of deforestation, the removal of native vegetation and soil occurs too and it goes without saying that this results in biodiversity loss, since animals may not find enough food to stay alive due to deforestation and habitat destruction. Another reason for the loss of life of plants and animals that puts indigenous people at risk too is water and air pollution due to mining, through chemical contamination of leaked chemical compounds that are needed from separating minerals from the ore. Another important thing to be mentioned is the high contribution of the mining industry to greenhouse gas emissions worldwide, which account to as much as 4% to 7% due to fugitive coal-bed methane releasing during coal mining. Greenhouse gasses have a profound effect on the energy budget of the Earth system despite making up only a fraction of all atmospheric gasses.¹²

¹⁰ Image source: <https://cointelegraph.com/news/the-history-of-mining-from-the-stone-age-to-the-digital-era>

¹¹ A Pan-tropical Assessment of Deforestation Caused by Industrial ... - PNAS, www.pnas.org/doi/10.1073/pnas.2118273119

¹² Delevingne, Lindsay, et al. "Climate Risk and Decarbonization: What Every Mining CEO Needs to Know." *McKinsey & Company*, 28 Jan. 2020, www.mckinsey.com/capabilities/sustainability/our-insights/climate-risk-and-decarbonization-what-every-mining-ceo-needs-to-know

Concentrations of greenhouse gasses have varied substantially during Earth's history, and these variations have driven substantial climate changes at a wide range of timescales.

Having said that, the lack of sustainability in the mining sector for the reasons stated above will not only impact mining districts short-term but also long-term, as mining activities can be irreversibly destroy numerous ecosystems and civilizations caused by economical and environmental instability respectively, thus downgrading indigenous communities and aiding to the climate change problem instead of helping the earth save itself before it's too late.

Challenges in achieving sustainable mining practices

Achieving sustainable mining practices is easier said than done; what concerns regulatory frameworks and governance, there is already an existing overview of international guidelines and instruments, however neither national legislation nor regulatory bodies have a strong presence in most countries, which only add on to the challenges in implementing and enforcing mining laws and regulations. Another aspect to take into consideration is the difficulty of ensuring and achieving unanimous legislation concerning mining that will ensure its sustainability in every nation with mining operations, as well as the challenges in creating a prosecutorial force for illicit mining activities that will act effectively and transparently in every nation at the same rate.

The lack of transparency and corporate social responsibility initiatives in most mining companies further highlight the high rates of corruption within the industry whereas the failure of addressing and persecuting the perpetrators of illicit mining activities is still a prominent phenomenon.

The aspect of technological advancements and innovation is equally - if not more - important as transparency and law enforcement in the sector, since in order to practically achieve sustainable mining practices, companies must first invest in the exploration of sustainable mining technologies and practices where automation and digitalization will be embraced for enhanced efficiency and safety, such as energy-efficient extraction methods and waste reduction.

Potential benefits of sustainable mining practices

Sustainable mining practices are vastly beneficial, since they help establish more control over the social, economical and environmental impact that mining activities can have and ability to adapt to a more sustainable standard of living and economic prosperity for local communities or even on a bigger scale for whole countries. Furthermore, no one can deny the importance of the development of newer infrastructure to have access to more isolated areas that are part of mining districts and incentives for the development of newer technology to further promote sustainable mining practices. Last, but not least, the public and the governments become more conscious and aware of the impact of mining and may pressure big mining companies to implement more ethical policies.

Downsides of sustainable mining practices

As much as there can be control over the social, economical and environmental impact that mining activities can have, they are still a driving force of destruction for the people, the land, plants and animals alike. Additionally, since sustainability in the mining industry is yet to become prominent, there will be an increase in the need of governmental funds that will monetize the mining companies which aim to develop their sustainable mining practices, all that stemming from taxpayers' money.

