

THE EFFECTS OF SOUTH AFRICAN DESTABILISATION ON
MINING IN THE SADCC

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BY PAUL JOURDAN

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The effects of South African destabilization on mining in the states of the SADCC

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In the beginning of the 1980s South Africa launched a series of strategies in order to undermine efforts by other states in Southern Africa to promote regional development and reduce economic dependence. One of the main targets has been the mining industries in the SADCC countries. In the following article Paul Jourdan evaluates the major effects of this policy.

Paul Jourdan is a Researcher at the Institute of Mining Research, Harare, Zimbabwe.

Address:
IMR
PO Box MP 167
Mount Pleasant
Harare
ZIMBABWE

Background

The *Southern African Development Coordination Conference* (SADCC) was formed in 1980 to promote regional development and to reduce economic dependence particularly, but not only, on the *Republic of South Africa* (RSA), their powerful white-ruled neighbour. The countries of the SADCC are Angola, Botswana, Lesotho, Malawi, Mozambique, Swaziland, Tanzania, Zambia and Zimbabwe.

In the late seventies the RSA launched the idea of the *Constellation of Southern African States* (CONSAS), a regional grouping made up of a South African sun orbited by its independent neighbours. It was in part as a reaction to this further attempt by the RSA to consolidate its regional hegemony, that the SADCC was formed. South Africa responded to the creation of the SADCC by launching a series of strategies to undermine it, especially against the socialist member states, Mozambique and Angola.

In 1979 the stature of the progressive members was at a peak, with Angola, Mozambique and Tanzania professing some form of socialist ideology. These states also contained all of the SADCC's coastline and hence ports putting them in an apparently influential position vis a vis the states of the interior. By 1986 Mozambique and Angola were fighting for their lives and Tanzania was in dire economic straits. The balance in the SADCC had tipped to the more prosperous market economy interior states.

Due to the closure of the Beira and Maputo lines in 1976 during the Zimbabwean liberation war and the closure of the Benguela line during the second war of liberation in Angola, the states of the interior became even more dependent on the RSA for their external trade. Between 1976 and 1980 the only non-South African rail route to the coast was the long haul up the Tazara line to Dar es Salaam in Tanzania (see map). With the independence of Zimbabwe the routes

to both Beira and Maputo reopened.

South Africa almost immediately embarked on a strategy of attempting to ensure the continued closure of the Angolan and Mozambican routes in order to maintain its control over the external trade of the landlocked SADCC states. They did this both by direct sabotage by the *South African Defence Force* (SADF) and indirectly via surrogate rebels (MNR and UNITA) who they trained, supplied and ran. This rapid increase in aggression by the RSA against its neighbours also coincided with the election of Reagan in the USA and the subsequent policy of collaboration with the South African regime in "rolling back communism" via "constructive engagement" with that regime.

From 1984 Zimbabwe started sending troops to help Mozambique guard the Beira corridor which contained an oil pipeline, the railroad and an all weather highway. But, by mid-1986 the line was still carrying only one train per day and both the Maputo (Chiqualaquala) and Benguela (Lobito) lines were out of action.

The political orientations of the governments of the SADCC vary considerably especially as regards their policy towards South Africa, from a virtual state of war in the case of Angola to outright collaboration in the case of Malawi. The SADCC states also vary greatly in size, population and in their economies.

Table 1 gives basic economic and demographic data for the states of the SADCC in 1983. The region has a total surface area of 4.9 million square kilometres and a population of 66 million, giving an overall density of 13.5 persons/km². The total SADCC GDP was 21.6 G USD in 1983 and the average GNP/capita was 326 USD, twice the size of the total export receipts of 5.4 G USD (Table 1).

Mining in the SADCC

As a grouping, the SADCC derives over sixty per cent of its foreign exchange

Table 1**SADCC: basic economic data 1983**

(in USD)

Country	Area k-km²	Population Mil	GDP G USD	GNP/cap USD	Ext.debt G USD	Exports M USD						
	%*	%*	%*	% +	%*	%*						
Angola	1 247	25	8.2	12	4.18	19	506	155	2.11	18	1 572	29
Botswana	600	12	1.0	2	0.89	4	833	256	0.21	2	611	11
Lesotho	30	1	1.5	2	0.35	2	460	141	0.15	1	47	1
Malawi	118	2	6.6	10	1.33	6	210	64	0.72	6	220	4
Mozambique	799	16	13.2	20	1.70	8	130	40	1.66	14	132	2
Swaziland	17	0	0.7	1	0.50	2	870	267	0.20	2	271	5
Tanzania	945	19	20.8	31	4.55	21	240	74	2.58	22	566	10
Zambia	753	15	6.3	10	3.35	16	580	178	2.64	22	869	16
Zimbabwe	391	8	7.9	12	4.73	22	740	227	1.50	13	1 133	21
SADCC total (avg)	4 900	100	66.2	100	21.58	100	326	100	11.77	100	5 421	100

Notes:

%* = % of SADCC total; % + = % of SADCC weighted average.

Table 2**SADCC: basic mineral data 1983**

Country	G USD	GDP	Production			Exports			Employ		
		% Min	%*	M USD	% +	Total	Min's	% Min	% +	%*	%**
Angola	4.2	26	239	1 646	43	1 572	1 506	96	46	157	9
Botswana	0.9	28	255	590	15	611	461	75	14	124	27
Lesotho	0.4	1	9	19	0	47	19	41	1	67	9
Malawi	1.3	0	0	7	0	220	0	0	0	0	1
Mozambique	1.7	1	9	5	0	132	3	2	0	3	1
Swaziland	0.5	3	27	23	1	271	14	5	0	8	3
Tanzania	4.6	2	18	45	1	566	45	8	1	13	2
Zambia	3.4	15	136	1 040	27	869	834	96	25	157	16
Zimbabwe	4.7	8	73	470	12	1 133	419	37	13	61	6
SADCC total (avg)	21.6	11	100	3 845	100	5 421	3 302	61	100	100	

Notes:

%* = SADCC weighted average %; % + = % SADCC total; %** = % total formal employment.

Sources:

SADCC, 1985 and SADCC States Govt data.

from mineral exports worth, in 1983, 3.3 G USD (Table 2). Mineral dependence varies dramatically from state to state from nothing (Malawi) to 96 per cent of exports and 26 per cent of GDP (Angola). Four countries make up almost all (97 per cent) of the region's mineral output of 3.8 G USD. These are Angola (43 per cent, oil and diamonds), Zambia (27 per cent, copper and cobalt), Botswana (15 per cent, diamonds and copper/nickel) and Zimbabwe (12 per cent, various minerals). Angola, Zambia and Botswana are virtual mono-mineral economies with one mineral accounting for from 60 to 90 per cent of total export receipts.

Table 3 gives production for SADCC by mineral ranked by value in 1983. In that year oil from Angola accounted for 37 per cent of the total regional mineral output. This was followed by copper (959 M USD) and diamonds (686 M USD). Together these three minerals made up 80 per cent of the total value. In terms of world output the only minerals

in the region with a significant share of global production are diamonds (23 per cent) and cobalt (14 per cent) though the proportions are higher when considered against "western" output only.

