

THE MINERALS INDUSTRY OF MALAWI
(A SAREC-FUNDED PROJECT)

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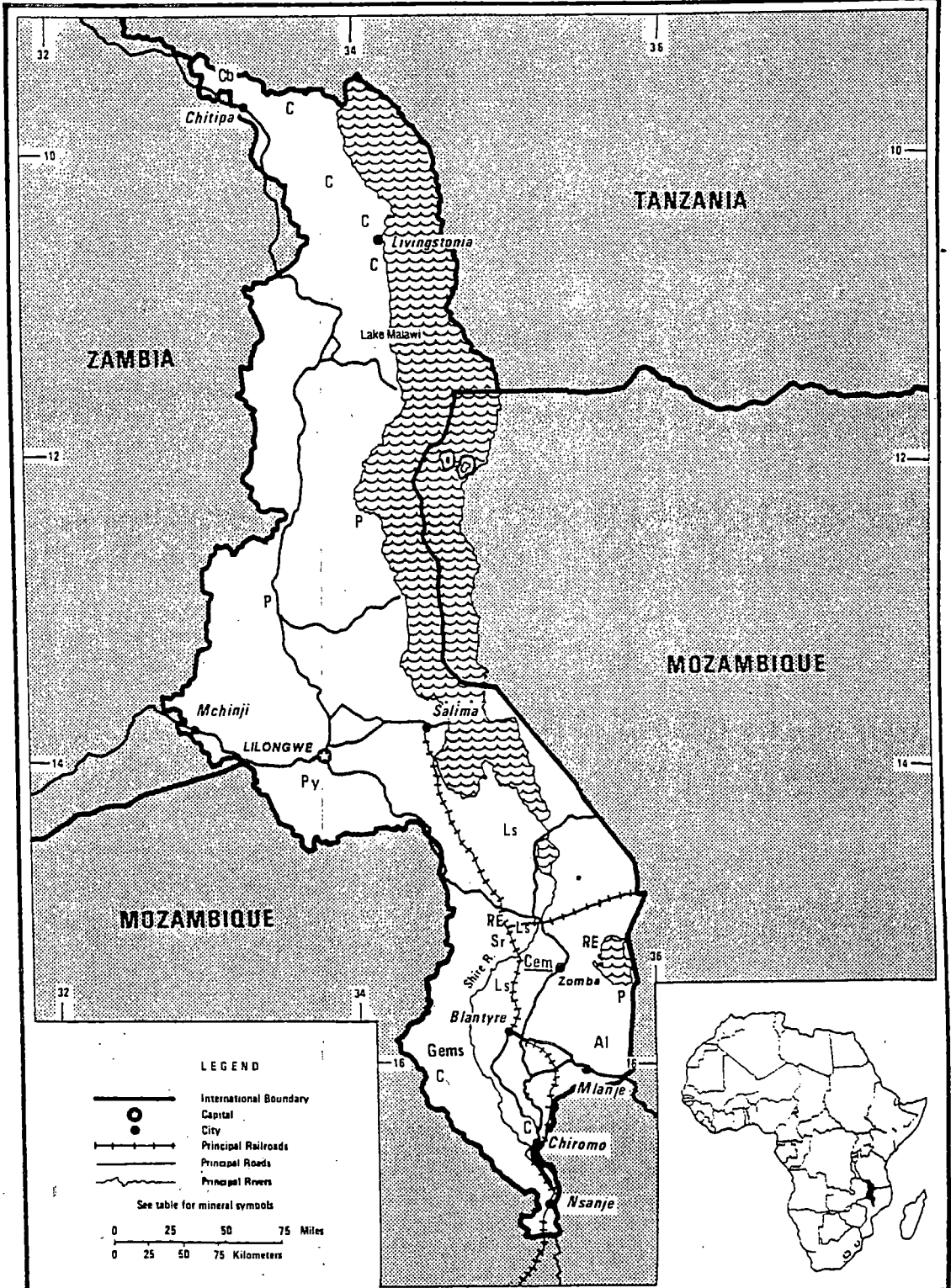
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Fig. 9

