Riding the Risks and Opportunities of ESG in Mining

An end-to-end approach inclusive of mine design, operation, closure and reporting is key to delivery on ESG commitments

By Carly Leonida, European Editor

The mining industry has historically seen sustainability as a cost center and a tool to manage reputation and stakeholder relationships. However, the recent growth of interest in environmental, social and governance (ESG) has increased recognition that issues like climate change, biodiversity, and community engagement and the way in which companies handle them, create enterprise-wide risks and opportunities that can significantly affect company performance.

Elizabeth Freele and Rachel Dekker, co-founders and managing partners of mining ESG consultancy and think-tank, Sympact Advisory, shared their thoughts.

"Industry leaders and others are now acting on the realization that environmental and social risks are critically connected to the bottom line and to company longevity; that taking ESG risk seriously really is just better business management," Freele explained.

By focusing on the core issues of corporate sustainability, ESG can help companies understand how their positive and negative impacts on people and the environment also impact their own performance.

"There is not only a competitive advantage in transparency and building relationships based on trust, but also a collaborative advantage," Dekker said. "Competitive, in that investors, insurers, employees, communities and others are more likely to reward companies for transparency and trustworthiness. Collaborative, in that sustainability challenges that affect companies cannot be solved by one company alone, but require peer and cross-sector collaboration to the benefit of us all."

There are also benefits in talent attraction and retention, smoother regulatory and permitting experiences, preferred partner status in a range of business activities, and broader pools of investment opportunities to name just a few.

"There is a chance to stand out as an individual company, in an era where companies are no longer defined by the industry they are a part of," Dekker said. "By doing their part to support resilient communities and ecosystems, mining companies can ensure a more sustainable future than the collective path they are currently on."

Dr. Sarah Gordon, CEO at risk and ESG training, consultancy and research firm, Satarla, weighed in. "The evolution that we're seeing across all sectors, is the E, S and G coming together and being dealt with in an integrated manner rather than separately," she said. "With this, there is greater understanding that these issues, risks and opportunities, don't just happen in siloes, they are interconnected networks, and one department's risk might cascade into another."

As such, ESG risk management is evolving into enterprise-wide risk management. Companies are moving away from having bureaucratic taxonomies and health and safety-style methodologies for measuring risk, toward more dynamic and fluid network risk analyses. This approach is far more conducive in bringing together different disciplines within companies, identifying interdependent risks and determining what they mean as a collective.

"For ESG to work properly, companies need to have simple, dynamic, decision-focused, risk-based decision making," Gordon said. "It's got to be networked up and down through the organization, with good communication and accountability. Mining doesn't do that today, in part, because of its strong health and safety focus. Also, much of the risk management guidance documentation for mining requires an update to bring it in line with what other sectors are doing. This will make it fit for purpose, enable organizations to balance ESG with legal, technical and financial risks, and use it in rapid decision making."

Executives and directors from Anglo American view a model of the company's Quellaveco project in Peru. The model is used as part of a 'dialogue table' to engage with representatives from the local Moquegua community. (Photo: Anglo American)

Risk Management: Start at the Very Beginning

The nature and complexity of ESG-related risks vary widely, starting with the company, its activities and their position within the value chain; whether at the exploration phase, development, operation, or closure and beyond.

"At the exploration phase, there is a big opportunity to spot threats early on and put in place the right designs before problems can occur," Gordon said.

Every country and region have their own risks related to national and regional governance, the local climate, presence of water (or lack of), terrain and altitude, etc. There might be communities surrounding the project who own the land. The nature of exploration activities is also important — the risks associated with using drill rigs to obtain samples will be very different to those for desktop studies and remote surveying.

Also, what is the company looking for? Exploring for critical metals that are vital to the energy transition, or polymetallic deposits that include them, is easier to justify from a social perspective than exploring for a commodity such as gold or coal.

"Even at the exploration stage, every activity can have big ramifications," Gordon said. "If a company has lots of people on site, they're probably influencing the local community. At the projects stage, there will be thousands of people on site, so it's important to think about how and where those individuals will live, and their interactions with the local population."

Which begs the question: who is part of that team? Is the team diverse from a gender and ethnicity perspective, and does it include indigenous community members? Are contractors treated as part of the team or separate? How do you plan to get those people to and from site, along with materials?

Moving into infrastructure, how does the mine plan to generate or access power, both now and in the future? It's worth considering whether there is a chance to work with the government and/or local groups to create capacity that could continue to represent value for the population post-extraction. The same goes for water. If a mine can employ a processing method that requires little or no water, it would reduce both its abstraction and tailings storage requirements.

