

Rural Workforce Development: Challenges and Strategies in the Mining Sector

KNOWLEDGE BRIEF



INTRODUCTION

The Canadian mining industry is a pillar of the Canadian economy, employing nearly 373,000 workers in exploration and development, mining and quarrying, support services, and mineral processing.¹ British Columbia (BC) is internationally recognized as a centre of expertise in mining, metallurgy, environmental engineering, mine safety, and geoscience. The province is home to the world's largest concentration of exploration companies and mining professionals.² Additionally, the province is Canada's largest exporter of metallurgical coal and one of the country's largest copper producers, as well as a significant producer of gold, silver, lead, and zinc.³ BC is also a hub for stone, sand and gravel mining, and quarrying, due to increased demand from the construction industry with 675 active gravel mines in the province. The Kootenay Development Region contains 4.8% of the mining facilities in BC.⁴ In 2016, \$37.4 million was spent on exploration related activities for 62 projects in the region (see [Mining Labour Market Profile](#)).

The nature of the mining industry's externally driven boom-and-bust cycles creates vulnerability and a loss of autonomy for mining companies and the communities where they operate.⁵ One of the key challenges this creates is the labour and skill shortages that pose a considerable threat to the sustainability and growth of the sector, which in turn affects the stability of communities. Additionally, as companies restructure and modernize their facilities to increased levels of technology, this adds to the threat of job losses.⁶

It is important to have a clear baseline understanding of the challenges and strategies the mining industry is facing with workforce development. Workforce development is defined as "the coordination of public and private sector policies and programmes that provides individuals with the opportunity for a sustainable livelihood and helps organizations achieve exemplary goals, consistent with the societal context."⁷

As noted in the RDI knowledge brief on [Rural Workforce Development Strategies](#), workforce development is focussed not only on job training and recruitment, but also long-term retention and career advancement.

This knowledge brief provides an **overview of workforce development challenges within the mining sector in Canada, particularly in rural British Columbia**. Additionally, this brief will showcase strategies and successful case studies to help practitioners address these challenges.

CHALLENGES FOR WORKFORCE DEVELOPMENT IN THE MINING SECTOR

Workforce development planning involves:

- analysis of the current and future goals of the company;
- the work needed to reach those goals;
- the competencies of the workforce that will be needed to accomplish the work; and
- the development of a plan for building the workforce to ensure organizational success.⁸

Mining companies are working towards a more resilient workplace in the face of volatile markets. This influences the job market and competition for workers is increasing and, at the same time, the nature of employment is changing. Jobs increasingly require more complex skills and training, and leading companies recognize that a high-performing workforce is linked to business values. Therefore, they are investing in the development of employee skills, and working to attract and retain a diverse workforce to maximize performance. Proactive planning in a cyclical industry also involves extended planning horizons and puts the current state of the organization in the context of long-term goals. Below is an overview of the current workforce development challenges the mining sector experiences.

MARKET CONDITIONS

Due to the nature of the mining industry's dependency on the market-based economy, economic cycles and fluctuating commodity prices are globally driven and inherently affect the industry's labour force. This is out of the control for rural communities, which are left to react to market conditions. With labour, there are typically periods of high growth which results in rapid increase of employment, and during a recession, rapid loss of employment.

In Canada, there is a strong correlation between economic cycles and employment in Canadian mining operations.⁹ Research has shown that industry employment levels are sensitive to economic fluctuations, which in turn are strongly affected by commodity prices. For some regions, over time, this ongoing cyclical pattern becomes the norm and communities are in a constant state of readiness to react to both scenarios.¹⁰ While these communities are constantly planning for short-, mid-, and long-term workforce development, there is the challenge of doing this strategically and sustainably. With commodity prices stabilizing and signs of growth, the mining industry is expecting to start new mining projects, which in turn, increases employment.¹¹ Mining operations need to plan for this growth and how to properly implement strategies for workforce planning.

PHYSICAL GEOGRAPHY

As mineral deposits are frequently located in remote areas with harsh climates, mining operations tend to be located in rural areas with low population. Because of this, mining operations are faced with geographical challenges that other industries are not faced with. For example, mining in mountainous areas such as the Rockies in BC entails special engineering

problems related to geology, altitude, climate, and economies of scale required for competitive advantage in the global market.¹² Extracting and processing ore bodies are complex undertakings, and this includes transportation of materials. As innovative technological advances allow for more modern facilities, this allows for operations to be located in even more rural and remote areas. However, this presents challenges with attracting and retaining skilled workers to these areas especially with the accelerating change and instability of the industry – an interesting challenge when these same areas may be fighting the increase of out-migration of residents looking for other work.¹³

COMPETITION FOR WORKERS INCREASING

The mining industry faces heavy competition for local talent. This competition spills over to other jurisdictions for employers to attract employees to rural communities. As competition continues to increase, the need to overpay employees in certain roles, especially where certifications or subject expertise are required, is a challenge mining companies face. Currently, some strategies that companies are using to face this challenge is hiring contractors and creating temporary workforce programs. However, these are only short-term solutions. Talent management, workforce planning, and aligning human resources goals to corporate targets are needed to maintain a competitive advantage in the market within the labour pool.

