



Mineral policy in Zimbabwe: its evolution, achievements and challenges

John Hollaway

John Hollaway and Associates, 6th Floor, Beverley Court, 100 Baker Avenue, Harare, Zimbabwe

Zimbabwe's economic geology features hydrothermal deposits and therefore, while its mines are generally small, it has several hundred formal operations. Initially the mining law was exceptionally facilitative by African standards, although it has since been rendered more sensitive to other rural interests. At first, too, the colonial administration imposed crippling rents on output but their self-defeating nature led to their abandonment. Three main features of mineral policy have emerged since independence in 1980: (1) state participation in production and supervision of sales; (2) specific regimes for some artisanal mining; (3) *ad hoc* arrangements for the legal and financial environments of major foreign investors; and (4) the withdrawal of mining-specific tax benefits. Zimbabwe has been seen as a model for other African countries with similar resources but with negligible formal mining sectors. However the trends above are all in the direction of conditions already in place in such countries. © 1997 Elsevier Science Ltd.

The country

Zimbabwe is a land-locked country in the heart of southern Africa of about 390 000 km². About 80% of its surface area lies above 600 m; the main topographical feature being a 650 km long and 80 km wide plateau — the highveld — averaging about 1 200 m. Rainfall (of between 300 and 1 000 mm depending on area) can be irregular and in the past 10 years it has been erratic enough to induce near-chronic drought conditions.

The word Zimbabwe derives from the Shona words 'dzimba dza mabwe' or houses of stone, and refers of course to the ruins of Great Zimbabwe near Masvingo in the south-centre of the country, which was the centre of an Empire based on gold in the 16th and 17th centuries. Following the 1992 census the population was estimated to be 10.4 million, 98% of whom are of African origin.

The geological background

Zimbabwe is placed geologically on the granite backbone of Africa. Between the granite zones are areas of older metamorphic rocks — the schist belts, or gre-

enstone belts — where the great majority of the country's gold mines are situated. Their reserves are principally of a hydrothermal nature, the gold being found in a multiplicity of quartz reefs and shear zones.

Almost bisecting the country from north to south is a 500 km long layered intrusive, the Great Dyke, holding major resources of platinum, chromite and base metals. Other scattered ultramafic intrusions host nickel and asbestos deposits. The Karoo sediments associated with river basins around the periphery of the central plateau contain commercial coal resources and some areas have been shown to yield gas in the form of coalbed methane. Gemstones are associated with pegmatites in the centre and west of the country, and there are a number of kimberlite pipes, some diamondiferous.

The historical background

Before the colonial period, the potential of the country for gold was known from numerous sources, including the reports of Portuguese missionaries who were active at the court of the Mhunumutapa in the 17th century. By the time the immense riches of the Witwatersrand were found in 1886, European prospectors

and miners had already penetrated into modern-day Zimbabwe and had confirmed the ancient stories of a country of plentiful reef gold.

In 1890 a formal invasion was organised, financed by Cecil Rhodes. He obtained Queen Victoria's signature on the charter for his British South African Company (BSAC), and emphasised the 'Imperial Mission' aspect of the enterprise, but he also made no bones about the attractions of another gold-rich country. It seems probable that this venture concealed a hidden hope as well, breathtaking in its implications. For the realisation that the Witwatersrand was a paleo-placer — a vast, ancient alluvial basin into which gold had been washed — must have suggested to Rhodes' American mining advisers that a 'mother lode' along the lines of the Californian model might still exist to the north, perhaps in Zimbabwe. If so, the trickle of primary gold that had emerged from the interior up to that time could well be the forerunner of a wealth far greater than the unparalleled riches already found in South Africa.

Whatever the unspoken hopes for a bonanza bigger than the Witwatersrand, the mining policy of this new Imperial acquisition had to be such as to ensure the rapid discovery and exploitation of its mineral resources. The South African law, at least in the Boer republics of the Orange Free State and the Transvaal, was clumsy, vesting mineral rights (and the rights to the air space above, incidentally) in the land owner.

As a result a 'finders keepers' law on Californian lines was adopted for the country, and Rhodes' column of pioneers, who terminated their trek at Fort Salisbury (now Harare) on the 12 September 1890, immediately disbanded and set out to find gold in the country that soon came to be called 'Southern Rhodesia'.