Conclusion

In conclusion, mining is not a practice that started existing a developing a few decades or centuries ago, but rather a few millenniums ago; this historical development showcases that since mining has evolved so many times in the past, further evolution towards a more sustainable approach is definitely feasible seeing how far these practices have come as of today. However, this evolution must be made in all aspects concerning the mining industry - that are human rights, laws and regulations and of course, technological development - and ensure that this evolution of mining eventually causes more good than harm in the long term regarding the economical, social and environmental impact mining could have on mining districts. Since achieving sustainability in the mining sector is still a big challenge it is of course not easy to overcome, but if all nations collaborate and take into consideration the positive impact of sustainable mining practices as well as try to eliminate any potential threats or drawbacks it could pose, the goal of a worldwide green mining industry would be achieved.

MAJOR COUNTRIES AND ORGANIZATIONS INVOLVED

Canada

Canada is a key global producer of copper, nickel and cobalt. It is the largest private-sector employer of Indigenous Peoples in Canada and is world-class when it comes to producing minerals and metals in an environmentally responsible manner. The industry also provides a major boost to the Canadian financial sector; the Toronto Stock Exchange (TSX) is the leading global mining exchange, listing more of the world's public mining companies and raising more mining equity capital than any other exchange. The Green Mining Initiative, led by Natural Resources Canada (NRCan), aims to further improve the minerals sector's environmental performance and create green technology opportunities.¹³ Canadian mining companies were the first in the world to develop an externally verified performance system for sustainable mining practices through the creation of the Mining Association of Canada's Towards Sustainable Mining initiative in 2004.¹⁴

China

In March 2021, China rolled out its 14th Five-Year Plan (FYP) (2021–2025, setting the national targets of carbon peaking by 2030 and carbon neutralization by 2060. According to Chinalco, approximately 50 percent of its total electrolytic aluminum products in 2020 were already produced with green energy. Chinalco is also intensifying an effort to shut down aged production lines and reduce pollutant emission and waste disposal across its plants in China. As with the trend globally, "green metals," including copper, nickel, lithium, cobalt and rare earth metals, will be in high demand in China's push to meet carbon-neutrality targets and the rapid development in sectors such as new energy vehicles, photovoltaics and wind power, sending a strong message to the wider global industry about what can be done in this sector to cut emissions.¹⁵

South Africa

Globally renowned for its sheer abundance of minerals worthy of mining, South Africa has gone on to become an industrial hotspot for the world's mining industry. A large portion of the country's economy centered around the mining sector, contributing more than 300 billion grand to GDP, employing thousands of people, and being the economic

¹³ "Mining in Canada." *Canada Action*, www.canadaaction.ca/mining

¹⁴ Funded in part by the Government of Canada. "Mining in Canada - Mihr: Mining Industry Human Resources Council." *MiHR*, 11 Sept. 2020, mihr.ca/career-development/mining-in-canada/

¹⁵ John Tivey | David Li. "China's Pursuit of Mining & Metals Industry Transition: White & Case LLP." *China's Pursuit of Mining & Metals Industry Transition* | *White & Case LLP*, 15 Sept. 2021, www.whitecase.com/insight-our-thinking/chinas-pursuit-mining-metals-industry-transition.

anchor of many communities around the country. Unfortunately, more than 50,000 jobs were lost in the mining sector in the last 10 years and over the last five years the productivity of South mining operations for key commodities has declined due to lack of technology adoption and key dimensions of organizational health, such as employee motivation and the work environment. Another worrying aspect is the slow progress to replace the failed South African Mineral Resources Administration cadastral system with a modern, transparent, corruption-free, online system.¹⁶

Glencore

With an estimated worth of US\$43bn, Glencore is a prominent force in the mining industry and its commitments to sustainability are certainly to scale. The company has received great coverage for its contributions, in particular, its investment of US\$3.54bn in the British Volt gigafactory this year, resulting in a long-term partnership that will sustain the demand for cobalt in the battery production. Glencore is also working on some innovative ideas to reduce its dependence on other resources. The company is currently working on a smelter method that utilizes seawater, in an effort to reduce the level of water withdrawn from conventional pipelines. Steps have also been taken to reduce emissions year-on-year, as occupational health is of utmost priority to the organization.¹⁷