The minerals that are produced mainly in the interior and have a unit value too low to be airfreighted, making them vulnerable to export route disruptions, are copper (620 kt), nickel (28 kt), ferro-chrome (240 kt), steel (659 kt) and asbestos (182 kt). Coal is mainly consumed in the countries of production, and about half of steel output is consumed in the region, which means that every year the interior states of the SADCC need to get roughly 1.5 Gt of various minerals to the coast to earn the foreign exchange vital to their economies. The main countries affected in this way are Zambia, Zimbabwe and Botswana.

Ownership

By far the most important transnational mining house in the region is the Anglo

American — De Beers mining consortium of South Africa. They control most of the region's nickel production (BNC and BCL), coal production (Wankie), diamond production (Debswana), about half of the ferro-chrome output (Zimalloys) and 27 per cent of ZCCM in Zambia which produces 93 per cent of the region's copper and 90 per cent of the cobalt. Turner Newall of the UK controls almost all of the SADCC asbestos output (Shabanie & Mashaba Mines Ltd) and Union Carbide of the USA controls the other half of ferro-chrome production (Zimasco). All petroleum production is controlled by the Angolan parastatal Sonangol in partnership with oil transnationals principally Gulf Oil of the USA (Cabgoc) now owned by Chevron. Other transnationals are Rio Tinto-Zinc and Lonrho of the UK (gold) and Amax of the USA (copper/nickel), but the latter company has been getting rid of its assets in the region over the last few years.¹

Table 3

SADCC: production of principal minerals (in kt)

Mineral	Volume					%*	Value M USD	Producers % SADCC 1983
	1970	1975	1980	1983	world			
Oil (Mt)	5.1	8.8	7.4	8.9	0.3	1 422.3	An(100)	
Copper	713.2	701.2	652.6	620.3	7.6	958.8	Za(93)Bo(3)Zi(3)	
Diamonds (Mcts)	3.6	3.9	7.0	12.4	22.7	686.3	Bo(88)An(10)Ta(2)	
Gold (t)	14.0	11.3	11.7	14.5	1.0	193.9	Zi(98)Za(2)	
Nickel	8.6	15.6	30.5	28.4	4.2	122.2	Bo(64)Zi(36)	
Fe-Chrome	na	196.7	231.4	240.0	na	118.6	Zi(100)	
Asbestos	221.0	299.1	284.6	182.3	4.5	80.9	Zi(84)Sw(15)	
Steel	na	544.7	813.5	659.1	0.1	85.0	Zi(98)Mo(1)An(1)	
Coal (Mt)	4.1	4.9	4.3	4.3	0.1	63.1	Zi(77)Za(10)Bo(9)	
Cobalt	2.1	1.9	3.6	2.7	13.8	30.9	Za(90)Bo(8)Zi(2)	

Notes:

* = of world production in 1983; An = Angola; Bo = Botswana; Mo = Mozambique; Sw = Swaziland; Ta = Tanzania; Za = Zambia; Zi = Zimbabwe.

Source:

SADCC Government Statistics and BGS, 1985.

South African destabilization

The effect of destabilization on the minerals industries of the SADCC by the RSA and its surrogates can be considered at various levels:

- The first and obvious loss is in the case of *direct destruction of mining plant and equipment*, as has been done in Angola and Mozambique. This effect is quantifiable in terms of value.
- The second knock-on effect is in terms of the *loss of mineral production* in terms of *forfeited foreign exchange earnings*. This again is quantifiable, but the resultant effect of the lost forex on import-dependent sectors of the economy is difficult to determine.
- Thirdly, related to the second effect, is that the cessation of mining will cause *losses and possible closures* to the downstream domestic industries using mineral inputs. These losses are difficult to determine.
- The fourth and widespread effect is that the destruction of transport routes *forces minerals to be exported via more distant and more costly, generally South African, routes*. The higher transport costs can be quantified, but the effect of the higher unit cost of the mineral at end market on the profitability and output of the mining operation would be difficult to accurately determine.
- The last and most elusive effect is that of *"lost opportunity"*. The regional instability brought about by South African destabilization results in otherwise viable mining prospects remaining unexploited. The poor security situation also causes a decline in foreign investment in the mining and other sectors of the region. The effects of this lost capital inflow on the mining industry and on the economy in general would be virtually impossible to quantify.

There are also a myriad of smaller effects such as the loss of markets to domestic mining inputs manufacturers, the higher costs of imported inputs to the minerals industry, the loss of experienced mining personnel murdered

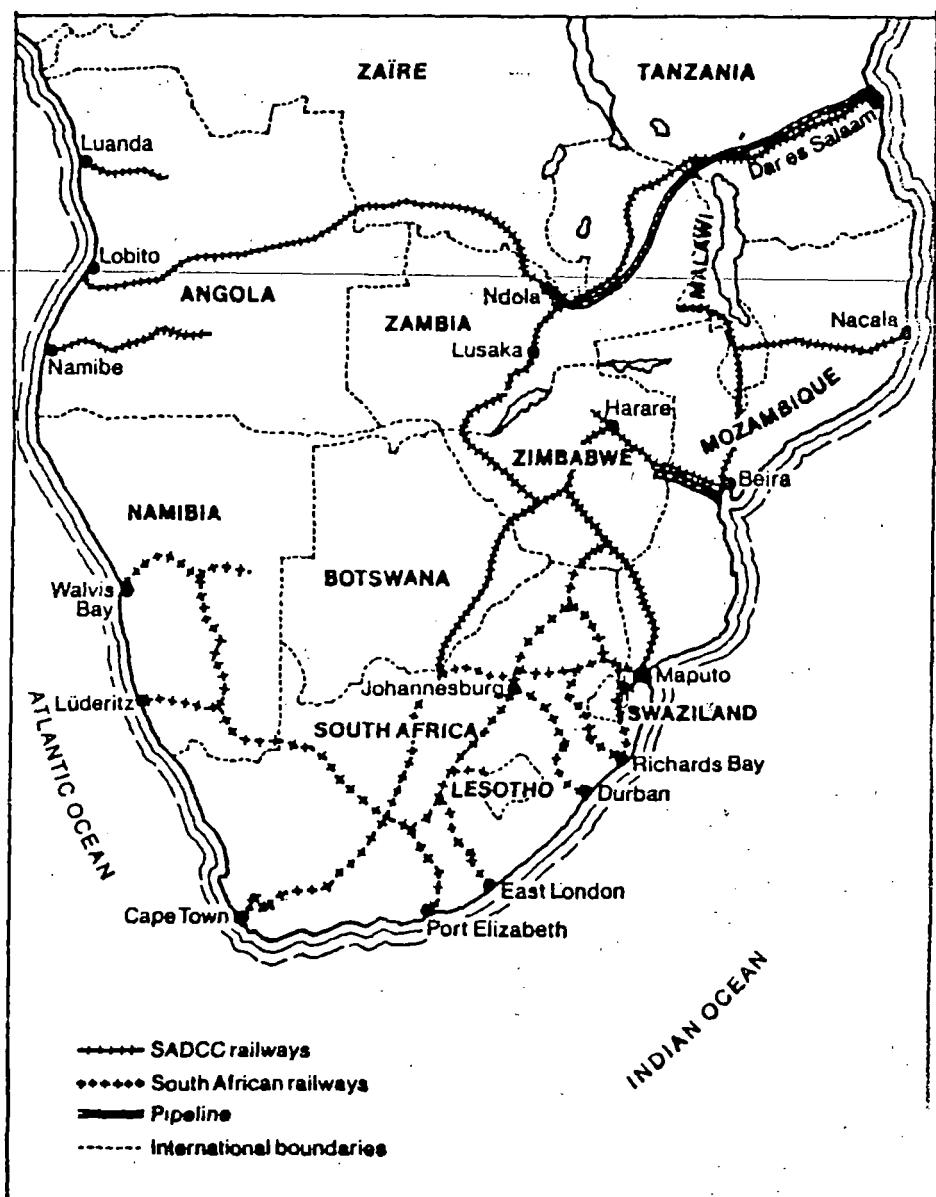
in raids, etc . . . , which would be extremely difficult to quantify given the lack of accurate data in the region.

