



The mining industry of Malawi

By Magnus Ericsson

The mineral industry of Malawi is one of the least developed among the SADCC countries. In this article in our series on mining in the SADCC Magnus Ericsson looks at activities in the mining sector and the prospects for mining in Malawi.

Introduction

Malawi attained political independence in 1964, after the break-up of the federation of Rhodesia and Nyasaland. It is one of the 25 poorest and least developed countries in the world according to UN classification.

The back-bone of the Malawian economy is agriculture with tobacco, tea and sugar as the most important crops. Industry including energy production and construction accounts for a relatively high proportion of the total GDP, 18—20 per cent. Foreign investment has been strongly encouraged by the Malawian government with liberal provisions for repatriation of profits and capital. The modern sectors of the economy both in agriculture and in industry is dominated by foreign capital. Government participation in industry has however increased during the last decade.

The mining industry of Malawi is at present quite small. It is only the production of industrial minerals (e.g. limestone and clay), mainly for building and construction uses, which is of any economic significance. There is no export of minerals except very minor quantities of semi-precious gemstones.

At the end of the 1970s it was reported that 500—2000 persons (0.5—1 per cent of total industrial employment), were employed in the mining sector including quarries.

Geology

A survey of geology and mineral resources published in 1973 by the Geological Survey Department points to the following potentially important mineral deposits.

Exploration

Geological Survey

Geological mapping and exploration has been carried out mainly by the Geological Survey of Malawi and its predecessors. Geological surveying started in the early 20th century but not until the 1960s and 70s was a geological map cov-

ering the whole country available.

The Geological Survey has been supported by various UN programmes and by bilateral aidprogrammes, in particular by the Malawi Mineral Development Section of the South African Chamber of Mines which in 1974 set up a special exploration project in Malawi.

Following the enactment in 1981 of a new Mines and Minerals Act a slight increase in exploration activities by foreign mining companies have been noted in the early 1980s. The Geological survey has, however, continued to do most of the exploration work and has focused on minerals vital to the economy but of little interest to the foreign mining companies such as coal and various industrial minerals for local glass-, ceramic-, and building material-industries.

In 1984 and 1985 there was a considerable slow down in the private prospecting efforts. The government has, however, by various means tried to counteract this to attract new foreign investors.

Foreign companies

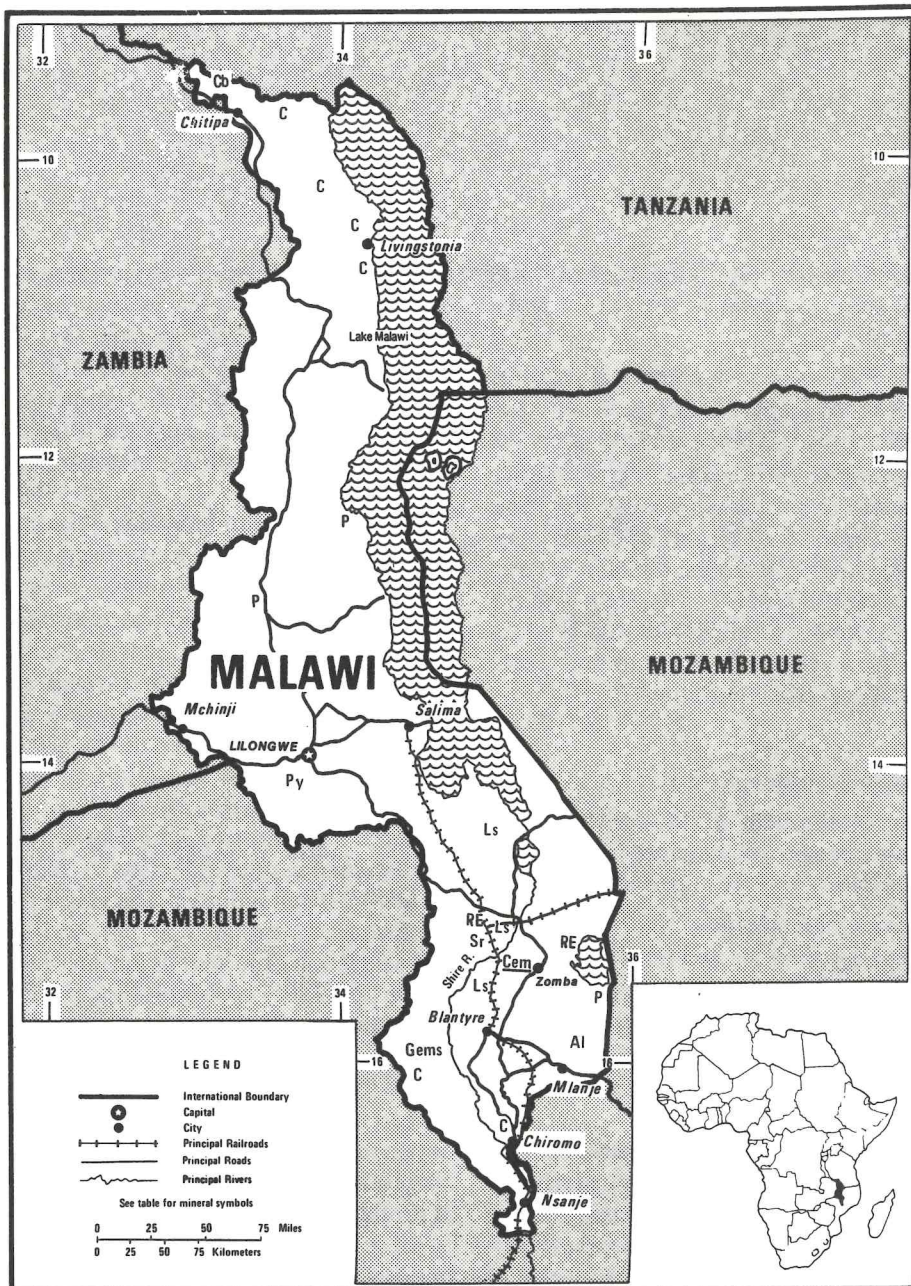
The most important private exploration and mineral development programmes are:

Lonrho (Malawi)

Lonrho has been actively engaged in various mineral projects since more than 15 years. The activities of the company have ranged from exploration to pilot process tests and feasibility studies. Lonrho has been interested in bauxite/aluminium and monazite/strontianite mainly.

In 1984 Lonrho announced that they suspended the rare-earth project at the Kangakunde Hill after more than ten years of eventually successful process development. The decision was taken due to current transport difficulties in the strongly dissected area.

Lonrho is at present studying the possibilities of a local production of lime for use in its sugar refineries.



Mineral production

The most important mineral production is shown in Table 2. The quarrying of limestone and production of cement is made since 1960 by the Portland Cement Co of Malawi. The company was taken over by the state owned *Malawi Development Company* (MDC) in 1973. MDC borrowed 4.25 million Kwacha (MWK) on commercial terms by the Bank of America to finance this deal and to further expand the production facilities of cement.

Small scale entrepreneurs are producing lime, gold and gemstones.

In the 1950s and 60s small scale mining of several minerals such as kyanite, monazite, niobium, corundum, mica has taken place.

Fuel minerals

The energy needs of Malawi are covered mainly by electricity and wood fuel. The electricity is generated in both hydro-power stations and thermal stations. When the first installations at the Nkula falls hydro power station was completed in 1967 Malawi's dependence on imported oil and coal could be diminished. Petroleum products are still of critical importance to transport but not to the industry.

Shell Exploration BV made an aeromagnetic survey for oil and gas over the Lake Malawi and part of the Shire Valley in 1982. Three sedimentary basins were found under water. The depth, however, is more than 200 m and the projects was abandoned by Shell.

In 1985 the British Central Electricity Generating Board was granted a three-year Exclusive Prospecting Licence to explore for uranium. An earlier uranium exploration was conducted in the 1970s by AGIP SpA of Italy.

The coal deposits of Malawi were investigated as early as in the 1920s. Considerable efforts to find coal of good quality has been made since that, but so far no large scale mining has commenced. In the 1980s it is the Livingstonia

Anglo American

After a preliminary exploration programme conducted in 1966 by Anglo American of the bauxite deposit at Mulanje, a detailed feasibility study was made by a consortium. Members of the joint venture called Alcoma were except AAC, the Malawian government and the Portuguese Champlimaud Group. Aluisse participated as a technical consultant. Resources totalling 28.8 Mt of ore were proved with an average Al_2O_3 -content of 43.9 per cent. The project was, however, not carried further due to the poor infrastructure at the time and hence the high investments needed as well as the lack of electric power.

British Gypsum

In 1984 BPB (Malawi), a subsidiary of British Gypsum suspended a decade long project studying the Kapirikamodz vermiculite deposits.

Other companies

Exploration has also been carried out by the following companies:

Reynolds International Inc, fluorite; International Nickel SA (pty) Ltd, zinc, copper, nickel; Eland Exploration, zinc, copper, nickel; Hermes Mining, sapphire-ruby; Union Carbide, tungsten, tin.

Exploration for diamonds, rutile/ilmenite has also been reported.

coalfield that has attracted the most interest. This field is estimated to consist of 800 Mt coal in the probable and possible categories.

The coalfields have also been explored by foreign interests such as the Japan Overseas Development Company and the South African Malawi Mineral Development Section mentioned above.

In 1985 MDC started excavation to determine the viability of coal mining at Livingstonia. MDC, which is the mother company of the Portland Cement Co intends to use the coal at its kilns at Changanalume. If the coal is found to be suitable production could start in 18 months' time according to company sources.

Through SADCC Malawi is participating in several projects to improve its energy supply situation. These projects are covering both coal mining, hydro-carbon exploration, mini hydro electricity plants, fuelwood and ethanol production from sugar cane.

Legislation

In order to expand the mineral production a new Minerals Act was introduced in 1981. The new act replaced three previous acts which were not considered to stimulate the fullest examination and exploitation of the mineral resources of the country.

