Social impacts of mine closure: engaging employees and host communities in planning for closure

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Abstract
Planning for mine closure usually focuses on a detailed reclamation plan designed by experts to mitigate environmental impacts; however, less is known about the social aspects of mine closure and how to mitigate the socio-economic impacts of closing a mine. Industry best practices highlight the need to engage host communities in planning for mine closure, still there are limited case studies that show what works best to face the social challenges of closure. New Gold’s Cerro San Pedro Mine, located in Mexico has taken a participatory approach to define the company’s Integrated Closure Strategy, engaging with key communities of interest to understand the social impacts of closure and find feasible economic alternatives for a local and regional longer-term development.

This paper provides an overview of the engagement process that the Company undertook to discuss aspects of mine closure and the future without the mine with host communities and employees. The engagement process is part of a broader approach to integrated closure planning and was led by a reputable non-governmental organisation specialised in creating spaces of dialogue and consensus-building. The process used both qualitative and quantitative methods. Findings of this engagement process revealed the specific challenges and opportunities to strengthen economic activities alternative to mining such as agriculture, tourism, and small business development; in addition to identifying potential partners. Outcomes of the engagement process may be summarised as: i) raising awareness and responsibility of mine closure, both environmental and social impacts, ii) building a common vision of the future without the mine, iii) reaching consensus among different communities of interest, enabling participation and ownership of a shared disposition that addresses social impacts of mine closure.

Lessons learned include, among others, the relevance of engaging employees and communities, not only in implementing mine closure, but also in identifying social impacts of mine closure and building together a feasible sustainability path forward.

1 Introduction
Planning for mine closure usually focuses on a detailed reclamation plan designed by experts to mitigate environmental impacts; however, less is known about the social aspects of mine closure and how to mitigate the socio-economic impacts of closing a mine. In Mexico, as in many other countries, the law stipulates the biophysical closure of the mines, but does not include social impacts of closure. More recently, mining companies have understood the importance of incorporating social aspects in their closure plans and industry best practices highlight the need to engage host communities in planning for mine closure.

The purpose of this paper is to illustrate an engagement process with key communities of interest, using the New Gold’s Cerro San Pedro Mine as case study. This engagement process had the aim of better understanding the socio-economic impacts of mine closure in order to build a mitigation strategy as part of the mine closure planning. The paper is divided in five sections; the first section provides an overview of the local context and the international best practices currently in place to address social aspects of closure. The second section describes the methodology used by the engagement process and explains its different phases. The third section of this paper discusses data obtained and the main challenges faced in using qualitative and quantitative methods. Section four presents the results of such a process and how they were used by New Gold in planning for mine closure, as well as discussing the main lessons learned. Lastly, section five presents concluding remarks and suggests further research to better understand social aspects of closure.
2  The New Gold's Cerro San Pedro Mine

New Gold is an intermediate gold mining company with assets on three continents, with four producing mines – the New Afton Mine, the Mesquite Mine, the Peak Mines, and the Cerro San Pedro Mine, and three significant development projects – the Blackwater project, the Rainy River project and the El Morro project. Cerro San Pedro is the only New Gold mine in Mexico and will be the first New Gold mine to initiate closure and, therefore, this process is a significant milestone in the evolution of the Company.

The Cerro San Pedro Mine (Cerro San Pedro), wholly owned by New Gold Inc., has been in production since 2007, and is located in Cerro San Pedro, central Mexico, 20 km northeast of the state capital city of San Luis Potosí, a city of approximately one million inhabitants. The San Luis Potosí region has a long history of mining activity, offering a strong pool of local mining suppliers and contractors and skilled workers covering a broad range of professions and trades. Cerro San Pedro is an open pit mine that produces doré, a mix of gold and silver, through heap leaching and a Merrill Crowe process plant.

Cerro San Pedro has maintained a close relationship with the residents of the Municipality of Cerro de San Pedro, which comprises sixteen communities and three ejidos (communally-owned land holdings) within the mine’s sphere of influence. Cerro San Pedro has, from its inception, provided broad benefits to the local communities, becoming the main economic activity of the region. Examples of other socio-economic benefits of the mine have been increased access to medical services, support for the local educational system with contributions for improving school’s facilities, building new classrooms, providing educational software and Internet connectivity. The mine has provided local children with transportation to schools, has contributed to the preservation of local heritage and culture, and has provided financial support for the restoration of heritage buildings. The mine’s contributions have been recognised in the accreditation as a Socially Responsible Company (Empresa Socialmente Reponsable - ESR) by the internationally-recognised non-profit Mexican Centre for Philanthropy (Centro Mexicano para la Filantropía - CEMEFI). While Cerro San Pedro’s community investments have contributed to the quality of life of the municipality’s residents, as the mine approaches closure, consideration must be given to the sustainability and continuity of such contributions. Since it has become clear that the mine life was about to end, management has carried out a strategic review of community investments and is working to ensure that long term and sustainable benefits from community investments are achieved.