Then there are impacts on biodiversity, both from mining activities and the changing climate. It's important to put assessments and checks in place early on and use frameworks like the mitigation hierarchy to ensure that impacts are, at best, avoided, or at least, lessened and offset.

Today, it's important that mines aren't designed for closure, but for the decades after extraction finishes, so that they continue to represent value and not a source of liability for companies, communities and the environment. The total value of the asset post-extraction could offer insight in this respect. For example, if residual metals and byproducts residing in stockpiles or tailings are of high value, reprocessing could potentially offer a source of value and purpose for the asset post-extraction.

"The tricky thing with ESG and the UN Sustainable Development Goals (SDGs), is that you need to take all of them into account when designing a mine and its risk management framework," Gordon said. "It's no good focusing on driving down emissions to the detriment of biodiversity or social prosperity. Mining happens over a relatively long timescale, and regulations change fast so companies have to balance their priorities if they want to be compliant, both now and in the future."

Designing for More Than Just Mining

Mine designs are gradually evolving to better manage ESG risks and make the most of opportunities they offer. Some engineering firms have even developed their own methodologies that place ESG at the heart of the design process, with the aim of improving project outcomes for both people and the environment over the life of mine.

Stantec's Sustainable Mining by Design philosophy is a good example. Lauren Meyer is co-leader of the program and shared her thoughts.

"Many mining companies have a strong foundation in corporate social responsibility and environmental stewardship programs," she explained. "However, in recent years, ESG has moved front and center as a common language and framework for comparison, making the atmosphere that mining companies work in more complex, largely due to the increasing shift toward stricter stakeholder expectations.

"Investors, consumers, end users and the communities we work in are holding mining companies to higher standards and in the end, these stakeholders hold the social license to operate. In order to continue providing essential resources to the world, we must adopt more sustainable practices to meet these new standards."

Through proper implementation of ESG principles, there are opportunities for mining companies to create prosperity for local communities that lasts long beyond extraction. (Photo: Nugroho Nurdikiawan Sunjoyo/World Bank)

In a recent article published on Stantec.com titled, "Helping mines leverage the 'S' in ESG," Meyer explained that, for many companies, the "E" in ESG often overshadows the "S" when it comes to project design. However, there are plenty of opportunities for companies to meet their sustainability pledges through prioritizing this lever, and some are doing this quite creatively.

In her article, Meyer pointed to an example from a remote mining complex in Indonesia. There, surface operators would stop work multiple times a day to attend local areas of worship and pray. The operator was planning to transition the mine from surface to underground operations. This would have made exiting the mine for prayer breaks difficult, so Stantec designed mosques, washing facilities and chapels into the underground workings of the mine. This reduced unplanned downtime and eliminated additional energy usage to transport workers to surface facilities, while creating an inclusive and welcoming work environment. Projects like this show how a single design can result in a multiplicity of benefits for both the mine and the community.

Why is the social aspect harder to address in design than environmental and governance? *E&MJ* asked Meyer.

"Lack of trust and misunderstandings between mining companies and the communities they work in," she said, honestly. "Our work brings us into contact with

At its Las Tórtolas site in Chile, Anglo American is generating 'green' hydrogen for carbon-zero vehicles. The plant produces hydrogen from re-used water from the mining and treatment processes. The investment is an important step in the company's journey towards carbon neutrality. (Photo: Anglo American)

a vast number of communities that have different concerns, constraints and needs. Understanding these in order to properly address them requires hard work. Building trust requires consistent transparent communication, proof of a positive track record, and results, among other things. Not to mention the challenges of maneuvering language and cultural barriers."

In the past, there was less pressure to build social principles into projects, partly, because less has been known about the intricacies of how individual communities were being impacted. Now more than ever, advancements in technology and social media have increased visibility and public participation, making it easier for people to speak their truth.

"We now know that the concerns are about much more than just clean water and air," Meyer said. "This knowledge has empowered companies to do what is right and initiate change in the way they design, operate and close facilities, and how to properly involve the communities we work in throughout the process."

Central to good design and execution on all ESG and, particularly, social commitments, are the people, skills and experiences mining companies employ.

Meyer explained: "Companies need a stakeholder engagement plan, led by a qualified community relations advisor or equivalent, with measurable objectives to track and report on progress. This will ensure consistent follow up and communication with local communities and stakeholders throughout the entire mine life cycle.

"The plan should include conducting stakeholder mapping exercises to set clear objectives, determining how project objectives align with the needs and goals of the local community, providing sufficient opportunities for stakeholders to be involved, and developing two-way communication between project leads and stakeholder groups to incorporate stakeholder feedback, gauge satisfaction and track grievances throughout the process."