Most probably the greatest effect on the SADCC of destabilization, but which doesn't directly relate to the minerals sector, is the enormous amount of resources that the states under attack have had to divert from economic reconstruction to defence. The total figure for this wastage must run into tens of billions of USD, but the total losses in-

cluding the diversion of scarce managerial and administrative cadres to defence are unquantifiable.

Due to the widespread ripple effects of destabilization on the rest of the economy, only three more or less quantifiable effects will be considered in this analysis, namely:

- Direct destruction of mines
- Forfeited production/exports
- Higher transport costs.



The socialist economies: the prime targets

Angola

The state that has suffered the most from destabilization is certainly Angola where South African aggression started with a full-scale invasion in 1975. The direct damage to the economy during this invasion and the scorched earth policy of the SADF during their retreat in early 1976 was estimated at 6.7 G USD at that time². Since then South Africa has been in and out of southern Angola constantly, both in order to protect their surrogate rebel movement UNITA from Angolan offensives and in order to constantly keep Angolan resources tied down by the war. The RSA usually uses the excuse of "hot pursuit" of SWAPO nationalists to justify their invasions, but the location and type of targets hit bear no relation to the activities of SWAPO, who are fighting to end South Africa's illegal occupation of Namibia.

From 1976 to 1981 damage from attacks by the RSA has been estimated at 1 G USD and substantial damage has been wrought during subsequent South African invasions, SADF sabotage squads attacks and UNITA banditry destruction. Angola currently diverts about 40 per cent of the national budget to defence against South African destabilization.³

The USA has also been involved in the destabilization of Angola since 1975 via Zaire and South Africa. In 1985 the Reagan administration managed to get the Clarke Amendment repealed thereby allowing open support to the UNITA rebels and in 1986 UNITA was given 77 M USD and sophisticated military hardware by the USA.

The minerals industry

- Direct damage

The Kassinga iron mines in the south of the country have been out of action since the first South African invasion in 1975. Over the last few years there have been several attacks on the diamond

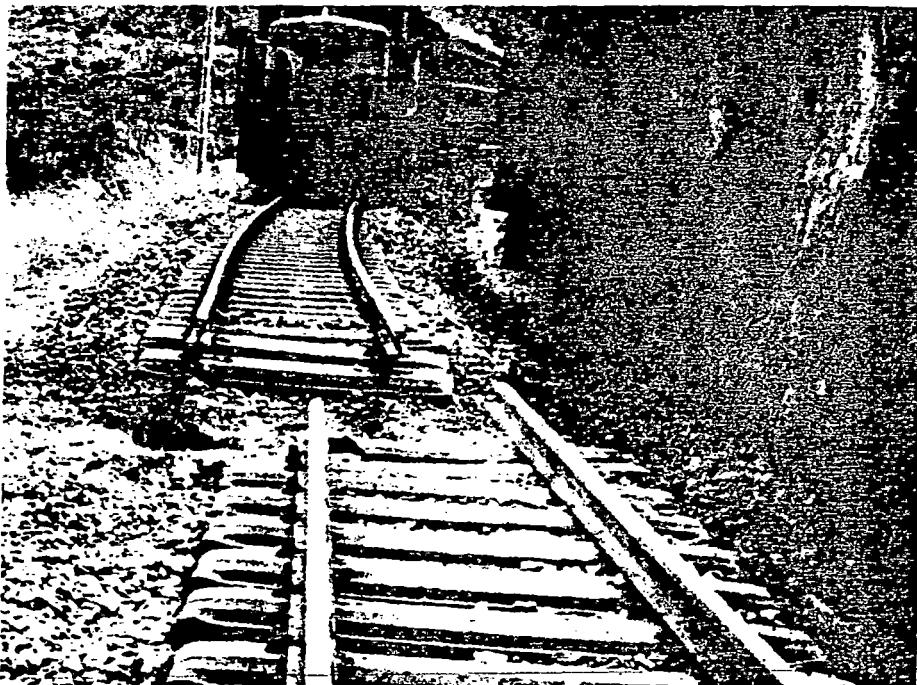


Table 4
Angola: production loss 1975—1980

Year	Iron ore (Mt)		Diamonds (Mcts)	
	prod	loss	prod	loss
1970-74*	2.21		5.70	
1975	0.99	1.22	5.60	0.10
1976	0.34	1.87	2.50	3.20
1977	0.53	1.68	0	5.70
1978	0.70	1.51	0	5.70
1979	0.84	1.37	0	5.70
1980	1.50	0.71	0	5.70
1981	1.40	0.81	0	5.70
1982	1.22	0.99	0	5.70
1983	1.01	1.20	0	5.70
1984	0.92	1.29	0	5.70
1985	0.72	1.49	0	5.70
1986e	0.50	1.71	0	5.70
Total	10.67	15.85	8.10	60.30

Notes:

* = average 1970—74; e = estimate.

Sources:

British Geological Survey, *World Mineral Statistics* 1976 and 1985; Ministerio de Plano de Angola, *Colecta de Alguns Elementos . . . , Luanda 1986.*

fields in the north-west of the country and the oil industry was hit in 1981 when a SADF sabotage squad attacked the refinery in Luanda causing 36.6 M USD worth of damage. In 1985 a SADF sabotage squad was apprehended in the Cabinda enclave. The squad had been sent to sabotage the American run oil installations and then to leave evidence that would attribute the attack to UNITA.

