KENYA

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In order to enhance the performance of mineral production in its economy, the Kenyan Government has embarked on a programme for the promotion and investments in the Mineral Resources sector. Mineral exploration and exploitation in Kenya are presently still being carried out under the auspices of an Act that was promulgated in 1940. A review of the Act started in late 1993, and is expected to be complete and presented before Parliament very soon. The review is to provide for lesser discretionary powers to the licensing authorities and hence provide for greater security of tenure. It is also to provide for greater environmental protection from the undesirable effects of mining activities. The Kenya Chamber of Mines (KCM), composed mainly of the major players in the Kenyan mining industry is assisting the Kenyan government in formulating this Act.

In 1999, the mineral commodities contributed slightly less than one per cent of the Gross domestic product (GDP) but there is tremendous minerals potential that await exploitation. The industry is still dominated by non-metallic minerals.

Mining has continued in the well-known mineral deposits such as common salt, from the saltworks along the coast and Lake Magadi, fluorspar in the Kerio Valley, and soda ash from Lake Magadi. Of the best-exploited industrial minerals, soda ash is produced from the mineral trona that occurs at Lake Magadi, which is situated within the Great Rift Valley. This is the biggest known natural source of trona in the world. Trona occurs together with common salt and Lake Magadi is also the main source of crude salt.

Fluorspar is mined to the east of the town of Eldoret within the Rift Valley system. The mine produces acid-grade fluorspar of which the bulk is exported to Luxembourg. High-grade diatomite occurs and is produced for both export and local markets at Soysambu and Kariandusi near Gilgil within the Rift Valley. The potential for the commodity is large as it is known to occur in a number of localities within the Rift Valley floor system.

Large tonnages of limestone, marbles and dolomites occur widely in the country. Along the Coastal belt, Bamburi Portland Cement Co., exploits coral limestone and gypsum, while near Nairobi at Athi River, East African Portland Cement Co. Ltd exploits kunkar and marble together with gypsum in the vicinity.

Quantity Of Mineral Production For The Period (t except where stated)*

	1995	1996	1997	1998	1999
Soda Ash (trona)	218,450	223,000	257,640	242,910	245,680
Fluorspar	80,230	83,000	68,700	60,854	93,602
Crushed Refined Soda	2,786	2,274	3,005	70,904	335,230
Salt (Magadi)**	71,400	41,000	6,280	21,742	44,886
Limestone Products	31,383	31,935	32,935	32,000	32,000
Carbon Dioxide (CO_2)	7,982	9,119	9,214	8,998	10,006
Vermiculite	457	734	1,418	353	164
Diatomite	577	415	297	468	507
Ruby Corundum	1.20	7.49	5.18	4.00	4.49
Green Garnet (kg)	109	56	50	14	26
Gold (kg)	151	492	440	388	990

* The figures and values for minerals produced and recorded for export. No records are available for products consumed locally.

** No figures available from other producers (mainly serving the local market).

Natural carbon dioxide, associated with the rift system, is exploited at Kereita by Carbacid ($C0_2$) Ltd and marketed for industrial purposes. The other emerging sector in this industry is the dimension stones industry of which Francescon Marble and Granites Ltd and Francescon Mineral Holdings Ltd are the key players, exploiting the granites and marble for both the export and local markets.

The gemstone industry is very active in Kenya. The main players, Rockland (K) Ltd, Gemkit Enterprises Ltd and Bridges Exploration Ltd, are familiar names in the gemstone world. Many local prospectors are engaged in prospecting and mining of a wide range of coloured and ornamental stones, that include a wide range of gemstones such as ruby, tsavorite, sapphire, various types of garnet, peridote, tourmaline, aquamarine and others. The value of the gemstones exported through the government machinery stood at US$5.4 million in 1999. This figure probably represents only a small fraction of the actual total amount exported.

Gold occurs in a number of places within the gold-bearing greenstone rocks of the Tanzania craton in western Kenya. Gold is also known to occur in other areas of the Mozambique belt and are being exploited by local miners through conventional panning.

From the mid-1990s to1998, prospecting for gold was very active in Kenya. But, with the slump in gold prices, there has been a considerable decline in gold prospecting. So far there has been no follow-up by Tanganyika Gold on the company's prospect taken over from Panorama (Auvista Minerals/Mid-Migori joint venture), which had reported 1.6 Mt at an average grade of 4.3 g/t.

