

MYANMAR

By a Special Contributor

For the past 40 years, Burma (Myanmar) has been under military control and in spite of multiparty elections in 1990, which resulted in the principal opposition party winning decisively, the military junta chose not to hand over power. The opposition leader, Aung San Suu Kyi, has been constantly harassed and placed under house arrest for much of the time. This state of affairs has generated widespread international protest and has had a major negative impact on foreign investment. The Constitution has been suspended since 1974 and a new one has yet to be drafted.

Myanmar covers an area of some 678,000 km² and has borders with India to the northwest, China to the northeast and Thailand to the southeast. The southern seaboard with the Bay of Bengal and the Andaman Sea extends for almost 2,000 km. The climate is tropical monsoon, and topographically the country is rugged highlands to the west and east with lowlands in the centre and the south. Some 70% of the population of around 42 million are involved in agriculture.

The agricultural sector contributes about 60% of GDP and this is estimated to have grown by around 3.3% in 2002 to about US\$70 billion or US\$1,660 *per capita*. However, official statistics are unreliable and foreign trade in particular – exports are estimated at US\$2.7 billion last year – does not take account of unofficial border trade, probably including minerals such as jade, gemstones and gold.

Myanmar has a wealth of mineral resources, including base and precious metals, gemstones and industrial minerals but there has been a dearth of foreign investment and foreign aid, and the government has insufficient funds to develop them fully. Only 7% of the country's workforce is involved in the industrial sector and mining in 2001-02 contributed only 0.8% of GDP.

There are now only three base metals mines and three gold mines remaining under state ownership and these are struggling to maintain even a minimal operational capability. In the private sector, mining of gold, jade and gemstones by local companies is believed to be thriving but there is only one foreign company making a significant contribution to mineral sector revenues, Vancouver-based Ivanhoe Mines Ltd.

Ivanhoe has had a business interest in the country for ten years and has a 50% interest in the Monya copper project in north-central Myanmar through the operating company, Myanmar Ivanhoe Copper Co. Ltd (MICC), a joint venture with Mining Enterprise No.1 (ME1) of the Ministry of Mines. The Monya project includes the S&K mine (comprising the Sabetaung and Kyisintaung orebodies) which is yielding around 27,500 t/y of cathode copper by heap leaching and SX-EW at a mine operating cost of US\$0.35/lb.

The partners are considering a major second-phase development based on the Letpadaung deposit 6 km to the southeast. Letpadaung includes a supergene zone plus a 200 m thick oxide zone and is typified by chalcocite breccia. A bankable feasibility study estimated proven and probable reserves of 906 Mt averaging 0.4% Cu and an operation producing 155,000 t/y by 2004 had been envisaged with a construction start in May 2002. However, further feasibility studies are reportedly being undertaken to examine the possibility of developing a 95,000 t/y heap-leach operation.

Elsewhere, Ivanhoe has continued with its surface and underground exploration of the high-grade Modi Taung gold property in Block 10, about 150 km southeast of Mandalay in central Myanmar. The mineralisation is contained in five vein structures, each extending for 500-800 m along strike and extending to depths of at least 300 m. Channel samples have assayed between 20 g and 50 g/t Au over several centimetres but gold distribution is reported to be extremely erratic.

Ivanhoe is listed in Australia and Canada and its founder and chairman is Robert Friedland. A number of organisations in Canada have urged Ivanhoe to withdraw from Myanmar and have criticised its co-operation with the military dictatorship. The company has responded by pointing out that it is creating permanent jobs in a safe and healthy environment, that it respects international conventions including human rights, and that it is not motivated by political considerations.

No further progress has been reported in respect of Cornerstone Resources' exploration drilling at the Loncheng zinc project where sizeable deposits of zinc carbonate in karst pockets had been sought. Some other foreign companies, including East Asia Gold Corp. and Myanmar first Dynasty Mines Ltd, have relinquished their mineral interests in the country.