- Forfeited mineral production

Iron ore: From 1970 to 1975 output from the Kassinga iron mines averaged 5.7 Mt/year (Table 4 and Fig 2). Lost production since then would therefore total 60.3 Mt of ore. The average price of iron ore over this period in deflated USD was roughly 35 USD⁴, which would give a total foreign exchange loss of 2.11 billion 1986 USD, assuming that no expansion of iron ore mining would have taken place under peaceful conditions. The resource base both at Kassinga and Kassala-Kitungo (south-east of Luan-

da) is huge and an expansion of production could well have taken place, had conditions been conducive⁵

Diamonds: Pre-1975 diamond production from the alluvial deposits of north-eastern Angola was averaging 2.21 Mcarats/year (Table 4 and Fig 2). Production fell to 0.34 Mcarats in 1976, then picked up to 1.5 Mcarats in 1980 before falling to 0.72 Mcarats by 1985, principally due to the deteriorating security situation. Lost production since 1975 would therefore be 15.85 Mcarats worth 1.15 G USD at 1984 (deflated) prices, assuming no expansion of production. Angola's diamond resource base is enormous and in 1980 it was estimated that the alluvial reserves could sustain a rate of production worth in excess of 500 M USD/year using only installed capacity at the time.⁶ Lost potential production would therefore be roughly 4 G USD, excluding the undeveloped in situ (kimberlite pipes) potential which has not been exploited due to

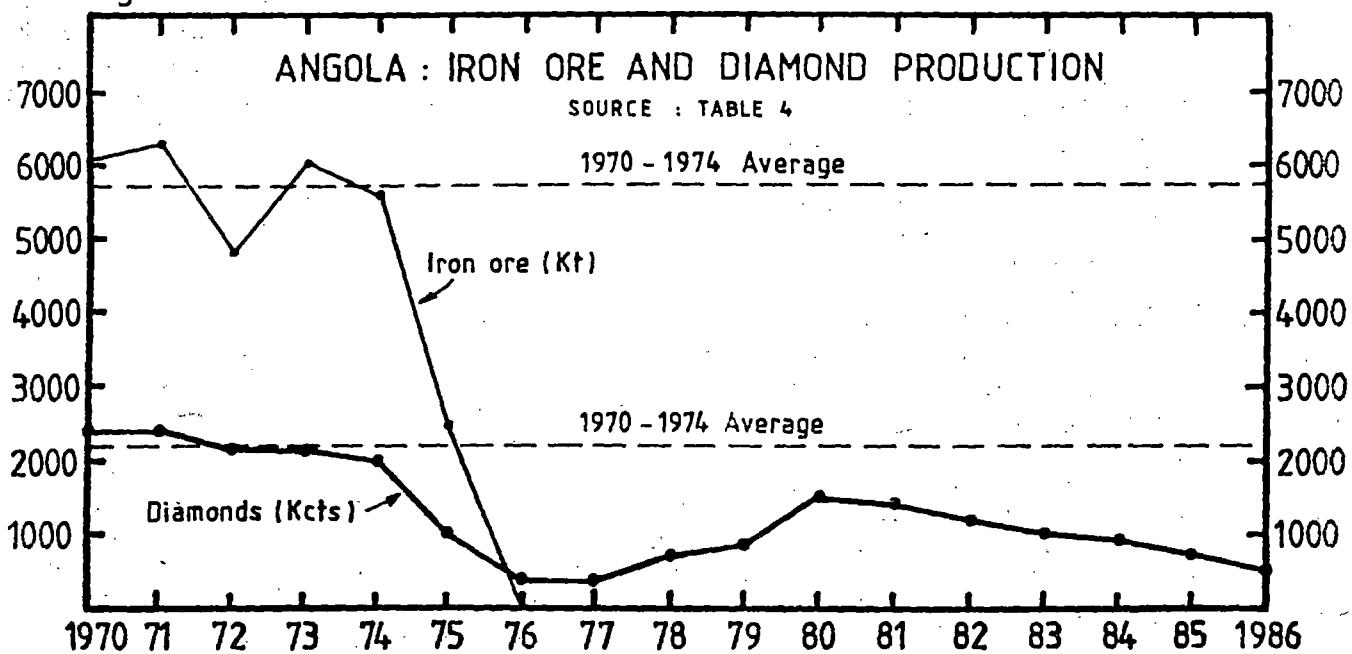
the security situation.

Oil: Due to the off-shore nature of oil production, output has not been affected by South African destabilization except for 1976 when production fell due to both the South African and Zairean invasions. Lost output for 1976 was 24.6 Mbbl worth 282 M USD at that time (500 million 1986 USD).

Other minerals: Pre-1975 Angola produced a variety of minerals from generally small scale operations. The majority of these shut down at the time of the 1975 South African invasion and have never reopened. In 1973 the total value of mineral production, other than oil, diamonds and iron ore, was 58 million escudos or roughly 2 M USD (4.5 M 1986 USD)⁷, but the lost value of these minerals since 1975 has not been determined due to a lack of data.

The total value of forfeited mineral production—due to South African destabilization of Angola since 1975 would therefore be of the order of 3.8 G

Figure 2.



USD assuming production at pre-1975 rates, a penalty that the new Angolan government could ill afford to pay.

• Transport

As a coastal country, Angola generally has not suffered from the RSA "transport premium" as have the states of the interior, but before 1975 the Benguela line, running from the Zambia/Zaire copperbelt to the port of Lobito, used to be a major mineral export route. In 1973 Lobito handled 2.56 Mt of cargo, mainly minerals from Zaire's Shaba Province and the Zambian copperbelt. Since 1975 the line has virtually been out of action due to SADF/UNITA sabotage. This has not only caused lost tariffs for Angola, but has also meant that Zambia has had to use more expensive routes to export its copper.

In Angola's case the other, unquantifiable, effects of destabilization, are far greater than the quantifiable ones analysed above. The total extra expenditure on defence alone would be greater than the total value of forfeited mineral production, while the effects of the diversion of human resources to the war effort permeates all sectors of the economy. In 1985 alone, Angola spent 1.15 G USD on defence, 38 per cent of the national budget.⁸

Mozambique

Second on the RSA's target list in terms of the intensity of aggression is the *People's Republic of Mozambique* (PRM). From independence in 1975 to 1980 the destabilization of Mozambique was left up to the then Rhodesian regime of Ian Smith, who were receiving substantial military aid from the South Africans and South African aircraft were used in invasions/attacks on Mozambique. The cost of supporting the Zimbabwean struggle was estimated at 556 M USD in 1984.⁹

With the independence of Zimbabwe in 1980 the South Africans took over the show including the running of the rebel MNR "movement" which had been the

creation of the Rhodesian security forces.¹⁰

In 1984 the PRM was forced into the, now infamous, Nkomati Accord with the South Africans in which they undertook to neutralize the South African nationalist movement, the ANC, on their territory and the RSA would cease to run the MNR. But the South Africans have continued to train and supply the MNR even though the PRM has kept to its side of the accord.

As with Angola, South African destabilization of Mozambique takes the form of direct action by SADF sabotage squads as well as via banditry by a surrogate movement (the MNR), but thus far the RSA has not resorted to full-scale invasions. Due to the pre-1975 integration of the Mozambican economy into the South African economy, it has also been subjected to economic sabotage by South Africa through the reduction of the trade through Mozambique and the reduction of the number of Mozambican migrant miners working on the South African mines.

The minerals industry

Due to centuries of Portuguese colonial neglect the Mozambican minerals industry was tiny in 1975 (independence) even though the country has substantial mineral resources. Most of the new government's efforts in the minerals sector since 1975 have been in prospecting and surveying in order to systematically assess the nation's mineral potential. By the early eighties this had been done for several deposits and a rapid increase in mineral output was planned, but it was at this time that the RSA stepped in and rapidly escalated its destabilization of the Mozambican economy via its surrogate movement, the MNR.¹¹ By 1986 the mining industry had virtually collapsed due to the deteriorating security situation in the countryside. The two most important minerals produced are coal in Tete Province and tantalum pentoxide in Zambezia Province.

