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The Social Dimension of Sustainable Development and the Mining Industry

A Background Paper



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A Background Paper

November 2003

Prepared by
Lise-Aurore Lapalme
Sustainable Development
Policy Integration Division
Mineral and Metal Policy Branch

Canada

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E-mail: info-mms@nrcan.gc.ca

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Note to Reader

This document is not intended to represent official views of the Government of Canada. Rather, it puts forward some information and ideas that may be of interest and that may promote further discussion on the social dimension of sustainable development.



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1. Introduction

The settlement and development of Canada is inextricably linked to the discovery and exploitation of natural resources. Beginning with fish and fur, and continuing with minerals, petroleum, forests and other resources, Canada's social history is closely tied to natural resources. Today, a strong natural resources sector, together with healthy manufacturing and service sectors, make for a strong economy overall.

Natural resources development, which was long characterized by an attitude of harvest and then move on to another region, is now facing the imperatives of sustainable development. First defined in *Our Common Future*, the 1987 World Commission on Environment and Development report known as the Brundtland Report, sustainable development is becoming the operating paradigm for natural resource industries.

The Brundtland definition of sustainable development as development that “meets the needs of the present without compromising the ability of future generations to meet their own needs” is well known. The concept of sustainable development as the integration of economic, environmental and social dimensions has become a model for thinking and policy-making.

The Whitehorse Mining Initiative, a process in which the mining industry, senior governments, labour unions, Aboriginal peoples and the environmental community discussed ways to seek a sustainable mining industry, endorsed sustainable development, but also went farther. It identified the fact that the social, economic and environmental dimensions are constantly changing, requiring the ability to recognize, anticipate and respond to change. Sustainable development is thus seen not as a static present state, but as an ever-changing system.

In 1996, the federal government defined sustainable development for minerals and metals in *The Minerals and Metals Policy of the Government of Canada*. This definition contains four elements that recognize the economic, environmental and social dimensions of minerals and metals activities while respecting the needs of resource users of the present and the future. In the Policy, “sustainable development in the context of minerals and metals is considered as incorporating the following elements:

- finding, extracting, producing, adding value to, using, re-using, recycling and, when necessary, disposing of mineral and metal products in the most efficient, competitive and environmentally responsible manner possible, utilizing best practices;
- respecting the needs and values of all resource users, and considering those needs and values in government decision-making;
- maintaining or enhancing the quality of life and the environment for present and future generations; and
- securing the involvement and participation of stakeholders, individuals and communities in decision-making.”

As our understanding and implementation of sustainable development has evolved, it has become evident that more effort has been placed on the economic and environmental dimensions than on the social dimensions. This is in part due to the difficulties inherent in conceptualizing the application and measurement of the social dimension to sustainable development.

The importance of the social dimension of sustainable development has long been recognized. The United Nations Conference on Environment and Development, which met in Rio de Janeiro from June 3 to 14, 1992, resulted in the Rio Declaration on Environment and Development (the Rio Declaration). The first principle of the Rio Declaration is that “Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature.”

The mining industry has an interest in sustainable development, including its social aspects. For example, the industry can contribute to continuous learning leading to innovation, to improving the health of people and the environment, and to developing vigorous diverse communities. The industry has the potential to enhance its social contribution and its influence on the Canadian social fabric, which can result in the industry receiving a social licence to operate from communities and regions.

Sustainable development has given rise to various visions of the world of the future, of possible tradeoffs and of externalities. The social fabric is changing and evolving with an increased emphasis on both communities and individuals. Through volunteerism and involvement, people are becoming more active in creating healthy, sustainable communities at the neighbourhood, municipal and regional levels within both geographical communities and communities of interest. This greater activity in communities and in the social fabric leads to an interest in examining the social impact of developments.

Natural Resources Canada (NRCan) has prepared this discussion paper in an effort to expand the understanding of the mining industry’s contribution to and impacts on the social aspects of sustainable development in Canada. The paper deals with the domestic aspects of the social dimension of sustainable development and the mining industry. Although the important opportunities of social enhancement on the international stage for the mining industry are recognized, they are not directly dealt with in this paper. Furthermore, the paper concentrates on the national scale, recognizing that provinces and territories regulate the mining industry, but that the impact of the activities of the minerals and metals industries can be felt at the national level.

The goal of the paper is to promote discussion of social issues related to mining developments by industry, government officials and stakeholders, leading to the development of policy instruments that will ensure the social dimension is well integrated into the sustainable development of mining projects. It is hoped that the paper will also serve to inform public constituencies of the potential of mining to create social value.

The paper is divided into several sections that highlight different aspects of mining and the social dimension of sustainable development. The history of the social impact of mining in Canada is used to present the background of the discussion in the first part. The concepts related to the social dimension of sustainable development as it applies to minerals and metals development are discussed in the second part of this report. The third part of the paper deals with the risks and opportunities related to the social dimension of sustainable development faced by industry and governments.

2. Historical Background

The history of mining in Canada can be divided into four main phases. At first comes Aboriginal mining prior to European settlement. Then, from the mid-1800s to the mid-1900s, mineral resources were exploited in a harvest and move pattern which was, at the time, the mode of exploitation of all natural resources. This phase was slowly replaced by one in which the mineral resources were seen by governments as a tool for ensuring economic development; this phase can be seen as extending from the mid-1900s to the late 1960s. Then, in the late 1960s and early 1970s, environmental concerns began to change the mining scene. We may now be in a fifth phase where natural resources, including mining, are being considered in the context of their contribution to sustainable development and the Canadian social fabric.

In this context, the following discussion will attempt to highlight the main impacts of the mining industry on the social fabric of Canada during each of the first four phases. The present phase will be considered in later sections of this paper.

2.1 MINING PRIOR TO EUROPEAN SETTLEMENT

The first mines in what was to become Canada were dug and exploited by Aborigines. Copper was dug by Aborigines in the Lake Superior area for over 5000 years until about 1000 A.D. (Udd, 2000). Maritime Archaic Indians are known to have mined chert beds in Labrador for the material used to make implements beginning about 4000 years ago. Aboriginal mining is also known from the Cobalt area of Ontario. Aborigines extracted silver from this area from 200 B.C. to 200 A.D.

The actual extent of Aboriginal mining is not known and may never be accurately known. Yet, trade in copper and silver and the use of chert implements were extensive in North America for over 5000 years before European settlement. Mining and the use of some minerals and metals were a part of Aboriginal life.

Explorers, such as the Vikings and early settlers, are known to have developed and exploited mines. The early explorers of the landmass were looking for deposits, especially gold. Knowledge of deposits and of the possibility of exploiting them were important for the administrators of the colony that became Canada.

2.2 HARVEST AND MOVE

The next phase of mining in Canada, from the mid-1800s to the mid-1900s, was characterized by what can be described as a harvest and move approach. This phase, from a government perspective, was due to the need to demonstrate sovereignty over the landmass, to acquire more knowledge of the landmass and resources, and to build a nation. For the mining industry, this phase represents the best use of existing technology to exploit the resources and make a profit. Both governmental and industry goals were similar in the need to find and exploit resources to ensure a future for the country.

In September 1841, the Legislature of the Province of Canada passed a resolution to conduct a geological survey of the province. This resolution gave birth to the Geological and Natural History Survey of Canada in 1842. The decision to undertake a geological survey of the country was based on the realization that the development of an industrial economy in Canada would depend to a considerable extent on a viable mining industry. There was a need to do a geological assessment of the landmass and to determine the presence of viable resources.

According to the harvest and move approach, resources were developed as quickly as possible upon their initial discovery and harvested until they were exhausted. This applied to all natural resources, but the following discussion is limited to mining. Once the mineral resources of an area were exhausted, developers and workers moved on to new mineral deposits. Many of the settlements established to accommodate and serve the workers eventually closed down after the mineral was exhausted and were abandoned.

The most extreme examples of this harvest and move phase were the Cariboo gold rush (1860s) and the Klondike gold rush (1896-98). The Cariboo gold rush brought thousands of people to the western coastal region of Canada while, in the case of the Klondike gold rush, thousands headed north to the Yukon. In both cases, numerous settlements were established to accommodate the gold seekers. Many of these settlements were abandoned shortly after their establishment as the supply of gold disappeared and prospectors extended their search into other areas.

