African Mineral Production

2001–2005

British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

BRITISH GEOLOGICAL SURVEY

African Mineral Production 2001–2005

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Drill rig at Sakoro, Adola Greenstone terrane, Ethiopia.
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EXPLANATORY NOTES

The statistics in this publication are from a more comprehensive database that is published as *World Mineral Production 2001-2005.*

Coverage

African Mineral Production covers the majority of economically important mineral commodities. For each commodity constant efforts are made to ensure that as many producing countries as possible are reported. For some commodities, where statistics on production are not publicly available, estimates are made. Users of this compilation are advised that more statistical information than can be included in a publication of this nature is held in the BGS files and is available for consultation.

Production

Metals Mine production of many metals is expressed in terms of metal content. This is clearly indicated adjacent to the commodity description. Unless otherwise specified, metal production statistics relate to metal recovered from both domestic or imported materials, whether primary or secondary, but exclude remelted material.

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Acknowledgements

Compilation of this volume of mineral statistics has been possible only by obtaining information from a very large number of organisations throughout the world, chiefly government departments and specialist national or international authorities concerned with particular sectors of the minerals or metals industries. To all these bodies the British Geological Survey expresses its grateful acknowledgement for the information made available, whether in published form or provided by direct correspondence.

Particular acknowledgement is made to the Mines Departments and other government agencies of many countries whose regular statements, yearbooks and other reports are worthy of direct consultations by readers in search of detail.

Specialist commodity organisations which have kindly allowed information to be reproduced include the International Copper Study Group, the International Lead and Zinc Study Group, the International Nickel Study Group, the International Fertilizer Industry Association Ltd, the UN Food and Agriculture Organization and the UNCTAD. In a few instances, information on specific commodities has been obtained directly from company sources. The co-operation of other members of the International Consultative Group on Non-Ferrous Metal Statistics is also gratefully acknowledged.

Information is also obtained from publications dealing with a wide range of commodities such as Minerals Bureau, *South Africa's Mineral Industry*; Mining Journal, *Mining Annual Review;* World Bureau of Metal Statistics, *World Metal Statistics* and *Metallstatistik;* publications of the United States Geological Survey.

In addition, information has been obtained from the websites of the following organisations, companies, and statistical offices: United Nations; International Iron and Steel Institute; World Nuclear Association; Xstrata Plc; Federacciai, Italy.

Units

The Statistics are expressed in metric units. The following factors are given for converting to non-metric units:

tonnes × 0.9842 = long tons
tonnes × 1.1023 = short tons
kilograms × 2.2046 = pounds
kilograms × 32.1507 = troy ounces
cubic metres × 35.3147 = cubic feet
1 tonne of crude petroleum equals on average 7 barrels of crude petroleum.
1 flask mercury = 34.5 kilograms
1 metric ton unit = 10 kilograms

Conversion of national currencies to pounds sterling has been made using the annual average factors shown for each country in *International Financial Statistics* published by the International Monetary Fund.

Symbols

...	figures not available
0	quantity less than half unit shown
—	nil
*	estimated
BGS	British Geological Survey

TABLE NOTES

Bauxite
(1) Includes production of refractory bauxite

Alumina
(1) Where possible figures show the alumina equivalent (Al_2O_3) of total hydrate produced, whether or not calcined

Antimony, mine
(1) Includes antimony content of antimonial lead alloys

White arsenic
(1) Includes calculated trioxide equivalent of arsenic metal produced except where this would involve double counting

Barytes
(1) Statistics may include small quantities of witherite

Bentonite and fuller's earth
(1) Bentonites consist of montmorillonite (one of the smectite group of clay minerals) and occur in two main varieties, calcium bentonite, the most commonly occurring, and sodium bentonite, industrially the more important
(2) Calcium bentonite can be converted to sodium bentonite by a sodium-exchange process
(3) In some countries calcium bentonite is known as fuller's earth, a term which is also used to refer attapulgite, a mineralogically distinct clay mineral but exhibiting similar properties

Bismuth, mine
(1) The figures are in some instances derived from reported bismuth content of refined and impure metal plus recoverable in ores and concentrates exported
(2) Production for some countries may include bismuth produced from imported ores but it is thought that any resulting duplication is insignificant in the countries shown

Cadmium
(1) Data exclude secondary metal unless otherwise stated

Coal
(1) There is no international agreement as to the separate definition of lignite and brown coal. In some cases they are distinguished. Elsewhere both may be aggregated under one or other term