The Department of the Geological Survey and Mineral Exploration (DGSE) undertakes systematic geological mapping and mineral prospecting on a regional scale and some 80% of the country has been geologically mapped. On behalf of the Ministry of Mines, the DGSE has signed an agreement with China's International Scientific and Technological Co-operation Department and early last year a team of Chinese geologists arrived in the country. The team has special interests in lead-zinc-silver, copper and gold deposits and moves are afoot to expedite the development of gold and PGM deposits in the north of the country. Also in 2002, a memorandum of understanding was expected to be signed by the DGSE and the Metal Mining agency of Japan concerning the exploration for porphyry-related copper-gold deposits in the south of the country.

On its own account, the DGSE continues to explore for coal and lignite in central Myanmar in response to a government decision to install coal-fired power plants in the country.

State-owned mining operations in the base metals sector are conducted by ME1 in Shan State at Bawdwin, Bawsaing and Yadanatheingi. There are both

open-pit and underground operations at Bawdin producing mainly concentrates of lead and zinc. Some smelting equipment has been purchased from China in a bid to boost output. Also, zinc oxide from zinc slags is being transported to a smelter in Yunnan Province, China, enabling ME1 to earn foreign exchange from slag sales. At ME1's two other lead-zinc mines, output continues to fall. The other state-owned mining company, ME2, no longer mines tin-tungsten on its account and its activities are confined to seven joint ventures with several indigenous companies, and one jv with the Thai company Myanmar Pongpipat Co. Ltd, which operates the Heinda alluvial tin mine.

No tin-tungsten production figures are available for 2002 and it was reported in 2001 that the country's output had been hit severely by low world prices. ME2 controls directly only one hardrock gold mine and the monthly target of 25 kg of gold has not been achieved. In 2002, it was reported that the jv operation was mining tailings in a bid to meet the target. ME2 is also involved in several other small gold jv operations.

ME3 is responsible for iron and steel, coal and lignite, antimony, nickel and industrial minerals. It operates one steel mill, two coal mines, two barytes mines and a gypsum mine, and controls a number of industrial minerals enterprises. Product output has been falling steadily. The development of coal and lignite resources is a priority but there has been little foreign interest. However, ME3 has one domestic jv partner involved in mining the Tigyt coal deposit. This will feed a nearby 120 MW power station now under construction. Tigyt will supply 500,000 t/y of coal over 40 years. At present, Myanmar produces 870 MW/y from hydropower and gas-fired plants.

Since April 2000, through Myanmar Gems Enterprise (MGE), the Ministry of Mines has been mining jade and gemstones in production-sharing joint ventures with ten indigenous enterprises, eight for jade in Lonkhin-Pharkant and two for rubies in the Mongshu area. Sales are held bi-annually. In a subsequent development, the sale and transport of raw jade to China is now legal.

Low-cost artisanal mining of gold, jade and gemstones is an important activity, and illegal mining and smuggling of gemstones remain rampant in the more remote and inaccessible parts of the country.

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Annual Production Figures for Selected Metals and Minerals

| Commodity | Unit | 2000-2001 | 2001-2002* |
|-------------------------|-------------|------------------|-------------------|
| Tin concentrate | t | 636 | 241 |
| Wolfram concentrate | t | 2 | 1 |
| Tin-wolfram concentrate | t | 222 | 70 |
| Cathode copper | t | 26,546 | 21,184 |
| Lead | t | 775 | 1,200 |
| Gold | kg | 100 | 84 |
| Silver | kg | 2,019 | 559 |
| Coal | t | 52,553 | 34,513 |
| Barytes | t | 32,669 | 24,232 |
| Gypsum | t | 52,573 | 63,031 |

Remarks: - Production figures represent financial years from April 1 to March 31.
 - *Production figures for the period April 1, 2001 to January 31, 2002.
 - Decrease in cathode copper production is due to higher clay content in the run-of-mine ore fed to leaching pads.