• Direct damage:

Due to sabotage of the line from the Moatize coal fields to the port of Beira, coal production has all but ceased. The Ta₂O₅ pegmatite workings (Morrua, Marropino and Muiane) were attacked in 1983 (when six Soviet technicians were killed), 1984, 1985 and yet another attack was reported in June 1986 in which a Mozambican geologist was murdered. The workings are still operating, but at a fraction of their capacity. The Mavita asbestos mine (Manica Province) was attacked in 1978 and again in 1985 when most of the plant was destroyed putting the mine out of action. At the end of 1984 the Tulua felspar mine in Nampula Province was attacked and the Mine Chief was murdered, while attacks on the limestone quarries supplying the cement plants of Maputo and Beira have caused cement production to fall to 15 per cent of national capacity.¹²

• Forfeited mineral production:

Coal: Production from Moatize used to run at roughly 500 kt of steam and coking coal per year, all of which was exported. Production fell in 1977 and 1978 due to an underground explosion in which 130 miners lost their lives and after which the mines were nationalized. With East German technical aid production then rapidly increased to 535 kt in 1981 before collapsing to virtually nothing in 1986 due to the destruction of the railway. Planned production, pre-distabilization, should have been 1 Mt by 1986.

Figure 3 gives two scenarios (A1 and A2) for coal production assuming an operating railway. A1 continues the rate of increase attained for the years 1978 to 1981, reaching the planned target of 1 Mt by 1986, while A2 assumes that production continued at the same rate as 1981. Forfeited production using scenario A1 would total 3.87 Mt (Table 5), while A2 (no change) would total 2.5 Mt. Using the price obtained for coal exports in 1981 (41.2 USD/t¹³) the loss would be 159.4 M USD for A1 and 103

Table 5

Mozambique: production loss 1982—86

Year	Coal (kt)			Cement (kt)			Ta_2O_5 (t)	
	prod	plan	loss	prod	plan	loss	prod	plan
1981	46.0	46	0	535	535	0	261	261
1982	29.1	60	30.9	67	630	563	270	290
1983	21.2	76	54.8	59	720	661	188	320
1984	10.5	90	79.5	39	810	771	110	345
1985	5.5	105	99.5	20	910	890	85	370
1986e	5.0	120	115.0	20	1 000	980	50	400
Total	71.3	451	379.7	205	4 070	3 865	703	1 725
								1 022

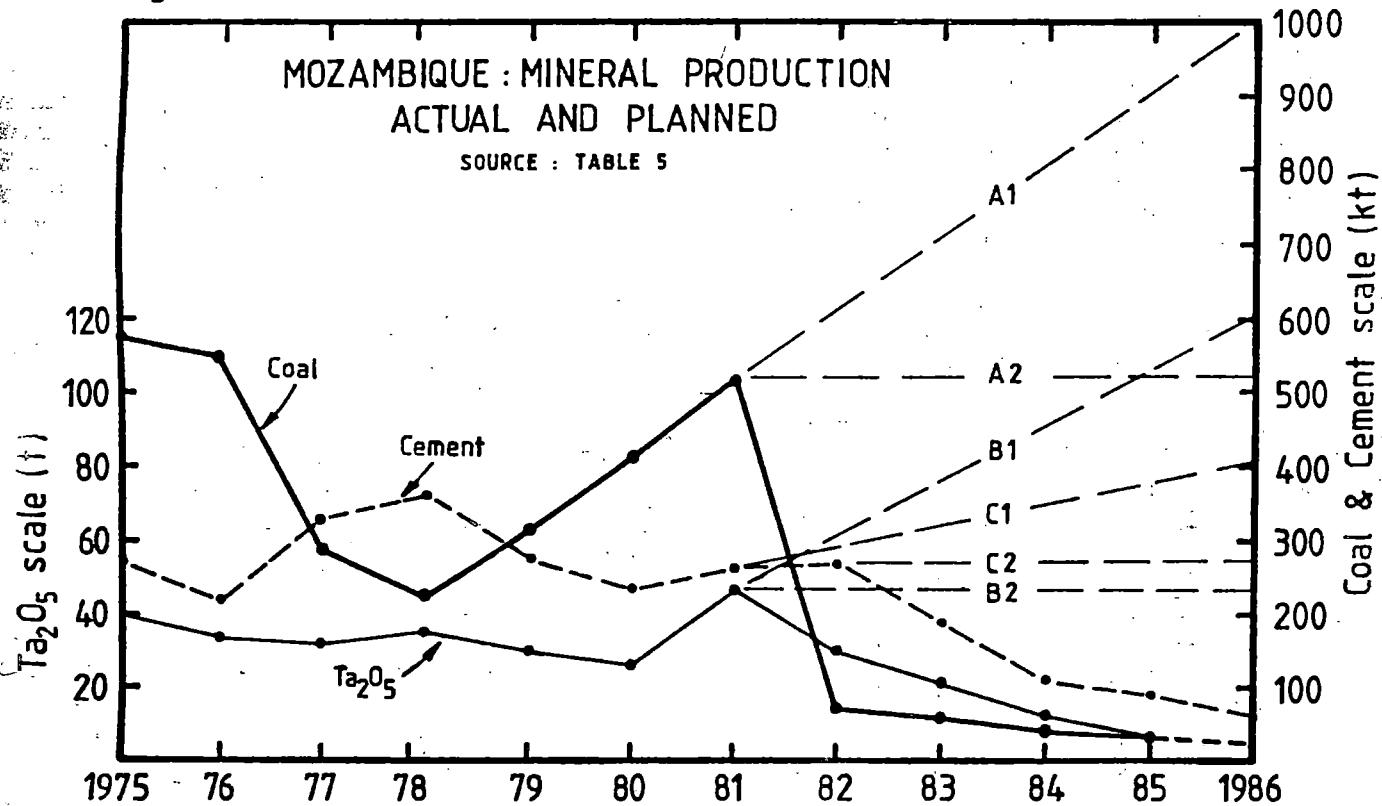
Note:

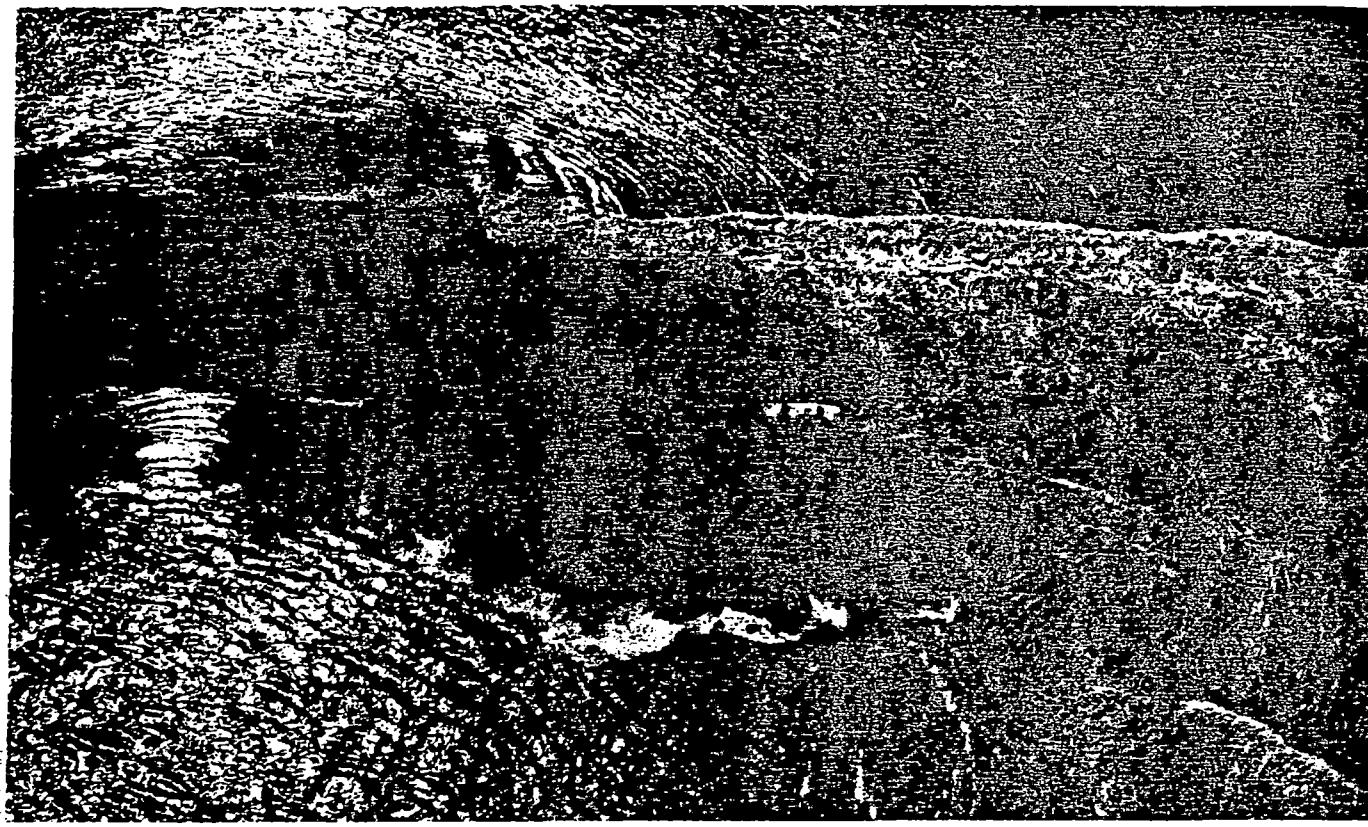
e = estimate.

Source:

British Geological Survey, *World Mineral Statistics 1976 and 1985*; Ministerio dos Recursos Minerais de Mozambique Unpublished data, Maputo 1986.

Figure 3





M USD for A2 or, in deflated 1986 USD, 193.2 and 124.8 respectively. Moatize has ample high grade reserves and therefore it would be reasonable to assume that production would have continued according to plan under peaceful conditions (Table 5).

Tantalum pentoxide: By 1981 the reserves of the artisanal pegmatite workings had been systematically assessed for the first time and a production plan to increase output to 120 t by 1986 had been formulated. The equipment for this expansion was purchased but still awaits installation pending an improvement in the security situation.

In Figure 3, Ta_2O_5 production is treated in the same way as for coal, with a "production-to-plan" scenario (B1) and a "no change" scenario (B2). Forfeited production for B1 would total 379.7 t (Table 5) and for B2, 160 t. Using the 1986 price of 70 k USD/t the loss would be 26.5 M USD for B1 (plan) and 11.2 M USD for B2 (no change). Given the adequate reserve base and the fact that the plant had already been purchased, it would be reasonable to assume that scenario B1 would have been achieved under normal conditions.

Cement: Between 1977 and 1980 cement production averaged 298 kt/annum and exports 144 kt/annum (48 per cent). From 1982, due to attacks on the limestone quarries, output declined rap-

idly to a mere 85 kt in 1985. Again using a production-to-plan and a no-change scenario (C1 and C2, Fig 3) since 1981, forfeited output due to destabilization would be 1 022 kt for C1 (plan, Table 5) and 640 kt for C2 (no-change). In 1981 cement was exported for 48.7 USD/t or 59 deflated USD. Forfeited output would therefore be worth roughly 6 M USD (C1, plan) or 3.8 M USD (C2, no-change) of which 48 per cent would have been exported giving a foreign exchange loss of 2.9 M USD (C1) or 1.8 M USD (C2).

Other minerals: production of minerals such as felspar, semi-precious stones, bentonite and asbestos has fallen drastically since 1981, but it would be difficult to work out the loss in value due to a lack of data except for semi-precious stones where the loss for 1986 alone is estimated at 2 M USD.¹⁴ A rough estimate for the period 1981 to 1986 would be in the region of 15 M USD.

The total value of planned forfeited mineral production due to destabilization by the RSA from 1981 would be of the order of 240 M USD, 98 per cent in foreign exchange, three times the total value of Mozambique's exports in 1985.

• Transport

The destruction of the Moatize-Beira line has caused all coal production to be lost rather than a premium to be paid by

using alternative routes. The ports of Beira and Maputo are the cheapest routes for the export of minerals from Zimbabwe and Zambia. Sabotage of the routes has therefore caused these countries to use more expensive South African (or other) routes and has denied Mozambique the port and rail tariffs it would have otherwise received.

There are clearly many other knock-on effects of declining mineral production such as the effect on the construction industry of severe shortages brought about by the closure of the limestone quarries. The asbestos-cement plant output declined 75 per cent from 1980 to 1984 due to cement and/or asbestos shortages. Although small in comparison to Angola, forfeited mineral export losses have had a relatively greater effect on the rest of the import consuming economy as Mozambique has not had an unaffected mineral, such as oil, to make up the forex shortfall.

The land-locked economies: the secondary targets

The mineral producing states of the interior, Zambia, Zimbabwe, Swaziland and Botswana, have not suffered direct attacks on mines as have the coastal states of Angola and Mozambique, but due to the destruction of the transport routes by the RSA and/or surrogates, their exports are forced to leave via more

Bridge in Mozambique destroyed by the MNR in 1985.

distant South African ports (Richards Bay, Durban and Port Elizabeth). Therefore only the RSA transport premium and possible minerals development opportunity loss will be considered here.

Botswana

Most of Botswana's mineral production is high value diamonds which are air-freighted, while the copper/nickel matte is exported to Zimbabwe to be toll-refined by Rio Tinto Zimbabwe (RTZim, RTZ of UK) and Bindura Nickel Corporation (BNC, AAC of SA). Therefore Botswana's minerals industry has not been affected overtly by RSA destabilization except that the extra expense in getting the toll-refined copper and nickel to more distant South African ports will be reflected in the price they receive for the matte from the Swiss purchasers (Centametal). Botswana has suffered several SADF raids in the past two years, ostensibly aimed at ANC houses in the capital Gaborone, but these have hardly affected their minerals industry.

The development of the Sua Pan potash deposit would be dependent on the South African market, but South Africa is making any agreement on this project dependent on Botswana signing a Nkomati-style accord. In this sense there could have been an opportunity loss due to the RSA's machinations. Likewise the development of Botswana's huge coal reserves might well have gone ahead had the regional security climate been more conducive.