Cobalt, mine
(1) There is frequently a considerable disparity between the cobalt content of ore raised and cobalt actually recovered
(2) Figures relate where possible to cobalt recovered

Copper, smelter
(1) Figures show primary metal in the form of blister and anode produced from concentrates, and may include copper produced from scrap but this is excluded when it can be separately identified

Copper, refined
(1) Figures relate to both primary and secondary refined copper, whether electrolytic or fire refined. Metal recovered from secondary materials by remelting alone is excluded

Diamond
(1) Production of synthetic diamond is not included
(2) So far as possible the amounts shown include estimates for illegal production

Gold, mine
(1) In several countries substantial amounts of gold produced in small operations are not recorded in the official statistics used when compiling these tables
(2) Central African Republic, Liberia, Mozambique, Nigeria and Sierra Leone produce less than 100 kg gold per year

Graphite
(1) Includes all forms of amorphous and crystalline graphite but excludes synthetic material

Gypsum
(1) Some countries produce large quantities of synthetic gypsum. Where possible, this output is excluded

Pig iron
(1) The data include sponge iron and direct reduced iron (DRI), where these have been separately identified

Crude steel
(1) The figures refer to crude steel and cast semi-manufactures are not included
(2) Unless otherwise indicated, these figures include production from scrap

Lead, refined
(1) Figures relate to both primary and secondary refined lead and include the lead content of antimonial lead. Metal recovered from materials by remelting alone is excluded

Mercury
(1) Several countries are believed to have unrecorded production of mercury from copper electrowinning processes

Nickel, smelter/refinery
(1) Data relate to refined nickel plus the nickel content of ferro-nickel, nickel oxide and nickel salts

Crude petroleum
(1) The figures exclude natural gasoline

Natural gas
(1) So far as possible the figures exclude flared or reinjected gas

Platinum group metals, mine
(1) Wherever possible, figures relate to quantities of platinum group metals thought to be recovered from ores originating in the country stated
(2) Figures for metal production are only given for countries where recovery is thought to be based predominantly on domestic materials or on imported materials which have not been recorded as mine production elsewhere in the table

Rare earth minerals
(1) Figures refer to gross tonnage of concentrates

Salt
(1) Production of refined salt is not included
(2) Salt is known to be produced in many countries for which statistics are not available

Sillimanite minerals
(1) A number of other countries produce sillimanite minerals but details of output are not reported

Tantalum and niobium minerals
(1) The figures refer to gross tonnage of tantalum and niobium concentrates
(2) Niobium and tantalum are also recovered from tin slags. This source is particularly important in the case of tantalum and in recent years is believed to have accounted for over 60% of all tantalum recovered

Titanium minerals
(1) The figures refer to gross tonnage of titanium concentrates

Vanadium
(1) Includes vanadium in slag products but excludes vanadium recovered as a byproduct of the refining and burning of heavy oils

Zirconium minerals
(1) The term 'zirconium minerals' is understood to mean zircon, unless otherwise stated

STATISTICAL TABLES

Algeria

Commodity	Units	2001	2002	2003	2004	2005
Barytes	tonnes	43 020	51 773	47 340	47 753	54 773
Bentonite and fuller's earth						
Bentonite	tonnes	21 282	30 699	28 064	32 200	29 029
Fuller's earth	tonnes	3 254	3 521	2 573	2 284	*2 200
Diatomite	tonnes	2 863	3 185	2 335	2 665	*2 600
Gold, mine	kilograms (metal content)	—	369	365	597	641
Gypsum	tonnes	646 000	741 000	*800 000	467 352	857 502
Iron ore	tonnes	1 291 000	1 162 000	1 426 200	1 754 300	1 878 800
Pig iron	tonnes	794 715	959 000	1 026 200	692 800	791 400
Crude steel	tonnes	947 040	1 091 000	1 051 000	1 014 000	1 007 000
Kaolin	tonnes	13 356	9 505	19 258	27 700	34 386
Lead, mine	tonnes (metal content)	560	690	—	—	—
Lead, refined	tonnes	6 100	6 000	*6 000	*6 000	*6 000
Mercury	kilograms	320 091	307 119	175 570	67 200	300
Crude petroleum	tonnes	57 147 000	61 487 000	*68 450 000	*71 870 000	*74 600 000
Natural gas	million m^3	78 240	80 367	82 829	82 009	87 800
Phosphate rock	tonnes	939 000	741 000	905 000	804 900	902 300
Salt						
Brine salt & sea salt	tonnes	195 000	238 000	241 000	241 800	302 700
Silver, mine	kilograms (metal content)	1 700	1 400	500	—	800
Sulphur and pyrites						
Recovered (a)	tonnes (sulphur content)	7 000	19 000	19 000	20 000	20 000
Zinc, mine	tonnes (metal content)	5 700	4 500	1 450	116	2 206
Zinc, slab	tonnes	26 000	33 900	34 928	33 414	36 699

