Chapter 9
Towards Sustainable Mining:
Diffusion of Sustainability Concepts into the Mining Industry within Canada

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EXECUTIVE SUMMARY

Early efforts to address sustainability within the mining industry (GMI and ICMM) did not create a common set of protocols by which individual operations could be clearly ranked on their performance. The Mining Association of Canada's Towards Sustainable Mining (TSM) program provides protocols to address biodiversity, tailings management, crisis management, safety and health, energy/GHGs, and aboriginal/community engagement. The TSM program has been mandatory for MAC members to implement at their Canadian operations since 2004. Progress along these indicators shows how well the industry is doing at addressing sustainability along each concept, and where further progress is still needed.

ORGANIZATIONAL BACKGROUND

Increasingly the mining industry is faced with demands to address their triple bottom line throughout the lifecycle of a mining operation. Public outcry against poor environmental and social performance in the industry can stymie the permitting process, preventing new mines from developing. Both the industry and public can benefit from an honest and realistic assessment of the social, environmental, and economic impacts of mining, and attempts to educe and mitigate the most signifi-

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cant impacts. In response to public concerns surrounding the impacts of the mining industry, the Mining Association of Canada (MAC) developed a program called Towards Sustainable Mining (TSM), including sustainability indicators on which member companies of the MAC are required to report. This chapter provides a summary of the program, reporting results across the mining industry within Canada, the progress made by the industry since the inception of the program, and opportunities for further improvement.

With increasing global population comes ever more competition for the Earth's finite mineral resources. Unfortunately, minerals are not distributed evenly on the planet, leaving some countries comparatively richer in minerals than others. Canada is among the leading mining countries in the world. With over 3,000 companies mining in Canada, its main products include potash, sulfur, uranium, aluminum, cobalt, gem-quality diamonds, refined indium, nickel, platinum-group metals, sodium sulfate, and zinc (USGS 2011). As the world's second largest country by area, Canada has vast amounts of wilderness and roadless areas (CIA, 2009). Through Canada's aboriginal populations of the First Nations, Inuit, and Métis, Canada also has a unique cultural heritage and connection to its natural environment. Canada's diverse society, expansive wilderness environment, and vast mineral resources have all contributed to the need for efforts to balance the social, environmental, and economic impacts of the mining industry. To better understand how these impacts can be addressed through sustainability programs, we must first revisit what it is that sustainability means.

Definitions of Sustainability

In 1983, to answer the global community's questions on how to best guide development, the United Nations convened the World Commission on Environment and Development (WCED). As the Commission was chaired by Gro Harlem Brundtland, the Prime Minister of Norway, it came to be known as the Brundtland Commission. The Brundtland Commission was created to address the growing concern "about the accelerating deterioration of the human environment and natural resources and the consequences of that deterioration for economic and social development." The Brundtland Commission's 1987 report, Our Common Future, defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." This definition is considered the original, and is probably the most quoted, definition of sustainable development. It also begs the questions of whether extractive industries can ever be truly sustainable.

The act of mining a finite resource results in an ever dwindling amount available for future generations to consume. Some mined materials can be reused. Recycling