Swaziland

The asbestos from Havelock mine has always been exported via the RSA so it cannot be said that Swaziland has suffered a RSA transport premium in this regard. However it could be argued that they have suffered an opportunity loss as the development of their coal resources is dependent on the reliable operation of the line to Maputo and the Matola bulk cargo terminal, neither of

which are secure due to the security situation. In general the Swazi regime appears to be willing to collaborate with the RSA, and accordingly have not been directly destabilized.

Zimbabwe

Before the application of sanctions against the Rhodesian settler regime by Mozambique in 1976, the majority of Zimbabwe's exports were routed via the closest ports of Beira and Maputo. After the independence of Zimbabwe in 1980 an attempt was made to reopen these routes, but due to South African/MNR sabotage and attacks, by 1986 the Maputo (Chiqualaquala) line was completely out of action while the Beira line was operating at only one train per day, though a major project to upgrade the latter line is in progress. From January 1983 to June 1984 this line suffered a total of 106 attacks and derailments in which 19 locos and 127 wagons were damaged.¹⁵ The security situation has, however, improved since then with the deployment of Zimbabwean troops in Mozambique.

When the Chiqualaquala line was in operation in 1983 it cost 45 ZWD/t to transport steel/ferro-chrome via the

port of Maputo. The current rate via the RSA (Durban) is 58 ZWD/t, therefore the extra cost would be about 13 ZWD/t. Total steel and ferro-chrome exports run at roughly 500 kt/year giving a total value for the RSA transport premium against the Chiqualaquala route of 4 M USD/year. Currently some steel is being shipped out via the even cheaper Beira route at 30.47 ZWD/t, or 27.53 ZWD/t less than the Durban route.¹⁶ Compared to Beira, the export premium for ferro-chrome and steel would come out at 8.3 M USD/year or 33.2 M USD over the last four years.

The current cost for exporting asbestos through Durban is 60.7 ZWD/t (36.4 USD) while the rate to Beira is 45.13 ZWD/t (27.1 USD), giving a premium of 9.3 USD/t. Asbestos exports run at roughly 160 kt/year meaning that the premium-in-relation-to-Beira is 1.5 M USD/year or 6 M USD over the last four years. The premium per ton in relation to Chiqualaquala-Maputo would be similar to that of steel/ferro-chrome.

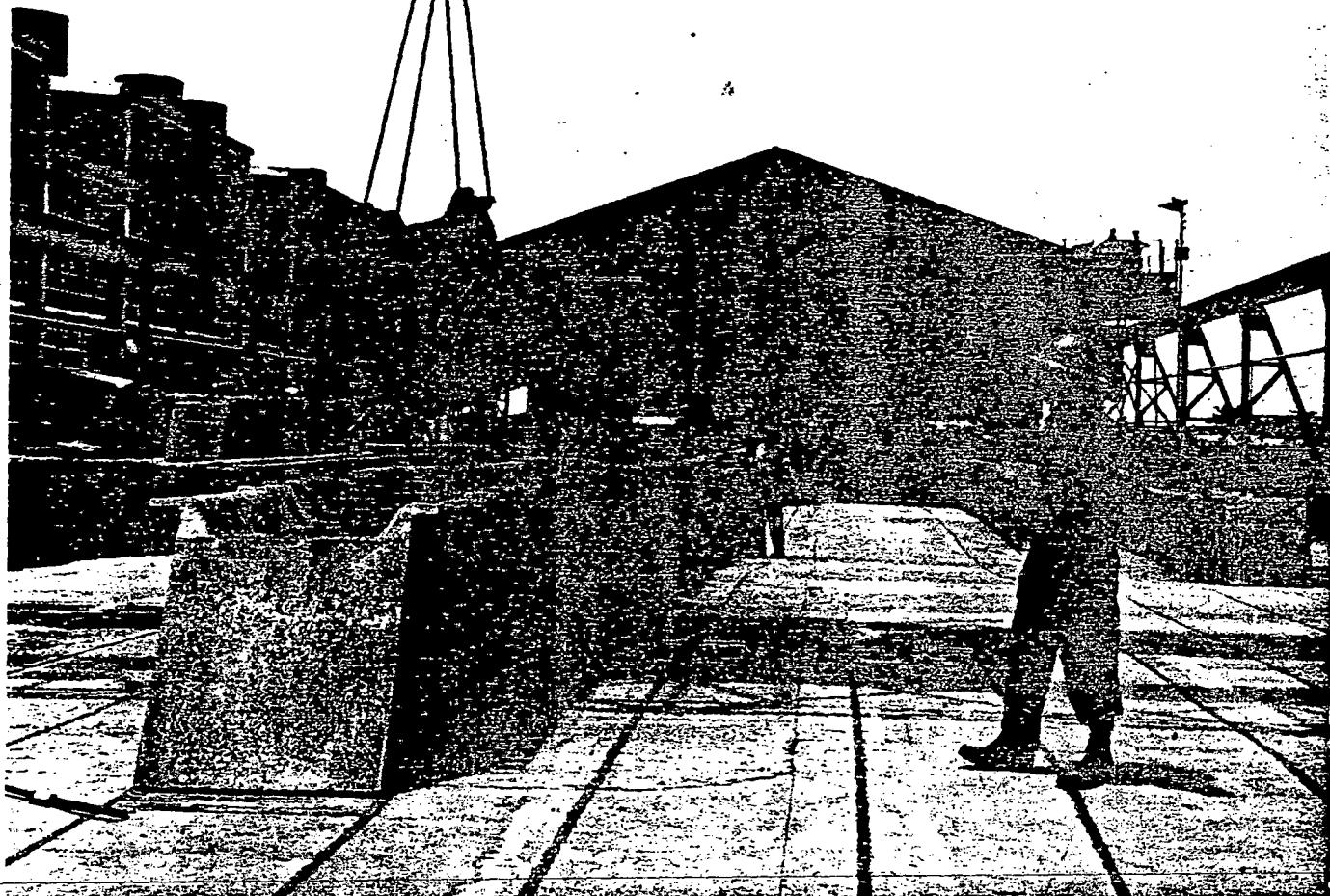
In 1984 Zimbabwean mineral exports were in excess of 1.3 Gt (Table 6), but it should be noted that much of this was within the region, especially for coal,

Table 6
Zimbabwe: selected mineral exports 1980 & 1984

Mineral	1980 kt	1980 M ZWD	1984 kt	1984 M ZWD
Ferro-chrome	257.3	79.5	209.7	154.9
Asbestos	274.3	80.1	155.4	74.0
Nickel	14.5	52.8	11.3	63.0
Steel	576.3	76.4	480.1	55.7
Copper	22.7	24.6	21.5	31.1
Tin	0.9	8.6	0.9	16.6
Coke	113.4	6.4	102.3	11.2
Cement	62.7	1.9	164.4	7.6
Coal	229.5	3.9	174.8	5.2
Lithium ores	18.4	1.7	23.8	5.1
Graphite	—	—	12.0	3.1
Tonnage	1 570.0		1 356.2	

Source:

Central Statistical Office of Zimbabwe: *Quarterly Digest of Statistics*, December 1985.



coke and cement, where almost all went to regional customers, and steel. A rough estimate of exports destined for overseas markets would be in the region of 730 kt/year. An approximate estimation of the premium above the Beira cost would be 20 M USD/year or 80 M USD over the last four years, while the premium above the Maputo cost cannot be estimated as there have been no rates for this route since 1983.