Note(s):-
(a) From petroleum refining and/or natural gas

Angola

Commodity	Units	2001	2002	2003	2004	2005
Diamond	carats	5 100 000	*5 700 000	*6 300 000	7 500 000	10 000 000
Crude petroleum	tonnes	36 469 000	44 600 000	43 600 000	49 000 000	61 000 000
Natural gas	million m^3	530	620	900	722	*700
Salt	tonnes	*30 000	*30 000	*30 000	*30 000	*30 000

Note(s):-
(1) Small amounts of steel are believed to be produced in Angola

Benin

Commodity	Units	2001	2002	2003	2004	2005
Salt (a)	tonnes	*15 000	*15 000	*15 000	*15 000	*15 000

Note(s):-
(1) Benin may also produce crude petroleum

(a) Sea salt

Botswana

Commodity	Units	2001	2002	2003	2004	2005
Coal	tonnes	930 374	953 081	822 780	913 087	984 876
Cobalt, mine	tonnes (metal content)	325	269	294	223	326
Copper, mine	tonnes (metal content)	19 209	21 590	24 289	21 195	26 704
Diamond	carats	26 190 000	28 368 000	30 412 155	31 125 000	31 890 000
Gold, mine	kilograms (metal content)	2	8	9	162	2 709
Nickel, mine	tonnes (metal content)	22 454	23 896	27 400	22 292	28 212
Salt	tonnes	178 646	315 259	229 432	208 319	243 945
Sodium carbonate, natural	tonnes	251 231	283 197	234 520	263 358	279 085

Burkina Faso

Commodity	Units	2001	2002	2003	2004	2005
Gold, mine	kilograms (metal content)	229	209	770	1 125	*1 400
Phosphate rock	tonnes	1 010	2 350	2 400	2 400	*2 400
Salt	tonnes	*6 000	*6 000	*6 000	*6 000	*6 000

Burundi

Commodity	Units	2001	2002	2003	2004	2005
Gold, mine	kilograms (metal content)	415	483	2 855	3 229	3 905
Tantalum and niobium minerals						
Columbite-tantalite	tonnes	123	72	24	23	46

Cameroon

Commodity	Units	2001	2002	2003	2004	2005
Primary aluminium	tonnes	80 900	67 000	77 200	85 900	90 400
Diamond (a)	carats	...	*12 000	*12 000	*12 000	*12 000
Gold, mine	kilograms (metal content)	540	630	630	600	600
Crude petroleum	tonnes	4 100 000	3 700 000	3 500 000	3 200 000	2 900 000

Note(s):-
(a) Including artisanal production

Cape Verde

Commodity	Units	2001	2002	2003	2004	2005
Salt	tonnes	*2 000	*2 000	*2 000	*2 000	*2 000

Central African Republic

Commodity	Units	2001	2002	2003	2004	2005
Diamond	carats	550 000	480 000	*500 000	*500 000	*500 000

Chad

Commodity	Units	2001	2002	2003	2004	2005
Crude petroleum	tonnes	—	—	1 300 000	8 800 000	9 300 000

Congo, Democratic Republic

Commodity	Units	2001	2002	2003	2004	2005
Coal						
Bituminous	tonnes	40 000	37 000	*35 000	*33 000	*31 000
Cobalt, mine	tonnes (metal content)	*12 000	*14 500	*14 500	*20 500	*22 000
Cobalt metal (a)	tonnes	3 199	2 149	1 200	735	600
Copper, mine	tonnes (metal content)	34 100	28 000	56 900	69 600	98 000
Copper, smelter (b)	tonnes	25 000	10 000	8 000	20 000	10 000
Copper, refined	tonnes	—	—	—	...	2 500
Diamond	carats	19 637 000	21 985 000	29 000 000	*29 000 000	27 000 000
Crude petroleum	tonnes	13 180 000	12 550 000	11 670 000	*11 100 000	*11 000 000
Silver, mine	kilograms (metal content)	500	2 100	35 700	69 700	53 600
Tin, mine	tonnes (metal content)	1 650	1 450	2 600	6 800	*7 000
Zinc, mine	tonnes (metal content)	*700	—	—	—	—