Anglo-American

Anglo American is responsible for the mining of precious materials in various locations around the world, including diamonds, copper, platinum group metals, iron ore, nickel and manganese. The global mining enterprise is making moves towards decarbonization with the implementation of hydrogen fueling stations in Chile, trialing and implementation of marine biofuel for vessels traveling between Singapore and South Africa and adopting smart mining technologies to protect its employees. And then there are the figures. Anglo American reduced its greenhouse gas emissions by 34% last year and intends on taking this further with another 22% reduction. The need to reduce

¹⁶ Editor, Brand South Africa. "South Africa's Mining Industry Story of Integration and Success." *Brand South Africa*, 24 May 2023, brandsouthafrica.com/150919/south-africas-mining-industry-story-of-integration-and-success/.

¹⁷ Person. "Top 10 Global Sustainable Brands in the Mining Industry." *Mining Digital*, 2 Nov. 2021, miningdigital.com/supply-chain-and-operations/top-10-global-sustainable-brands-mining-industry.

water withdrawal has also been noticed, along with mitigating environmental incidents and energy consumption.¹⁸

COP and COP 15

The first Conference of Parties (COP) was an international convention held by countries who are party to the U.N. Framework Convention on Climate Change (UNFCCC) and the Paris Agreement on 28 March-7 April 1995. COP15 is the fifteenth meeting of Parties to the Convention on Biological Diversity (CBD), bringing together countries to agree on targets to ensure the survival of species and stem the collapse of ecosystems across the world, focusing on setting agreed global targets to halt and reverse the loss of 'biodiversity'. Plants and fungi among other things regulate the climate, protect communities from natural disasters like hurricane damage, and counteract the pollution in the air by carbon-sequestering. In December 2022, representatives of 196 governments were gathered to negotiate, among other things, green mining too, by placing emphasis on the implementation of even stricter measures for nations that were concerned with mining practices.¹⁹

BLOCS EXPECTED

Bloc 1: Countries in support of sustainable mining

This Bloc will be composed of countries who support the use of sustainable mining practices and are looking to develop it within their borders. Such countries will want stricter control of the legislation concerning the subsections of this issue, maintaining more relative transparency and striving for further technological developments in the mining sector for the improvement of the sustainability of mining practices. (Canada, Australia, Sweden etc.)

Bloc 2: Countries neutral or not supporting sustainable mining

This Bloc will be made of countries who don't really support the sustainability of mining practices without making much of an effort to establish it within their borders,

¹⁸ Person. "Top 10 Global Sustainable Brands in the Mining Industry." *Mining Digital*, 2 Nov. 2021, miningdigital.com/supply-chain-and-operations/top-10-global-sustainable-brands-mining-industry.

¹⁹ "Explained: What Is COP15 and Why Is It Important?" *Kew*, www.kew.org/read-and-watch/what-is-cop15#:~:text=Also%20known%20as%20the%20United,of%20ecosystems%20across%20the%20world. Accessed 6 Aug. 2023.

neither in terms of legislation and transparency nor in terms of technological advancements (DR Congo, Venezuela, Cambodia etc.)

TIMELINE OF EVENTS

Date	Description of event
Neolithic age (10000-4000 BC)	The onset of mining activities, using simple materials such as sharp rocks
Ancient Greece (1200-323 BCE)	Some of the first major mining disputes in influential civilized cultures are recorded
Middle Ages	Explosives used to break rocks
19th century	First appearance of motorized mining tools
20th and 21st century	First attempts made by countries to make mining more environmentally- and human-friendly
28 March-7 April 1995	The first Conference of Parties (COP) was held by countries who are party to the U.N. Framework Convention on Climate Change (UNFCCC) and the Paris Agreement
February, 2004	Creation of the Mining Association of Canada's Towards Sustainable Mining initiative
December 12, 2015	196 parties sign the Paris Agreement at COP21 in Paris
December, 2021	China rolls out its 14th Five Year Plan that affirms the national targets of carbon peaking by 2030 and carbon neutralization by 2060