3  Local context

The history of the Municipality of Cerro de San Pedro has been closely linked to mining. Mining in this area gave rise to the founding of the city of San Luis Potosí. From pre-Hispanic times to the present, Cerro de San Pedro has experienced boom and bust times due to mining. Before the arrival of New Gold, the last major mining project was undertaken by the American ASARCO, which operated in the area during the first half of the 20th century. After this period, mining activity continued on much smaller scale as mostly artisanal mining.

One of the main challenges for the area’s social and economic development is the lack of social capital. A Social Baseline Study commissioned by New Gold in 2012 found that there was a “crisis of social organisation” in the communities around the mine, attributable to changes in land ownership, lack of leadership, emigration, and social and economic inequality, among other factors. This study also identified areas of opportunity and challenges for the area’s sustainable development, such as agriculture and tourism.

An Economic Impact Study, also commissioned by New Gold, revealed the significance of the Cerro San Pedro mine to the local and regional economy. For instance, in 2011 Cerro San Pedro represented 33.5% of the mining sector’s GDP in San Luis Potosí, and 0.92% of the state’s total GDP. In 2012, taxes paid totalled $761.5 million pesos (about US$ 57.8 million at the time). Total tax expenditure was around $ 2.11 billion pesos from the start of operations (about US$ 165.1 million at that time). By 2012, Cerro San Pedro had created nearly 860 direct jobs and about 4300 indirect ones. Direct jobs represent about 15% of the workforce of the entire mining industry in the state of San Luis Potosí and 30.2% of the workforce of the state's metals and minerals sector.
4 Socially responsible mine closure – international context

In the last decade, some toolkits and guidelines have been designed to promote closure best practices – including the social aspects of the process. As examples, the International Council on Mining and Metals (ICMM) Planning for Integrated Mine Closure Toolkit was released in 2008, and the Brazilian Institute of Mining (Ibram) Guide For Mine Closure Planning, was released in 2013. The development of these guidance materials have been in response to an increase in societal expectations and the fact that national regulations generally do not include social aspects of mine closure processes, as is the case in Mexico. Issues resulting from mine closure process, such as the loss of local employment, environmental liabilities and their impacts on people’s health, and the loss of the local economic engine, are addressed in these valuable publications.

Despite the guidance available through organisations such as Ibram and ICMM, there are few documented mine closure experiences that have been considered exemplary in the industry; and even fewer that have had a major social component. The majority of cases identified as best practices focus on the biophysical and technical aspects of remediating the mining site. In order to better understand international benchmarks for social mine closure, New Gold commissioned a review of seven mine closure experiences of several companies in different parts of the world, including Río Tinto, Newmont and Barrick. The following were identified as the main characteristics of the leading practices in closure planning:

- responsibility to independent third parties beyond regulatory requirements;
- high levels of transparency;
- ethics in business practices;
- respect for the expectations of communities of interest by including them in the planning and decision-making processes;
- respect for the rule of law when taking additional measures to satisfy corporate social commitments;
- respect for international regulations by applying similar business standards at all operations; and
- respect for human rights through their actions in the field.

Aware of the lack of positive benchmarks on social closure yet with leading practices identified, Cerro San Pedro set out to establish its own Integrated Closure Strategy. New Gold, with the support of external consultants started a process to identify and assess closure-related risks, identify controls and assign responsibilities for the implementation and maintenance of controls. An internal committee was set up to break traditional departmental silos and provide a forum for collaborative and integrated work. The Closure Committee includes all key departments and regularly meets to review the closure risk registry, discuss actions and collaboratively identify opportunities and solutions to challenges.