A SADCC study at the end of 1985 estimated a total saving (all exports) for Zimbabwe of 187 M USD/year through the use of Mozambican instead of South African ports. Paradoxically the saving for Malawi would be even greater at 266 M USD, yet that country continues to do the RSA's bidding by supporting MNR banditry.¹⁷

The effect of the higher transport cost on the profitability and hence output of the Zimbabwean mining companies would be impossible to estimate, suffice it to note that most of the non-gold companies are operating at low profit margins if not making losses. The effect of South African destabilization on the inflow of foreign capital into the mining

industry can again not be calculated as it would be impossible to determine whether the lack of investment was due to the perceived regional security situation or to the general slow down in mining investment world-wide since 1980, but it is possible that Zimbabwe's coal production would have been expanded for overseas export had the Chiqualala line been operating effectively.

Due to South African destabilization of the south-west of the country via so-called "Super Zulu" bandits and the need to secure the Beira corridor, Zimbabwe has recently announced the expansion of her army and the introduction of military conscription. This is yet another extra expense provoked by South Africa's strategy of regional destabilization, and one that Zimbabwe could well do without.

Zambia

As a mining economy situated in the centre of the region, Zambia has probably suffered the most from transport route disruptions. Pre-1975 Zambia's main routes were to Lobito (Benguela line), the Mozambican ports and the

South African ports, but the latter two routes went through the then Rhodesia. Due to border closures by the Rhodesian regime, Zambia was at times forced to export its copper by air and more commonly, by road (to Dar es Salaam). In the late sixties, due to the instability of the southern route and increasing guerrilla activity on the Benguela line in Portuguese Angola, Zambia and Tanzania decided to construct a line from the copperbelt to Dar es Salaam (the Tazara line) which was completed by The Peoples Republic of China in 1975.

Zambia exports between 530 and 600 kt of copper yearly, almost all to overseas markets. Smaller amounts of lead, zinc and cobalt are also exported (about 40 kt/year). In 1984/85 of all metals despatched 79 per cent went via Dar es Salaam and 21 per cent via East London in the RSA.¹⁸

Zambia's cheapest route is via Lobito which has been out of action since the South African invasion of Angola in 1975, due to sabotage by the SADF/UNITA. The next cheapest is via Beira, but the capacity of this line is still low due to SADF/MNR sabotage.

Anodes awaiting treatment in the refinery stacked in the storage yard at Ndola Copper Refinery, Zambia.

The current cost of exporting copper via East London is 443 ZAK/t (64 USD), via Beira 411 ZAK/t (59 USD) and via Dar es Salaam 247 ZAK/t (35.6 USD). As Lobito has not been used for ten years there are no current rates for it but it is estimated that they would be about 50 per cent of those for Dar es Salaam, or roughly 18 USD/t.¹⁹

Total Zambian copper exports for the period 1975 to 1986 are of the order of 7.3 Mt. Using the 21:79 ratio between East London and Dar es Salaam, the average current rate is 41.6 USD/t. The transport premium paid by Zambia, due to the closure of the Benguela line, would therefore be 23.6 USD/t, or a total of 172.3 M USD since 1975 on 7.3 Mt of copper exported.

Due to the depressed world market price for copper, the Zambian mining industry has been operating with little or no profit margin. The absence of this transport premium therefore may well have made a significant difference to its profitability resulting in an expansion of production, rather than a reduction as has been the case.

Conclusion

This paper has looked at only three, generally quantifiable, effects of South African destabilization on the minerals sector of the SADCC namely:

- Direct destruction of mining installations.
- Lost production from reductions in output, and
- Extra transport costs due to the destruction of preferred routes.

The effects of mineral output reductions on downstream and upstream industries have not been looked at. Likewise, the effect of reduced exchange earnings on the economies as a whole has not been analysed and neither has the significant effect of the diversion of resources to defence been determined. The paper has kept strictly to its brief, the effects of destabilization on the minerals industries only.

In terms of direct destruction of mining installations, this form of destabilization has only been experienced by Angola and Mozambique. Published figures for the value of this destruction are not available, but a rough estimate would be between 100 and 200 M USD.

Forfeited mineral production for Mozambique and Angola due to output reductions would total about 4.5 G USD. A staggering amount when considered against the poverty of these two states.

The extra transport costs resulting from the sabotage of the most economical export routes for Zimbabwe and Zambia are roughly 33 M USD/year or a total of 252 M USD. Given the depressed international minerals market this extra transport cost burden could be crucial factor to the continued profitability of the mining industries concerned.

In general, with the exception of precious minerals, the mining industries of the SADCC have been stagnating or declining since the start of the world recession in 1980. In real (terms of trade) terms most minerals are worth less than half their 1980 value and only by constant devaluations of the national currencies and resulting declining real earnings of mineworkers, have many of the mineral industries been able to survive. The added cost of South African aggression could therefore not have come at a worse time.

Notes:

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³ Jourdan, P P, "The Mining Industry of Zimbabwe", in *Mining and Engineering*, Vol 50, Nos 11 & 12, Harare, 1985.

⁴ UNCTAD, *Monthly Commodity Price Bulletin, 1960-1984 Supplement*. UNCTAD, Geneva, 1985.

⁵ Jourdan, P P, "The Minerals Industry of Angola", *Raw Materials Report*, Volume 5 No 1, Stockholm 1986.

⁶ UNTCD Project ANG/78/017; "Report on a Mineral Economics Consultancy at Geominas, People's Republic of Angola", by Astorga, T, Mimeo, UNTCD, 1980.

⁷ INE, Instituto Nacional de Estatistica, *"Anuario Estatistico 1973"*, INE, Delegacao de Angola, Luanda, 1974.

⁸ MPA, Ministerio de Plano de Angola; "Colecta de Alguns Elementos Informativos da Situacao Socio-Economica de Angola", Mimeo, MPA, Luanda, 1986.

⁹ CNPM, Comissao Nacional de Plano de Mocambique; *"Informacao Estatistica 1975-1984"*, CNPM, Maputo, 1985.

¹⁰ Jourdan, P P, "The Minerals Industry of Mozambique", in *Raw Materials Report*, Vol 4 No 4, Stockholm, 1986.

¹¹ Ibid.

¹² MRMM, Ministerio dos Recursos Minerais de Mocambique; Unpublished data on mineral production, MRMM, 1986.

¹³ See note 9.

¹⁴ See note 12.

¹⁵ SATCC, Southern African Transport and Communications Commission, *"Beira Port Transport System, 10-year Development Plan"*, SATCC, Maputo, 1986.

¹⁶ MMCZ, Minerals marketing corporation of Zimbabwe, Unpublished data, MMCZ, Harare, 1986.

¹⁷ See note 15.

¹⁸ MEMACO, Minerals Marketing Corporation Ltd, *"Annual Report 1985"*, Memaco, Lusaka, 1985. Personal communication, Lusaka, 1986.

¹⁹ Ibid.

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