AGING WORKFORCE

According to the Mining Industry Human Resources Council's (MiHR) 2013 report entitled "Managing through the Cycle: A Strategic Approach to Workforce Planning in the Mining Industry," 67,180 new hires are needed to replace retiring workers in Canadian-wide mining operations. The report also identifies that 145,870 workers need to be hired by 2023 to build a long-term sustainable mining workforce in Canada. To prepare for the baby-boomers approaching retirement, a plan is needed to properly transfer knowledge from these senior employees to the new workforce. The loss of knowledge – whether from retiring employees or organizational downsizing – is a significant issue for many companies. In the technical and potentially hazardous environment of the mining industry, knowledge loss can be very detrimental to operations and risk management. Knowledge transfer can improve safety of workers, and is a way of seeing if the knowledge is concretely embedded in the workforce.

LACK OF DIVERSITY

The mining industry has inherently always lacked diversity within its workforce. Women, Indigenous Peoples, and other minorities have typically been under-represented and the mining industry is seeing this as a significant priority. In BC, 16 per cent of the employed labour force in the mining sector were women in 2015.¹⁴ In comparison, nearly 48% of the employed labour force across all sectors is female.¹⁵ As the mining industry acknowledges this challenge, strategies are starting to be put in place.

STRATEGIES FOR WORKFORCE DEVELOPMENT IN THE MINING SECTOR

Strategic workforce planning is a systematic process that identifies, builds, and sustains workforce and skills requirements to ensure that business or operational goals are met. Forming an effective and responsive workforce plan involves careful analysis of metrics to track progress and manage people requirements to align with business outcomes. In mining, workforce planning generally aims to maximize production and minimize costs in response to immediate pressures. Workforce plans, therefore, take an operational perspective, rather than a strategic human resource management perspective. According to WorkBC's Mining Industry Outlook

Profile, there is a 0.4% average annual growth rate of employment in the mining sector in the Kootenay Development Region.¹⁶ This means that the region will see approximately 1,822 job openings between 2015 and 2025. This accounts for 29% of all jobs in the mining sector in the province of BC. Therefore, mining companies need strategies in place to plan for this growth. This has started already, where companies are integrating, redesigning, and implementing new strategies to better manage their talent to balance short-term needs with long-term pressures. Below are strategies that can aid in workforce development in the mining sector.

TALENT ATTRACTION

Human resources can be the most challenging aspect of operations when mining is inherently tied to geography – how do we get the people we need to the place we need them? To attract new talent, a **mobility program** can be a tool mining companies use to address geographical challenges. Mobility Programs are often led by regional/provincial governments and supported by industry and labour groups, with the goal of attracting workers to a particular city, region or province.¹⁷ Mobility programs can include incentives and assistance, and opportunities for career development to support employee relocation. The areas that benefit from government mobility programs tend to be remote and less developed, and the skills targeted tend to be more specific. Governments benefit from increased taxes, improved employment statistics, and a larger working population.

It is becoming more common for employers to support inter-provincial or international certification for their certified mining and processing employees, so they can be eligible to apply for comparable positions at other sites. This also contributes to an increasingly mobile workforce. By bringing together major industry stakeholders, companies can work together to bring additional workers to mining regions.

YUKON'S LABOUR MARKET FRAMEWORK

Fuelled by new exploration, Yukon's gross domestic product grew by 5.6% in 2011, compared to 2.6% overall in Canada.¹ This accelerated growth in the territory created an increased demand for skilled labour. In 2008, the Government of Yukon, in partnership with a number of key labour market stakeholders (e.g., mining companies, energy companies, labour representatives from First Nations) developed the [Labour Market Framework](#). This program was designed to sustain growth in Yukon by filling current and anticipated future gaps in the labour market – by attracting workers with in-demand skills from across Canada and the world. The strategies contributed to mobility in different ways, from attracting workers to Yukon to improving learning and employment transitions. A large portion of the Labour Market Framework dealt with employee retention.

LABOUR RELATIONS

It is equally important to attract new talent and to retain the talent that already exists within the company or region. A strategy on employee retention is redeploying workers. This is a critical workforce planning tool that mining companies with multiple operations can use to build strategies for managing fluctuations in both economic and production cycles. During an economic downturn, organizations must streamline their workers – and during upswings, organizations race to increase their workforce to capitalize on growth opportunities. Through redeployment, mining companies can offer employees relevant employment opportunities at specific locations – based on current and forecasted workforce needs. Some benefits includes: reducing external hiring costs; improving access to resources for ramping up or down production; and allowing organizations to retain knowledgeable skilled workers. However, due to employee attachment to their current lifestyle, such as community relationships and family obligations, employees may be reluctant to redeploy.