5 Integrated closure planning at Cerro San Pedro

Cerro San Pedro announced its gradual closure of the mine in 2014, to all employees and contractors. The significance of this process lies in the fact that today one of the most important challenges facing the mining industry is the planning and implementation of an operation’s closure. A responsible mine closure must take into account social, economic and environmental parameters, seeking to minimise the impacts caused by the operation and termination of mining activities. Cerro San Pedro adopted an integrated closure strategy that not only complies with legal laws regarding environmental and biophysical closure, but also includes social aspects of closure; therefore having a socially responsible and integrated approach through the entire

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1 This study was presented by its authors at the 2013 Mine Closure Conference.
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Key goals of the Integrated Closure Strategy are the employability of the workforce and a focus on sustainable economic development of local communities. The Strategy seeks to strengthen the foundations of a development model focused on different engines for the local economy as alternative to mining, such as agriculture, tourism, ventures tied to existing productive chains, and direct employment in other industries of San Luis Potosí. Therefore, Cerro San Pedro’s Integrated Closure Strategy includes two main social components: 1) to support employees to have a successful employment transition, by strengthening their employability in the mining industry, in other industries, or through individual entrepreneurship, and 2) to identify and promote local economic development.

Several actions may allow employees to continue with their professional development after their employment relationship with the company is over. Cerro San Pedro has offered skills certification and training programs, for both its employees and for the residents of neighbouring communities. The purpose of these programs is to provide the tools and skills they require to strengthen their capabilities, and, at the same time, to promote local development with the necessary social capital to diversify economic activities of the Cerro de San Pedro communities. This municipality has, besides the mining industry, an economy based on agricultural and tourist activities.

6 Participatory planning

Cerro San Pedro has taken a participatory approach to define the company’s Integrated Closure Strategy, engaging with key communities of interest to understand the social impacts of closure and find feasible economic alternatives for a local and regional longer-term development. The autonomous civil society organisation Centro de Colaboración Cívica (CCC) (which is a member of the network Partners for Democratic Change International) was selected for its reputation in Mexico and its alliances with well-respected organisations worldwide to facilitate an engagement process to involve employees and communities in discussion about aspects of mine closure and the post-mine future. The decision to involve an independent third party was made as a means to add credibility and legitimacy to the engagement process. It was important, for New Gold and CCC, that the process was kept autonomous, transparent and inclusive at all stages. During most of 2014, CCC carried out a consultation with employees from the different mine departments, as well as the residents of the various localities of the Municipality of Cerro de San Pedro that maintain strong connections of financial dependency with the company.

The main objectives of the engagement process were to understand the concerns and expectations of the company’s workforce, as well as those of the communities surrounding the mine, and to generate inputs for the development of post-closure economic alternatives. The engagement process lasted about seven months - from May to November 2014. Even though the planning of certain activities and implementation of some programs were delayed until results from the engagement were analysed, this did not significantly impact the general closure schedule. It was important to construct something robust and well informed before Cerro San Pedro could make key decisions about investments and activities associated with social closure.

7 Engagement process methodology

7.1 Engagement process

The engagement process included information gathering and generation of ideas, proposal development and discussion, and proposal presentations. A mix of qualitative and quantitative methods was used to engage with employees and community members. The process designed and facilitated by CCC lasted seven months, and consisted of three main phases:
**Phase 1: Introduction and collaborative process design**

New Gold and CCC collaborated in the design of the engagement process, taking into consideration the company’s Community Engagement Strategy and labour force characteristics. The key objectives of Phase 1 were to:

- introduce the engagement process to management, mine employees and members of direct impact communities;
- identify concerns and expectations for the future after mine closure; and
- consult with employees and community on their preferred methods of communication and engagement.

Phase 1 was also an opportunity for the CCC team to familiarise themselves with the community and the manner in which community members interact with each other and with the company.

The CCC team started out with meetings with key internal communities of interest such as department managers and 20 in-depth interviews and focus groups with employees at the various departments of the mine. These interviews were followed by open community meetings in the four direct impact communities: La Zapatilla, Cerro San Pedro, Monte Caldera and Cuesta de Campa. These communities are considered ‘direct impact’ because they are in close proximity to the site and/or have been identified as most dependent on mining employment and other support from the mine. La Zapatilla was in fact part of a resettlement program as a result of the mine development. It was also identified as the community with stronger links and dependency to the mine. Meetings with the other communities in the municipality took place during the second CCC visit. Meetings with key community communities of interest identified by the Cerro San Pedro Community Development Team - such as municipality staff and the local priest - were carried out.