From Closure to Succession Planning

As mentioned earlier, through proper implementation of ESG principles, there are opportunities for mining companies to create prosperity for local communities that lasts long beyond extraction. For example, employing a local workforce stimulates economic prosperity by developing new skills and capabilities for those living in the local community. Likewise, assessing and addressing environmental project impacts to reduce air and water pollution improves the overall health of communities and, in turn, improves their long-term quality of life.

Meyer shared another example: "Stantec recently worked on a project in South America where the client was looking to expand their mining operations," she said. "The project site is located in an arid climate, and the operators realized that they needed more water to meet the expansion's demands.

"While our team was looking for a solution, the mine reached out to the local community and found they lacked infrastructure to properly treat their wastewater. At that time, the wastewater was being discharged into a nearby river untreated, so we decided to develop a single solution — a waste-water treatment plant — to meet both challenges.

"This solution provided the water needed for the project, enhanced the mine's social license to operate by giving back to the local community, and also reduced the community's health risks."

Demonstrating Progress

Designing mining operations to reflect ESG principles and executing properly on those designs during the life-of-mine is crucial. But that action must also be bookended with timely and appropriate reporting; stakeholders, shareholders, investors and regulators need to see undisputable proof that mining companies are doing what they have promised.

In a February 2022 article for Mining.com, Sympact's Freele explained that "in its current state, insights provided by the ESG market remain unreliable for most investors." This is in part due to differences in reporting methodologies, but also a heavy reliance on company disclosure or 'self-reporting.'

"This subjective content is not only limited and usually outdated, but also frequently inaccurate or incomplete, whether intentional or not, leaving analysts to work with patchy data that provides little insight into real and current ESG risks," the article stated.

Additionally, a great deal of analysis is still undertaken by humans, which is both resource-intensive and means a limited amount of data can be analyzed.

Freele said: "Because of this, the ESG disclosure world is still failing on the trust-building front. The application of certain machine learning and artificial intelligence technologies, especially if combined with blockchain-based sources in the future, is on track to force a level of transparency through disruption that the industry is quite ill-prepared for."

Although disclosure is undertaken with the best of intentions, the growing complexity of the standards landscape and accompanying reporting activities mean that reporting is fast becoming another source of risk that needs to be navigated carefully.

Freele spoke to this: "ESG performance, as currently understood (i.e., achieving and maintaining good company ESG ratings and rankings from a finance world perspective), is starting to displace good sustainability performance (i.e., minimizing and mitigating adverse impacts on people and the environment, and maximizing those that are positive)," she said.

"Ideally, the systems, processes, and actions that lead to good sustainability performance are rewarded with good ESG performance scores, but the field is not quite there yet. In the meantime, companies may feel incentivized to focus their efforts on disclosure and implementing just those practices or policies that secure them a good ESG score within a particular ranking methodology, and worry about ensuring they operate sustainably later.

Gordon echoed this concern. "The increase in data reporting requirements has exploded over the past five years," she said. "Many companies are outsourcing reporting activities to consultants or have hired teams specifically to handle it, because ESG ratings are holding up share prices. But the danger is that, in ploughing resources into disclosure, companies are missing the opportunity to invest in sustainability initiatives on the ground that create real change."

It's also important for companies to make sure that they're reporting on tangible actions, rather than whether or not they have ESG policies and procedures in place.

In its March 2021 report "ESG Diligence and Transparency Report on Extractive Commodity Trading," the Responsible Mining Foundation found that "while most companies have made some level of commitment on issues such as human rights, anti-bribery and corruption, and environmental protection, there is much less evidence of systematic implementation of these commitments."

The report assessed 25 companies with significant activities in oil, gas, metals or minerals. These scored, on average, only 23% on ESG due diligence systems and 28% on disclosure of public-interest information.

Freele added: "This RMF report highlights that mining, as an industry, knows how to talk about ESG, but almost everyone is falling short on actually assessing and managing ESG risk. We see this a lot; company ESG statements that don't translate into action on risk-based management."

Intelligent Reporting

In short, mining companies need to slim down on reporting and do it in a more intelligent manner using different datasets. There are a number of companies that can help with this.

Jamie Strauss, founder and CEO of Digbee, an ESG and data platform specifically designed for the mining industry, weighed in.

"We are seeing mining companies genuinely wanting to embrace ESG, but many are understandably confused," he explained. "What ESG activities should they be undertaking? What does 'good' look like? What should they be measuring? How should they disclose? Which of the global standards are relevant to the sector? What are investors and stakeholders wanting? Should a small exploration company be held to the same standards as a large producer? Should they use a generic ESG disclosure tool or a mining specific one? We've come a long way in the last five years, but there's still a lot to be done."

Strauss cited trust, credibility and confusion as the main challenges faced by companies in ESG disclosure today. If investors and stakeholders cannot trust a company's output or, ultimately, the scores provided by ratings agencies, then ESG will be of limited value.

