

8.1 Introduction

The mining sector has been a prime mover of economic development in Zambia for over 70 years, with exports of mineral products contributing about 70 percent of total foreign exchange earnings. Over the last two decades, however, copper production has declined largely because of declining copper ores, poor re-investment into new and existing mines, and unsupportive management practices. In order to boost and make the mining sector viable, the government decided to implement a comprehensive economic restructuring programme aimed at promoting private sector-led development. The privatisation of the industry was completed in the year 2000. With a private sector-driven mining industry, it is hoped that the sector will be better leveraged to spearhead economic growth and poverty reduction efforts.

Over the years, the national economy has developed a comparative advantage in copper and cobalt mining. Deposits of gold, diamonds, zinc, gemstones, coal, and a variety of agro and industrial minerals are also found in Zambia. Large-scale mining is active in copper, cobalt, and coal while small-scale mining is active in a variety of gemstones that include emeralds, amethyst, aquamarine, tourmaline, garnets, and citrine. Emeralds are by far the most dominant. This rich variety of mineral resources offers great potential to provide the needed resources for financing development and poverty reduction. However, the mining deposits are located in undeveloped and remote parts of the country and their exploitation inevitably leads to the development of access roads, telecommunications, and other physical and social infrastructure such as schools and clinics. It is recognised that there are numerous interventions that could be made in the mining sector to make it viable and contribute positively to economic growth and poverty reduction. However, due to limited resources, the first three-year rolling PRSP will mostly focus on targeting resources to the small-scale mining sub-sector.

The mining sector is critical in poverty reduction and in the economic development of the Zambian economy. Lately, mining has been generating between six percent and nine percent of GDP, and contributes about 40,000 jobs to total formal sector employment that currently stands at about 470,000. The fundamental role that the mining sector plays in national development can also be seen in the backward and forward linkages that exist between this sector and others. It provides critically needed inputs for agriculture and agro-chemicals, industrial manufacturing of a wide variety of products e.g. ceramics, paint manufacture, the electricity industry, essential raw materials for the building industry, and for road and telecommunication infrastructure. Clearly, the predominant superstructure of economic development is built upon mining and its products. In this regard, the actual contribution of mining to wealth creation in the economy is far-reaching and has significant multiplier effects that can impact on the general uplift of the country through employment creation, income generation, and stimulation of industrialisation and infrastructure development.

Furthermore, mining has the capacity to condition an increase in the stock of needed skills and expertise, an increase in a broad spectrum of service industries, value addition through downstream processing, and technology transfer to small-scale operators. The orderly development of small-scale mining is also capable of lowering poverty through the creation of development zones or areas in rural mining centres arising from the emergence of mining communities, and the provision of essential agricultural inputs such as lime close to

agricultural areas. It may also offer a facilitating environment to support cottage industries that are related to pottery making, brick making, and increased demand for skills and essential mining equipment and machinery. These considerations point to the potential significance of mining to the reduction of poverty in Zambia.

8.2 Situation Analysis

A number of factors influence the performance of the Zambian mining industry, some of which are outside the country's control. To begin with, it is noteworthy that demand for copper is sensitive to the levels of industrial production in the major industrialised consumers and as such, prospects in demand for this mineral depend, to a considerable degree, upon the strength and duration of world recovery. Table 8.1 shows the fall in demand for copper, zinc, lead, nickel, and tin in two major world recent recessions.