People were invited by the Community Development Team to open community meetings to introduce CCC and the engagement process. Posters with simple diagrams of the process and information about next meetings were displayed and distributed in the various communities. While the Cerro San Pedro Community Development Team participated in first meetings with community members – as a means to introduce the CCC team and their purpose – CCC facilitated all other meetings and focus groups independently in order to keep the process autonomous.

Outcomes of this first phase were the revised design of the engagement process, as people were not just asked about their concerns and aspirations for the future, but also about how they wanted to be engaged. Inputs from Phase 1 informed the design of the process, and included a preliminary assessment of concerns and expectations. Phase 1 also built support and buy-in for the consultation and participatory closure planning program.

Later in the year, a survey was designed specifically for the workforce, with the aim to better understand their level of comfort and understanding of the closure process at Cerro San Pedro, to document the workforce’s concerns and their aspirations in regards to Cerro San Pedro programs to support their transition to other employment. A total of 362 surveys were completed including all site’s departments.

**Phase 2: Identification and development of livelihood alternatives**

Once engagement channels were defined together with host communities and employees, the next step was to listen to their concerns and ideas for the future after the mine closure. The key objectives of Phase 2 were to:

- Carry out workshops with residents of the direct impact communities to identify potential alternatives for economic diversification in their communities.
- Identify and establish a collaborative relationship with technical experts who could assist with the assessment of the viability of proposals made by community members and employees.
• Assess proposals based on technical quality and business viability.

Participatory workshops were carried out in La Zapatilla, Monte Caldera and Cuesta de Campa. These workshops included the participation of technical experts and aimed at the identification and preliminary assessment of alternatives for the local economy. Consultation with technical experts about ideas generated by workshop participants was also carried out. All ideas were taken into account, making sure that the views of everyone that was interested in participating was heard.

Inputs from communities were grouped in similar themes and then assessed by experts to consider their technical and business feasibilities. This exercise was important for the following phase, where these inputs were discussed back with communities.

**Phase 3: Feedback to the community**

Phase 3 consisted in six days of dialogue tables in the different communities and key stakeholder groups. The key objective of Phase 3 was to discuss the opportunities and challenges identified with the proposed projects, which were mostly related to agriculture and tourism. The feedback to communities aimed at consensus building and reaching agreement about future investment projects.

Detailed reports with proposed agricultural and tourism projects that included feasibility studies by experts, were presented to Cerro San Pedro and the Municipality. These reports also suggested partnerships and co-investment opportunities.

**8 Data and discussion**

The engagement process was agreed with communities and employees about the preferred channels of communication and discussion. This was key to get process buy-in and participation from communities of interest.

Data collected about concerns and future after mine closure reflect the following:

• Around 35% of Cerro San Pedro employees are interested in starting their own businesses.

• 25% of employees are interested in skills development programs, 40% would prefer to stay in the mining sector while 50% would prefer to look for employment opportunities in other industries in San Luis Potosí.

• Communities are concerned about their future without the mine, in particular the future of the local youth, and would like to see more employment opportunities and local development in the municipality.

• Past negative experience with failed ventures, particularly with productive projects are reflected in apathy and lack of confidence in their business competency.

• A key concern within the communities is the weakness of the transportation infrastructure and services, the lack of roads connecting the communities and the low quality of existing roads.

• Another key concern expressed was in relation to the protection of the environment and human health as the mine closes.

Inputs from communities and employees collected and analysed in Phase 2 reflect the following:

• There are opportunities for agricultural and tourism development in the region, and there are synergies between some potential activities and businesses.

• Water is the greater challenge for agriculture in the region.

• Agricultural projects must include consistent technical support for at least three years and should be well planned and based on a solid understanding of the market.
Community enterprises must be legally formalised to ensure the adequate level of commitment from participants.

Data was analysed and presented back to communities and employees for feedback and consensus building. Agricultural and touristic projects proposals were discussed in the last part of the engagement process. This was central to raise awareness of co-responsibility of different actors, including communities and employees, as well as the importance of partnerships with government agencies and other public and private institutions.

Regarding challenges of the engagement process it is important to mention, firstly, finding a reputable and trustworthy third party to carry the process out. A balance needs to be found between jointly designing and overseeing the process while keeping its autonomy and independence from the mining company. A strong collaborative relationship and effective communication between Cerro San Pedro and CCC were central in achieving goals. During the engagement process, the main challenges were to keep interest and participation levels throughout the different phases. To overcome this challenge, CCC kept participants well informed about the next steps so they could better understand and anticipate following steps. It was very important to manage expectations with this process. Cerro San Pedro was careful to convey the purpose of the engagement process in order to avoid false expectations about its scope and reach.

