

II. METALLIC MINING

II.1. Mining According to Extraction Methods

II.1.1 Comparative overview.

Mining exploitation methods in Chile have evolved from underground mining to open-pit mining. This is evidenced mainly in gold mining where galleries and tunnels have been replaced by pits in new investment projects. In copper mining, the big operations have opened a pit next to the traditional mine, like in Andina and Salvador. Others, like Los Bronces, have evolved from underground to surface operations. In coal mining the underground exploitations in Arauco have faced competition from the Pecket open pit in Magallanes. Therefore, open pit mining is the most significant method of mineral exploitation in Chile.

Production of copper, iron, gold, silver and coal is done through open pit operations. Likewise, the mining of nitrate and the salt mines may also be considered open pit.

According to the figures shown in Table VII, 61% of total fine copper is produced by this system. It is the only exploitation system in iron mining and supplies 100% of production. In gold mining, open pits supply 63% of total production and in coal mining, 41% of the total. Most silver production is obtained as a by-product of copper and gold, mainly from open pit mining.

TABLE VII
MINERAL PRODUCTION ACCORDING TO EXPLOITATION METHOD

	Copper Mt	Iron Mt	Gold t	Coal Mt
Open pit	1,180	8,500	19	1,100
Underground	750	0	11	1,400
TOTAL	1,940	8,500	30	2,700
% Open pit	61%	100%	63%	41%
% Underground	39%	0%	37%	59%

As the metallurgical treatment technologies of minerals have progressed, surface operations have acquired more importance. This is especially true in gold mining where the metallurgical feasibility of recovering metals from minerals with grades as low as 1 gram of gold per ton or less has turned mass mining into the most appropriate and economic method.

This possibility has greatly expanded this processing method, along with a significant increase in total mining production due to the favorable conditions for foreign investment which have encouraged the inflow of capital into Chilean mining.

II.1.1.1. Open Pit Mines.

Open pit mining has played the most important role in the growth of mineral production. La Escondida's large copper deposit is famous worldwide, and started production at the end of 1990. La Coipa, inaugurated in October of this year, is also an open pit mine, as are Lince and San Cristóbal which were inaugurated at the end of 1991. The Quebrada Blanca and Andacollo projects also contemplate open pit exploitations. The only important new underground projects are Los Pelambres and Zaldívar.