The present mining sector

Since 1890 there have been between 4 000 and 5 000 mines in Zimbabwe, the vast majority of them small gold operations. Given the geological setting and the sophistication of the formal sector, the Zimbabwean mining industry has become the largest of its type in Africa north of the Limpopo. In all, mining contributed about 8% of the GDP in 1995, with a total output of about Z\$6.3 billion (US\$800 million); *Table 1* gives the principal production figures. Typically the value of the gold output represents about 40% of the total of mineral production from the country. The industry employs about 55 000 persons in the formal sector, with perhaps 300 000 others engaged in seasonal alluvial gold winning ('artisanal' or informal mining).

Eight major companies operate about 40 mines between them, including almost all the major ones. As many as 45 different metals and minerals have been produced in a single year, or about as many as South Africa. The greater part of the value of the output is as refined gold and base metals or ferroalloys.

Table 1 Zimbabwe mineral production (principal minerals)

	1994	1995
Asbestos (t)	151 846	169 229
Chromite (t)	514 099	631 382
Coal (t)	4 566 437	4 919 948
Cobalt oxide (t)	126	102
Copper (t)	9 632	6 614
Diamonds (ct)	150 683	223 628
Gold (kg)	20 564	24 393
Graphite (t)	8 729	11 381
Iron ore (t)	—	311 352
Iron pyrites (t)	71 026	70 760
Lithium minerals (t)	28 500	30 465
Nickel (t)	13 005	10 860
Silver (kg)	10 942	11 156
Tin metal (t)	82	—

However, while the geology is diverse, it is not bountiful. Zimbabwe has probably the lowest grade nickel, copper and gold mines in the world. Much of its chromite comes from seams only 10 cm thick. The Great Dyke platinum grades are generally lower than those in South Africa's mines. Zimbabwe has enormous resources of coal, enough for many thousands of years, but most is of poor quality.

Future hopes are currently focused principally on diamonds. Following on the opening of the River Ranch mine near the South African border in 1992, virtually the entire country has been covered by Exclusive Prospecting Orders for this gemstone.

However by far the most important mining development recently has been the Hartley platinum project, where BHP Minerals and Delta Gold are developing a US\$206 million mine, treating 2.2 million tons of ore annually to produce 150 000 ounces of platinum group metals and base metals, worth about US\$100 million.

Minerals policy prior to independence

The early years, 1890–1914

Until Independence in 1980, mineral policy was largely *ad hoc*, driven by the desire to take fullest advantage of whatever was economic to mine. Thus although the law introduced on colonisation in 1890 gave the state (or in this case, until 1933, the Chartered Company) ultimate title to all minerals, at the same time it allowed the easy acquisition of mineral title and its sale, optioning or tribute. Surface rights were subordinate to the those of prospectors and miners.

Rhodes' desire to get things moving as quickly as possible also resulted in two features of the present Zimbabwe mining law that were designed to prevent a leisurely or fatuous approach to the mineral resources: (1) the discovery of a deposit as a pre-requisite for title; and (2) the obligation to maintain its validity by work or payment

A third feature — an American one, but fiercely

argued against by his chief American adviser (Hammond, 1935) — allowed claim holders to claim ‘extra-lateral rights’ if a reef dipped outside the vertical limits. Although this acted as an incentive to rapid mine development by reducing the need to establish the geological structures at depth, it had led to many law-suits in the US. Indeed, in Southern Rhodesia it was to result in a marathon case in the 1920s that was eventually only resolved by a decision in the House of Lords.

However, despite something like 65 000 claims having been pegged by 1995, very little actual mine development had occurred. Although there were severe rebellions by the Matabele and Shona tribes in 1895 and 1896 (the ‘First Chimurenga’ or Liberation War) and an outbreak of rinderpest which eliminated almost all draft power at about the same time, as well as the isolating effects of the Boer War (1899–1902), the financial policies of the ‘Chartered Company’ were the main hindrance to the creation of a mining industry.

These were based on the theory that great wealth lay deep underfoot, requiring major investments and high science to extract it. As a result, while it was easy enough to peg reefs, individuals were not permitted to exploit them for personal gain. Until 1903 only companies could develop mines, and, in theory at least, the BSAC would receive 50% of the shares in return for making available the mineral title. Under these circumstances, Rhodes’ decision to allow extra-lateral rights was a reasonable one; if all the companies mining in the country were dominated by the BSAC it mattered little which of them developed adjacent gold reefs.