Findings of the engagement process revealed the specific challenges and opportunities to strengthen economic activities alternative to mining. The main challenges identified were water scarcity, gaps in infrastructure, transportation, gaps in local capacity and in social capital. The main opportunities are the proximity to a large industrial city, highways and an international airport, cultural and historical richness of the area, and a recognised tourism potential. The engagement process resulted in proposed agricultural projects, the strengthening of a proposal for tourism development which had previously been commissioned by the mine, and a summary of concerns and expectations from mine employees and workers.

Employees were able to share their concerns, their vision for their own future and to articulate how the company could support their transition to a productive life post mine closure. In regards to opportunities for economic development, proposals were made by community members with the support of technical experts. Technical experts contributed with their knowledge to analyse the feasibility of economic development proposals, and suggested different alternatives to achieve them.

Provided with the findings of this process, the mine was able to review and bring focus to a preliminary Integrated Closure Strategy, define actions and a budget associated with the social closure aspects.

Other key outcomes of the engagement process have been: raising awareness and responsibility of mine closure, including both environmental and social aspects, building a common vision of the future without the mine, reaching consensus among different communities of interest, and enabling participation and ownership of a shared strategy that addresses social impacts of mine closure. All of these are key components of a successful community program for closure planning.

9 Results

Findings of the engagement process revealed the specific challenges and opportunities to strengthen economic activities alternative to mining. The main challenges identified were water scarcity, gaps in infrastructure, transportation, gaps in local capacity and in social capital. The main opportunities are the proximity to a large industrial city, highways and an international airport, cultural and historical richness of the area, and a recognised tourism potential. The engagement process resulted in proposed agricultural projects, the strengthening of a proposal for tourism development which had previously been commissioned by the mine, and a summary of concerns and expectations from mine employees and workers.

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10 Lessons learned

Valuable lessons have been learned since Cerro San Pedro started the development of its integrated closure strategy. What follows is a brief summary of the lessons learned to date.

First and foremost, it is very clear to Cerro San Pedro and to New Gold that engaging employees and communities in the closure planning is absolutely critical. The mine did not commission or designed a closure strategy in isolation and based on its own understanding on what would be adequate for the community. Cerro San Pedro has learned that in order to achieve a shared ownership and responsibility for a prosperous future the main actors need to be engaged from an early stage. Employees and community members need to participate in decisions which impact their future and be given all the information they need to be able to
make their own decisions. Their role includes the identification social impacts of mine closure and building together a feasible path forward.

The benefits of establishing a cross-departmental Closure Committee has also been a very positive lesson. This committee has resulted in increased understanding of the interdependency of the various departments, particularly in regards to closure aspects. This understanding has translated into collaboration and innovation in addressing challenges of both social and technical nature. Regarding community investments, it is clear that an investment strategy focused on sustainable, long term benefits is critical. The traditional philanthropic approach to community investments often fail to create sustainable benefits and miss opportunities to build social capital, which is critical for the social and economic development of local communities. Cerro San Pedro has re-focused its community investment strategy to support the development of local social capital and invest in projects which meet a sustainability criteria. The efforts the Community Development Team has put towards building social capacity and resiliency within community members have provided very encouraging results in a very short period of time.

Finally, in order to promote the local economy in a meaningful way, the collaboration between public, private and social actors, is fundamental. Cerro San Pedro has engaged and signed collaboration agreements with renowned Mexican educational institutions, business incubation centres, international consultants and with governmental agencies, to promote the development of small businesses and productive projects, understanding entrepreneurship as a manifestation of the aspirations of self-employment that, in addition, contribute to the revitalisation of local economies.

11 Conclusion

New Gold’s Cerro San Pedro Mine is the first New Gold Mine to initiate a closure process and therefore an important learning experience for New Gold. In order to establish a closure strategy which meets the real needs of the local communities and addresses their true concerns, the mine launched a participatory process to help define the company’s social closure strategy. The key outcome of such process was engagement with key communities of interest to understand the social impacts of closure and find feasible economic alternatives for a local and regional longer-term development.

The closure process at Cerro San Pedro is at its early stages, yet several benefits have resulted from open and transparent engagement with communities and employees and from internal collaboration among the various departments. These lessons will continue to support the closure process at Cerro San Pedro and will influence how New Gold plans and implements closure in the future.