MALAWI

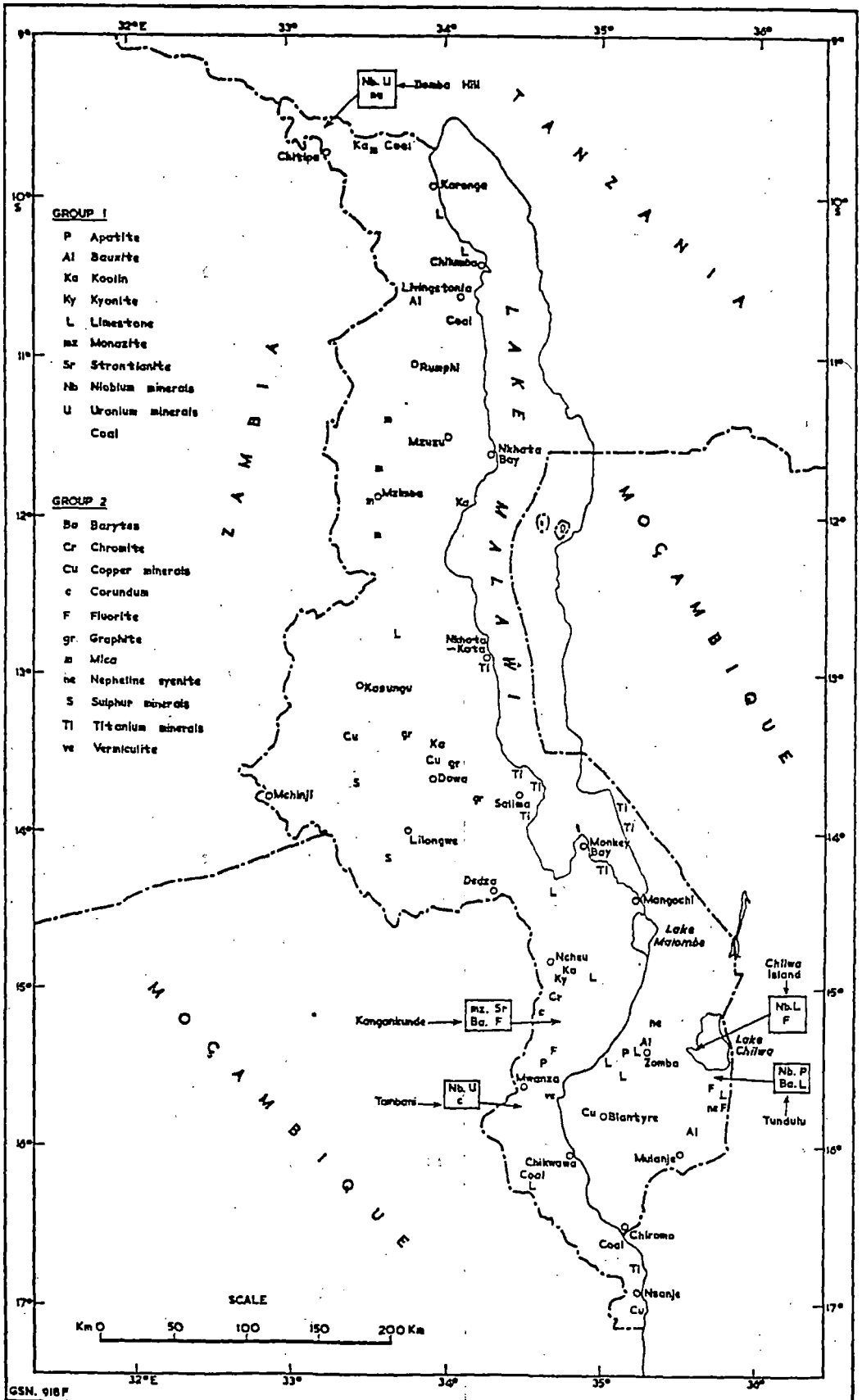
AREA 119,000 sq km

POPULATION 8.0 million



Source: USBM 1984

MALAWI : MINERAL DEPOSITS



The Minerals Sector of Malawi

Introduction

History

The territory of what is now the state of Malawi is thought to have been one of the earliest areas of settlement by the iron age Bantu-speaking cultures, in the fourth and fifth centuries¹. These people brought iron mining and smelting technologies to the area and all around Lake Malawi/Nyasa ancient iron slag heaps are found.²

Due to its position on the Lake, on the Zambezi River (via the Shire) and at the end of the Rovuma River valley, Malawi has long been on the ancient African trade routes from the East Coast to the interior. From the 10th to the 12th Century Malawi was on the trade route bringing gold from Zimbabwe, through Tete and on along the Rovuma valley to the Arab and Swahili traders on the east coast (Kilwa) from where it was taken by boat (dhow) to the Arab world and India.

By the end of the 15th Century the Maravi³ Kingdom had come into being at the southern end of the Lake, and by the 17th Century extended all the way to the coast.⁴ In the 18th Century Malawi was increasingly drawn into the lucrative trade in slaves and ivory, first by the Nyamwesi traders of Tanzania, from northern Malawi, then by the Yao trading system from southern Malawi along the Rovuma valley to Kilwa and later by the expanding Zanzibari trading system under Seyyid Said.⁵

The arrival of Nguni raiders (Zwangendaba) in about 1840 plus the expansion west of the Yao caused the collapse of the Maravi Empire, which was by then limited to the Cewa country south-west of Lake Malawi/Nyasa. "In a land where traditional society was disintegrating in the face of (slave) raids from the Yao and invasions of the Ngoni, the Zanzibaris had little alternative but to attempt to take political control themselves".⁶ They set up permanent posts at Nkhotakota, in the centre on the west shore, and on the northern shores.

