



The Policy Quarterly is part of the Mining Industry Human Resource (MiHR) council's Policy Research & Analysis (PRA) project, which aims to provide timely and policy relevant information to mining industry stakeholders.

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MAC
 The Mining Association of Canada
 L'Association minière du Canada

The Policy Quarterly is a collaborative effort between the Mining Industry Human Resource (MiHR) Council and the Mining Association of Canada (MAC).

Developing a Skilled Labour Force still a Priority

The mining industry has not been immune to the economic downturn that has occurred over the past four months. A number of companies operating mine sites in Canada have taken decisions to establish a hiring freeze or have temporarily shut-down operations. However, these changes will not eliminate the current skilled labour shortages. In *Prospecting the Future (2005)*, MiHR projected that the Canadian mining industry would require 80,000 new and replacement workers over the next decade. A more recent projection in early 2008 included three alternative scenarios: high-growth, no-growth, and industry contraction. The projected annual labour demand was 9,200, 6,200, and 4,600 respectively, until 2016. Based on retirement alone, the mining industry will continue to experience pressures in attracting, recruiting, and retaining skilled workers throughout 2009.

It will be important that industry and governments work together to design policies and support programs that will increase the availability and mobility of skilled workers during the economic slowdown so that when commodity prices increase the skills will be there to develop the resources.

Under the current contraction of the global economy the mining industry is likely facing either a no-growth or slight contraction period over the next year. According to data from InfoMine, some minerals and metals, mainly gold and cobalt, actually saw an increase in their value over the period between September and November 2008 when calculated in Canadian dollars. When the commodity markets and the global economy eventually rebound the mining industry will likely find itself, once again, in a scenario where skilled labour shortages could drive up the costs of production and lead to delays in project developments.

Labour Productivity: Growth or Decline

We measure labour productivity as the level of output (tonnes) per unit of labour input (worker hours). Statistics from 2006 show that labour productivity declined at the same time as employment grew. There are two possible explanations: either companies were hoarding workers during a temporary downturn in anticipation of labour shortages when the economy rebounded or they were hiring workers during an upturn who were less skilled and less ready to work. But what was happening at the macroeconomic level in 2006? The simple answer is that there was a boom in exploration and a shift to higher commodity prices. Clearly, companies were hiring workers with fewer skills and less experience.

References to Labour Productivity

The 2006 and 2007 annual reports of seven senior companies that operate in Canada contained the following phrases associated with labour productivity: stable operation; extension of mine life; additional reserves; better mineral grades; favourable geological conditions; mining at lower elevations; shorter hauling distances; unit cost savings; cost efficiencies; operational efficiency; operating performance; technical innovations; *automated business operations*; healthy life-styles of workers; training programs for new miners; and human resources. From this list we can suggest three strategic areas for labour productivity improvements: risk management, process innovation, and human resource management. In fact, skilled human resources are fundamental to all three.

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Risk Management and Labour Productivity

Starting at the exploration phase, proper risk management can reduce the number of accidents and delays in production. Since even minor accidents are often followed by lengthy investigations to determine cause, such delays can have a significant impact on labour productivity. Proper risk management in the design phase of a mine can help reduce disruptions during the production phase. A mining company needs to attract, recruit and retain experienced engineers and staff in order to carry out proper risk mitigation measures throughout the

mine cycle. Investments in mine safety training also contribute to minimizing accidents and related delays during production.

Risk management should begin with the exploration phase, as exploration can have a twofold effect on labour productivity. First, it provides the basis for mine development. The geological conditions of an ore body need to be captured during the exploration phase. Skilled human resources and advanced technologies are needed to map the underground conditions in which the mine will be designed. Proper exploration therefore contributes to mitigating risk during the mine's development phase. Second, exploration contributes to sustaining labour productivity levels by potentially increasing the quantity and quality of known reserves, thereby extending the life of the mine.



Process Innovations and Labour Productivity

The contribution of process innovations to productivity is more obvious. During the 1990s, the mining industry achieved significant increases in labour productivity through investments in technology. Since then, however, labour productivity has been decreasing. One possible explanation is that the industry has not been able to attract enough of the skilled human resources needed to operate the new technologies. Companies have therefore been forced to hire less qualified workers who require longer periods of on-the-job training.