Despite the large number of ghost towns that it created, the harvest and move phase of mining in Canada left important benefits to the economy and social fabric of the nation. Major developments occurred with respect to the exploration and settlement of remote areas: wealth was created, knowledge of the country was extended, transportation infrastructure was developed, the role of government was expanded, new technology was developed, and sovereignty was established. The mining industry, through the creation of settlements, helped forge the nation.

2.2.1 Exploration and Settlement

The search for mineral resources led to the exploration and mapping of remote areas of the country. The discovery of mineral resources in turn led to the development of communities and a flow of population to parts of Quebec, Labrador, Ontario, Manitoba, British Columbia, the Yukon and the Northwest Territories.

While a series of communities prospered and then dwindled or disappeared completely due to mineral exploitation or the gold rushes, several permanent communities (such as Nelson, Flin-Flon, Sudbury, Thetford Mines) also developed. All of these communities, those that persisted and those that disappeared, played a significant role in the gradual extension of the frontier and in the settlement of the country, as well as in the economic and social development of Canada.

The Cariboo gold rush was instrumental in the settlement of mainland British Columbia and the westward expansion of settlement, while the Klondike gold rush served to expand the northern frontier. Both gold rushes resulted in the establishment of communities, many of which were abandoned, but others achieved permanence.

The Cariboo gold rush, and other mining exploration and development, resulted in the opening up of regions that were subsequently discovered to be of agricultural, forestry or ranching value. This in turn stimulated the permanent settlement of areas and a diversification of local economies.

Another important result of both gold rushes and mineral exploration has been the increased geographic knowledge of the country's land base. Significant parts of the country were mapped as a result of the gold rushes or of mineral exploration. This provided the foundation for subsequent settlement, the development of transportation corridors, and greater access to other natural resources including agricultural lands, forests and fossil fuels. It also led to the establishment of government control over lands and resources.

2.2.2 Transportation Infrastructure

Mineral exploration and the construction of transportation infrastructure are closely related. Some mineral deposits were discovered during the construction of the transcontinental railroads while, in other cases, mineral discoveries led to the construction of further railroad routes. In both cases, mineral discoveries and the construction of railroads led to the establishment of sovereignty and of governmental control over large areas.

The period between 1880 and 1920 was the golden age of railroad construction in Canada. The development of the three transcontinental rail lines – the Pacific Railway (1885), the Grand Trunk Pacific Railway Company (1914) and the Canadian Northern Railway (1915) – is closely tied to the expansion of the mining industry. The Canadian Pacific and Grand Trunk Pacific railways were motivated in large part by the mining activity in Ontario and British Columbia, while the Canadian Northern Railway was an important prerequisite to mineral development in the northern prairies and the Northwest Territories. The building of the railway was a national policy and a condition for the entry of British Columbia into Confederation. Once in place, these rail lines had a profound impact on the movement of goods and people, settlement, and industrial expansion.

The development of canals for the transportation of goods was also stimulated by the mining industry. For example, the first lock of The Great Lakes-St. Lawrence Seaway System was built in Sault Ste. Marie in 1855 in response to the discovery of iron and copper ores around Lake Superior. The Welland Canal, connecting Lake Erie and Lake Ontario, underwent several improvements between 1845 and 1932 that were due in part to the mining industry and were of subsequent importance to the development of the Canadian steel industry.

The gold rushes and mineral exploration also led to the construction of roads. In 1862, the Government of British Columbia commissioned the construction of the Cariboo Road, which was completed three years later and led to the construction of shorter roads to communities. The construction of these roads contributed to the development of a comprehensive transportation system in the province. The use of these roads for the delivery of goods, services and security assisted permanent settlement.

2.2.3 Related Development

The establishment of mines, the existence of transportation networks, and government policy resulted in the development of processing facilities within Canada. In some cases, government policy played an important role. The nickel industry, for example, was legislated into building a refinery in Ontario. In

the case of aluminum, it was the granting of water licences by the provinces to give companies like Alcoa and later Alcan access to competitively priced hydro-electric power that lured the industry to Canada.

The development of processing facilities increased the impact of mining, leading to higher employment and greater value for exports. Additionally, once materials were available, industry was able to grow and branch into other areas and activities. Technological advances have also been made in mining, exploration and other related industries, helping secure Canada's position as a leading global minerals producer.

A good example of industrial evolution is the case of Consolidated Mining and Smelting Company of Canada, which became Cominco Ltd. in 1966. The company was formed in 1906 by an amalgamation of several companies to ensure a secure supply of ore and power to operate the ailing copper smelter in the town of Trail, British Columbia. The smelter expanded dramatically in the 1920s and 1930s and became the largest producer of lead and zinc in the world. A large chemical fertilizer plant was added in the 1930s to eliminate sulphuric acid from the smelter and to improve the environmental conditions in the area. Cominco in Trail and many other companies in Canada have had important impacts on communities by increasing local populations, creating jobs, and diversifying the local economy.

The gold rushes, especially the Klondike gold rush, have been the source of a tourism industry, which has helped communities, such as Dawson City, survive. Furthermore, the gold rushes and other mining activities have often had impacts on communities located far from where the resource was found. For example, the growth of Edmonton, Alberta, as a major supply centre was stimulated by the Klondike gold rush just as, more recently, it was again stimulated by the search for and discovery of diamonds in the Northwest Territories.

2.2.4 Government

Both gold rushes stimulated the expansion of government activities. Motivated by concerns over sovereignty and protection of the fur trade, the Government of British Columbia took an active role in the regulation of activities during the Cariboo gold rush. It sold mining licences, enforced licensing and other laws, and maintained law and order.

The presence of the North West Mounted Police (the precursor to the Royal Canadian Mounted Police) had a considerable effect on the Klondike gold rush. The approach of the Northwest Mounted Police was conducive to settlement and the Mounties were of considerable assistance to those inexperienced in wilderness survival.

The management of the gold rushes led to a stable environment for settlement, while the selling of licences was an important source of government revenues. The revenues led to investments in transportation and infrastructure, which in turn led to more extensive settlement and increased law and order and governmental services.

2.2.5 Aboriginals in British Columbia

Prior to the gold rushes, the Aboriginal peoples of British Columbia and the Yukon had limited contacts with fur traders and explorers. The gold rushes brought thousands of people into these areas and the Aboriginal groups began to feel threatened by the invasion of the gold seekers.

The gold rushes were for many the first contact between Aboriginal peoples and European diseases, which led to countless deaths. Furthermore, many Aboriginal peoples were displaced as a result of mining activity and lost either land or access to resources. Because of this, Aboriginal peoples became more protective of the land and resisted development initiatives, such as the construction of the Cariboo Road. Government authorities, who viewed the Aboriginal population as strategically important to maintaining sovereignty and the fur trade, attempted to maintain peaceful relations. Unfortunately, there were many violent conflicts between Aboriginals and gold seekers.

2.3 ENSURING REGIONAL ECONOMIC DEVELOPMENT

Both World War I and World War II led to an increase in the demand for minerals. They also led federal and provincial governments to look at natural resources development, including mining developments, as a way of stimulating economic growth, regional development, and the creation of local employment.

Government initiatives to use mining development as a source of regional economic development included:

- the establishment of the federal Department of Mines in 1907;
- the first federal *Mining Act* in 1917, which stipulated that ores mined in Ontario be refined in that province instead of in the United States;
- provincial mining legislation;
- the *Emergency Gold Mining Assistance Act* of 1948, which extended the life of gold mines and allowed communities dependent on them to adjust to declines in production;
- the Roads to Resources Program of 1958, which provided funding for the development of transportation corridors in regions where mineral development was constrained due to difficulties in accessibility; and
- the reorganization of the Department of Mines and Technical Surveys in 1966 to the Department of Energy, Mines and Resources, with a mandate expanded to include economic research of resource markets and the development of policies and plans for resource management.

These initiatives were aimed at improving the socio-economic position of Canadians and communities in remote regions and, in many cases, resulted in the development of single-industry resource-dependent communities. During the 1950s, governments began regulating the development of single-industry communities and encouraging mining companies to settle workers into existing communities instead of creating new ones. In cases where there were no existing communities, governments played an advisory role and encouraged comprehensive community planning. Governments also attempted to encourage economic diversification, especially tourism, and to implement gradual phasing out of the communities that industry was planning to leave. Government intervention was aimed at providing a better quality of life, increasing the chances of long-term community stability, and easing the stress associated with community decline.