Table 8.1: Metal consumption in recent recessions (percentage change)

| | 1973-1975 | 1979-1982 |
|----------------------------|-----------|-----------|
| OECD industrial production | -8.3 | -4.0 |
| Consumption of: | | |
| Copper | -21.2 | -8.8 |
| Zinc | -27.0 | -10.9 |
| Lead | -14.4 | -9.7 |
| Nickel | -20.4 | -17.8 |
| Tin | -18.8 | -12.1 |

Source: Financial Times, January 1991

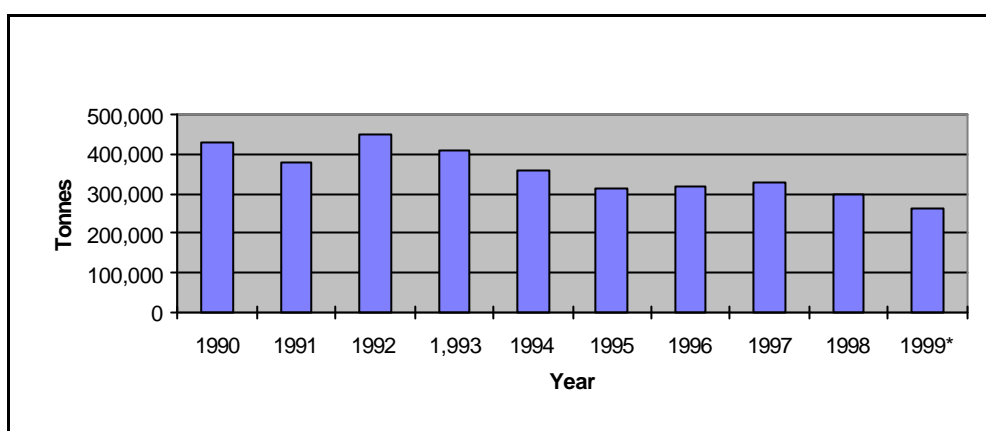
In general terms, production costs worldwide are likely to be significantly lower than they have been in recent years due to technological innovations. Zambia, however, remains amongst the highest cost producers as a result of large indirect costs and high debt service payments.

In terms of performance, a worsening trend is apparent in Zambia's mining sector, particularly at the level of copper production. With the sector under threat of insolvency following the recent decision by Anglo American Corporation (AAC) to consider withdrawing from active involvement in Konkola Copper Mines Limited (KCM), the largest post-privatisation mining company in which it is the majority shareholder, there remain many uncertainties for the sector. Besides, copper output has registered a downward trend for several years now. Production in 1997 was 322,100 tonnes – a slight improvement on the low levels of 315,000 tonnes experienced in 1995/96. This will result in severe consequences for the country's balance-of-payments; the exchange rate; and the economic survival of mining suppliers that are dependent on the copper sector. Figure 8.1 gives the mining sector's copper production trends in Zambia over the 1990-1999 period and clearly shows the declining trend.

Trends in world prices for refined copper, apart from production volumes, have accounted significantly for the country's declining revenue. Copper prices declined by as much as 44 percent since mid-1997 at the onset of the Asian crisis. Although the first quarter of 1999 registered some slight price recovery, it is projected that the subsequent average price would be 40 percent lower than the 1997 figure, a phenomenon that is explained principally by the western commercial stocks which have doubled over the 1997-98 period to 1.2 million tonnes. Current forecasts predict that it will take several years for world copper prices to recover to the 1997 average of 100 cents per pound. In January 1999, the World Bank actually warned that, as a result of excessive supply of metals on the world market, "...it may take several years of rapid economic growth to wear off existing surpluses [of copper] and to

provide conditions for a rise in prices". Figure 8.2 shows the world market prices for refined copper prices.

