LAOS

By a special contributor

Laos is a mainly mountainous, densely-forested country in southeast Asia, and possesses a tropical monsoon climate. It covers an area of some 240,000 km², roughly the size of the UK, but has a population of just 5.4 million, one of the lowest in the region. Laos is landlocked and bordered by China, Vietnam, Cambodia, Thailand and Burma (Myanmar). A large part of the border with Thailand runs along the 4,000 km long Mekong River.

From 1893 until 1949, Laos was a French Protectorate and for many years thereafter it was a controlled economy. There has been economic liberalisation since 1986 and a move towards private enterprise, a development brought on by the perceived necessity to import modern technology as the main engine of growth. Annual GDP growth of 7% was achieved in the five years until 1997 and, after slowing for a few years, recent growth has been in excess of 5.5%. The industries and service sectors account for half of GDP. The main weakness of the Laotian economy arises from its poor infrastructure and land-locked geography.

For foreign investors, one of Laos' chief attractions are its rich and varied mineral resources. These include iron ore, tin, coal, gypsum, limestone, potash, precious stones and gold. The country possesses substantial deposits iron ore, mainly in Xien Khouang Province. The high-grade metasomatic Phou Nhouan deposit consists of magnetite and haematite, and may be as large as 30 Mt. The Pha Lek deposit is similar and could contain 30-60 Mt.

A gypsum mine in Savannakhet and an iron ore mine in Xien Khouang have been established with Vietnamese aid. The Vientiane plain has substantial deposits of sylvite-potash. Potash also occurs close to the Thai border. Elsewhere, there have been proposals to mine lignite for power generation in the northern region, where there are estimated resources of 150 Mt.

Tin ore has been exploited for many years. There are two principal mining operations, and concentrates (50% Sn) are sent to Malaysia for refining. Proven reserves of tin are estimated at 65,000 t, sufficient to support an annual production of 2,000-3,000 t for several years, but total resources are considered to be much larger.

A major problem in the past has been the lack of proper mining laws. During the 1990s Rio Tinto (and its former subsidiary CRA) and the Normandy Mining – Anglo American Joint Venture were active explorers and helped to formulate mining legislation broadly based on the Indonesian Contract of

Work system. In Savannakhet, following up a UNDP report, Rio Tinto worked in the Sepon mineral district and made the Sepon gold discovery.

The Sepon project is now 100% owned by Australian-listed Oxiana Ltd, and encompasses a producing gold mine and a copper mine now in the construction phase. The gold operation is based on reserves of 14.2 Mt averaging 3.43 g/t Au and the processing of 1.25 Mt/y of ore. The first gold was poured in December 2002 and last year output totalled 165,255 oz at an operating cost of US$135/oz. The district hosts eight separate gold deposits and the capacity of the gold plant is currently being doubled, with expanded production beginning in 2005.

The company has recently received approval from lenders and the board of directors, for its Khanong SX-EW copper project, part of its Sepon copper-gold development. Thus far, Oxiana has contributed US$130 million of the US$235 million capital required for the project. Construction is on schedule and has been contracted to a joint venture between Bateman and Ausenco Ltd. Cathode production is forecast at 60,000 t/y, and is expected to begin by March 2005. The life-of-mine average cash operating cost is estimated at US$0.37/lb placing it in the lowest quartile of all copper producers. Reserves are estimated at 15.5 Mt averaging 5.2% Cu within a total resource of 25 Mt averaging 4.2% Cu. Khanong has further reserve potential as does the nearby Thengkham resource, and other targets in the area.

Elsewhere in Laos, another Australian-listed company, Pan Australian Resources NL, has committed to develop the Phu Bia gold project located about 120 km north of Vientiane. First production from a 2.0 Mt/y heap leach operation is scheduled for March 2005. Annual production is expected to be over 50,000 oz/y based on an ore reserve of 7.5 Mt at an average grade of 1.1 g/t. Cash operating costs are estimated below US$200/oz for the first two years.

The contract area was originally explored in the early 1990s by Normandy Mining (since merged with Newmont) in joint venture with Anglo American. Two porphyry copper-gold systems and several stockwork gold deposits were identified. Pan Australian has purchased an 80% interest in Phu Bia Mining Ltd (Newmont 20%). In early 2004 Pan Australian reported the results of the Phu Kham copper-gold project preliminary study that envisages a 9.0 Mt/y operation with annual output of 57,000 t of copper and 52,000 oz gold. To date, the inferred mineral resource is estimated at 108 Mt averaging 0.8% Cu and 0.3 g/t Au at a 0.3% copper cut-off grade. The Phu Kham primary copper-gold mineral resource is now the subject of a full feasibility study scheduled for completion August 2005.