2.3.1 Fly-In Mining

Mining companies tended to build a town at the mine site. This type of town, company built, owned and operated, tended to be self-sufficient and then to be abandoned once the ore was extracted and the mine closed. This system, although useful to mining companies, was not useful for purposes of regional development. The fly-in system was devised to increase the economic development of a region by not concentrating all of the economic activity in one temporary town.

In the fly-in mining system, workers remain in communities remote from the mine site and are flown in to the site for shifts of one to eight weeks. Economic activity is distributed over a wider area than was the case when mining towns were established.

The first mine in Canada to use a fly-in system was Asbestos Hill, south of Deception Bay, Ungava, which opened in 1972. The number of fly-in operations increased rapidly in the 1980s, mostly for mines in northern Saskatchewan and the Northwest Territories.

Some of the more important economic reasons for the use of the fly-in system include:

- lower costs than building a new community, since increased governmental regulations have made the development of new communities expensive;
- a reduction in communication and transportation costs; and
- lower costs in implementing mine closure.

There are also social benefits to the fly-in system, including:

- avoiding some of the problems with resource-dependent communities, such as instability and socio-demographic imbalances;
- the benefits of the development are spread out over a wider range of communities;
- workers can maintain a good separation between home and the workplace; and
- greater flexibility in work schedules, making it possible for Aboriginal workers, for example, to maintain a traditional lifestyle.

Some of the disadvantages of the fly-in approach include:

- the fact that hardship, when a mine closes, is spread over a wide range of communities;
- the development of the remote region does not benefit because supplies and workers are brought in from other areas;
- negative effects on families and family life due to the fact that one partner is away from home for extended periods of time; and

- negative social impacts can still occur in communities from which outsiders are flown to the mine site.

The fly-in system does contribute to regional development. Since a mining settlement does not exist, goods and services are delivered to a convenient existing settlement, which benefits from increased economic activities. Such settlements become transportation nodes that can offer an increased number and type of services.

2.3.2 Northern Development

Concerns about poor economic conditions, poverty within Aboriginal communities, and Canadian sovereignty were some of the motivating factors behind the strategy to use natural resources to stimulate regional development in the north, particularly in the Northwest Territories. The vast number of mineral deposits found in the N.W.T. and in the northern parts of provinces led to the development of many mines between 1950 and 1990, many of which used a fly-in system.

Mining activity stimulated the construction of roads, railways, hydro-electric facilities and communities. Both the federal government and the mining companies made an effort to involve Aboriginals in the planning and operation of the mines and to accommodate traditional lifestyles through the use of the fly-in system and initiatives directed at the development of Aboriginal communities.

Despite efforts on the part of the federal government and the mining companies, Aboriginal peoples felt threatened by mineral development and, in some instances, resisted the opening of mines or the construction of roads. Nonetheless, the importance of mineral resources to the economic development of northern Canada is recognized by Aboriginal peoples. Inuit leaders now expect mineral development to play an important role in the economic and social future of Nunavut.

The drafters of the agreement that created Nunavut insisted upon mineral rights, and the Inuit have regulated that an Inuit Impact and Benefits Agreement must be negotiated before mining development can take place. Such agreements guarantee economic benefits, but can also deal with ways of accommodating traditional lifestyles and preserving family structure.

2.4 ENVIRONMENTAL CONCERNS AND SUSTAINABLE DEVELOPMENT

During the 1960s and early 1970s, the environmental movement in North America targeted industrial and natural resource processes that could be detrimental to the environment. The galvanizing issue for mining industries was the problem of acid deposition, also known as acid rain. The effects of acid rain on the environment and human health led to direct action by provincial and federal governments and a heightened public consciousness of the potential impacts of mining activities on the environment. These environmental concerns also led to the development of federal, provincial and territorial environmental impact assessment processes.

With the recession of the 1990s, environmental concerns, for Canadians, were superseded by economic concerns. At the same time, the concepts of sustainable development and of multi-stakeholder approaches were garnering interest. The Whitehorse Mining Initiative (WMI) of 1994 was one such approach that brought together Aboriginal peoples, the environmental community, labour groups,

governments and the mining industry. WMI led to the adoption of a strategic vision for a strong mining industry that contributed to the maintenance of a healthy and diverse ecosystem in Canada.

As sustainable development continues to gain momentum and governments and industry search for methods to implement it, some mining companies have begun to look at the concept of the “triple bottom line,” which goes beyond simply measuring financial results to also include social and environmental impacts. Such concepts lead to difficult questions dealing with the social dimension of sustainable development, the impact of the mining industry on the social fabric of a country, and the methods to increase social sensitivity and to measure social responsibility.

These difficult questions are amplified by the fact that the mining industry exists and develops mines for profit and not as a social good. Yet, share prices are heavily dependent upon qualitative factors. Management culture, responsiveness to societal pressures, reputation, and the presence or absence of environmental accidents all have an impact on share prices. Although contributing to the social dimension of sustainable development results in costs for the industry, it can also be the basis for increased profits.

3. The Social Issue

“Sustainable development” throughout this paper is defined as in the Brundtland report, namely, “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” This is also the definition used in the *Department of Natural Resources Act*.

The question then becomes one of ensuring that a development is sustainable, or that the development generated by the extraction of a mineral resource continues through time even though the mineral itself does not. This is a complex, long-term issue in which the social or human dimension of sustainable development becomes crucial. It is an issue that requires dealing with the fact that the mineral wealth of an area will come to an end, but that the development generated by that mineral wealth can and should continue so that future generations can continue to meet their needs.

Although sustainable development requires the integration of the economic, environmental and social dimensions of the development itself, this paper concentrates on the social dimension only. It should nonetheless be noted that the social dimension cannot be divorced from either the economic or the environmental dimensions. Many of the social elements of sustainable development can be cast in the light of socio-economic considerations as links between the economic and social dimensions. Furthermore, environmental considerations are present in discussions of health and safety issues, in issues dealing with settlements, or in the examination of the impact of a development on subsistence lifestyles.

When dealing with the social dimension of sustainable development it is important to remember that the main theme is people and how a development can contribute to their lives and their opportunities to make the present and the future better. The impacts of development activities can occur at several social scales, including individuals, families, communities, First Nations, cultures, and society as a whole. It must also be noted that the social dimension is subjective, qualitative, difficult to measure, and perceived differently by the various players and stakeholders.

The following discussion concentrates on the social benefits and impacts of the mining industry. Although it is understood that there is a strong component of the social dimension that resides within the purview of governments, the following discussion is limited to the effects of mining in an attempt to identify some of the benefits and impacts of mining developments on the social fabric and the possible responses of the industry.

The social impacts and opportunities created by a mineral development can be categorized in a variety of ways. In order to facilitate the discussion, three categories have been identified as a starting point. These categories were selected because, although each has a social focus, they serve to integrate the three dimensions of sustainable development. Environmental and economic issues are covered within these categories but, in each case, the social issues, namely individuals, families and communities, are the starting point for the discussion. Each of these categories is further divided into sub-categories that are not meant to be mutually exclusive, but rather to be reflective of the types of concerns and issues that are related to the social dimension of sustainable development.

3.1 HEALTHY PEOPLE, HEALTHY ENVIRONMENT

3.1.1 Health and Safety

Ensuring healthy and safe working conditions at the mine site is often the first social impact identified by residents and workers. Miners and community leaders want assurances that work on the site will be safe for people and non-detrimental to the environment. They also want to see how accidents, which can put the health and safety of workers at risk or can be the cause of environmental damage, will be treated. Workers, communities and governments want to see the emergency measures that a mining company has prepared to deal with accidents and the commitment it has to these measures. The health and safety of all individuals at a site, from workers to visitors, are basic social requirements of any development.

Health and safety at the mine site are ensured through management plans. Contingencies for responding to accidents are usually part of the proposed plan for the mine. Response to accidents can go beyond the mine site to the education of members of neighbouring settlements in emergency procedures. Although the development of emergency response measures is necessary to assuage fears, working with communities to develop emergency response capabilities external to the actual site within the region can do much to involve people more closely with the mine.

It should be noted that ensuring health and safety at the mine site makes good business sense, since the company can often recoup costs associated with nurturing a safe working environment through lower insurance premiums. Reduced costs, a healthy work force and the good will of neighbouring settlements can all result from ensuring a safe working environment.