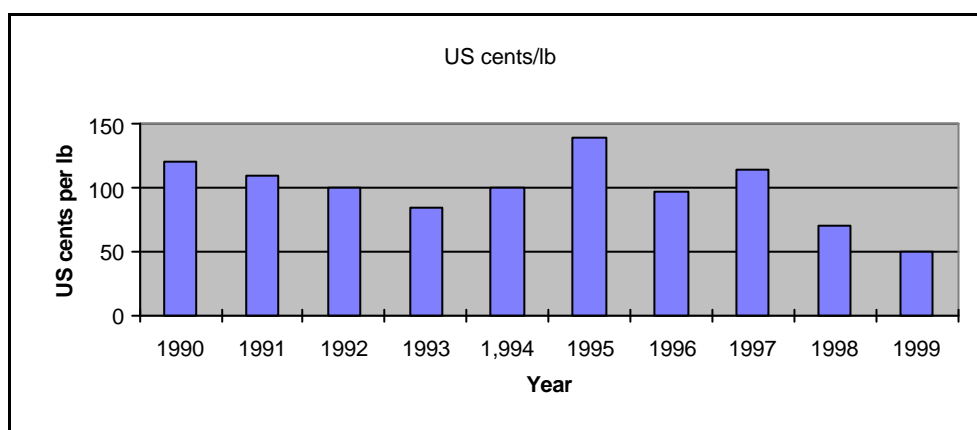
Figure 8.1: Volume of Copper Production in Zambia: 1990-1999 (tonnes)



* Projected

Source: Standard Chartered Bank: *Business Trends Zambia* (several issues)

Figure 8.2: World Market Prices for Refined Copper
(in US cents per lb)



Source: Economic Intelligence Unit

From the above scenario, it is clear that copper production levels are set to continue to fall in the currently operating copper mines and unless more efficient methods of extracting lower grade ores are developed, current reserves in these mines are not expected to last much longer. To develop the large reserves of unexploited ore at the Konkola mine (Konkola Deep), for example, would require major investments that are presently under threat following the uncertainty still surrounding the AAC mining interests in the country.

Notwithstanding the above, the mining sector certainly holds promise for sustainable economic development and poverty reduction. If new mines are opened and existing major mining entities re-capitalised, production could be sustained at least at current levels in the short run and assume upward trends in the long run. The undeveloped ore body at Lumwana in Northwestern Province holds promise with about one billion tonnes of ore grading about 0.7 percent copper. Other undeveloped areas with great mining potential include Kalengwa, Kansanshi, and Mkushi. In addition, the following future expansion projects have been identified by the new mine owners, provided a favourable investment environment continues

to prevail: Konkola Deep Mine Project, Mining at depth at Mindolo, Chambishi, Bwana Mkubwa, Chibuluma South, and Kansanshi.

On the other hand, while the gemstone segment holds great potential for spearheading rural development since most gemstones and other mineral deposits amenable to small-scale mining are located in rural areas, this segment is severely constrained as it lacks appropriate credit facilities and requisite valuation skills, and obtains in areas where infrastructure is least developed. The sub-sector has also been adversely affected by excessive illicit trafficking in gemstones in the absence of a better organised market.

8.3 Sector Programmes/Strategies

8.3.1 Small-Scale Mining

Under small-scale mining, the following programmes, in order of priority, will be undertaken:

8.3.1.1 The Sysmin (Mining Diversification) Programme

Diversification under small-scale mining will entail the broadening of the focus of production from gemstones to include agro and industrial minerals. In order for the programme to be focussed, small-scale mining will be identified. This will also minimise large and developed mines crowding out the small and emerging mines. The programme aims to make available adequate geographical data to small-scale miners and prospectors; enable small-scale miners and processors better able to manage their businesses; improve access to adequate capital and equipment for small-scale miners; equip small-scale miners with adequate mining safety, valuation, and processing skills; enable small-scale miners and processors obtain fair market prices for their products; ensure that effective and fair mining regulations and taxation policies are in place; and facilitate the improvement of the road access to the mining areas. The programme is comprehensive and will complement the efforts of other programmes in enhancing the exploitation of the small-scale mining potential. Financing mechanisms will entail the introduction and implementation of the following, in addition to other alternative options:

- Enterprise Development Fund (EDF): Through its components, the multi-purpose credit facility (MPCF) with two lines of credit, namely, the investment credit and the export pre-shipment facility, the other being the matching grant scheme.
- Trade and Enterprise Support Facility (TESF): Intended to support feasibility and market studies; business re-engineering and corporate recovery; act as guarantor to banks that provide working capital finance; and support preparatory activities for companies seeking to list on the Lusaka Stock Exchange.
- Creation of a revolving fund for provision of working capital.
- Joint ventures/partnership.