March 2, 2022	A resolution adopted by the United Nations Environmental Assembly specifically tackles the issue of
December 12, 2022	A COP15 meeting takes place (subsection of the COP that concerns biodiversity) with a focus on green mining

RELEVANT RESOLUTIONS, TREATIES AND EVENTS

Article no.2 and 3 (a) and (b) from the UNEP/EA.5/Res.12 adopted by the United Nations Environment Assembly on 2 March 2022

This resolution tackles the issue of “Environmental aspects of minerals and metals management” and more specifically, the articles 2, 3(a) and 3(b) refer to a global intergovernmental meeting regarding the environmental sustainability of minerals and metals along their full life cycle using the help of various organizations and intergovernmental regional consultations, which will “take stock of existing activities and actions in the public and private sectors and by other relevant stakeholders to enhance the environmental sustainability of minerals and metals and identify, among other things, best practices, responsible business practices, standards, guidelines, technical tools, environmentally sustainable technologies and the use of renewable energy in mining” and “identify opportunities for enhanced international cooperation, including with a view to fostering capacity-building and technological, technical and scientific cooperation in the mining sector, in particular with developing countries”.

The Paris Agreement on Climate Change

This is a legally binding international treaty on climate change, adopted by 196 nations at the UN Climate Change Conference (COP 21) in Paris, on December 12, 2015, which was enforced from November 4th, 2016. The main goal is to keep the increase in the global average temperature below 2 Celsius grads above pre-industrial levels while limiting the temperature increase to 1.5 Celsius grads above pre-industrial levels. Implementation of the Paris Agreement requires economic and social transformation, based on the best available science. The Paris Agreement works on a five-year cycle of increasingly ambitious climate action carried out by countries. So far, the years since its entry into force have already sparked low-carbon solutions and carbon neutrality

targets, becoming competitive across economic sectors representing 25% of emissions, such as the power and transport sectors.²⁰

UNFCCC

The UNFCCC entered into force on 21 March 1994. The 198 countries that have ratified the Convention are called Parties to the Convention. The UNFCCC bound member states to act in the interests of human safety even in the face of scientific uncertainty. The ultimate objective of the Convention is to stabilize greenhouse gas concentrations "at a level that would prevent dangerous anthropogenic (human induced) interference with the climate system." It states that "such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened, and to enable economic development to proceed in a sustainable manner." The idea is that, as they are the source of most past and current greenhouse gas emissions, industrialized countries are expected to do the most to cut emissions on home ground.²¹

Convention on Biological Diversity (CBD)

The Convention on Biological Diversity (CBD) is the international legal instrument for "the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources" that has been ratified by 196 nations. The Convention on Biological Diversity covers biodiversity at all levels: ecosystems, species and genetic resources. It covers all possible domains that are directly or indirectly related to biodiversity and its role in development, ranging from science, politics and education to agriculture, business, culture and of course mining. The CBD's governing body is the Conference of the Parties (COP). This ultimate authority of all governments (or Parties) that have ratified the treaty meets every two years to review progress, set priorities and commit to work plans.²²

PREVIOUS ATTEMPTS TO SOLVE THE ISSUE

Treaties and conventions mentioned above, like the Paris Agreement, the UNFCCC, the CBD and its primal institution, the COP are all included in the previous attempts to resolve the issue of sustainable mining practices, due to their close relation to climate change as well as their consideration of economic and social factors that

²⁰ *Unfccc.Int*, unfccc.int/process-and-meetings/the-paris-agreement. Accessed August 2, 2023

²¹ *Unfccc.Int*, unfccc.int/process-and-meetings/what-is-the-united-nations-framework-convention-on-climate-change. Accessed 2, 2023.