3.1.2 Health Care

Health care for the individuals in communities dependent on a mineral development is also essential. Healthy workers are necessary for the good functioning of the mine, but healthy families are also necessary for the functioning of a community. In Canada, health care is primarily a provincial or territorial responsibility, but the development of a mine in a remote area can quickly stretch the capacity of a provincial or territorial health care system. The influx of outsiders and the presence of a development can bring about better health care in an area, and yet, some health care issues, such as increased drug and alcohol abuse, can arise due to the presence of the mine.

Health care is not limited to the provision of health facilities and professionals on a site. It can include the provision of services to the individuals and families in a community. Health care includes access to services, access to health education and preventive measures, and access to mental health services. In specific communities, preventive measures may be aimed at potential or existing problems, such as alcohol and drug addiction, or at specific groups within the community such as the elderly, women or youth.

The health of individuals and families is essential to the sustained development of a community and a development. Although some elements, such as access to medical services, may be general to all communities, communities may also be interested in ensuring specific services, geared to their own situation or problems, and may be looking to industry to offer assistance. Such assistance may include, but not be restricted to, education on preventive health care, counselling for workers and their families, and the provision of health services at the mine site open to all members of a community.

In this paper, the discussion of the social dimension of mining relates mainly to the Canadian context. It should be noted that some international dimensions, such as human rights issues, are not being discussed in the paper. Another such issue on the international scene is HIV/AIDS and mining. As the experiences of several companies in Southern Africa demonstrate, it is necessary for mining companies to be involved in dealing with the HIV/AIDS crisis (Elias and Taylor, 2001).

3.1.3 Aboriginal Peoples

For many Aboriginal groups, the respect and preservation of traditional cultures and values are necessary requirements of development. Native cultures differ, and identifying the values and elements of a given Aboriginal culture should be the first task of a mining concern working on or close to Aboriginal lands. A mine can lead to the introduction of new lifestyles and consumption patterns that can disrupt community life and lead to a breakdown of traditional lifestyles. Aboriginal peoples perceive many risks in the development of mineral and metal resources including loss of traditional resources, disruption of social organizations, and spiritual uncertainty (Downing et al, 2002). Aboriginal peoples will want to protect their communities and their culture from such a breakdown and ensure that their values and way of life can be preserved for present and future generations.

While ensuring values and way of life, some Aboriginal communities may not have the ability to make the transition from a traditional economy to a cash economy. Many mining companies are recognizing these difficulties and have introduced programs to help Aboriginal peoples retain their traditional values and ways of life. Such programs include fly-in mining, which lowers the impact on neighbouring communities; the two or three-week working session followed by the same amount of time off, which gives Aboriginal peoples a chance to continue a traditional lifestyle during the weeks off; the provision of time off during traditional hunting seasons; and training programs to develop skills that can be transferred to other jobs once the mine is closed.

Aboriginal peoples also often fear that access to traditional hunting grounds will be denied because of the mine or opened up to strangers through road access. The presence of a development and of outsiders is seen as a source of environmental damage that can result in a reduction of wildlife. Furthermore, because traditional activities remain an important component of Aboriginal cultures, there is a fear that workers will not have the time to pursue traditional activities or that youth will not learn traditional values.

Working with Aboriginal peoples begins with consultation, which is not an easy task. Consultation entails establishing a relationship of mutual trust; this takes considerable time and understanding. Traditional and cultural values are not easily shared between people with very different social backgrounds, yet this sharing is essential to developing an understanding of ways of life, issues of concerns, and communication opportunities. Processes that involve a third party may be required to bridge the gaps between Aboriginal peoples and industry and to establish a communications process that respects the Aboriginal peoples and makes it possible for them to engage.

The participation of Aboriginal peoples in environmental and social impact assessments is necessary to identify their concerns and to give them a voice and a place in the decision-making context. Unfortunately, Aboriginal peoples often lack the resources to access the information and the expertise required to participate fully. Assisting Aboriginal peoples in developing the needed resources to effectively participate in environmental assessments and later in decision-making is a first step in recognizing their needs, their concerns, and the value of their contribution.

Respecting Aboriginal cultures and values requires that mining companies find effective ways of ensuring continued access to traditional territories and to wildlife, and of integrating the environmental and traditional values of the local population into mining activities. Providing facilities for traditional activities at mine sites and inviting elders to spend time counselling and visiting at mine sites are examples of specific activities to integrate mining with traditional activities.

Ensuring that an adequate proportion of the work force is Aboriginal is a necessity in Aboriginal regions. This may require the mining company to set up training and apprenticeship programs specifically for Aboriginal workers. Purchasing goods from local and Aboriginal businesses and helping to develop Aboriginal businesses are activities that can result in long-term enhancement of the local economy. Mining companies can develop specific policies that clearly state the minimum acceptable percentage of Aboriginal employment and the desired percentage of Aboriginal involvement in mine procurement.

3.1.4 Women

The women of a community form a significant group with specific concerns. In many cases, women see impacts as related to one another. For instance, women see alcohol and drug abuse as leading to strained relationships, jealousy, violence, family breakdown, lost job and training opportunities, and financial stress. Many women believe that counselling and health care assistance linked to substance abuse and other family disruptions should be made available for all the members of families affected by a mineral development. Furthermore, counselling and health care that is accessible to the women and their families means that they need to be dispensed in remote locations and communities, not just at the mine site.

Work opportunities for women at the mine site are also a concern. Low educational levels mean that women can often only find menial traditional jobs such as cleaning and cooking. Women want an equal chance at non-traditional jobs and the training opportunities to be able to adequately fulfill such jobs, as well as a workplace that is free of harassment. Providing economic opportunities for women in mining settlements and at the mine site, and providing them with the capacity to build on these opportunities through training and the attainment of skills, serves to empower women to make a living during the life of the mine and after closure (Musvoto, 2001). The provision of child care and child care facilities is a necessity for women who want to work at the mine site and take advantage of training opportunities.

Some mining companies have women working in all aspects of the operation, including underground. These jobs give women increased economic power and can change relationship dynamics in a positive way.

Women often feel left out of the consultation processes that mining companies conduct in communities. Such consultation processes are often geared to reach all the leaders of the community to the exclusion of some groups such as women and youth. Women are often less likely to attend a public forum, especially if no child care is provided, and will often not speak out to express their concerns in public. Women also feel that demanding anything of a company may jeopardize the employment opportunities of their spouses and sons (Musvoto, 2001). Consultations to identify the specific impacts on a community's female population must be designed to reach the women in an atmosphere that permits communication.

An improved standard of living and an increase in financial security and material goods are seen by women as leading to a better family life and increased opportunities for their children. Some women feel that they need assistance to properly use these opportunities. Financial management education is seen by some as a necessity to enhance the positive familial socio-economic opportunities derived from a mineral

development. Furthermore, women entrepreneurs, because of poor access to education and skills development, usually struggle with access to finance and with understanding the financial world (Ranchod, 2001).

Increasing women's participation in the economy, their access to educational opportunities, and their involvement in decision-making can have a direct impact on reducing poverty. It should be recalled that the United Nations, at the 4th World Conference on Women in Beijing in 1995, said that 70% of the world's poor are women (Ranchod, 2001).

3.1.5 Religious and Cultural Values

Burial grounds, ceremonial sites, and religious structures are examples of sites that hold special values for individuals and groups of people who are often, but not exclusively, Aboriginal peoples. Protection of these sites is a prerequisite of demonstrating respect for their beliefs and values.

Mining companies need to first identify any sites or areas that hold special religious or cultural importance. Archeological studies and discussions with local people can lead to this identification. Dealing respectfully with religious and cultural sites requires consultations with local people and flexibility in adapting plans to local situations. While the destruction of sites with religious and cultural values can lead to resentment and opposition, a respectful attitude can help gain the trust of local populations.

3.2 INNOVATION AND LEARNING

3.2.1 Education

A mining development can have an impact on education. In remote communities, the level of education of individuals is often not high enough to fill all the possible jobs within the mine. The goal of replacing outsiders with local people means that individual workers have to be trained and encouraged to advance. Training programs and apprenticeship programs can help increase the education level of employees, but these should also be accompanied by opportunities for advancement and the conditions that make advancement possible. Workers must have incentive to undertake training and to believe that it will result in advancement.