In the 1870's, following European interest aroused by Livingstone's safaris, two Scottish missionary societies set up in southern Malawi with help from a Scottish trading company, the African Lakes Company. This marked the beginning of the end of slave trade and resulted in a "de facto" British colony. In 1883 the British foreign office appointed a consul (Johnston) in Malawi, mainly due to British public outcry against the continued slave raids, which was followed by attacks on the slavers.

In 1889 Nyasaland, as it was then known, became a formal British Protectorate and in 1890/1 its borders were decided by the Anglo-Portuguese agreements. In 1891 Cecil John Rhodes' Charter Company agreed to subsidise the Protectorate at the rate of 10,000 UKP/annum in exchange for an extension of their charter to include Zambia (northern Rhodesia).⁷

Unlike the two Rhodesias (Zimbabwe and Zambia), which were colonised by a mining company (Rhodes' BSAC) in search of mineral riches to provide profits for their shareholders, Malawi was colonised in a sense by default. In part due to British public indignation over the continued slave trade in the area, in part to limit the territorial designs of Germany to the north (Tanganyika) and the Portuguese to the east and south (Mozambique) and in part no doubt to secure British commercial (trading) interests.

In the early fifties the settlers of southern Rhodesia (Zimbabwe) sought to counter the South African economic block by creating the Central African Federation of the two Rhodesias plus Nyasaland, which

came into being in 1953. In 1958, at the request of the Nyasaland African Congress (NAC), Dr Hastings Banda returned to Malawi from the UK, became president of the NAC and launched the campaign against the settler-dominated Federation. By 1962 the British permitted Nyasaland to withdraw from the Federation and in 1963 Banda was sworn in as the first Prime Minister.

The following year Nyasaland became independent as Malawi under Banda who immediately set about consolidating his power by sacking Ministers opposed to his leadership. In 1966 Malawi was declared a republic with Banda as the executive President and his Malawi Congress Party (MCP) as the only party.⁸ In 1970 he declared himself President-For-Life and has spent the last two decades consolidating his political and economic position.

The South African Connection

At Independence in 1964 Malawi's economic dependence on the Republic of South Africa was extremely low in terms of trade and investment, but high in terms of migrant workers. Since then Banda has built up a close relationship with the apartheid regime and in 1967 Malawi became the first, and last, independent African state to recognise the RSA and to open a full embassy in Pretoria. From 1969 to 1971 South Africa provided loans for the new capital, Lilongwe, and for the link to the Nacala railway.

South Africa is now the country's largest trading partner, a major source of investment and aid and about 20,000 Malawians used to migrate each year to work on the South African mines⁹, but almost all migrants to the mines ceased in 1988 ostensibly because the Malawi government objected to its citizens being HIV tested¹⁰. In addition South Africa has helped train the Malawian armed forces and its internal security units.¹¹

During the anticolonial struggle in Mozambique by Frelimo from 1965 to 1975, Banda consistently collaborated with the Portuguese who reciprocated by training and equipping the Malawi navy on the Lake. Malawi also helped the Portuguese in setting up a rival independence movement, for the liberation of northern Mozambique only. After the independence of Mozambique in 1975, the remnants of this group continued raids into Zambezia Provinces from Malawi and in 1980 a unity agreement was signed between this group and the MNR (Mozambican National Resistance) operating from South Africa, which had been set up by the Rhodesian Government in the late 1970's.

From 1982 the MNR opened up fronts in Zambezia Province, Nampula Province and Niassa Province operating from Malawi. Columns marched through the countryside pillaging, burning and looting, supplied from the air by South African planes operating from Malawi. In 1988 a study on the MNR commissioned by the US Department of State concluded that the "only reciprocity provided by RENAMO (MNR) for the efforts of civilians is the possibility of remaining alive".¹² The extent of the destruction and human suffering caused by the South African sponsored banditry in Mozambique is well documented elsewhere.¹³

Paradoxically, both of Malawi's rail links to the coast, to the ports of Beira and Nacala, have been put out of action by the MNR operating from Malawi which has caused enormous extra transport costs to the economy.¹⁴ Imports and exports have had to be routed overland via Zimbabwe and Zambia to South African ports and via a new, British-funded, link to Tanzania to Dar es Salaam. However, it has been reported that since 1988 Banda has cut back his country's overt support to the MNR, allowing the first trains to operate on the Malawi-Nacala line in 1989. The Malawi-Beira line though remains out of action. A reason put forward for this paradox is that Banda is still hankering after an access to the sea (the "Greater Malawi" that stretched to the Indian Ocean) and was supporting the MNR on the understanding that his territorial claims would be realised¹⁵ as had been his strategy in supporting a

movement for the north of Mozambique against the Portuguese. But, after it became clear that the Frelimo regime was not about to collapse, and the extra transport costs increased, he withdrew his support for the MNR.