²² "Convention on Biodiversity." *United Nations*, November 2020, www.un.org/en/observances/biological-diversity-day/convention#:~:text=The%20Convention%20on%20Biological%20Diversity,been%20ratified%20by%20196%20nations. Accessed August 2 2023.

contribute to this phenomenon and the demand for various reports and the use of indexes that showcase the level that each country abides to these agreements or conventions and ensures that among other things, the mining industry also operates sustainably and transparently, ensuring that no further environmental, social and economic harm is done to the nations where mining operations take place. Other previous attempts include:

Governments as initiators: fiscal decentralization

In many countries tax revenue from mining is shared between national and lower level governments. One of the two categories of arrangements is the degree of fiscal decentralization, affecting the way a nation empowers various parts and levels of its government to impose and collect taxes and fees from the private sector. Fiscal decentralization is more common in federal states such as Australia, Canada and the United States, where it is a direct consequence of the jurisdiction that states or provinces hold over mineral legislation and taxation.

Governments as initiators: revenue sharing

The other category of arrangements between the governments is revenue sharing, affecting how revenues collected by one or more parts of government are allocated for distribution to other governmental entities or for various investments or expenditures to non-governmental entities. In Africa, the governments of DR Congo, Ghana, Mozambique and Uganda share royalties and/or corporate income tax proceeds with lower level governments and local communities. However, in important mining countries, such as Chile and Tanzania, the central government does not share mineral revenues with lower level authorities. There is often a strong political pressure for revenue sharing and it is sometimes argued that it is necessary to ensure that the local communities affected by mining are able to benefit from its existence or can expect to receive additional public expenditure in order to account for mining's negative side effects. A fundamental difficulty with sharing mineral revenues in most countries is that the timing of the flow of funds to lower level governments is often exactly opposite to the timing of their actual needs.

Community consultations

Increasingly, mining companies are required by legislation to consult with the local communities affected by the proposed operations. The scope of such consultations may vary and usually companies are not required to conclude binding agreements with the communities. However, in most cases, companies find it in their interest to try to reach agreement with the communities on terms that they can consider, for practical purposes at least, as binding.

Corporate initiatives

Corporate initiatives are often developed in response to pressure from governments, employees or local communities. This may lead to a focus on short term solutions and “easy fixes”. There are, however, an increasing number of well-designed and effective corporate programmes that aim to promote local employment and wealth generation and that have been developed over long periods, usually in collaboration with local communities and other interested parties. Important corporate initiatives include: supply chain development by investing in improving the capability of local suppliers; employment since relatively few of the locals can be recruited in mining operations due to skills limitations and few companies take a broader view of the effects of their hiring policies on local communities; local business development since induced employment has raised local demand for consumer goods and at the same time assist in laying a basis for diversified economic development; regional development by large scale mining investment, which poses challenges and opportunities for local governments that are responsible for economic development; infrastructure, where infrastructure like inputs and machinery to be brought in and finished products to be transported out can often be used by local populations and other economic activities and can position a region for more rapid economic development and diversification.²³

POSSIBLE SOLUTIONS

Strengthening international cooperation

To achieve sustainable mining practices, international cooperation is of paramount importance and through this cooperation it is important that nations encourage information sharing and best practice exchange, facilitate collaboration among governments, mining companies, and civil society organizations as well as address the challenges of transboundary mining operations.

²³ *Sustainable Mining - International Labour Organization*,
www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_ent/---multi/documents/publication/wcms_592317.pdf

Investing in Research and Development (R&D)

Furthermore, it is of no less importance for nations to not only promote research on sustainable mining techniques and technologies, but also support innovation for the reduction of resource consumption and its environmental impact and develop sustainable mine closure and reclamation strategies.

Ensuring inclusive stakeholder engagement

What concerns inclusive stakeholder engagement, governments and mining companies should aim to empower local communities and indigenous groups in decision-making processes, establish platforms for dialogue and consultation between stakeholders and additionally, incorporate the voices of affected communities in mining policies and practices.

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