Educating the youth of a community to work in the mine, in related enterprises or in the community can have a positive social impact, but building and maintaining schools is not enough. Mining companies often go beyond such programs and extend educational assistance to youth through scholarships. Again, what is necessary is the creation of conditions that make it possible for youth to believe that education will be helpful and lead to a better life. Lack of motivation to attend school or training programs, or to hold on to a job, is a problem that has been identified in many remote communities, including Aboriginal communities.

Education at a distance through the use of the Internet offers many possibilities for both adults and youths. In remote settlements, the mine site may have the best connections to the outside world through the Internet. Offering the use of facilities for access to education at a distance may be a simple yet effective way for a mining company to increase the educational possibilities and potential for the people of neighbouring settlements.

Furthermore, higher incomes in the community from the mine can result in better education for individuals. An initial problem with low levels of educational attainment can be changed into a positive impact through specific programs. A rise in educational levels can have a long-term impact that leads to sustainability for individuals, families and communities.

Through training and education, the number of local people employed at the mine site can rise, but so can the number of local enterprises. This can assist in diversifying the economy and retaining youth in the area.

3.2.2 Employment

Many new mining developments occur in remote and isolated areas. As such, these developments are important for their positive socio-economic impacts as they generate employment for individuals and taxes for the different levels of jurisdiction, making economic development possible. Through the generation of income, they can lead to a rise in the standard of living of individuals, families and even communities. They can also be the source of security of livelihood for individuals and families. They also enable the development of skills that can be used elsewhere when a mine closes.

3.2.3 Economic Diversification

The provision of new goods and services can help to diversify the economy and create new job opportunities and additional impetus for individuals to continue their education. Economic diversification of a community or region can be helpful in making it possible for a mining development to be sustainable, since a strong diversified economy can survive the closure of a mine.

Mining companies can successfully help to diversify the economy of a region by assisting in the development of local and, where warranted, Aboriginal enterprises. Information on the types of businesses required to support the mine and business training can be extremely helpful to local entrepreneurs. Partnerships with existing contracting firms to help establish new local firms create opportunities for even more diversification. Mining companies can also support community economic development through the development of cooperatives or other economic venues.

As incomes rise and more money is available to individuals and families, the demand for a variety of goods and services will expand. New services and goods providers may be needed locally. Mining companies, through information distribution and business support, can help local people acquire the skills to deliver new goods and services. As new local services or goods providers become successful, they in turn can serve as examples and this can have a multiplier effect leading to economic community diversification.

3.3 VIGOROUS AND PROUD COMMUNITIES

3.3.1 Community Involvement

Each community is different and must be approached according to its own characteristics. One of the first issues for a mining company is to identify the communities that may be affected by a mineral development. It is important to recognize that impacts can extend over a whole region and will not necessarily be limited to the immediate vicinity of the mine. The social and environmental sustainability

of a mineral development should apply to the affected region and to all of the communities within that region.

With an increase in communications and the fact that communities are becoming more proactive, they are asking to be directly involved in decision-making and in dealing with the impacts on their communities. The involvement of stakeholders and communities in mining development is evolving towards their participation in decision-making. For a mining company, this means that all voices should have a chance to be heard and that appropriate methods of participation need to be devised for each community. Such methods may include consultation bodies created within the community or access to decision-making bodies by appointed individuals.

There are several important aspects to ensuring the participation of a community and its members. Understanding the culture and values of the people, reaching out to include all groups within the community, and, helping the community build the capacity to cope with the mineral development and attendant impacts are all necessary. Community capacity building means helping communities develop the tools needed to deal with future changes from the provision of services to planning an economic future once the mine closes; planning must take into account the full mining cycle. Helping communities build their capacity to deal with the social issues of education, health care, economic opportunities, preservation of cultures and values, youth integration and involvement in activities is an essential component of dealing with the social impacts of mineral development.

3.3.2 Outsiders

The influx of outsiders into a community and the ensuing rapid expansion of the community can be a cause for concern for individuals and families. Increases in prostitution, sexually transmitted diseases, alcoholism, drug abuse and violence are seen as the negative side of development. Such impacts are especially worrisome for women, who are concerned about the safety of children and young women and who fear the breakdown of family values. Fly-in operations seem at first glance to have resolved this issue, but it should be remembered that the employees are flown in from a given community that will experience an increase in outsiders and expansion, resulting in an increase in social problems. Goods and services are also acquired in a community that will feel the impact of a development.

Dealing with the problems that can occur from the influx of outsiders to a community can require an increase in health care delivery. Counselling for alcohol and drug abuse, and for victims of violence or sexually transmitted diseases, can help decrease the negative impact of outsiders on individuals and families. Such counselling can be made available not only to mine workers, but also to their families. Crime prevention programs may also be necessary, and the mining industry can assist communities in the development of such programs and the capacity to apply them. Furthermore, some companies have set goals of including high levels of local people within the work force or even of eventually replacing all outsiders with local people.

Although it is difficult to prevent some of the negative influences that occur from the presence of outsiders, some of the impacts can be diminished through fly-in mining and through an increase in the proportion of local workers. With fly-in mining, larger settlements that act as service and transportation centres will see an increase in outsiders, while some of the settlements from which workers originate will see very few outsiders. In some cases, they will see a declining population as their residents relocate to larger centres after working for a while with the mine. As the local proportion of mine workers increases,

the proportion of outsiders will decrease. Training, education, advancement opportunities and a policy of hiring local people can all serve to decrease the negative influence of outsiders on communities.

Outsiders can also have positive impacts on a community through the provision of new or improved services, such as health services and education. Furthermore, tourists are outsiders who can put money into the economy of a region.

3.3.3 Access

The creation of roads has potential environmental and social consequences. Roads can also have a beneficial effect. Access to a community can make it possible for new goods and services to be brought in or it can be used as an opportunity to develop tourism or to otherwise diversify the economy. Furthermore, roads can provide Aboriginal peoples with easier access to hunting, trapping and fishing areas.

In areas that are difficult to access, roads can become an important instrument of economic diversification. The presence of a road can make it possible for mining exploration to intensify and for marginal orebodies to be brought into production. Furthermore, such roads can result in the development of other economic resources and in lower prices for food and essential goods.

Roads constructed to a mine site also allow general access to a new area. This access can be used by hunters, who can illegally take animals, and by in-migrants, who can settle, legally or illegally, on the territory. Illegal hunting and fishing are of particular concern in areas that are critical habitat for species at risk and in regions that are used by Aboriginal peoples engaged in traditional activities or lifestyles. These are areas where the reduction of wildlife can have serious impacts on the wildlife itself or on the activities and lives of the local people.

Since roads are often essential to a mining development, road access becomes an issue. Access to a road can be open to all or it can be limited, but this should depend on the wishes of residents and local communities and should take into account any safety concerns due to the use of heavy vehicles. If access is limited, gates and security may be required.

3.3.4 Foundations

In some cases, mining companies have created foundations to deliver social programs to individuals and communities. Such foundations have had many successes and have become involved in the support of local schools, scholarships, sporting and cultural events, health care, and many other local activities. They can provide direct access for mine employees and managers to become involved in the activities of an area. When well managed with a dedicated staff, clear goals and objectives, a budget, and the support of the highest levels of management, foundations have been found to deliver many benefits (McMahon, 1998).

3.3.5 Displacement of Populations

Mineral and metal resources are exploited where they are found. Sometimes, gaining access to a resource requires displacing local populations. Displacement can result in the loss of physical and non-physical assets for local populations, including homes, productive land, access to traditional lands, resources, cultural sites, social structures, and income-earning assets. There is a risk that local populations may find

themselves jobless, homeless, marginalized, and without access to traditional food sources while having lost social cohesiveness and having to deal with the disruption of educational and cultural activities.

Populations are often resettled by the mining company, in cooperation with local and national governments. The goal of resettlement should be to ensure minimum disruption in the lives, livelihoods and culture of local populations and the individuals and families that comprise them.

There are three possible strategies with different outcomes that have been followed by mining companies in cooperation with governments. The first, which requires the least effort and can result in major disruptions, is simply to displace the populations without concern for the people; this has mainly occurred when the individuals had no legal or recognized rights to the lands in question. The second strategy, relocation, involves compensation or the rebuilding of lost assets, such as housing, at a new location. Although the populations thus acquire infrastructure at the new location, they must still deal with the disruption to the social fabric of communities, the acquisition of new productive land and systems, and cultural disruptions. The third strategy, rehabilitation, entails providing processes, beyond relocation, to ensure that livelihoods and social systems are restored and that affected peoples are better off as a result of the project (Downing, 2002). Although difficult and more costly, the third strategy is, in essence, ensuring that the mining development is sustainable, in the present and the future, for any displaced populations.