The Economy

Malawi is located in central-east Africa between latitudes 9°22' and 17°08'S and longitudes 32°40' and 35°55'E. The 1988 population was 7.7 million and the total land area is 118 thousand km² giving the highest population density in the SADCC region. The density is even higher when one takes into consideration that a large part of the area is made up of water, that of Lake Malawi/Nyasa and the minor lakes in the south (Malombe and Chilwa). Arable land is at a premium in all parts of the country. However, the land is generally very fertile and Malawi has generally had a commercial maize surplus, although many of the poor peasants are malnourished (due to inadequate land).

The local currency has been devalued steadily over the decade, from 1.23 USD to the Kwacha to 2.56 Kwacha to the USD, in an attempt to compensate for declining terms of trade during the global recession in the 1980's. This in turn was the major cause of rapid inflation estimated at 239% from 1980 to 1988 (CPI).¹⁶ The economic crisis of the eighties also provoked an increasing debt burden, which rose from 52% of GDP in 1980 to 93% in 1988.¹⁷

Table 1. MALAWI, BASIC ECONOMIC INDICATORS

(KWACHA)		1980	1981	1982	1983	1984	1985	1986	1987	1988
Population	M	6.0	6.2	6.4	6.6	6.8	7.1	7.3	7.5	7.7
Pop density	/km ²	51	53	54	56	58	60	62	64	66
Forex Rate	/USD	.81	.90	1.06	1.17	1.41	1.72	1.86	2.21	2.56
CPI		100	110	120	136	151	174	200	253	339
GDP mp	G	1005	1108	1244	1436	1707	2022	2302	2866	3699
GDP/cap	USD	206	199	183	186	178	166	170	173	187
GFCF	M	223	168	182	197	223	260	243	333	480
GFCF/GDP	%	22%	15%	15%	14%	13%	13%	11%	12%	13%
Debt	GUSD	.65	.69	.70	.72	.73	.99	1.00	1.16	1.35
Debt/GDP	%	52%	56%	60%	59%	60%	84%	81%	89%	93%
Labour Force	k	348	315	327	388	381	411	428	430	
Govt Revenue	M	199	215	231	273	311	384	465	506	

Sources: RBM 1986/7/8/9, NSO 1988.

Gross fixed capital formation has also reflected the crisis, falling from 22% of GDP in 1980 to 13% in 1988. GDP per capita in current US dollars declined from 206 in 1980 to 187 in 1988 (calculated by converting Kwacha at the average annual exchange rate).

Malawi's main exports in 1988 were tobacco (63%), tea (10%) and sugar (10%). South Africa has become the main trading partner. At independence in 1964 only 6% of imports and 5% exports were with South Africa¹⁸ compared to 35% and 11% by 1987. Since Malawi joined the SADCC in 1980 exports to the region have fallen from 11% of total exports to 9.5% in 1987, while those to the RSA have increased from 3% to 11% in 1988. Imports from the SADCC and from the RSA have remained constant throughout the eighties at around 8% and 37% respectively.

The number of official migrant miners working in the RSA fell from over 100 thousand in 1971 to almost none after the air disaster in 1976, then increased from 14 thousand in 1980 to about 20 thousand in 1988 while their remittances made up around 5% of foreign currency earnings. However in 1988 Malawi refused to allow its citizens to be tested for the AIDS virus and by 1989 almost all Malawian migrants had returned home. This is likely to worsen the unemployment situation, pushing wages down even further.

Table 2. MALAWI, TRADE AND MIGRANTS (Kwacha)

		1980	1981	1982	1983	1984	1985	1986	1987
Exports fob	M	228.0	244.0	253.0	289.2	440.7	429.7	462.1	611.6
SADCC	M	25.4	32.0	23.1	31.6	38.0	45.8	43.8	12
PTA	M	24.5	31.8	21.4	24.7	31.6	38.6	23.0	
RSA	M	7.5	12.1	14.9	22.0	32.0	26.8	33.0	67.3
% SADCC	%	11.1%	13.1%	9.1%	10.9%	8.6%	10.7%	9.5%	
% RSA	%	3.3%	5.0%	5.9%	7.6%	7.3%	6.2%	7.1%	11.0%
Imports cif	M	357.3	312.4	322.7	362.9	381.7	492.6	478.0	655.1
SADCC'	M	22.7	26.9	30.6	38.4	48.2	40.6	33.5	
PTA'	M	21.5	25.7	29.5	37.3	46.4	39.9	31.8	
RSA'	M	131.5	103.9	116.5	141.1	153.5	187.3	138.7	229.3
% SADCC'	%	6.4%	8.6%	9.5%	10.6%	12.6%	8.2%	7.0%	
% RSA'	%	36.8%	33.3%	36.1%	38.9%	40.2%	38.0%	29.0%	35.0%
Trade Balance		-129	-68	-70	-74	59	-63	-16	-44
Miners RSA	k	14.2	15.2	16.0	15.8	18.2	19.6	20.0	20.0
Remittances		13.3	18.9	21.2	21.1	22.1	17.9	22.7	33.6
Remit/miner	k	.937	1.243	1.325	1.333	1.214	.913	1.135	1.680
Remit/Exports%		5.8%	7.7%	8.4%	7.3%	5.0%	4.2%	4.9%	5.5%

Sources: RBM 1987/8/9, NBM 1986/7, NSO 1988.

