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## Recursos naturales e infraestructura

# **S**mall-scale mining: a new entrepreneurial approach

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## Summary

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In the second half of the twentieth century some of the Latin American countries suggested a system of stratification for mining activity, which was never actually applied, based on criteria such as the volume of production, the amount of capital invested and the number of workers involved in mineral extraction.

One result of this stratification, which divided the industry into small-, medium- and large-scale mining, was that governments at different times implemented plans and programs in various areas, without any integrated planning between them; some related to the promotion of small-scale mining, or encouraged state investment in mega projects, while others sought to establish an appropriate climate to generate businesses that could obtain foreign investment for large-scale mining.

While this process has been taking place, it has not been possible for a mining development policy to evolve that would attract large-scale national and foreign investment capital and promote the use of technology. What has been observed is the proliferation of forms of production of very poor technical quality, with few legal and financial tools, and a lack of systematic integration, particularly with respect to the lower scale of production referred to as small-scale mining.

In order to conduct an impartial review of the concepts, and also the problems associated with these modalities in the mining industry, a new look must be taken at small- and medium-scale mining. The aim

is to strengthen the business and management structure rather than the scale or volume of the operation as has been attempted in previous years.

This makes it possible to establish a more appropriate definition of small-scale mining and the associated features of mining production, which include: informality, non-productive artisanal developments, illegality, environmental degradation, sociocultural conflicts, and technical and legal problems. State action is evidently necessary on a large scale in order to achieve appropriate economic and social results for those involved in this activity.

This is an important issue as the conglomerate that is grouped together under the title of small-scale mining represents a significant proportion of mining production in the continent, and also of the labour force employed in mineral and metal extraction. It is also important to note that small-scale mining is not a recent phenomenon and that it is a universal activity, that has appeared in all five continents and in countries as different as: Canada, Colombia, Chile, China, Bolivia, England, Peru and Spain.

Although there are no totally reliable statistics available on the extent of this activity, the most recent data provided by the International Labour Organization (ILO), indicate that there may be from 11.5 to 13 million persons around the world engaged in this activity (1.4 to 1.6 million in Latin America and the Caribbean); they receive an average salary of US\$ 150 per month, amounting to a sum of between US\$ 2.52 and US\$ 2.88 billion per year, which becomes part of the region's economic flow. Small-scale mining is thus the sector offering the highest income in many of the districts where it takes place, and such activity makes a significant contribution to stimulating the local economy in various parts of the continent.

This is such an important subject that the United Nations Organization and various bodies of that system such as ILO, the United Nations Conference on Trade and Development (UNCTAD), and the Economic Commission for Latin America and the Caribbean (ECLAC), as well as the World Bank, the conferences of mining ministries of the Americas and of West Africa, and other organizations have begun to study the subject and to seek alternative solutions for achieving harmonious development in this area. This is indicated by the resolutions and recommendations relating to small-scale mining which have resulted from events such as the Fifth Tripartite Technical Meeting for Mines other than Coal Mines, organized by ILO in Geneva in 1990, and the Interregional Seminar on the Development of Small- and Medium-scale Mining held by the United Nations in Harare, Zimbabwe, in 1993.

Similarly, the World Bank convened an International Round Table on Artisanal Mining in Washington in 1995; the National Institute of Small Mines of Calcutta held a Global Conference on Small/Medium-scale Mining in 1996; in the same year, ECLAC convened in Santiago, Chile, a meeting of Latin American experts who proposed alternative forms of management for this subsector to the governments of the region; an expert group of the United Nations Industrial Development Organization (UNIDO) made a statement on mercury contamination at a meeting on small-scale mining held in Vienna in 1997.

More recently, the Conferences of Mining Ministries of the Americas held in Buenos Aires, Argentina in 1998 and in Caracas, Venezuela, in 1999, as well as the Conference of Mining Ministries of the West African Economic and Monetary Union, have made statements on the need to shift the focus of attention to the area referred to as small-scale mining. In addition to those events, there have been numerous national, binational and regional meetings and events that reflect the importance of mining throughout the world, and especially in the developing countries.

In September 1999, a meeting was convened in Washington by the World Bank, and attended by a representative sample of international organizations and public agencies concerned with areas relating to small-scale and artisanal mining. It became clear that there is currently a trend of

accepting the existence of these forms of production as part of the economic situation and that the countries and the mining community need to pause and reconsider the way that this branch of mining activity has been dealt with over the past decade.

Institutional support and strengthening of civic education for the persons involved in mining could become a very effective tool. Civic education, together with other forms of training in areas such as income distribution, social investment and fiscal discipline, could strengthen the development and peace processes in those areas where extraction activities are damaging the environment, reinforcing a cycle of poverty, and leading to problems and violent social conflicts over the ownership, management and use of the mines.

## I. General considerations

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### A. Historical overview

Metal extraction and use is an activity that is as old as humanity, as indicated by the names that social researchers have given to certain periods in human development - stone age, bronze age and iron age.

The expansion of human settlements was made possible by the use of tools and weapons made from minerals, which were first collected and later intentionally sought for, and also by the development of technology for obtaining elaborate and finished mining products: pebbles and rocks for blunt instruments, sticks and pieces of flint to make sparks, and obsidian for knives. With the discovery of metals there followed bronze, iron, metallurgy and,

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