Human Resource Management and Labour Productivity

Human resources management also contributes to labour productivity. The extent to which a company is able to attract, recruit and retain skilled human resources will have a direct impact on the overall productivity of the company's workforce. For example, adapting to the desire of employees for greater work/life balance is one way of supporting healthy life-styles within the workforce. Moreover, the

level of investment that both companies and governments put into training the existing and future mining workforce will produce the greatest contribution to labour productivity growth.

Access to skilled human resources has become critical for growth in labour productivity. Technological improvements are no longer its sole driver. New process innovations will fully contribute to labour productivity only if the skills to use the existing and future technologies are developed. There needs to be a balanced approach to investments in both technology and human resources, requiring coordination between industry, government and academic institutions. Good human resource management will also contribute to improving risk management throughout the mine cycle, beginning with exploration. If human resources are properly managed, there will be greater opportunities for innovative practices and technologies to take root in companies and in the industry as a whole.

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Human Resources Challenges for 2009

While the conditions leading to shortages of skilled workers have been developing for a number of years, industry has only recently begun feeling the effects directly on operational capacity. For some companies the tide has already turned, and shortages are directly impacting their ability to expand existing projects or develop new ones. The challenges of attracting, recruiting and retaining skilled people in the mining industry are increasing and will continue to do so when the economy rebounds.

More inter-firm competition for skilled labour will put a strain on collaborative efforts, which are essential to effectively address some of the constraints to labour supply and implement solutions – such as innovative training arrangements – that cannot be addressed by a single entity. Furthermore, increased competition from other sectors (i.e. oil & gas) and mining operations overseas, are all contributing to a very tight labour market. Increased competition for skilled labour may also begin to shift the makeup of exploration activities, which is currently dominated by junior companies. If commodity prices

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continue to fall in 2009, junior companies will find it increasingly difficult to compete with senior companies for skilled labour solely on the basis of compensation.

According to a study by Natural Resources Canada, the distribution of exploration expenditures in Canada in 2004 was nearly equal between junior and senior companies. Since then, the proportion has changed significantly. In 2006, junior companies accounted for nearly double the expenditures of senior companies in exploration. The gap narrowed slightly in 2007, but juniors continue to dominate the exploration scene. If the challenges continue, we may see a sharp rise in the number of mergers and acquisitions in 2009 leading to larger companies, which will no doubt require new tools and methods for managing human resources.

Mining Industry HR Challenges

1. Knowledge Transfer
2. Labour Market Information
3. Turnover
4. Accommodating Diversity

A number of the challenges facing mining companies are related to human resources. Four are of particular interest to industry as a whole and are highlighted below.

Knowledge Transfer

The transfer of knowledge and experience to new workers will present a challenge to both human resource managers and existing workers themselves. The large number of older workers in mining means a significant number will be reaching retirement age within the next five years. Companies will need to transfer operational memory to an increasingly junior staff with different skill sets and less onsite experience. Managing employee expectations about skills

development and advancement will need to take this accelerated exodus of older workers into account.

Labour Market Information

Access to more timely and relevant labour market information will also have an impact on the agility with which industry and government can respond to the volatility of the markets. The mining sector will require labour market information that will help in decision making when it considers expansion, development or temporary shut-down of new and existing mines. The Mining Industry Human Resource (MiHR) Council has to date published labour market demand projections for Saskatchewan and British Columbia.

Turnover

Perhaps the greatest challenge will be to address the turnover of highly skilled workers. This group is unlikely to be deterred from switching employers during an economic downturn as their skills will continue to be in high demand. Turnover presents a problem for two primary reasons. First, the employer loses knowledge and experience when a worker leaves. Second, when markets rebound, employers will need to recruit for vacant positions under what could develop into intense labour market pressures if workers leave the industry during the current downturn.

An investment in retention initiatives could greatly reduce future recruitment and training costs. Part of the solution to turnover challenges will be to pay more attention to non-monetary factors like quality of life, corporate social responsibility and professional development. However, this presents a challenge of its own as companies will require information on the impacts that work arrangements, such as fly-in/fly-out, have on quality-of-life factors for an increasingly wide diversity of employee groups, including Aboriginal people, youth, women, and new Canadians. Companies that have not

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already started dealing with these challenges may find it difficult to change from human resource hiring strategies based on price alone.