All this might just have been acceptable had the wealth lived up to the standards of the presumptive mother lode, but what was found were thousands of shallow ‘ancient workings’ on quartz reef and shear zone structures of archaean and proterozoic age, with generally modest grades. As a result the regulations not merely severely inhibited mine development, they caused the wrong sort of mine to be built. Companies raised money on the stock markets of Europe and America for big mines; great sums were spent on roomy shafts and massive mills. Yet the mineral resources on which these developments took place were usually too small to justify the capital expended, and this (along with the technical, managerial and financial mismanagement still to be seen in many projects in Africa today) led to the ruin of many of these ventures (Bowen, 1980; Letcher, 1936).

In 1903 the 50% ‘free ride’ was reduced to 30%, but more importantly individuals and syndicates were permitted to work prospects for profit instead of having to go to flotation as a company (Letcher, 1936). Thereafter a miner whose capital limited him to driving an adit and setting up a second-hand 3-stamp battery was able to get into the business of mining the modest resources available. In 1908 the 30% require-

ment had been eliminated in favour of a royalty of 5% and even this was removed some years later.

The response to this policy change was rapid; by March 1904 there were about 20 ‘smallworkers’ as they were called, by 1906, 164 and by 1907, 254. By 1914 about 40% of the gold produced was coming from such operations. Smallworker activity peaked during the Great Depression when financial distress led to many new entrants. In 1934 there were 1 600 small gold producers.

The middle years, 1914–50

In this period the support structures provided by Government to the industry were extended past the basic requirements needed to ensure that the law and regulations were obeyed. A School of Mines was founded, technical assistance widened to include free assay and testing services, a national electricity grid was created that extended to many mines, a plant hire scheme was initiated and a custom roaster for refractory gold ores and concentrates was commissioned.

In particular, after both World Wars special programmes were undertaken by the Government to encourage the returning (white) soldiers to enter (or re-enter) the smallworker sector (Viewing *et al*, 1987). Following the First World War the Returned Soldiers Prospecting Fund was set up. This provided grubstake capital in return for a 10% interest in any mine that eventuated.

This programme was not as successful as the second one, in 1945, when the Returned Serviceman’s Scheme was initiated. By this time there were numerous dormant mines in Zimbabwe whose claims had been forfeited due to the war. A total of 221 men were given training, resulting in the bringing into production of 67 mines whose output in 1952 alone was worth £25 million as against the cost of the scheme of £840 000.

Although during this period gold predominated, other minerals became important exports; chrysotile asbestos, chromite, copper and even some platinum from the Great Dyke.

The late years, 1950–80

This period, which may be seen in retrospect as that of a mature mining industry, commenced with the introduction of a scheme of Exclusive Prospecting Orders (EPOs) in 1950. This development acknowledged that the claim-pegging prospector hunting for visible evidence of a deposit was being overtaken by the company geological team using sophisticated, extensive techniques to identify targets. EPOs gave the right to the holder to examine large areas for long periods (up to 6 years) and it has been the favoured approach of all the established mining houses since then.

Applications for EPOs had to be supported by evidence of competence and a proposed exploration programme complete with costings. This introduced a

significant discretionary element into the allocation of mineral rights for the first time, and to deal with this a 'Mining Affairs Board' was created, with a majority of government officials but with representatives of farming, mining and other interests on it.

This period saw the evolution of the embryonic Rhodesian (now Zimbabwe) Iron and Steel Corporation into a major steelworks, the creation of several significant nickel mines, the production of ferroalloys and the development of a major copper mining industry.

Throughout both the middle and the later period there was a steady tendency for the government to provide financial support or incentives, particularly for the gold sector during periods when an overvalued exchange rate made life difficult. During the 1920's a 'gold premium' was paid and cash prizes were offered to successful prospectors. A loan fund was created in 1924 which has run ever since and in 1947 a gold subsidy was introduced (which was instrumental in encouraging mine development but which was later withdrawn following IMF objections; an early case of the intervention by a multilateral agency that has now become a standard part of Zimbabwe's economic scene). Other, less direct, subsidies replaced it, the last of these being phased out in 1991, when the currency, by then the Zimbabwe dollar, was finally floated free of Government control.

Post-independence mineral policy

Independence was achieved in April 1980, with an incoming Government that was, at the time at least, avowedly Marxist. However reconciliation was also a cornerstone of its policies, and much of the pattern of the mining sector has remained largely unchanged since colonial times. Nonetheless, while prior to independence there was no legal restriction on black Zimbabweans starting and owning mines — and a number did — impediments to acquiring skills and finance, and a traditional aversion to mining (most mineworkers were from Mozambique and Malawi prior to 1980), meant that there were only half a dozen black Zimbabwean mine managers at Independence.