It should be noted that resettlement seldom happens anymore in Canada. It is, today, mainly an international issue, but one which has the potential to occur on Canadian soil.

3.3.6 Mine Closure

When a mineral resource becomes exhausted and a mine prepares to close, it is too late to start considering the effects of mine closure. True sustainable development implies that methods to ensure the sustainability of the community and its people have been integrated into the mining activities from the time the project was first proposed and throughout the life of the mine. Sustainability means that, as a mine closes, the community does not become a ghost town or become severely limited with regard to socio-economic opportunities.

One of the dangers of the mining industry directly supporting services within a community occurs when the mine closes and the mining industry withdraws. If services are dependent on the mining company for funds or operational capacity, these services will disappear upon closure of the mine and withdrawal of the mining company from the area. A more sustainable strategy, for both the industry and the community, is for the mining company to work with local and other interests at developing the local capacity to provide social services and to ensure an easy transition when mine closure occurs.

4. Risks and Opportunities

Mining companies can choose from a diverse range of possible activities to reduce negative social impacts or enhance positive social opportunities. These activities carry with them social and other risks and opportunities. This discussion will begin by examining mining industry practices and will then explore how these can lead to risks and opportunities for individuals and communities, and for the industry.

4.1 TYPES OF PRACTICES

The diverse activities of the mining industry can be classified in a range of types (Dunn, 1999):

- beads and trinkets: individuals gifts and donations, usually presented to local leaders;
- grants and donations: direct support for health care, education or other social needs;
- leveraging relationships: encouraging national governments and other interests to increase local health and education services, often with cost-sharing by the mining company;
- training and education: developing the skills and abilities of local people to participate in mining and related activities;
- capacity development: increasing local business, economic and managerial capacity to diversify the economy and reduce dependence on the mineral development;
- employment: assisting in the creation of local jobs, both directly and with suppliers and contractors;
- procurement: procuring local goods and services; and
- partnering: securing equity participation in local projects.

These types of activities serve to highlight the attitude that a mining company can take towards a community and its people. Such an attitude can range from a paternalistic attitude, exemplified by the giving of beads and trinkets, to a partnering attitude, exemplified by working with the community and its people to identify their needs, enhance their lives, respect their culture and traditions, and accept them as participants in decision-making.

Although, through time, it is possible to see a progression from beads and trinkets towards partnering for the industry as a whole, it is not the task of this report to analyze the progression for individual companies. Do companies use different strategies with different cultures? Do companies use different strategies in Canada and overseas? The use of different phases in different areas by a single company would make an interesting study.

4.2 CATALOGUE OF SOCIAL PRACTICES IN THE CANADIAN MINERALS AND METALS INDUSTRY

During the summer of 2000, in order to begin identifying present social practices and tracking progress towards sustainable development, the Minerals and Metals Sector (MMS) of Natural Resources Canada began the compilation of a Catalogue of Social Practices in the Canadian Minerals and Metals Industry. The information collected for this catalogue has been posted on the Internet to create a repository of information (www.nrcan.gc.ca/mms/sociprac/intro_e.htm).

Eleven mining companies responded to our invitation to contribute information to the catalogue. During the spring/summer of 2001, a second round of requests for information was sent out. The responses of the companies were very diverse and the information was collated into six categories based on the types of practices that were reported. The following is only a sampling of the types of activities that mining companies reported.

Corporate Policies/Codes of Conduct

- Many companies reported on the existence of corporate policies dealing with social practices.

Aboriginal Partnerships

- Involving native and local populations;
- Priority to hiring local and native people;
- Policy for the advancement of Aboriginal peoples;
- Financial contributions to the local heritage centre and local elders;
- Uses traditional knowledge;
- Impact and benefits agreements;
- Facilities for storing and preparing food;
- Fostering joint ventures with local Aboriginal enterprises.

Training, Education and Awards

- Training women;
- Building schools;
- Sponsoring local schools;
- Investing in public and post-secondary education programs;
- Scholarships;
- Apprenticeship programs;
- Contributions to university research projects;
- Making presentations to local schools.

Labour Relations

- Career and financial counselling for employees and families;
- Employee education programs;
- Hiring Aboriginal employment and training officers;
- Fly-in programs;
- Retraining programs;

- Hiring local students in a work experience program;
- Holding mine rescue and first aid training at the mine sites and in the communities;
- Banning alcohol and drugs from the mine site.

Community and Business Development

- Supporting local business;
- Preferential consideration to local and Aboriginal business proposals;
- Community advisory panel;
- Meeting regularly with local leaders;
- Providing environmental monitoring reports to local people;
- Studies and surveys to determine community needs;
- Economic diversification strategies;
- Technology and research and development partnerships.

Community Participation

- Building community centres and health facilities;
- Consultations, tours, community visits and public information sessions;
- Publishing of monthly community updates;
- Reporting to local councils and regulatory agencies;
- Funding for boys and girls clubs;
- Annual donations to the local library and to local community groups and activities.

A critical analysis of the practices of the mining companies and their effectiveness has not been completed for two reasons. First, the intent of the catalogue was to be a repository of information – a snapshot in time of the activities of the mining companies. Second, the catalogue represents only a sample of the activities of mining companies since not all companies responded to the call for information.

Although the range of activities is large, the question becomes one of why the mining industry should get involved in social issues since some of these issues can be viewed as the responsibility of governments. There are risks for the industry in becoming too involved and taking the place of government, or in not being involved enough with the community and facing opposition to a proposed or existing project. There are also opportunities for the industry in establishing a good relationship with a community and its people, which can facilitate operations over the long term.

Risk has a connotation of loss, while opportunity leads to gains. Both risk and loss are evaluated differently by stakeholders, based not on technical studies, but on perceptions, values and preferences. The emphasis is often placed on emotions and on the perceptions of the stakeholders and the industry. It is important to remember that risks and opportunities are not evaluated on the basis on information, but on the basis of the values and views of the world.

4.3 CORPORATE SOCIAL RESPONSIBILITY

Corporate social responsibility has been defined as the voluntary social and environmental practices of companies that go beyond existing legal obligations. It comprises of all those activities that companies undertake to maximize the benefits of projects while minimizing their impacts, which extend beyond what is required by the laws of the countries where they operate. In this context, the term "social" refers not to social issues, but to societal objectives, such as economic development, social contributions, and environmental protection. Corporate social responsibility has been described as the corporate tool to implement sustainable development.

Voluntary activities, within the realm of corporate social responsibility, are believed to be vital to ensure the competitiveness of industry. A large part of competing and working in a globalized world rests on the reputation of companies, which is based partly on the quality of their products and partly on the activities of those companies outside of production. Being involved with communities and working with the people of nearby settlements can serve to enhance a company's reputation and to facilitate future acquisitions.

This is especially important for the mining industry, which has a reputation as being the cause of serious environmental damage. Furthermore, mines are often located in remote areas where they are the only significant economic activity. The reputation of companies, based on their actions in other areas, is reflected in the idea of the social licence to operate. Countries and settlements are beginning to look at specific companies and deciding whether to give a company a social licence to operate, and mining companies are receiving increased scrutiny around the world.

Mining industries have responded by increasing their voluntary activities to minimize impacts on the environment and have begun to explore ways of maximizing social benefits. This is reflected in the fact that more and more mining companies are adopting codes of conduct and publishing sustainable development reports that look at the company's economic, environmental and social activities. There is no benchmark or standard for corporate social responsibility, but leading companies are attempting to set directions through both practices and reports.

Corporate social responsibility involves activities that are integrated throughout a company and its business strategies. It cannot be an activity that occurs only on one site or only in one country. Corporate social responsibility is not just a series of practices; it is also a culture, an ethic that sees the integration of social, economic and environmental factors in all the activities of a company.

In many cases, there has been a perception that corporate social responsibility is about shifting governmental responsibilities to the private sector. Although this may seem particularly the case in many developing countries, in Canada, corporate social responsibility is about complementing governmental responsibilities and working with governments to enhance the standard of living of people living within the vicinity of mines. For example, in Canada, educational activities would include training for adults in mining, business or finance-related subjects and not in building schools and taking over the educational role of provinces and territories.

