

Mitigating the social impacts of mining projects

by Lauren Meyer



When mining operations are located adjacent to towns, it is important to consider asset transformation and successful economic transition for the community upon mine closure.

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In the past few years, we have witnessed industries around the world accept sustainability as a top priority. Whether the focus is aimed at reducing emissions and energy use, minimizing land disruption, or reducing water consumption, industry leaders are striving toward stronger environmental, social and governance (ESG) standards.

The same transformation is true for the mining industry. Investors, consumers, end users and the communities we work in are holding mining companies to higher standards. This shift toward stricter stakeholder expectations has moved ESG front and center as a common language and framework for sustainable practices. Now, mining projects new and old are increasingly being required to live up to sustainability promises to mitigate impacts on the environment and

climate, protect people and adopt robust governance standards in accordance with the industry. In the end, the stakeholders hold the social license to operate, and failure to address ESG issues risks the loss of stakeholder support.

Historically, many mining companies have largely focused sustainability efforts on environmental stewardship. However, sustainability is about more than just the environment. When it comes to protecting people, or the “S” in ESG, the mining industry has a lot of ground to cover. The industry must consider the community and cultural impacts of its projects on nearby residents all while addressing equity, equality, health, well-being, safety and much more.

To be successful in this space, the industry must focus more on the people its projects impact, not just during construction and operation, but after the mine reaches the end of its life. In regard to the social aspects of ESG, what can the mining industry do to strengthen

relationships with the communities it works in and serves?

Making clear commitments to sustainability

Many mining companies have pledged to follow the International Council on Mining and Metals (ICMM) Global Industry Standard on Tailings Management, United Nations Sustainable Development Goals, and Copper Mark and the Mining Association of Canada's Towards Sustainable Mining (TSM) guidelines, among others. Some have gone further and set goals to be carbon neutral by 2050 and improve water and energy efficiency by 2030.

Regulatory agencies are also starting to follow suit, with those in the United States, Canada and other countries moving toward requiring compliance with the ICMM standard for both new and existing facilities. Similarly, countries such as Australia and Brazil have recently adopted TSM guidelines. These commitments make it clear that the industry has recognized the importance of sustainability and strong ESG standards.

Oftentimes, the "E" overshadows the "S" in ESG. However, there are a handful of mining companies championing the incorporation and

consideration of social impacts into their project plans. These companies can demonstrate how the industry can meet sustainability pledges by prioritizing the social aspects of ESG. In other words, putting people first.

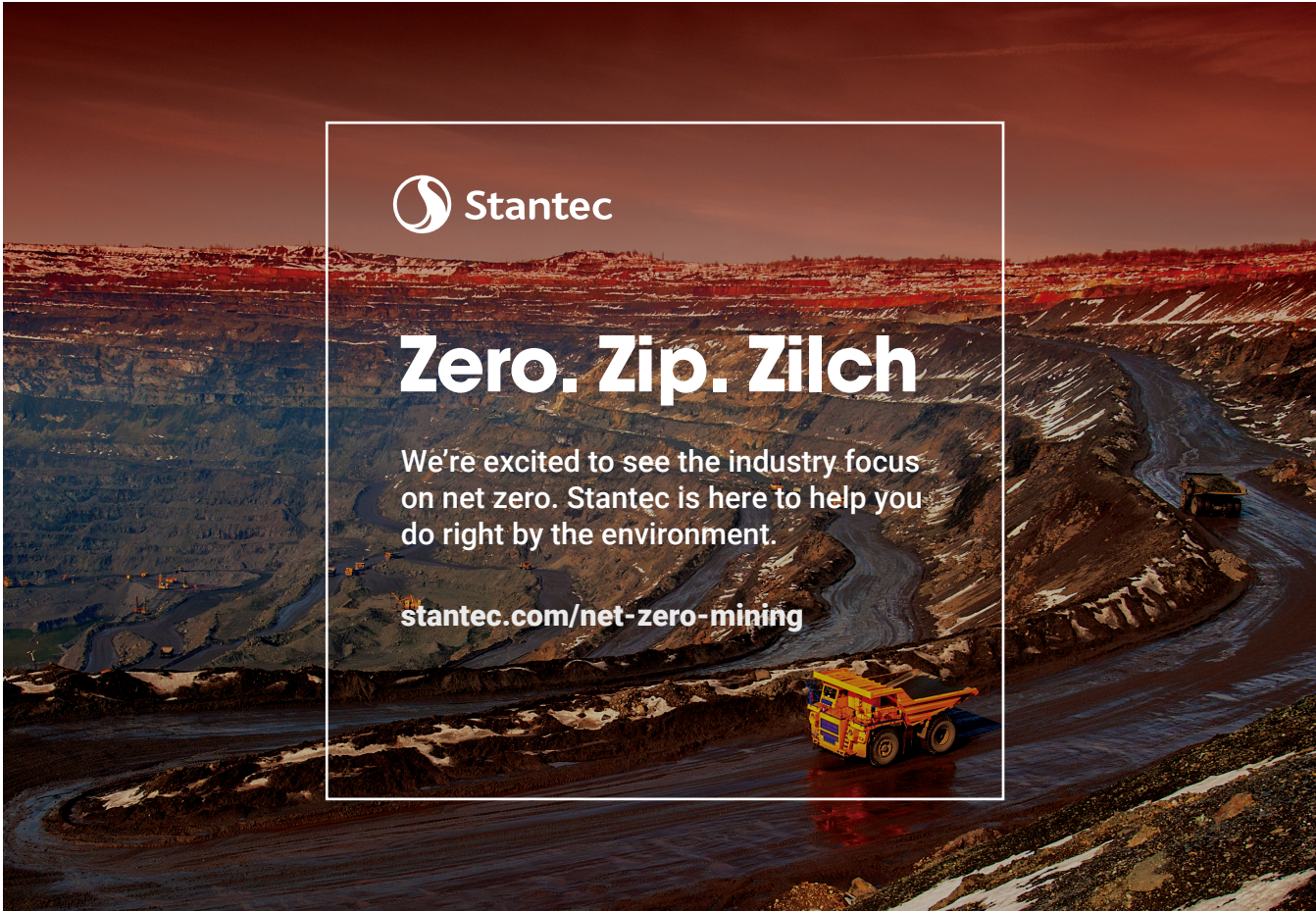
Steps to improve the social aspects of ESG