Banda has interests in two major Malawian companies, Press Holdings and Admarc which "between them...control the banks, most agricultural estates, and most private companies. ... Together, Press and Admarc control more than half the economy".¹⁹ In many ways Malawi is more akin to a fiefdom where the ruler/despot directly controls the security forces, the economy and the civil service, than a modern state.

The Mining Sector

General

The Malawian minerals sector has always been small, generally contributing less than 0.5% to GDP, mainly from cement and coal production. Essentially no minerals are exported and the mining sector employment is typically only 0.1% of the total formal labour force at about 400 workers, but if quarry (stone) and limestone (lime and cement) workers are included, total employment is around 3,000 workers. Average wages in the mining sector are about 60% of the national average, above agriculture but well below manufacturing and services.²⁰

Table 3. MALAWI, MINERALS SECTOR (kwacha)

		1980	1981	1982	1983	1984	1985	1986	1987
GDP Mining	M	5.9	5.4	4.7	6.1	7.5	6.8	6.7	8.6
% GDP Mining	%	.6%	.5%	.4%	.4%	.4%	.3%	.3%	.3%
Mineral Prod*	M	8.8	8.0	7.0	9.1	11.1	10.0	10.0	12.8
Min. Prod/cap		1.5	1.3	1.1	1.4	1.6	1.4	1.4	1.7
Min. Exports	M	.0	.0	.0	.0	.0	.0	.0	.0
Mining labour	k	.6	.6	.6	.5	.3	.3	.3	.4
% mng lab	%	.2%	.2%	.2%	.1%	.1%	.1%	.1%	.1%
avg mng wage	k	.34	.38	.42	.45	.85	.57	.62	.53
avg REAL wage	k	.34	.34	.35	.33	.56	.33	.31	.21

* value of cement output until 1984 and cement plus coal from then on.

Source: NSO 1988.

With both the railroads to the coast under MNR attack, exports of all minerals other than precious minerals are currently out of the question, but with the normalisation of these routes certain known

mineral deposits such as titanium and monazite (rare earths) sands and bauxite might warrant reassessment.

Responsibility for the mining sector comes under the Ministry of Forestry and Natural Resources which has two relevant departments, the Department of Geological Survey and the Department of Mines. In 1985 a parastatal company, Mining Investment Development Corporation (MIDCOR), was created to undertake mining ventures, either on its own or jointly with private capital. Since its formation MIDCOR has mainly been involved in the development of the coal deposits in the north (Livingstonia) with French aid.

In its publication "Statement of Development Policies"²¹ the government outlines four potential benefits from the development of the minerals sector:

- 1) Diversification of the economy away from agriculture.
- 2) Expansion of industrial employment.
- 3) Increase in forex earnings, both directly and indirectly by substitution of imported minerals.
- 4) Broadening of the geographical spread of industrial development.²²

Surprisingly little mention is made of using minerals for resource-based industrialisation, or the potential role of minerals in the development of other sectors of the economy, particularly agriculture as regards fertilizer minerals.

Economic Geology

The geology of Malawi can broadly be divided into three groups of rocks,²³ namely:

- 1) The Basement Complex
- 2) Post-Basement Complex Sediments
- 3) Intrusives

The Basement Complex is mainly made up of gneisses and granulites and constitutes the Malawi province of the Mozambican orogenic belt. It occupies about 85% of the land area of the country and is host to a variety of metamorphic deposits including marble, kyanite, graphite and iron ore, and pegmatites containing mica, uranium minerals, galena (lead), gold, molybdenum, zircon (titanium) and corundum.

There are also several minor mineral occurrences associated with the mafic and ultramafic rocks of the Basement Complex, including asbestos, chromite, corundum, talc, magnesite, copper and nickel.

The post-Basement rocks are mainly made up of Karoo sediments and volcanics in the extreme north and south containing substantial coal reserves and recent (Cainozoic) sediments containing resources of limestone, residual clays (including bauxites), and unconsolidated heavy mineral sands (titanium and rare earths).

The most important intrusives are the carbonatites and syenites of the Chilwa Alkaline Province of upper Jurassic to lower Cretaceous age, containing rare earths in monazite and strontianite in carbonatite dykes (Kangankunde). Apatite (phosphate) rich intrusives occur at Tundulu and pyrochlore-sovite at Chilwa Island. Fluorite and barytes are found in vein deposits.