In many ways, mining companies will have difficulty implementing any corporate social responsibility practices on their own. Such activities require partnerships between industry, local groups and governments to identify the needs, determine the best methods of maximizing benefits, and deliver results. For mining companies, working with stakeholders can help to improve risk management,

enhance access to capital, and protect the social licence to operate (Smalheiser, 2002). Working with stakeholders can also help companies to anticipate changes in regulations and technology and to enhance opportunities for innovation.

For industry, corporate social responsibility is not altruistic but, rather, a response to shareholder interests that can raise a company's profile and facilitate access to land and financial resources. Consider, for example, that investment in ethical funds in Canada grew from over \$100 million in the 1990s to approximately \$6 billion in 2000. A genuine commitment to corporate social responsibility also leads to better motivation and social satisfaction on the part of employees and serves to attract young people to the industry. Industry can contribute to better health services for communities, higher educational and training levels, and a clean environment that in turn means healthier and more productive employees.

In many ways, social responsibility is about managing risk. Mining companies are engaged in corporate social responsibility to enhance their chances of economic success. There are risks in being involved with local settlements, but there are greater risks in ignoring the environmental and social impacts of mining. A company's profile, based in part on its social and environmental practices, has a direct bearing on its ability to raise equity and debt capital (Smalheiser, 2002). In this era of globalization, failure to demonstrate corporate social responsibility practices may be a greater financial risk than spending the money on maximizing benefits and minimizing negative impacts.

For industry, there is also the risk of free riders – companies who depend on others to do the "good work" and then ride on the coattails of the industry's reputation. While standards and guidelines can provide a framework for identifying free riders, we must remember that every mine is different and every community has different needs.

This paper examines only one part of corporate social responsibility, namely that which deals with social practices. Yet corporate social responsibility represents the voluntary decision by corporations to increase their positive benefits to society, countries, communities and people. It is a sustainable development tool that has the potential to be a constructive, proactive force in local and world affairs.

4.4 THE ROLE OF SOCIAL CONCERNS IN THE EVOLUTION OF INDUSTRY PRACTICES

Canadian mining companies are world leaders in mineral exploration and leading suppliers of capital to the international mining industry (The North-South Institute, 1998). Mining companies have been dealing with environmental concerns and developing technical expertise and solutions to environmental difficulties. However, on both the international and the national scenes, Canadian mining companies are facing challenges and demands from people and communities asking to be involved in mineral development decision-making and to have their concerns dealt with. Traditionally, these concerns centred on the environmental impacts of mining activities, but additional concerns related to impacts on individuals, families, culture, traditional lifestyles and communities are surfacing.

There are a variety of players and stakeholders who are asking the mining industry to deal with perceived risks. Labour unions have been active in asking for health and safety measures to be put in place at mine sites. Non-governmental organizations have been active on a variety of fronts, including the environmental agenda, human rights issues, community involvement and participation, and concerns

related to the impact of mining on individuals and families. Communities are also active participants in the discussion, asking for participation in decision-making.

In all of these cases, the industry is dealing with the risks that stakeholders perceive in a mining operation. These perceived risks are varied and the list is long. They include possible environmental degradation, loss of access to resources, health issues for workers and the people living in the vicinity of the operation, safety issues at the mine site and in the surrounding area, increased access to the area by outsiders, an increase in the number of strangers in the area, increased crime and prostitution, increased substance abuse, loss of land or land tenure, uneven distribution of benefits, destruction of religious or cultural sites, disintegration of local culture, loss of traditional knowledge, changes in values and value systems, unequal participation in decision-making, and decision-making that does not take the values and culture of people into consideration.

Many stakeholders and communities also recognize that a mining operation can bring opportunities to an area and the people who live there. Increased employment, better and higher education for the children, economic diversification, and community capacity-building are important opportunities. The difficulty for stakeholders and communities then becomes to maximize the opportunities, minimize the risks and, where possible, turn the risks into further opportunities. This requires information, knowledge and participation through access to decision-making.

Failure to meet the expectations of stakeholders, communities and non-governmental organizations carries a risk for the mining industry. It can trigger opposition to a project leading to costly delays and it can lead to difficulty in accessing project financing, decreased share prices, and even erode management credibility (Dunn, 1999). As communities, individuals and organizations become more proactive, they define their needs and concerns, expect to be recognized and included in decision-making, and can play a role in determining which companies have access to territory and resources.

A progressive image of being environmentally and socially responsible can create opportunities and can give a mining company a competitive advantage and access to potential resources. Dealing with increased social concerns and a multitude of stakeholders is not easy and involves the risk of balancing the requests and concerns of varied stakeholders, but it can lead to a more efficient operation, integrated within the region, and an image for a company that creates opportunities.

Modern communications systems make it possible for individuals and communities to access information and to open dialogues with environmental groups, international organizations and other communities. This means that any confrontation between individuals or communities and mining companies can quickly become known on a wide scale. Confrontations can lead to opposition to a project, which can be the source of delays or even abandonment of a project. The result of such opposition is often a negative image for the company involved and for the industry as a whole.

Although modern communications present a risk to the industry, they can also present an opportunity. It is possible for the industry to communicate its successes and for individuals, communities and non-governmental groups to communicate positive interactions with industry and how they were achieved.

As companies respond to specific local social challenges, new practices are being developed that will result in the identification of leading practices and companies. The recognition of leading companies and practices can create an upward pressure on all companies. Such upward pressure can lead to the development of standards of social behaviour. At present, the mining industry is using the concept of

leading practices only in the environmental field, but the pressure being exerted by communities will make it necessary in the social dimension of sustainable development. There is an opportunity for companies to share experiences and learn from others.

The mining industry is finding it necessary to demonstrate social responsibility in order to have access to resources. Social activities need to be seen not as costs, but as investments in the social structure and in the mining activity, and as opportunities to assist individuals and communities and develop a positive relationship with the stakeholders of an area. Investments in the social aspects can yield long-term competitiveness, a better image, and easier access to resources and a healthy social system, thus ensuring the sustainability of the mining activity.

4.5 SOCIAL TOOLS AND OPPORTUNITIES

There are a variety of tools that can be used to estimate the risks and opportunities, minimize the risks, and maximize the opportunities of the social dimension of sustainable development. The following discussion is a brief synthesis of some of the most well-known tools available.

Evaluating the social implications of a specific project and determining the best course of action are usually accomplished independently for each situation. Social impact assessment is being used in many industries to determine the possible social impacts of development, minimize risk and identify the best methods to mitigate negative impacts and maximize social opportunities. Social impact assessments evaluate the social, cultural and socio-economic impacts of a project. Adequate social and cultural data are often not easily accessible, which can result in a social impact assessment biased towards economic indicators. It is important to take the time to collect cultural and social data when conducting a proper social impact assessment (Joyce and MacFarlane, 2001).

Following a social impact assessment, a mining company can prepare a vision, a policy and a framework for implementation. A social issues management plan is an instrument used to oversee the implementation of a social policy. It can include specific activities to enhance the social life of the community, the partnerships needed to take the greatest advantage of opportunities, the mitigation measures needed to reduce negative impacts, mechanisms for the resolution of conflicts, and methods of measuring and monitoring the impacts and the activities related to them. The monitoring and reporting of possible impacts and opportunities is an important tool in communicating with stakeholders and in determining progress.

The field of social impact mitigation and enhancement of opportunities is open to many innovative practices. Partnerships with communities, governments and non-governmental organizations offer the possibility of dealing with difficult issues in a manner that respects the culture and values of a community while ensuring capacity building and sustainability. The range of possible partnerships is restricted only by the imagination and leads to many opportunities to minimize risks and impacts.

As mining companies begin to develop internal policies to deal with social issues, the leaders in the field may want to go farther. A social code of practice could be developed for the mining industry or a certification scheme could be established. An environmental code of practice has been developed by The Mining Association of Canada. Social codes of practice could be added to environmental codes to ensure that mining developments are in fact sustainable for present and future generations.

The development of a code of social practice would rest first on the examples of the present and past practices of the mining industry. A compilation of present practices, such as NRCan's Catalogue of Social Practices in the Minerals and Metals Industry, can assist in the identification of leading practices, an essential step in crafting an effective code of conduct. Leading practices can serve as examples. Much work on social issues is presently being done by the mining industry in developing countries, and some of this work could be imported into Canada and adapted to the Canadian context. In the same vein, the work that some mining companies are doing with Aboriginal communities in Canada provides examples of leading practices that could be exported to mining companies working in other parts of the world.

