

NORTH KOREA

By a Special Contributor

The Democratic People's Republic of Korea (North Korea) covers an area of 120,540 km² in the northern part of the Korean Peninsula. It is bounded to the south by South Korea and to the north by China, with a very limited border with Russia in the far northwest. The country, with its population of 22 million, is governed by the totalitarian and isolated leadership of Kim Jong Il, who operates a centrally-planned, command economy.

Since succeeding his father in 1994, Kim Jong Il has made three desperate gambles. First, he believed that he could keep his precarious economy afloat by exporting the missiles that the country manufactures to all states, rogue and otherwise. The latest estimates are that North Korea is somehow managing to earn US\$500 million in this way every year, making missiles the largest export earner. (Yemen was one of the states that imported nuclear missiles from North Korea clandestinely but shipments were intercepted, first by Spanish and later US forces.) Second, Mr Kim increased his already considerable bet on nuclear proliferation, hoping, mistakenly, that the US, in order to dissuade him from doing so, would reward him with aid. Third, he was hoping that his further escalation of the nuclear crisis in the Korean Peninsula would persuade the left-of-centre President Roh Moo Hyun of South Korea to continue the South's sunshine policy of aid and subsidies to the communist North.

Recently, it came to light that North Korea is building a uranium enrichment facility that could yield weapons-grade uranium. The US has sought to punish it by halting supplies of fuel oil pledged under an earlier deal signed in 1994.

The basic economic weakness of North Korea stems from its long-held policy of *juche* or self-reliance. This has prevented the inflow of technology and has burdened industry with outmoded plant and machinery. Military spending, estimated at some 31% of GDP, is also a factor as it diverts funds away from the much-needed investment in other industries and agriculture. There have been food shortages for years and there is a constant need for foreign food aid. By sector, agriculture contributes about 30% of GDP, industry (including armaments manufacture) about 32% and services 37%. Last year, GDP is estimated to have grown by about 1% and, based on purchasing power parity, amounted to some US\$22 billion, or US\$1,000 *per capita*.

North Korea's major imports comprise petroleum, coking coal, machinery equipment, textiles and grain. Exports are chiefly armaments, metallurgical products, fishery products and textiles.

The country lacks any reserves of oil and gas and there are persistent energy shortages. Its two oil refineries, with a capacity of 3 Mt/y are supplied with

crude from China, the only reliable source. The supply is not adequate, however. Hydropower generates about two-thirds of North Korea's electricity supply, the balance being met by coal. Anthracite is the country's most abundant mineral resource, with reserves estimated at some 1,800 Mt. Metallurgical coal reserves are limited.

Apart from coal, north Korea's natural resources include, iron ore, manganese, copper, lead, zinc, tungsten, gold and silver, and industrial minerals such as magnesite, graphite, fluorspar and salt. Up-to-date, official mineral production figures are difficult to obtain.

Coal mines are mainly concentrated in south Pyonyang Province, and annual anthracite production has been as much as 68 Mt. The Anju District coal-mining complex has been the country's leading producer, and a large-scale open pit operation there was established there in 1990. In recent years, output in the district has risen by 7 Mt/y as a result of new mines becoming operational at Chili and Soho. Production has also improved as a result of the addition of new equipment at Saebjol and in the southern districts of North Hamgyong Province.

Capacity of the Sunchon district complex increased to 3 Mt/y some time ago. Output of metallurgical grade coal was 1 Mt/y at Kukdon and Yangjong mines. New coal deposits were discovered some time ago in Ryanggang province.

North Korea has reserves of iron ore estimated at some 400 Mt. Mines are located at Musan, Unryul, Songhung, Komdok, Toksong, Tokhyon, Chaeyong, Hason, Tokonsong and Sehaeri. The largest iron-ore complex, Musan, has the capacity to produce some 10 Mt/y of ore, and concentrates are transported via a slurry pipeline to the Kim Chaek steel plant in the vicinity. This plant has the capacity to produce 4 Mt/y of steel but is in dire need of modernisation. Another steel plant at Nampo was expanded from 1 Mt/y to 3 Mt/y a few years ago. South Hamgyong Province has promising deposits of magnetite ore.

In the west of the country, near the Chinese border, monazite deposits are mined at Chelsan where the resource is estimated at 500,000 t. A 1,500 t/y capacity processing plant is operated by International Chemical Joint Venture Corp., jointly-owned by state-run Korea Ryongaksan General Trading Co. and a Japanese company.

A lead-zinc ore-processing complex, with an ore capacity of 15 Mt/y and the capability to produce 100,000 t/y of zinc metal, operates at Komdok in South Hamgyong Province and is the country's leading producer. The International Lead and Zinc Study Group, however, estimates that North Korea's total mine production in 2001 amounted to 32,000 t of contained metal. There are proposals to modernise the facilities at Komdok, and also to upgrade the extraction technology at a number of North Korea's non-ferrous ore-mining facilities. Current mineral exports include concentrates of copper and molybdenum.

In the industrial minerals sector, the chief exports are of wollastonite and kaolin. North Korea has substantial resources of good-quality magnesite, and magnesite mines are concentrated in the Tanch'n district of South Hamgyng Province. In 1990, annual production was estimated at 1.5 Mt but it is now believed to be closer to 650,000 t.

One industrial minerals project of note is the plan to mine graphite at Yongho by a joint venture comprising Samchelli Corp. of North Korea and Korea Resource Corp. (KRC) of South Korea. Both entities are state-controlled. Under the plan, KRC would provide machinery and equipment. Annual sales of 9,000 t - 10,000 t/y of graphite to South Korea are envisaged.