8.3.1.2 Re-introduction of the Gemstone Exchange Scheme

There is a lot of tax revenue lost in illicit trafficking of gemstones. The marketing methods of the gemstones have been unsatisfactory and intermediaries have taken advantage of the marketing situation, thereby obtaining gemstones directly from the workers at the expense of the mine owners. Even in cases where the intermediaries get the gemstones from the mine owners themselves, there is lack of skills in valuation of the products and this greatly disadvantages the producer who has no other immediate market for the product except the intermediaries. This affects the returns as well as the capacity to reinvest in the sub-sector. Therefore, the re-introduction of the Gemstone Exchange Scheme will serve as a forum for the producers and the buyers of rough and processed gemstones and jewellery to conduct auctions and routine transactions. The gemstone exchange will also encourage the participation of traceable gemstone trading and marketing companies rather than individuals, in order to promote transparency and accountability. This will revitalise the sector and increase the incomes of the communities around the mining operations. There will be more production because of the availability of, and accessibility to, the market for the products.

8.3.1.3 Introduction of Plant Hire Scheme

Apart from finances, capital equipment is required. Most small-scale mines apart from Kagem and Kariba Minerals use basic tools such as picks, hoes, and shovels which are not effective, resulting in low production levels. The introduction of the Plant Hire Scheme will encourage efficiency and promote the development of new mines. The scheme will target mainly the new operators as well as those that may not be able to access the facility under the diversification programme. The scheme will make use of the newly acquired Zambia National Service equipment. This should boost the operations of small-scale miners.

8.3.1.4 Creation of a Mining Community Development Fund (MCDF)

This is a programme that is intended to ensure that owners of productive mines contribute directly to the development of communities in areas where they operate. This programme will be financed and sustained from contributions made by mine owners. Local communities themselves will manage it, with appropriate participation of chiefs/traditional rulers, to ensure that these resources are applied towards development and poverty reduction efforts.

8.3.2 Large-Scale Mining

There are two major programmes in the large-scale mining sub-sector that could be implemented if funds were available. However, due to limited financial resources, they will be considered in the second PRSP phase. One of them is *infrastructure development* that entails the rehabilitation of the dilapidated rail and road networks, particularly the rail network on the Copperbelt and the Chingola-Chililabombwe-Kasumbalesa and the Chingola-Solwezi-Mwinilunga roads. Export routes to the southern ports also need urgent rehabilitation. The second one is the *Lumwana Copper Project*. The Lumwana copper resource being promoted for private sector involvement represents the largest undeveloped resource outside the Zambian Copperbelt, with significant potential to be increased with further exploration. Development of the mine at Lumwana would have a positive impact on economic growth and social benefits in terms of improvements in infrastructure and employment opportunities in Northwestern Province. There is also good potential to develop commercial agriculture and related downstream processing. The main infrastructure required for the development of the Lumwana copper project includes electric power, a highway upgrade, a rail link, and a planned town site. The roads connecting the Copperbelt to Lumwana exist but require upgrading. The power requirement of the proposed Lumwana mine design is estimated at 27MW. It is envisaged that the plant will be supplied with electric power from the Zambian national grid with a 330kv tie-in at Luano, 330kv overhead to Solwezi and then 132kv overhead line from Solwezi to Lumwana. The extension of the Zambia rail network from Chingola to Mwinilunga would also be a beneficial new infrastructure development for Northwestern Province. This would allow the provincial agricultural potential to be better realised and would assist the potential mining project in the area. Furthermore, a town site occupying approximately 50ha. is proposed to accommodate the total project workforce of about 1,000. A total of approximately 900 houses are planned, along with a municipal office, recreation centre, medical clinic, fire service station, crèche, and convenient stores. A potable water supply and sewage treatment plant is also proposed to service the designed Lumwana Township.