Legislation

The ownership of all minerals is vested in the President on behalf of the people of Malawi. The Mines and Minerals Act 1981 provides for non-exclusive prospecting licences (NEPL) which allows prospect-

ing in a particular district and is designed for the individual or small-scale operator. If successful a mining claim, which is one hectare in extent, can be taken out. Larger companies can take out a Reconnaissance Licence or an Exclusive Prospecting Licence (EPL) for period up to three years. A licence lays down a prospecting programme in which the amount of money to be spent annually is specified.²⁴

After prospecting a Mining licence, up to 25 years, can be taken out. Section (10) of the Act enables a company to apply for an agreement which lays down special terms and conditions if a company requires special treatment, normally tax treatment. Royalties vary from 3% for building stone, 5% for precious metals and 10% for precious stones, on gross sales.

The Petroleum Act of 1983 and its regulations of 1984 provide for the issue of oil exploration and exploitation licences.

The Malawian mining legislation is similar to that of other SADCC countries, particularly ex-British colonies and cannot be considered a deterrent to mineral developers. The reasons for the lack of a mining industry must therefore lie elsewhere.

Mineral Production

General

The only minerals currently exploited are limestone for cement and lime, dolomite, coal, clay for bricks and tiles, stone (aggregate) for building and semi-precious stones.

Table 4. MALAWI, MINERAL PRODUCTION, 1980-88

Mineral	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	Avg ¹	
Coal	kt					1.8	10.5	18.7	29.4	41.7	20.4	
Limestone	Mt	.138	.116	.080	.098	.105	.092	.103	.107	.108	.121	.107
Cement	kt	92.2	77.9	53.4	65.5	70.1	61.7	69.7	72.8	84.9	102	75.0
Lime	kt					1.92	2.77	3.13	2.48	na	2.58	

¹average 1980-88 for limestone and cement, 1985-88 for lime and coal. Source: Dept. of Mines 1988/9.

Carter²⁵ divides Malawi's mineral resources into the following three groups:

- Group 1) Mineral deposits with both substantial tonnages and favourable economic circumstances.
- Group 2) Smaller deposits, but still of some economic importance.
- Group 3) Minor mineral occurrences of little or no economic importance.

In the first group are, in alphabetical order, apatite, bauxite, clays (kaolin), kyanite, limestone, monazite and strontianite, niobium minerals and uranium minerals.. The second group includes barytes, chromite, copper minerals, corundum, fluorite, graphite, mica, nepheline syenite, sulphur minerals, titanium minerals and vermiculite.

The third group, comprising minor mineral occurrences, includes asbestos, beryl, diatomite, galena, gold, gypsum, iron ore, magnesite, manganese minerals, molybdenite, nickel minerals, platinum, semi-precious and ornamental stones, talc, tantalum minerals, zinc minerals and zircon.

Limestone-Cement-Lime

Limestone (calcitic marble) has been quarried for cement production at Changalume near Zomba since 1970 by the Portland Cement Company, a subsidiary of the Malawi Development Corporation (MDC). Clinker is produced in kilns at Changalume and it is ground and gypsum is added at a mill at Blantyre.

Limestone production peaked in 1979 when 168.6 kt were produced from which 113 kt of cement were made. Since then production of limestone has averaged 107 kt and cement 75 kt, mainly due to a decrease in demand from the construction industry. The industry employs about 700 people.

Another calcitic marble deposit has been investigated in the Chikoa-Livwezi area and was found to be suitable for a cement plant of 126 kt/annum, but there are no immediate plans for its development given current weak demand.

The quarrying of limestone for small-scale limestone production is carried out in the districts of Blantyre, Chikwawa, Machinga, Ntcheu and Karonga. Total lime production runs at 2.5 to 3.5 kt/an, for paint, as a soil conditioner and for the sugar industry. A new, more efficient, vertical shaft kiln has been developed at Chenkumbi, jointly by the Department of Mines and the Intermediate Technology Development Group (ITDG).

Coal

There are four main coal deposits in Malawi, two in the south, Nkombedzi and Chiromo (Shire valley) and two in the north near Lake Malawi/Nyasa, Livingstonia and Nkana near the Tanzanian border. Coal mining started in 1985 in the north in the Livingstonia field in a small Karoo graben at Kaziwiziwi by the newly-formed MIDCOR. It is a small-scale operation producing about 30 kt/an of coal, by bord and pillar mining, which is transported 700 km by road to the markets in the south, principally the clinker plant near Zomba.

In 1987 the French government provided a soft loan for Charbonnages de France to develop a pilot mining operation at Mchenga, about 40 km south-east of Kaziwiziwi, which was running by 1988 operated by MIDCOR.²⁶ Part of the French aid included the establishment of a Malawian coal laboratory in Lilongwe.