Accommodating Diversity

Companies also face pressures to recruit from a more diverse labour force, which presents the added challenges of using the tools, and implementing policies and resources developed to make the process easier. The MiHR Council recently published *Mining for Diversity: An Employer's Guide to Attract, Recruit, and Retain a Diverse Workforce*. The guide provides employers with tools and resources that target a number of key demographic groups in Canada. Diversity is also linked to the challenge of transferring knowledge and experience. Cultural and generational differences have an impact on the way learning and mentoring take place within the work setting.

The Impact of a Downturn

The economic downturn may alleviate the aforementioned challenges to some degree. However, given the levels of development that took place during the period before October 2008, economic recovery will see a significant number of projects once again becoming viable, causing a tightening in labour markets. As we move into 2009, human resource departments will continue to struggle with diversity issues. They will also be dealing with the ability of companies to retain their highly skilled workers during the economic downturn. These factors could well have an impact on the structure of the industry when the economy recovers.

Transitioning Workers from Forestry to Mining

Mining is closely connected to other primary sectors, most notably the energy sector. Their outputs are interdependent. While forestry and agriculture may not appear to be interdependent with mining – certainly not to the extent that energy is – there is potential for greater interaction in the area of human resources. Many of the skills required in forestry could apply in mining with minimal retraining. For example, a heavy equipment operator working in the forestry sector could transfer his/her skills to the mining sector for work in an open-pit mine. The return on retraining such workers is potentially more beneficial than training other pools of labour. In other words, the productivity gains from hiring workers with transferable skills and

significant work experience are potentially greater than hiring new and inexperienced workers.

Australian Efforts in Transferable Skills

In Australia, the mining sector is currently looking at the transferability of skilled labour between agriculture and mining. The Australian Regional Agricultural and Mining Skills (ARAMS) pilot project was launched in February 2008. It results from a memorandum of understanding between the Minerals Council of Australia (MCA), the National Farmers Federation (NFF), and the Australian Government. In Canada, the objective of the From Forestry to Mining (FF2M) project, which is being implemented by MiHR, is to support the transferability of skills between the mining and forestry sectors by conducting gap analyses of comparable occupations and by follow-up with gap training and other transition support services.

Occupational Standards and Labour Market Information

Occupational standards and improved labour market information are two additional tools that would greatly facilitate the transition of workers. Occupational standards provide the basis for skills-gap analysis, retraining, and training support services. In turn, labour market information has the potential to improve the capability of the mining sector to anticipate the level of demand for displaced workers. The transferability of skills is, however, only one factor contributing to the success of re-employment efforts. Other factors are linked to the opportunity costs associated with moving. Tax credits to minimize moving expenses contribute to easing the transition of forestry workers into mining-related employment opportunities. Tax credits for moving expenses are already in place and further measures have been recommended by the House of Commons Standing Committee on Human Resources, Social Development and the Status of Persons with Disabilities, which tabled a report on *Employability in Canada: Preparing for the Future in April 2008*.

Support for Transition Period

These efforts come at an opportune time. Natural Resources Canada announced in July 2008 that one billion dollars in funding would go towards supporting areas affected by the mountain pine beetle. Six million dollars of this total would go towards mineral mapping activities to provide alternatives to forestry in the rural communities affected by the beetle infestation. An essential part of providing alternative opportunities will be help with the transitioning of workers.

The Impact of Governance on Engagement with Aboriginal Communities

Governance plays an important role in First Nations, Inuit and Métis communities and can have a significant impact on engagement between mining companies and Aboriginal Human Resources Development Agreement (AHRDA) holders. The AHRDA holders stem from The Aboriginal Human Resources Development Strategy (AHRDS), which originated from a government response in 1998 to the final report of the Royal Commission on Aboriginal Peoples (RCAP). The response was entitled *Gathering Strength: Canada's Aboriginal Action Plan* and highlighted the need to support capacity building for Aboriginal governance and self-government. The government of the time also recognized that efforts towards self-government would be severely undermined without a sustainable economic base. It was because of these conclusions that the AHRDS, with its focus on support for training and employment, was developed.

The Diversity of AHRDA Holders

There are currently 79 AHRDA holders across Canada. Local, regional and national First Nation, Inuit and Métis administrations make up 68 percent of AHRDA holders. Nine percent can be categorized as development corporations or foundations, and 23 percent can be categorized as employment and training centers, of which 52 percent are located in urban areas. AHRDA holders manage a combined budget of over 1.5 billion dollars in funding (2004-2009) from Human Resources and Social Development Canada (HRSDC). The geographical distribution and varying governance structures of AHRDA holders are an indication of the variety of opportunities and difficulties that may arise when providing employment and training services to communities, and the degree to which the separation of politics from administration may become a challenge in terms of engagement with mining companies.

