including humans, for enzyme and metabolic function where either too little (deficiency) or too much (toxicity) can have adverse effects.

The behavioural complexity of metals and their compounds is often not well understood. Parameters related to persistence, biodegradation, bioaccumulation, and biomagnification were developed for synthetic organic chemicals and may not necessarily apply to inorganic metal compounds as the chemical form of metal compounds may be changed by physical, chemical, or biological activities. Bioavailability, a prerequisite for bioaccumulation and toxicity, can be significantly altered as metals assume different chemical forms resulting from these changes. In addition, a wide range of environmental conditions (acidity/alkalinity, soil type, methylating/chelating agents) influence the bioavailability of most metals in the environment.

To ensure that society continues to benefit from minerals and metals products, it is important to know and understand the juxtaposition of the natural baseline values with human impacts so that appropriate management of human activities can be implemented.

Our approach to the use of minerals and metals throughout their life cycle tests the practical meaning of sustainable development. We need minerals and metals. They result from extractive processes and their locations reflect geological realities. Those facts will not change. Our challenge is to find ways to integrate a full range of economic, environmental, and social values in the development and use of minerals and metals. This is not a simple process. As in other sectors, the international minerals industry is grappling with translating sustainable development into practice.

This monograph has three purposes:

- it describes domestic steps, particularly the new *Minerals and Metals Policy of the Government of Canada: Partnerships for Sustainable Development*;

- it reviews recent international efforts on the sound management of minerals and metals, including those relevant to environmental and health concerns; and