The new act is administered by the Ministry of Forestry and Natural Resources and its two departments for the mining sector, Mines Department and the Geological Survey Department.

The mineral licences are divided into three categories:

- *Mineral Permit*, which is issued more or less on demand and granted to individuals wishing to produce building materials such as bricks.
- *Prospecting Licences and Mining Claims* are intended for more sophisticated small scale producers such as the lime producers.
- *Mineral Rights* which can be divided into three subgroups are intended for

large investors. This kind of permit has not been available in the earlier legislation.

The *Reconnaissance Licence* is valid for 1 year for a specified area, usually not more than 100 000 km², and gives the right to do prospecting. The *Exclusive Prospecting Licence* is valid for three years and for an area of 2 500 km². Detailed quarterly reports are required and a successful holder has the right to apply for a *Mining Licence*. This may be granted for a period up to 25 years and is subject to certain conditions.

Mineral policies

The government of Malawi has three main areas of interest concerning minerals:

- industrial minerals,
- energy minerals and fertilizers,
- minerals for export.

The production of industrial minerals could make important import substitution possible specifically in the building materials industry.

There is today a considerable fuel deficit in Malawi. Coal, particularly for the tobacco industry but also for the cement-industry is an important substitution possibility. In 1984 72 300 t of coal was imported from Mozambique, Zimbabwe, South Africa and Zambia. The requirements for the cement production at Changanalumi is about 12–15 000 t of coal annually.

Fertilizers for the coffee plantations could possibly be based on locally available apatite, but production is dependent on the manufacture of sulphuric acid in Malawi.

Export oriented mineral production has not yet taken place and the slow-down in exploration probably means a considerable delay of any future export.

The government sees as its main role in the mining industry to provide basic geological information and to carry out preliminary assessment work on potential orebodies to encourage the private

mining companies or entrepreneurs to take over. In the last few years the government has gradually realized that it may need to take a more active role in the development of industrial minerals for local consumption since the foreign mining companies are not interested in this area.

The intention is to increase public investment in the mining sector from less than 1 per cent of total public investment to at least 5 per cent up to the end of this decade.

The government has concentrated its efforts in the following areas: Lime is an important raw material for the *building industry* and is also consumed in the manufacture of *pulp* and in the *alumina industry*. These are two industries which are discussed as potential growth sectors in the Malawian industry. The aim is to improve present quality of production and also to raise the level of production.

The possibility of establishing a pottery industry in Malawi has been studied in an UNIDO project. Suitable raw materials for the manufacture of earthenware to supply local demand could all be obtained in the area around Liwonde. No production has started so far, but trial production is under way.

All in all it is hoped that the present imports, valued at around 15 MWK, could be substituted by local production towards the end of the decade.

To counteract the slow down in prospecting by private companies during the last two years, the government has tried to attract new foreign interest through a special advertising programme run by the Malawi Export Promotion Council. The availability of corundum deposits has been particularly emphasized.

The government has also been negotiating with the French BRGM for two years concerning tin and tungsten exploration.

Within the framework of the SADCC five Year Program for the mining sector (1986–1990) the Mulanje bauxite deposit has once again come into focus. A

Table 1
Classification of mineral deposits

Group 1 ¹	Group 2 ²	Minor occurrences ³	
Apatite	Barytes	Asbestos	Molybdenite
Bauxite	Chromite	Beryl	Nickel
Clays (incl kaolin)	Copper	Diatomite	Platinum
Coal	Corundum	Galena	Semi-precious stones
Kyanite	Fluorite	gold	Talc
Limestones	Graphite	Gypsum	Tantalum
Monazite/strontianite	Mica	Iron ore	Zinc
Niobium	Nepheline syenite	Magnesite	Zircon
Uranium	Sulphur	Manganese	
	Titanium		
	Vermiculite		

Notes:

¹ Deposits are known to exist in substantial tonnages and with favourable economic circumstances. Could make an important economic contribution to the economy of the country.

² Smaller deposits that are nevertheless of some importance.

³ Deposits with little or no economic potential.

Source:

The Geology and Mineral Resources of Malawi, 1973.

Table 2
Mineral production of Malawi

Year	Limestone (t)	Cement (t)	Gemstones
1984	—	70 058	—
1983	109 186	70 318	—
1982	79 758	55 453	—
1981	116 118	77 926	—
1980	133 321	92 177	—
1979	153 430	102 820	—
1978	155 299	102 785	—
1977	116 653	—	—
1976	149 254	—	—
1975	158 355	—	3.5 t
1974	136 045	—	24 t
1973	156 407	—	9 t

Note:

— No figure available.

Source:

Mining Annual Review, various years.

project for the joint exploitation and processing of the Mulanje and Manica bauxite deposits in Malawi and Mozambique has been approved. Due to a lack of funds the project has not yet been started. It is anticipated that a feasibility and market study of a joint production facility and mainly regional marketing in the SADCC countries should be made in two years time. Up to now the SADCC countries are totally dependant on imports of aluminium. The intention is to start a production of 125 kt/year.

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