

ECUADOR

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With a land surface of only 274,000 km², Ecuador is one of South America's smallest countries. It is a small hydrocarbon producer, but metalliferous mineral production is so far insignificant. However, several large gold and base metal deposits have been identified by exploration during the past decade. The non-hydrocarbon mineral potential largely lies within the Andes, which form the mountainous, 600 km-long, backbone of the country. The mountains rise to over 6,000 m and separate a wide coastal plain in the west, the home of most of Ecuador's agricultural production, from the extensive plains of the eastern 'Oriente' provinces (upper Amazon Basin).

The country's 13 million inhabitants are a patchwork of indigenous people, descendents of Spanish colonialists, and people of African origin. Agriculture was the mainstay of the country's economy until the discovery of hydrocarbons in the Oriente in the 1960s. Hydrocarbons gradually transformed the economy, but the depressed oil market of 1997–98, and catastrophic damage to the agricultural sector caused by 'El Niño', drove the Ecuadorian economy into a free-fall in 1999. That year saw the collapse of the banking sector, default on external loans, raging inflation, and total collapse of business confidence. When confidence goes, capital flees; an estimated US\$3,000 million of capital left the country between 1998 and 1999. Over 500,000 of the country's more able citizens voted with their feet and emigrated.

In March 2000, to stave off total economic collapse, the local currency was abolished and replaced by the US dollar. Emergency reforms were rushed into place by the government of Dr Gustavo Noboa. In a promising start, the economy grew from negative 7.3% in 1999 to +5.6% in 2001, one of the highest growth rates seen in South America. The growth rate for 2002 slowed slightly to 3.1%, attributed by the IMF to the government's failure to impose rigid fiscal policies after dollarisation. Nevertheless, the Noboa government is credited with making some progress in restoring the damaged economy and improving business confidence.

In November 2002, in an unexpected election result, the left-leaning former coup-leader, Lucio Gutierrez, polled 54% of the vote, beating Conservative banana-billionaire, Alvaro Noboa. Mr Gutierrez, a retired colonel, gained this narrow lead by enlisting the support of the country's impoverished indigenous people whom he won over with his anti-corruption stand and the promise of increased aid. Dr Noboa also lost crucial ground when, during a televised broadcast, he gaffed a response to a simple question about the recent Reventador volcanic eruption!

Once elected, and to the considerable relief of the business community, Mr Gutierrez toned down the rhetoric of his pre-election speeches. Shortly after inauguration, the president visited New York to renew ties with the IMF, securing a US\$205 million standby facility in support of his government's new economic plan. His visit to the US sent out a clear signal that the new administration seeks economic stability. Mr Gutierrez has assembled some very capable advisors, including indigenous representatives. However, the government's biggest challenge is to combine the social and political support base, founded in the centre-left, with the need to undertake structural reforms that can only work with support from the centre-right. The political arena in Ecuador is decidedly unforgiving and time is not on his side.

The light at the end of the tunnel, however, could be the glow from the oil lamp. Ecuador's current crude production is 400,000 bbl/d, derived from the Oriente. Production is currently limited by the capacity of the 390,000 bbl/d state-owned trans-Andean pipeline which takes the oil across the Andes to the Pacific coast. Current exports are about 270,000 bbl/d of about 22° API crude. Oil production will increase by 450,000 bbl/d once a second pipeline (OCP) is completed in June 2003. Built at a cost of US\$1,100 million, the new pipeline was financed by a consortium of Alberta Energy, Agip, Kerr Mc Gee, Occidental, Repsol-YPF and Perez Compac.

The OCP project has gone ahead despite strong opposition from environmental groups concerned that increased oil production will threaten the rich, biologically diverse and delicate ecosystems of the hydrocarbon-rich Oriente. With oil revenues currently funding 50% of the budget, however, the government has assigned high priority to the development of new oilfields. The oil outlook looks promising. The Oriente has a very high discovery record; currently, more than 50% of exploratory wells result in successful discoveries.

Turning to the non-oil minerals sector, Ecuador completely revamped its mining legislation as part of a wide-ranging group of economic reforms undertaken in 2002, and now has one of South America's most competitive mining laws.

Reliable estimates of gold production are not available, since most is derived from informal operations. One source put 2002 gold production at approximately 8 t, mostly derived from vein mining operations in the Portovelo-Zaruma and Ponce Enríquez mining districts. The Portovelo-Zaruma mining district is now almost exhausted, but during its long mining history, dating back to the Colonial period, the district produced about 4 Moz of gold.

Several companies continue exploration and evaluation work on gold targets located in the Western Cordillera, which mainly comprises Tertiary volcanic rocks, and on copper targets associated with Jurassic batholiths in the Cordillera Real.

In the Western Cordillera, work is continuing at International Mineral's Río Blanco project. This high-grade low-sulphidation epithermal gold deposit is

located about 40 km west of Cuenca. The company has estimated the Rio Blanco resource, which comprises mainly veins and breccias, at approximately 880,000 oz gold and 6.7 Moz silver.

Drilling is planned for later in the year at IAMGOLD'S Norcay low-sulphidation epithermal vein gold project located some 60 km west of Cuenca. The company also plans to continue work this year on the Quimsacocha high-sulphidation gold prospect, located 90 km south southwest of Cuenca, and has recently joint-ventured International Minerals Corp.'s Cañicapa prospect, located 90 km south of Cuenca. In a further development, IAMGOLD and Gold Fields recently announced a joint venture to explore for gold in a large area in the southern part of the Western Cordillera, an area centred on the Cañicapa gold prospect.

The Western Cordillera also hosts two similar, large, low-grade porphyry gold deposits close to the Pacific coast near Machala. The more advanced Gaby-Papa Grande deposit, which was evaluated by International Minerals Corp. in the 1990s, has an estimated resource of 5.6 Moz gold. The Gaby deposit lies adjacent to the Ponce Enríquez gold vein district, from which approximately 1-2 Moz gold have been won since the early 1980s. The Cangrejos project, located 30 km to the south and explored by Newmont in the late 1990s, may have similar potential to Gaby, but a resource figure has not been released. The concessions have now been returned to their original owners who continue to exploit several high-grade gold-bearing hydrothermal breccias.

La Plata, a gold-rich volcanic massive sulphide (VMS) deposit, was acquired by Minera Cachabí last year and further work on the property is planned by the new owners. La Plata is one of two VMS-type deposits located in the Cretaceous volcanic rocks in the western Cordillera.

In the Cordillera Real, Corriente Resources recently announced completion of studies that indicate the economic feasibility of its Mirador copper deposit as a 20,000 t/d operation at a capital cost of US\$134 million. The near surface portion totals 98 Mt averaging 0.78% Cu. The Mirador deposit is one of several copper deposits in an important new porphyry-copper district related to Jurassic granitic intrusions. Corriente estimates a resource totalling approximately 600 Mt at a grade of 0.8% Cu in four separate deposits.

The porphyry-related Nambija bonanza-grade gold skarn deposit, located near Zamora in the southern part of the Cordillera Real, has produced more than 1 Moz of gold since its chance discovery in the early 1980s. The deposit is now largely mined out. Most of the Amazon tributaries that drain the southern part of the Cordillera Real contain appreciable alluvial gold, suggesting that this densely-vegetated area contains further gold deposits.

The Ecuadorian section of the Andes is clearly well endowed with a diverse range of mineral deposit types. With the recent adoption of a sound mining code, together with the country's new political and economic outlook, the stage is now set for this under-explored part of the Andes to realise fully its attractive potential.