Coal from the Kaziwiziwi mine has about 20% ash (usually mudstone) while the Mchenga mine coals have 15% ash. Reserves at the former are estimated at 315 kt and at the latter 2.8 Mt.²⁷

Table 5. MALAWI, COAL SUPPLY

Year	Imports	Production	Total supply
1970	43.9	--	43.9
1975	71.3	--	71.3
1980	65.4	--	65.4
1985	32.9	1.8	34.7
1986	27.7	10.7	38.5
1987	18.3	18.3	36.6
1988	16.0	29.4	45.4

Source: Dept of Mines, 1989

Until 1977 almost all Malawi's coal needs were imported from Moatize Colliery across the border in Tete Province in Mozambique, at the rate of about 60 kt/annum. By 1982 half the imports were coming from South Africa. The Moatize operation mainly produced metallurgical grade coking coal for export (about 0.5 Mt/an), with small amounts of steam coal for the local and Malawian market. No coal has

been exported via Beira since the railway was put out of action by the MNR in 1982 and likewise imports up the same line from South Africa to Malawi all but ceased.²⁸

Exports from Moatize by road to Blantyre became hazardous due to MNR ambushes. Due therefore to its own collaboration in the destabilisation of Mozambique, in 1983 Malawi's started experiencing coal shortages and the decision was taken to develop their northern resources, even though the, already operating, Mozambican colliery was closer to the consumers. In 1986 the cost/t of Moatize and Kaziwiziwi was about the same but the cost of South African coal was five times more, and Zambian and Zimbabwean coal three times more expensive.

Within Malawi the question of why the northern and not the southern coalfields were developed has been raised, but it appears that the objections to the northern development are political rather than technical, as the southern coalfields have lower grade, more deformed and hence less economic seams.²⁹

Other Minerals

Other minerals currently exploited are clays at Linthipe and Mangochi (Malindi Potteries), dolomite for scourers, gold (18 gm in 1987), and gemstones.

The principal economic apatite deposit is at Nathace Hill, Tundulu, in Mulanje District where the open-castable reserves are estimated at 1.25 Mt at 15% P_2O_5 . The development of this resource for the manufacture of phosphate fertilizers would have profound impact on agricultural productivity, but would be dependent on the availability of cheap sulphuric acid. The numerous sulphide mineral deposits, particularly at Malingunde Hills near Lilongwe, could possibly provide the basis for a sulphuric acid plant. Due to the small reserves (1.25 Mt) this deposit would be best developed for the domestic market only.

The bauxite reserves of the Lichenya Plateau of the Mulanje massif are estimated at 29 Mt with a grade of 44% Al_2O_3 . These constitute the only appreciable resource for an aluminium industry in the SADCC region and the SADCC Mining Coordination Unit has completed a study to consider the feasibility of establishing an alumina/aluminium industry using hydropower from Mozambique.³⁰ The regional market has been estimated at 15 kt/an of aluminium (about 70 kt/an of bauxite).

The rare earth oxide deposit of the Kangankunde Hill carbonatite complex 25 km from Balaka contains high cerium-low thorium monazite with strontianite as a byproduct. The high grade core contains 10% rare earth oxide and the feasibility of exploiting this deposit is under consideration by BRGM of France.³¹

A sandstone containing uranium at Kayelekera in the north has been studied by the Central Electricity Generating Board of the UK who are considering establishing a mine. Kyanite was exploited in the 1950's at Kapiridimba Mountain about 16 km south of Ncheu. The vermiculite reserves at Kapiri Kamodzi deposit are estimated at 300 kt grading 10% vermiculite and are also the subject of a SADCC utilisation study together with deposits in Zimbabwe.

Niobium-bearing minerals (pyrochlore, betafite and columbium) occur principally in the carbonatites of the Chilwa Alkaline Province complexes, but also are associated with nepheline syenites. At Ilombo Hill, 25 km NW of Chipita, the ore grades 7.5% Nb_2O_5 and has associated uranium, but there are no current plans for the development of this deposit.

Heavy mineral sand deposits occur on the beaches of southern Malawi containing monazite (rare earths) and titanium minerals (ilmenite and rutile) and are part of a SADCC study project on the

“Assessment of Heavy Mineral Sand Deposits and Feasibility of a Titanium Oxide Plant”, together with the resources of Mozambique and Tanzania.³²

In 1988 the United Nations Revolving Fund for Natural Resources Exploration (UNRFNRE) published a study on potential mineral exploration targets in the SADCC region³³ which, for Malawi, recommended that the following deposits warranted further exploration work:

Vermiculite, Mwanza,
Heavy Mineral Sands, south Lake Malawi/Nyasa,
Limestones, across the country,
Refractory clays and kyanite, several locations,

All of these have been incorporated into SADCC Mining Sector Projects³⁴ which will be implemented as soon as funding is secured.