Predictably therefore the main feature of the mining sector in post-Independence Zimbabwe has been the direct investment by government in it in order to rectify this imbalance. In 1983 a state mining house, the Zimbabwe Mining Development Corporation (ZMDC) was formed, mainly as a response to the threatened closure of a group of low grade copper mines. Concern over transfer pricing led to the introduction of the Minerals Marketing Corporation of Zimbabwe (MMCZ) to market all exported mine production (gold was already required to be sold to the central bank, which set up a gold refinery in 1989). The government also acquired a controlling shareholding in the steelworks and in Wankie Colliery Company, Zimbabwe's only major coal mine.

The IMF and the World Bank, which have assumed

increasing supervision over the Zimbabwean economy as it has faltered, disapproves of such ventures, and the government has been under pressure to privatise its interests, particularly as many of them are unprofitable, or, if profitable, are state monopolies.

Until 1994 the total investment from foreign investors in the minerals sector had been modest, of the order of US\$150 million. That year marked the commitment by BHP for the US\$206 million Hartley platinum project. It had been preceded by 3 years of negotiation, resulting in a major amendment to the Mines and Minerals Act, whereby in place of a mining title maintained by work or payment, major foreign investors were now guaranteed a 25 year lease, with exemption from the need to sell through the MMCZ.

However, the most characteristic feature of mining in Zimbabwe continues to be the small scale of most of its mines. This is still exemplified by the gold mining sector; while there is a large but fluctuating number of gold producers (over 500 normally) the majority are very small, as can be seen from *Table 2*, taken from the Secretary of Mines Report for 1984.

The right of public access to the minerals in the ground has, until now, not been challenged in Zimbabwe. In most African countries governments dictate where prospecting may be carried out and who can do it; in Zimbabwe it dictates only where it may not be carried out, and there is no requirement that a prospecting licence holder has any skill or financial resource. Since independence an exploding population (it is now 10.4 million as against 8.5 million in 1980), a series of droughts and a shortage of investment has driven many Zimbabweans to artisanal mining, including a major rush to alluvial gold winning. Attempts to control the latter with the modest resources of the Ministry of Mines (whose expenditure in the 1981 financial year was the equivalent of US\$5.4 million, and 15 years later was budgeted at only the equivalent of US\$ 3.3 million) have failed. In 1992 responsibility for stream bed panning was hived off to local authorities, on the grounds that they were better placed to regulate the estimated 300 000 people now engaged in this activity.

There is little evidence that this has been much more successful, and in 1994 the Secretary for Mines indicated that it might become necessary for all applicants for prospecting licences to meet technical and

Table 2 Distribution of gold output, 1983

Output range kg/annum	Number of producers	% of Total gold output
Over 300	13	63
150-300	10	16
60-150	15	10
30-60	13	4
15-30	11	2
Under 15	475	5

financial criteria (Murangari, 1994). Coupled with the *ad hoc* arrangements sanctioned for BHP, these comments may signal a turn towards the two-tier, dirigiste mining regime seen in most other African countries, where local miners are consigned to one part of the mining code and foreign investors to another, with only the latter allowed a tradeable mining title.

This would be unfortunate; the most successful mining countries — Canada might stand as an example — have an integrated system which encourages prospectors to trade their discoveries to those better able to develop them. Over the last 5 years the general trend of international opinion has been swinging against legally segregating the unsophisticated from the sophisticated sectors of the mining industry (United Nations, 1993; World Bank, 1995).

Pressures by the multilateral agencies on government to reduce its budget deficit have meant that the relatively generous taxation regime Zimbabwe miners have enjoyed is endangered. One concession, the depletion allowance, which effectively gave a 5% automatic tax rebate, has already gone; under threat now are the blanket deductions permitted for all exploration, development and capital expenditure related to a mine. Up until now the main source of Government revenue from mining has been from payroll taxes, followed by customs and excise duties; corporate taxes were usually not a major burden on profits (Hollaway, 1991).

Since independence there has been a significant inflow of aid money into government agencies, and the mining sector has also benefited from this. Britain, Germany and France have been amongst the principal donors, but probably the most useful assistance came through the Canadian International Development Agency (CIDA) which undertook a 20 000 line km airborne magnetic and electromagnetic survey, the first national effort of its kind, which indicated a number of targets.