If an AHRDA holder has significant ties to community decision makers through the governance structure of the community, the mining company should first engage with those local decision makers before initiating a working relationship with the AHRDA holder.

Proximity of Aboriginal Communities to Mining Developments

The mining industry is facing increasing pressures to find the skilled human resources needed to address not only the growth of projects entering the development and production phases, but also the exodus of older workers soon to be retiring in greater numbers. These pressures are heightened when we consider the difficulties companies face in attracting potential workers to the rural and northern locations where mining is primarily located. There are currently some 1,200 Aboriginal communities located within 200 kilometres of 220 principal producing mines and 3,000 active mineral exploration projects. This geographical context increases the importance of constructive engagement between the mining industry and Aboriginal communities.

Protocols for Engagement

While respect is an essential element of this engagement, another involves training and employment opportunities that correspond to the services provided by AHRDA holders. It is important for mining companies interested in forming working relationships on employment and training initiatives with AHRDA holders to realize that success in engagement needs to take into account factors that affect the degree to which politics is separated from administration, and the degree to which AHRDA holders are directly influenced and affected by the political decision makers at the community level (i.e., band councils in the case of First Nations communities). Mining companies should be aware that employment and training needs may take secondary importance to other concerns of the Aboriginal community at the onset of engagement. If an AHRDA holder has significant ties to community decision makers through the governance structure of

“To understand the process, Inuit constantly analyzed the experience in order to identify any system or pattern. Once patterns were identified and understood, Inuit would respect the presence of the pattern and adapt their individual and collective practice to it.”

By Jackie Price

Source – *Tukisivallialiqtakka: The things I have now begun to understand: Inuit governance, Nunavut and the Kitchen Consultation Model*

the community, the mining company should first engage with those local decision makers before initiating a working relationship with the AHRDA holder.

A company may wish to assess the degree to which the AHRDA holder is able to carry out its long term training and employment strategies. For example, if the AHRDA holder is a training and employment center, it may be necessary for them to contact the local community organizations where the mine is to be operational to establish priorities and develop or update its inventory of skills for the community. On the other hand, if the AHRDA holder is itself part of the political structure of the community, it may lack some of the institutional capacity to carry out a full-fledged employment and training strategy that can address the current opportunity. Under these circumstances, the AHRDA holder may need help in identifying and developing partnerships with institutions that provide mining-specific and trades training programs.

The Variance of Governance Structures

It is also important to distinguish between the governance structures of First Nations, Inuit and Métis communities. There can be an impact on governance in the degree to which roles are clearly defined for political leaders in the community and staff of AHRDA holders. With clear roles, politics will be less important in the day-to-day administrative decisions and more time will be available for guiding the direction of key initiatives. Clear roles also lead to results-based decision making and clear direction for the relationship between the AHRDA holder and the mining company. Turnover of AHRDA holder staff can also create challenges in maintaining institutional capacity. If staff turnover is high, the separation of politics and administration may be temporarily lost as political leaders step in to compensate for temporary staff shortages.

The Impact of Consistency in Funding

Funding may also be an issue for a number of AHRDA holders. The degree to which long-term or core funding has been secured by an AHRDA holder will also affect the degree to which day-to-day administration is influenced by political considerations. This may increasingly become an issue, as the AHRDS was extended until 2010 only recently. A successor plan has not yet been developed, which may cause AHRDA holders to be reluctant to commit their existing funds to new activities that may not be sustainable in terms of

programming. Clear direction from the Government of Canada would help companies and AHRDA holders, now that a significant number of new mining projects are ready to enter the production phase when the economy rebounds. This is precisely the context in which the activities and experience of AHRDA holders become increasingly relevant.

For further information on governance in Aboriginal communities, contact John Graham at the Institute on Governance (Email: jgraham@iog.ca) or visit the Institute's web site at www.ioi.ca.

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Diagnosing Lack of Diversity as Cause or Symptom

Changes in Canadian demographics and advancements in technology will require mining companies to tap into new sources of labour as older and more experienced workers begin to retire. An increasing focus on "diversity" should therefore become a priority. Mining companies have thus far not been particularly successful in attracting visible minorities and women to employment in mining. Low levels of diversity in mining can be considered as both a contributing cause and a symptom of the difficulty of attracting and developing skilled labour from the general working-age population.