Impacts and benefits agreements (IBAs) are becoming an important social tool for mining companies working on or near Aboriginal lands. IBAs are negotiated between the company and Aboriginal groups and cover such issues as job opportunities, education and training, preferential hiring programs, financial transfer payments, royalties, tax payments, new business development, local purchases or goods and services, anti-discrimination programs, and compensation. Through IBAs, Aboriginal peoples and communities try to minimize risks and maximize opportunities.

Indicators of the social dimension of sustainable development integrated into a system of indicators to report on all the dimensions of sustainable development can be effective tools for measuring and reporting. Social issues are intimately related to environmental and economic issues. The development of the economic base of a region so that it can be sustainable during and after mineral development is a part of both the economic and social dimensions of sustainable development. Protection of the environment to ensure both the health of the human population and of wildlife is a necessity for the sustainability of the social fabric of any remote community. An integrated system of sustainable development indicators could be a useful tool for both the industry and stakeholders in determining and measuring risks, opportunities, progress, and leading practices.

4.6 TIME AS AN ELEMENT OF RISKS AND OPPORTUNITIES

Sustainable development contains a temporal dimension within its definition, concept and application. Inter-generational equity, or ensuring that development is to the advantage of both present and future generations, is an important component of sustainable development, and yet a difficult one to integrate and apply.

Mineral resources are finite in space and time. Once a resource is extracted, it is gone and will not renew itself for future generations. The sustainability of a mining development is thus not found in the resource itself, but in the long-term sustainability of the region. The development of mineral resources can help to expand the economic opportunities of the people of the region and make them economically and socially sustainable over time. The benefits from mining create wealth and this creation of wealth for the local and regional economy can be passed along to future generations. Furthermore, the materials that are extracted, refined and transformed into useful products provide an immediate benefit to society by providing materials for use today and, if durable, through recycling, for future generations.

Sustainable development thus requires that the development of a resource include consideration of how it can affect the social fabric and the social and economic capacities of communities and a region. This is neither a simple nor an easy task. There are questions of the needs that have to be addressed, of which players should address these needs, of the points in time when change needs to be effected, and of the responsibility of the industry in addressing the needs and effecting change.

Acting within the time dimension of sustainable development to ensure strong communities and regions carries a risk for communities and for the industry. There is a possibility that the region will come to depend exclusively on a mining development and find itself deficient in social and economic resources once the mining development has run its course. There is also the possibility that, in isolated regions, the industry can find itself pressed into a role that it believes governments should perform.

There are also temporal opportunities for individuals, communities and industry. For individuals, ensuring both the social and economic livelihood of future generations is a positive impact that a development can bring. For communities, developing social and economic capacity and diversifying economically can bring long-term stability. For industry, assisting in economic diversification can be a financial asset, while ensuring social stability can mean better relations with employees, communities and governments.

Throughout this paper, examples of activities that take into account the long-term goals of sustainable development have been mentioned. Examples include economic diversification, educational opportunities, ensuring health care, and negotiating IBAs.

Another important tool in considering the time dimension of sustainable development is to consider the region, the groupings of communities and individuals influenced by a development, and to examine the future of the region. The questions then become how a mining development can assist a region in achieving sustainable development over the long term.

4.7 SOME EXAMPLES

The following two tables, dealing with the social risks to and opportunities for individuals, families and communities, and the risks and opportunities for industry, have been derived from the previous discussion. They serve as starting points for discussion and are not intended to be all inclusive.

Individuals, Families and Communities

Social Risks	Social Opportunities
<ul style="list-style-type: none"> • Loss of life through accidents • Loss of environmental quality through accidents • Increase in sexually transmitted diseases • Drug and alcohol abuse • Increase in prostitution • Increase in crime and violence • Increase in family violence • Breakdown of family values • Illegal hunting and fishing by outsiders leading to destruction of wildlife • Loss of access to resources, such as biodiversity 	<ul style="list-style-type: none"> • Health and safety at site activities • Access to health services • Access to health education • Access to preventive health measures • Crime prevention programs • Access to counselling • New goods and services • Tourism and related economic growth • Employment and motivating workers • Higher incomes and retaining workers • Increased financial security through jobs • Rise in the standard of living • Increased revenues for governments • Apprenticeship and training programs

- Jobs going to outsiders
- Disparity of wealth distribution
- No opportunities for youth
- Uneven distributions of benefits
- Economic opportunities lost to outsiders
- Community opposition to a development
- Disruption of community life through opposition to project
- Unequal participation in decision-making
- Breakdown in traditional lifestyles and values
- Changes in values and value systems
- Destruction of religious or cultural sites
- Dependence on the economic returns from a single development
- Loss of access to traditional lands

- Rise in level of education
- Scholarships
- Economic diversification
- Creation of new local firms
- Community participation in development
- Increased community cohesion through partnerships and cooperation
- Community capacity building

Industry

Social Risks

- Opposition to a project
- Costly delays
- Difficulties in financing a project
- Decrease in share prices
- Erosion of credibility
- Negative image for a company or the industry as a whole
- Balancing the needs of various stakeholders
- Taking on the role of government in delivering services
- Absence of a positive relationship with communities and stakeholders

Social Opportunities

- Increase in public trust
- Better public image
- Communicating a success story
- Setting leading practices/standards
- Competitive advantage
- Access to potential resources
- More knowledgeable work force
- Safer working environment
- More efficient operation
- Successful project
- Creating successful communications
- Developing successful partnerships and cooperation
- Better relations with employees

5. The Future

Sustainable development requires the integration of social, economic and environmental factors while dealing with the time dimension of inter-generational equity. Applying sustainable development is not easy for any industry, but it seems more complex for industries that deal with non-renewable resources. This is due to the fact that these industries, such as mining, develop a non-renewable resource and then move on. The question then becomes what was left behind.

Integrating the social dimension of sustainable development and inter-generational equity with economic and environmental considerations within the context of sustainable development requires an understanding of the social impacts, risks and opportunities of a development. Although much is known of the economic and environmental dimensions of sustainable development, governments, industry and civil society are just beginning to grapple with the social dimension. In large part, the present response to the social dimension of sustainable development is reactive. It is driven by social concerns and issues put forward by individuals, communities and non-governmental organizations.

As these social concerns are articulated, it is becoming possible to see the social dimension as a whole – a distinct, vital and integrated component of sustainable development. It is formed of many elements, all of which are connected to each other and to economic and environmental components. It is not a black hole, but a series of concerns and issues that deal with how development affects individuals, families and communities.

Social concerns are in part based on perceptions of the mining industry and its possible impacts, and require dealing with competing visions of the present and the future. Consultations and conflict resolution become essential parts of understanding the social fabric and dealing with the benefits and impacts of mining developments. It also requires understanding the vision of the future of various communities and individuals and integrating these visions into a workable present with a sustainable future.

Addressing the social dimension presents risks and opportunities for industry, individuals, families, communities and other stakeholders. Understanding and measuring the risks and maximizing the opportunities become methods by which society can deal with the social dimension. The development of specific tools is just beginning and will evolve as the social dimension becomes better understood. Measuring and reporting on progress remain a target for future activities.

For the mining industry, sustainable development does not only mean integrating the three dimensions into a mine plan. It also entails looking to the future and how a region will fare once the mine closes. It involves helping the people and communities ensure that the development brought by the presence of the mine does not completely disappear when the mine closes. It means ensuring that a mine means a bright future for people, communities and regions.

For governments (federal, provincial and municipal), sustainable development means ensuring a better quality of life for people, now and in the future. It means dealing with inter-generational equity and defining the issues that will affect not only the social fabric of today, but that of tomorrow as well. The social issue of sustainable development is time-dependent required policy that looks at the future.

The level of intervention of governments in activities related to the social dimension of sustainable development remains an unanswered question. Should policy be developed to promote activities that enhance social opportunities? If so, what would be the elements of such a policy?

As a final note, although this document has dealt exclusively with the mining industry and the extraction process, it is recognized that the social dimension of sustainable development as it relates to minerals and metals extends well beyond this. The development of products from minerals and metals, their use and longevity, and their final disposition, whether as waste or in recycling, are also important components of sustainable development that will require further study.

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