Environmental concerns did not feature prominently in the previous periods, but miners were nonetheless restrained by other powerful rural interests. The early disappointment of finding only modest mineral resources in Zimbabwe was soon alleviated by the discovery that it was an excellent agricultural country, such that in normal years it is a major exporter of maize, while the annual value of its tobacco crop usually exceeds that of gold. This presence of a relatively sophisticated agricultural sector, considerably larger and with more political clout than the mining industry (and perennially irritated by the paramountcy of mineral rights over landowner's rights) has led to a steady tightening up of the conditions under which those rights can be obtained and used.

For example the introduction of a system of Licensed Prospectors was the direct result of pressure from non-mining rural interests. The Licensed Prospector has undergone a test of his knowledge of the mining law, and only he is allowed to undertake the actual pegging at the discovery site, although any

Zimbabwean can, for the payment of the equivalent of about US\$20, obtain a prospecting licence which entitles him to seek for minerals and, on discovery, the ownership of a block of claims totalling 200 by 500 m.

The mining regulations have a number of environmental features, including the requirement that on closure there is a degree of clean-up and protection of openings before a quitance certificate is issued that allows the site to be abandoned. These regulations have recently been strengthened with donor assistance, which has included the promulgation of guidelines requiring Environmental Impact Assessments (EIAs) and Environmental Management Plans (EMPs) to be implemented on larger mines.

Indeed there are continuing pressures to bring Zimbabwe's standards up to those of the developed world, particularly as this is a prime area of donor interest. There may be a danger here; other, more urgent, aspects such as safety, training and community health may get neglected, while the environmental impact assessments demanded of potential small mines are at a level of sophistication that further disadvantages the local small-scale miner.

Coal, oil and natural gas fall under the Mines and Minerals Act, but from the start their exploitation has been seen as of strategic importance, and so subject to discretionary rulings by the government. No oil has been found, but enormous amounts of economically minable coal have been delineated; probably enough to last several thousand years at present consumption rates. There has been a move to liberalise this aspect of minerals policy; with the reserves of coal being so great and widespread, the easy acquisition of mining title along the lines of other minerals would probably lead to a useful degree of competition.

The virtues of this policy have been demonstrated by the discovery of major reserves of coalbed methane in some areas. Because the promoters were small companies, and the extent and economics of the resources were speculative, no stringent conditions were put in the way of those seeking exploration concessions. As a result there are three such companies in this field, and a vigorous competition has sprung up between them to be the first in production.

Conclusions

Zimbabwe's original mineral policies were based on an assumption that gold in quantity to rival the Witwatersrand would be found there. This led to a situation where it was easy to obtain mineral title but very difficult to create a mine appropriate to the modest scale of the resources actually found.

Once these restrictions had been removed the easy access to mining rights rapidly led to a relatively large mining sector composed principally of small mines.

Government support was necessarily fairly intensive, covering both technical and financial aspects, but there was little direct involvement by the state in mining.

At independence in 1980 the racial imbalance in this sector and the socialist convictions of the new government led to considerable state ownership and intervention. Economic pressures are now tending to reverse this process, but a new problem, that of unregulated artisanal activity, threatens to make the acquisition of mineral rights discretionary. In addition major mining investors are seeking *ad hoc* legal and financial arrangements; these two trends together are leading to consideration of a change in policy which could eventually result in an industry which is segregated into a foreign dominated, large scale one and an unsophisticated, locally owned small scale one.

References

- Bowen, D J (1980) *Gold Mines of Rhodesia, 1890–1980*, Thomson Newspapers (Zimbabwe) Ltd, Harare.
- Hammond, J H (1935) *The Autobiography of John Hays Hammond*, Vols I and II, Farrar and Tinehart Inc, New York.
- Hollaway, J W (1991) Small scale mining in Africa; its significance and relationship to the fiscus, *International Seminar On Mining Taxation*, United Nations. Montreal.
- Letcher, O (1936) *The Gold Mines of Southern Africa*, Published by the Author, Johannesburg.
- Murangari, D E (1994) Speech by the Secretary for Mines at the Harare and District Mining Association meeting, Bindura.
- Viewing, K A, Phimister, G and Jourdan, P P *et al* (1987) A review — past, present and future — of Zimbabwe's mining industry, *African Mining 1987*, Institution of Mining and Metallurgy, London.
- World Bank (1995) *A Comprehensive Strategy Towards Artisanal Mining*, Washington, DC.
- United Nations (1993) *The Harare Guidelines on Small/Medium Scale Mining*, Harare, Zimbabwe.