"Trust needs to be earned, it will not come from PR and marketing alone," he said. "Companies must ensure that what they report is credible and can be relied upon."

Digbee's platform users are subject to annual assessments conducted by independent ESG experts to a standardized scoring methodology. The experts review a company's intentions to improve their sustainability journey, supported by uploaded evidence, accompanying narrative and engagement between Digbee and the company to ensure accuracy. The result is an independent report that can be used by management as a gap analysis, relied upon by the board

It's important that mines aren't designed for closure, but for the decades after extraction finishes, so that they continue to represent value and not a source of liability. (Photo: Unsplash)

to discharge their own obligations, provide meaningful KPIs for management and become the basis of ESG due diligence.

The scores and major findings are openly published to the Digbee platform so that all stakeholders have a means to credibly track the company and its assets as well as compare them to peers on a risk context basis.

The Value of Data

Erwan Jameron, chief revenue officer at sustainability software provider, Metrio, also joined the debate.

"The sheer number of frameworks and standards that mining companies have to manage — both general, like those from the TCFD, and industry-specific, like those from Toward Sustainable Mining or the World Gold Council — are a big challenge," he said. "Even though many of the frameworks are consolidating or coordinating their standards, companies still have to juggle multiple questionnaires, all with similar yet different questions. Governments have also begun adding mandatory climate disclosures to the mix."

To stay on top of all these reports and disclosures, companies have to put in place the right sustainability management team, tools and processes early on; because having to start over with a new reporting system the second time around and potentially missing a mandatory disclosure deadline can be costly.

Another challenge that companies face is ensuring their ESG data is accurate and can be fully vetted by the time it reaches investors and rating agencies. Eclipse Mining Technologies, developer of the SourceOne data platform, recently published a paper titled, "Data: the foundation of responsible mining." In it, the company explains the importance of data integrity, not just in compliance, but also in operational optimization and ESG-related decision making.

"Unless data can be verified and corroborated, it doesn't mean much and, with manual data handling, there is a risk of fraudulent reporting, whether intentional or not," the paper stated. "If ESG data is inaccurate or misinterpreted, leaders risk focusing precious resources in the wrong area or taking actions that aren't aligned with their companies' core values."

Modern data management systems can help to expedite ESG disclosure through automated data capture, integration and analysis. They also provide the tools for interrogation, corroboration and verification of data where necessary. And the accompanying history and context mean that root cause analyses can be run if the data is questioned.

For example, Metrio Sustainability Reporting is an end-to-end, collaborative ESG reporting solution that helps companies collect and centralize granular ESG data from multiple sources. It also aggregates companies' raw data into custom, ESG-specific indicators, like scope one, two and three GHG emissions. Since all data is backed by thorough audit trails, external auditors can trace all data back to the source.

Jameron pointed out that the data analysis involved in ESG reporting can reveal many opportunities for companies to create value. "For instance, companies that want to reduce their environmental or human impact often end up improving their operational efficiency and cutting their operating costs too, which is a win-win for all stakeholders," he said. "Companies that openly publish ESG reports can also attract more investors who look at integrated sustainable development practices as a measure of a company's long-term viability."

Access to capital is crucial to the industry's future. Given the negative perception of mining, this can only become a reality when the sector overcomes its reputational risk. A credible and reliable means of tracking ESG performance will allow the sector to become increasingly "bankable," following which the cost of capital will fall, thus increasing opportunities for investment.

"Looking at ESG from a financial perspective alone misses the point," Strauss said. "If the sector adopts transparency through an independent, standardized and measurable approach, then any stakeholder can hold a company accountable, which encourages ongoing positive action. This can lead to improved community relations, improved recruitment, safety and staff retention; perhaps even an improved understanding when it comes to permitting."

Owning the Past, Shaping the Future

Proper ESG disclosure is not just about what and how companies disclose, but also their attitude to identified areas of weakness in their operations. Embracing these as opportunities to learn, improve and mitigate real and potentially costly risk is a huge opportunity.

A good example is Rio Tinto's Everyday Respect workplace culture report that was published in February. Although the investigation revealed incidences of bullying, sexual harassment and racism, by choosing to disclose its findings, Rio Tinto helped to drive awareness around the need for change, not just internally but within the wider mining industry too.

Ultimately, timely and transparent reporting is indicative of secure and mature leadership teams who want to demonstrate their organization's credibility through ESG activities, and this is exactly what stakeholders are looking for. This openness, backed by carefully structured companies and well-designed mining operations with ESG principles at their core, can only reflect positively on the whole industry.

Together, they represent a big step forward in building trust with the public and future generations.