When mines close, many companies instinctively turn to immediate layoffs to reduce operating expenditures – but redeployment can be a valuable alternative. This also lessens the impact of mine closures on local communities, minimizes morale problems and builds loyalty within the workforce. Vale, Goldcorp, BHP and Xstrata used redeployment tools for situations, such as: operational shut-downs, ramp-downs, role-based needs, and development-based needs.¹⁸ The companies have historically used redeployment in reaction to vacancies, the need for a particular skill set at another site, or to cope with a mine closure.

RETENTION, TRAINING, AND DEVELOPMENT

Knowledge transfer is an important workforce planning tool that mining companies can use to maintain and improve the quality and skill level of their workforce.¹⁹ Knowledge transfer programs are the systematic documentation, organization, creation, capture and distribution of knowledge to ensure its availability for future users.²⁰ Using knowledge transfer effectively can help companies plan to fill important senior positions through internal promotion using apprenticeship-style rotation. These programs aid companies to identify knowledge that is critical for operational excellence, safety and environmental compliance – and to build it into every level of the business from basic training upwards. These programs also help to shape future leaders – making knowledge transfer an integral component of executive succession programs. Mature knowledge transfer programs will regularly review and update program tools, to ensure they capture the current scope of each occupation or task, as well as up-to-date health

TECK'S SHIFT LEADER DEVELOPMENT PROGRAM

Teck developed the Shift Leader Development Program, which uses Learner Outcomes. Learner Outcomes uses a checklist to support apprentice or rotational-type sessions through key departments, such as Safety and Health, Environment, Reliability, Maintenance and Production Facilities. This allows a focus on high-level understanding of what is involved in each department and process. Each department that is involved in the rotation has a mentor for trainees who provides feedback with the Business Area Superintendent to discuss the completed Learner Outcomes. An evaluation is conducted on the trainee's performance and any concerns are discussed and then filed through the Development Coordinator. This program aids in Teck's overall goal of company-wide standardization of knowledge and compliance. See details in Teck's [2016 Sustainability Report](#).

and safety control measures. Programs should also have a method or schedule for re-verification and if necessary, retraining employees on critical operations or tasks.

Mining organizations can use knowledge transfer in conjunction with other workforce planning tools to create a workforce prepared for cyclical fluctuations. Given the expected shortage of employees in the mining industry and the realities of aging workforce demographics, knowledge transfer programs are becoming a critical tool. These programs enable organizations to capture knowledge transfer programs from retiring and other exiting workers – and then to transfer knowledge to the current and future workforce.

TECK'S IMPROVEMENT ON EMPLOYEE RELATIONS

In 2016, Teck worked to improve productivity and employee relations by maintaining constructive labour relations as they worked through contract negotiations at their Elkviv and Fording River operations. They also conducted planning for short- and long-term changes in their workforce and advanced diversity initiatives across the company. Nearly \$16 million was invested into employee training programs in 2016.

DIVERSITY AND EQUAL OPPORTUNITY

A diverse workforce that integrates a wider range of people, backgrounds and perspectives, not only helps enhance corporate performance, but it also makes local economies more resilient.²¹ Attracting immigrants can be a recruiting tool in increasing a diverse workforce. Yukon developed an [Immigration Strategy](#) that focuses on labour force integration, including language skills, foreign credential recognition and Canadian work experience. This improves the labour market

IMPROVING QUALITY OF LIFE

Goldcorp's newest Canadian operation, the Eleonore mine in northern Quebec is a two-hour flight north-east of Timmins, Ontario. Last Christmas, the company flew in the spouses of employees working over the holidays. The company also provided perks such as appearances from comedians, satellite TV in the hotel-like rooms, and round-the-clock buffet. The perks were part of the company's efforts to attract and retain the best employees, even if it means being apart from their families for half of each month. The workers may not have the kind of institutional knowledge inherent at an older mining site, but the employees are more representative of the community the industry hopes to build. The men are younger and there are more women and Indigenous employees.

needs including diversity, population structure, and geography. This strategy provides the comprehensive skills and trades training needed for positions that immigrants may not have the necessary skills for. This reduces the barriers to mobility and the potential for negative worker experiences.

RECOMMENDATIONS AND CONCLUSION

In order for the Columbia-Basin Boundary region to soften the impact of economic cycles on industry employment and to meet future labour needs, the mining industry needs to develop counter-cyclical workforce planning strategies, including:

- Incorporating collaborative talent attraction strategies to aid in financial or settlement support for potential employees
- Deploying employees to better suited roles to improve their career development
- Using the Learning Outcomes tool for employee retention
- Promoting a diverse workforce to increase diversity and equal opportunity

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