AAPS (Kenya) (part of the Anglo American group) in a joint venture agreement with SEBIMU, and under its own licence, has conducted exploration activities for gold. This exploration was carried out in the Lolgorien, Kisii and Migori greenstone belts in southwestern Kenya and West Pokot, Maralal to the north. Similar exploratory work for gold mineralisation has also been carried by Lasource plc of France in the Kakamega area, and in a joint- venture agreement with Winam at Rongo-Oyugis within the past two years. In both cases, several small colonial workings were re-evaluated and the more promising prospects drilled. When prospecting was curtailed in 1999, no mineralisation suitable for open-pit bulk mining had been identified, although there is some potential for high-grade low-tonnage mining. It is therefore apparent that the mineralisation is suitable for exploitation by smaller companies interested in low tonnage high-grade ores.

Because of the nature of mineralisation that encourages small scale operators employing underground mining techniques, International Gold Exploration AB (IGE), a junior mining and exploration company based in Sweden with projects in southwestern and northwestern Kenya, has increased gold production at its small-scale plant in Lolgorien adjacent to the Migori property owned by Tanganyika Gold.

The plant is currently in production, fed with ore from the gold rich Teng Teng mine. The current throughput is 12,000 t/y, which is expected to yield 5,500 oz/y, and Teng Teng's inclined shaft will be deepened to access the lower ore reserves. IGE has identified eight additional areas with high gold potential in the vicinity. The plan is to explore these areas by underground mining.

AAPS is currently carrying out exploration and seeking other targets within Kenya for base metals, primarily zinc, nickel and copper. Up until the end of 1999 the focus of activity was in the Maralal area in central Kenya where there are several large ultramafic bodies. The best looking target is at Siambu Hill, where highly anomalous nickel and copper values in soil and stream samples were returned. An extensive trenching programme was carried out and copper-nickel mineralisation identified in thin veinlets along fractures. This work was carried out under the auspices of a joint venture with Trade World Kenya, the holders of the relevant licenses.

AAPS has recently entered into a joint-venture agreement with IGE to explore Proterozoic

terrain for nickel and zinc on three licences held by the latter in the Pokot area of western Kenya. The nickel target is the Tulot ultramafic body, which forms the core of a synclinal structure and is bounded by talc schist and biotite gneisses. Tulot has previously been evaluated for its nickel laterite potential but not as a primary sulphide target. Near the town of Wakorr, several zinc anomalies associated with crystalline limestone were outlined by the Japanese International Co-operation Agency (JICA) during a reconnaissance programme in 1980. Follow-up work is currently under way.

Currently the most promising mining prospects in Kenya are within the licences held by Canada's Tiomin Resources Inc. The company was granted licences for deposits, located a few kilometres inland from the coast, covering four areas; Mambrui, Sokoke, Vipingo and Kwale. These deposits are estimated to hold about 12% of the world's rutile and ilmenite resources. Extensive field and laboratory work by Tiomin has indicated that commercial grade products of rutile, zircon and ilmenite can be produced from Kwale, Sokoke, Mambrui and Vipingo.

Preliminary results and the development status show that the resources for the individual licence areas are as at Kwale - 200 Mt, Mambrui (at resource estimation stage) 700 Mt, Sokoke (at resource estimation stage) 1,700 Mt and Vipingo (at exploration stage) 500 Mt of mineralised sands.

The 56 km^2 Kwale prospect has the best economics due to the significant levels of rutile, zircon in addition to ilmenite suitable for the production of chloride grade slag and/or synthetic rutile. The Kwale deposit is the smallest but has the highest percentage of heavy minerals, particularly rutile. Tiomin recently announced a positive feasibility study of the Kwale project, envisaging an operation that will support a mine life of at least 14 years. During the first six years of production, the study models an output of 300,000 t/y of ilmenite, 75,000 t/y of rutile, and 37,000 t/y of zircon. The etimated project capital cost is US$137 million, and the company expects to receive the necessary mining and environmental permits from the Kenyan Government by the end of 2000.

To date, Tiomin has spent more than US$3.5 million on exploration, and a further US$2 million on the feasibility study. An environmental baseline study including an environment impact assessment study has been completed to international standards. Construction is expected to begin early in 2001, with a projected start-up date of late 2002.

Negotiations with the landowners for compensation are in most places particularly in the northern parts complete. Tiomin, in liaison with the provincial administration, is currently finalising surface lease agreements with individual land owners within Kidiani and Mwaweche Settlement areas. However, the company has not managed to secure a surface lease agreement with the Receivers/Managers (Bank of India) of Associated Sugar Co. (Ramisi). Talks between high-ranking officials of the Kenya Government, the Indian High Commission, Bank of India and Tiomin have been held in a bid to resolve this issue.