Many guidelines and standards address ESG issues to improve sustainability in the mining industry. Sometimes, the sheer number of guidelines can be overwhelming. Despite this, we must intentionally view them as more than just a box-checking exercise, but how?

Unfortunately, the how is one area where most of the standards do not provide specific guidance, leaving the execution to the mine while still requiring compliance. Nonetheless, common sustainability practices have been implemented within the civil engineering industry and can be adopted by the mining industry.

Here are nine basic steps for improving social sustainability:

1. Engage stakeholders throughout the mine's lifecycle. Determine how the project objectives align with the needs and goals of the local community.



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Water treatment plants are a great example of how mining companies can meet operational needs while incorporating critical infrastructure services for nearby communities.

2. Conduct stakeholder-mapping exercises and set clear objectives. Develop two-way communication and provide sufficient opportunities for stakeholders to be involved.
3. Develop communication between project leads and stakeholder groups to incorporate feedback into the process. Create feedback loops to gauge stakeholder satisfaction and establish grievance mechanisms.
4. Empower communities to engage in the development process. Ensure that impacts and benefits are distributed equitably throughout the affected communities.
5. Use community input to identify areas as historic or cultural resources. Avoid development in these areas and take steps to preserve or restore cultural resources.
6. Assess project impacts and reduce air and water pollution to improve the health of the community. Consider including critical infrastructure services to communities experiencing — or at risk of experiencing — imminent negative health effects or personal safety impacts.
7. Stimulate economic prosperity and development by creating local jobs during design, construction and operation.
8. Develop local skills and capabilities through an inclusive culture of training programs.
9. Consider asset transformation from project inception to support a successful economic transition for the community upon mine closure.

Taking these steps to address community impacts and concerns can build trust, improve communication with communities, and help mining companies maintain a strong social license to operate. Not only is this the right thing to do, but it also makes the company more attractive to potential investors.

Several mining companies have started to creatively address social principles in their project plans. These serve as great examples of how a single design can result in many benefits for both the mine and the community.

Addressing water resources in South America

When a mine in South America was looking to expand operations in an arid climate, the operators realized the need for more water. While looking for a solution, the mine reached out to the local community and found it lacked the infrastructure to properly treat wastewater. As a result, the wastewater was being discharged

untreated into a nearby river.

In this case, Stantec developed a single solution to meet both challenges by designing a wastewater treatment plant to help the mine meet its water demands, improve water resources and enhance local living standards.

This innovative solution provided the water needed for the project and enhanced the mine's social license to operate. Now these citizens have a significant reduction in health risks. Plus, their agricultural products are now accepted in international markets where they were previously rejected due to health risks. Aquatic life ecosystems have also recovered, leading to increased tourism in the region.

Considering cultural impacts in Indonesia

A vastly different example comes from a remote Indonesian mining complex. There, surface operators would stop work a few times a day so that they could go to local areas of worship and pray. Future mine plans required a transition from surface to underground operations. Taking several breaks for prayer was no longer feasible, and the owners needed to address these workers' needs.

Stantec's underground engineering project team designed multiple mosques — with adjacent washing facilities — and chapels throughout the underground workings of the mine. Having these facilities on multiple levels allowed workers to fulfill their religious needs while keeping operations moving efficiently. This reduced unplanned downtime or additional energy use to move workers several kilometers from underground to surface facilities.

These underground facilities contributed to an inclusive and welcoming work environment, and the effort to prioritize a cultural understanding of the local workforce also improved operational efficiency.

Using 3D animation to improve communication

There is much more to effective communication than the written word. Whether

one is aiming to improve safety, overcome language barriers, or reassure regulators and public stakeholders about upcoming mine developments, 3D animation is an innovative tool that can result in big impacts.

An example of this was when Stantec's design team created a construction sequencing animation for a large-scale service shaft. Video sequencing is often used as a helpful tool for identifying potential hazards early in the design process. But in this case, it was also used to transcend language barriers. The sequencing animation prevented construction staff, who were not primary English speakers, from misinterpreting written directions. Visualizing this process was a creative solution to improve construction safety.

Animations can also be used external to mine operations. For several projects in North America and abroad, Stantec has prepared 3D flyover animations of various mine infrastructures to communicate upcoming developments to local regulators and stakeholders. In these cases, the animations were tailored to address specific community concerns. Taking these extra steps with design technology can significantly improve a mine's social license to operate.

Leveraging the "S" in ESG

Prioritizing social considerations can come in many different forms. The common denominator is that these actions have the power to prevent negative social impacts and create a harmonious relationship with the array of stakeholders to which a mine is accountable. With the help of existing standards and examples of unique solutions, mines can take innovative steps to achieve sustainable development goals, and meet sustainability pledges.

Sustainability should be incorporated into every phase of new or existing projects, making it a key element of the design, operations and closure processes. Not only will prioritizing ESG help protect the planet for future generations, but it will help improve the lives and wellbeing of people living on Earth today. ■