Internal Factors as Contributing Cause

Low levels of diversity could be seen as a contributing cause if mining work environments are not inclusive of visible minorities and women despite the fact that these groups are achieving high levels of education. According to the Association of Universities and Colleges of Canada (AUCC), the makeup of those who obtain post-secondary education and training are increasingly from visible minority groups and women. In fact, a recent study by the AUCC, Trends in Higher Education: Enrolment, has shown that most visible minority groups are nearly twice as likely as the general population to have completed a university degree. Women also account for a larger percentage of students in higher education. According to the AUCC, women account for 58 percent of bachelor degree enrolment.

In 2006 the number of male and female graduates in the labour market was equal.

Symptom of External Factors

On the other hand, low levels of diversity could be considered a symptom if barriers outside the direct influence of the workplace are holding back skilled individuals from taking up employment in mining. Barriers could include: difficulties in having foreign credentials for regulated occupations recognized in Canada; inadequate support for the integration of recent immigrants into employment such as mining; barriers to access to information for recent immigrants about opportunities in mining; or difficulties in finding suitable solutions to work/life or work/family balance. A lack of diversity in the mining workforce can also be seen as symptomatic of a perception held by mining companies that they have little control over changing these barriers.

Mining for Diversity

Recognizing that low levels of diversity in mining are both a contributing cause and a symptom of the labour shortage means there is a role to be played by mining companies, the industry as a whole, and governments. Mining companies can make use of tools like Mining for Diversity: An Employer's Guide to Attract, Recruit, and Retain a Diverse Workforce, available through MiHR, to develop ways of creating a more inclusive work environment. Specifically, the Guide:

- provides strategies and tools to attract, recruit, and retain diverse talent in the industry;
- promotes and showcases companies with innovative and effective practices;
- reinforces creative, collaborative, leading-edge practices; and
- fosters collaboration among practitioners.

Industry as a whole can also take a more proactive role in coordinating with government to address broader issues such as the recognition of foreign credentials and the integration of visible minorities (i.e., recent immigrants) and women into the labour market. Industry needs to understand that it has a lot to offer in developing solutions to the challenges mentioned above. For further information on the Mining for Diversity tool, please contact Melanie Sturk, Senior Program Manager (msturk@mihr.ca).

Agreement on Internal Trade and Labour Mobility

A national agreement on labour mobility was announced by Canada's premiers and territorial leaders at a Council of the Federation meeting in Quebec City on July 17, 2008. The agreement stems from the existing Agreement on Internal Trade (AIT), which was signed by First Ministers in July 1994 and took effect on July 1, 1995. The agreement on labour mobility is an aggressive action plan for full labour mobility for designated, and in many cases, regulated occupations by August 2009. It seeks to do this by making changes to Chapter 7 of the AIT.

One of the proposed changes to Chapter 7 is to strengthen the wording concerning the obligation of provincial/territorial regulatory agencies to comply with the provisions of the new text of Chapter 7. A revised chapter on dispute resolution will also be developed. These anticipated changes would increase the fine attached to refusal of a province or territory to recognize workers from another jurisdiction.

The agreement will also seek to eliminate unnecessary additional requirements for a worker to be certified in another jurisdiction (i.e. minimum residency requirements).

Elimination of Unnecessary Requirements

The agreement will also seek to eliminate unnecessary additional requirements for a worker to be certified in another jurisdiction (i.e. minimum residency requirements). This will be especially pertinent to companies having operations in more than one province/territory who seek to move their employees internally from one provincial or territorial jurisdiction to another without the burden of additional external procedures.

The provinces and territories have committed to amending the AIT by January 1, 2009; implementing the agreement to accept credentials across provinces by April 1, 2009; and achieving full labour mobility by August 1, 2009. The first deadline is on track, involving the granting of ministerial approval to the revised text of Chapter 7 of the AIT.

For more information, contact Jean-Francois Biron, the Labour Mobility Coordinating Group Secretariat Manager at jean-francois.biron@mess.gouv.qc.ca.

We encourage you to provide comment, questions and/or feedback about this publication. We also invite you to suggest topics for future articles that reflect the concerns and challenges of your organization. To do so please contact:

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