In 1987/8 hydrocarbon exploration work was carried out by Duke University (Lake Malawi/Nyasa) and Placid Oil (Shire Valley) which was inconclusive. Mobil Oil is reported to be considering further exploration.³⁵

Infrastructure

Traditionally the Lake has served as Malawi's principal highway for transporting goods and it continues to be an important form of transport. The south of Malawi is well served by railways running from Mchinji, on the border west of Lilongwe, to Salima, near the Lake, then down the Shire Valley, where the two international lines come in from the ports of Nacala and Beira in Mozambique. The Beira line has been out of action since 1982 and the Nacala line operates sporadically, depending on the security situation in Mozambique.

Malawi boasts a relatively good paved road network that has been extended to the north and on to Tanzania to connect to the Tazara railway. The country also has international road links to Zambia (paved, bad condition), to Zimbabwe via Tete Province in Mozambique (paved, reasonable condition), to Nacala in Mozambique (unpaved, impassable) and to Beira in Mozambique (unpaved, impassable). The main route for imports and exports is currently to Zimbabwe with Zimbabwean military convoys through Tete in Mozambique.

Unlike other SADCC countries, Malawi has no mineral deposits that cannot be exploited due to their distance from the transport system (water, road or rail), but due to the security problems on the two export railroads, the development of low value export minerals is out of the question at present.

The south of the country is well covered by the existing electricity grid, but any mineral developments in the north of the country would most probably require their own power generation.

Discussion

Malawi's small minerals industry in comparison with other countries in the region is mainly due that to the fact that it has no major deposits of precious or base minerals such as the diamond pipes of Botswana, the Copperbelt of Zambia or the Great Dyke of Zimbabwe. It does however have significant deposits of industrial minerals, particularly bauxite (aluminium), apatite (phosphate), monazite (rare earths) and pyrochlore (niobium), which have not been developed for export, mainly due to their distance from sea ports.

The development of export minerals is clearly limited by access to the Mozambican ports of Nacala and Beira. The former is considered the best natural port on the east coast of Africa and would be the obvious

choice for bulk mineral exports, but its development depends on a normalisation of the security situation in northern Mozambique, a situation in part brought about by the Malawian regime itself, by supporting the MNR dissidents.

Over the last decade some progress has been made in developing the smaller, industrial, mineral deposits for local consumption, such as clays for ceramics, coal for boilers and cement manufacture and lime for industry and agriculture. It would seem a pity however that the coalfields were developed at the expense of a closer, regional, supplier (Moatize Colliery), thereby diminishing the already tiny intra-SADCC mineral trade.

Several mineral deposits are to be reassessed as regional, SADCC, projects including kaolin, heavy mineral sands (both rare earth and titanium minerals), vermiculite and limestones, as possible sources for regional resource-based industries. The small Malawian market is a major limiting factor for the exploitation of a diverse range of industrial minerals, but given the larger, regional, market, exploitation may be feasible, particularly for bauxite (aluminium) and apatite (phosphates).

In conclusion, Malawi is a predominantly agricultural country, and therefore the initial phase of minerals development should be directed towards this, already established market, for the supply of mineral inputs such as lime for soil conditioning and sugar processing. In this regard it would appear that a major project worth considering would be the development of the Nathace Hills apatite and the Malingunde Hills sulphur minerals deposits for the local production of phosphate fertilizers. There is already a substantial market in the large scale commercial farming sector and the potential market for low-priced phosphate fertilisers in the peasant farming sector is also likely to be considerable.

Footnotes

1 Fage 1978.

2 After independence Nyasaland was renamed Malawi and Lake Nyasa Lake Malawi, but the Mozambicans keep the old name (albeit Niassa) as do the Tanzanians. The Lake is therefore referred to here as Lake Malawi/Nyasa.

3 The origin of the modern name, Malawi.

4 Fage 1978, p134

5 Fage 1978, p134

6 Fage 1978, p299

7 Oliver 1972, p196.

8 Drum 1983.

9 17,600 on gold and coal mines alone in 1987. CMSA 1989.

10 Chamber of Mines of South Africa 1989, page 35. 11 Hanlon 1986.

12 Gersony 1988, p42.

13 See for example Hanlon 1986, Martin and Johnson 1986 and 1989.

14 Estimated at 70 MUSD in 1984 alone. Hanlon 1986.

15 David Martin, personal communication, 1989.

16 Reserve Bank of Malawi 1989.

17 World Bank 1990. 18 Tostenson 1982. 19 Hanlon 1986, p236.

20 NSO 1988 21 DEPD 1988. 22 DEPD 1988, p49.

23 This section is based on Carter 1973.

24 Fairbairn 1987 25 Carter 1963, p39. 26 Ottley 1989.

27 Kalyati 1988 28 MIREM 1988. 29 Dept of Mines 1988. 30 SADCC 1990.

31 Ottley 1989. 32 SADCC 1990. 33 UNRFNRE 1988.

34 SADCC Projects 4.0.3/4/5/6, SADCC 1990. 35 Ottley 1989.



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