Note(s):-
(1) Small amounts of steel and minor quantities of niobium and tantalum are believed to be produced in Democratic Republic of Congo
(2) No detailed information on the tantalum bearing tin slags is available but small amounts are produced in Democratic Republic of Congo

(a) Excludes white alloy and matte which are believed to be further processed in Belgium and elsewhere
(b) Including leach cathodes

Congo, Republic

Commodity	Units	2001	2002	2003	2004	2005
Crude petroleum	tonnes	12 108 033	*11 500 000	*10 800 000	*10 690 000	*11 280 000

Djibouti

Commodity	Units	2001	2002	2003	2004	2005
Salt	tonnes	173 099	162 266	128 000	30 000	*30 000

Egypt

Commodity	Units	2001	2002	2003	2004	2005
Primary aluminium	tonnes	190 800	195 000	194 600	216 000	243 800
Coal	tonnes	*58 000	*37 000	*35 000	*35 000	*35 000
Copper, refined	tonnes	...	...	...	14 119	*4 000
Feldspar (a)	tonnes	*300 000	*350 000	*350 000	*350 000	*350 000
Fluorspar	tonnes	304	502	*500	*500	*500
Gypsum	tonnes	126 615	119 453	...	...	...
Iron ore (a)	tonnes	1 843 027	2 618 065	*2 900 000	2 237 475	*2 500 000
Pig iron	tonnes	3 530 000	3 630 000	3 950 000	*4 000 000	4 000 000
Crude steel	tonnes	3 799 000	4 316 000	4 398 000	4 810 000	5 603 000
Ferro-alloys						
Ferro-silicon (a)	tonnes	*55 000	*55 000	*55 000	*55 000	*55 000
Other ferro-alloys (a)	tonnes	7 912	16 679	*20 000	*20 000	*20 000
Kaolin	tonnes	260 000	260 000	*260 000	249 761	*250 000
Crude petroleum	tonnes	32 552 000	34 925 000	*35 000 000	*33 250 000	*31 950 000
Natural gas	million m^3	18 304	19 605	17 680	14 090	34 700
Phosphate rock	tonnes	779 445	1 218 561	2 183 200	2 218 900	2 620 900
Salt (a)	tonnes	1 434 000	1 341 000	...	1 532 362	...
Sulphur and pyrites						
Recovered (b)	tonnes (sulphur content)	78 000	78 000	78 000	78 000	78 000
Talc (a)	tonnes	36 827	45 529	*40 000	50 210	*50 000
Titanium minerals						
Ilmenite	tonnes	66 000	69 000	...	...	...
Vermiculite (a)	tonnes	270	380	*400	*400	*400

Note(s):-
(1) Egypt produces refined copper
(2) Egypt is believed to produce diatomite and graphite

(a) Years ended 30 June of that stated
(b) From petroleum refining and/or natural gas

Equatorial Guinea

Commodity	Units	2001	2002	2003	2004	2005
Crude petroleum	tonnes	9 000 000	11 700 000	12 300 000	17 400 000	17 800 000
Natural gas	million m^3	790	1 050	1 220	1 390	...

Eritrea

Commodity	Units	2001	2002	2003	2004	2005
Gold, mine	kilograms (metal content)	107	—	9	33	25
Gypsum	tonnes	2 077	1 062	2 705	1 054	212
Kaolin	tonnes	...	120	140	50	518
Salt	tonnes	77 835	116 268	52 414	30 754	63 000

Ethiopia

Commodity	Units	2001	2002	2003	2004	2005
Diatomite	tonnes	...	...	...	2 000	420
Gold, mine	kilograms (metal content)	3 862	3 670	3 875	3 490	3 121
Gypsum	tonnes	50 500	22 500	48 058	51 200	34 729
Kaolin	tonnes	1 790	3 534	3 088	4 251	3 726
Salt	tonnes	61 000	61 000	61 000	21 000	24 000
Silver, mine	kilograms (metal content)	3 545	900	999	1 133	886
Tantalum and niobium minerals						
Tantalite	tonnes	47	55	58	71	93
Sodium carbonate, natural	tonnes	7 543	3 843	4 377	6 550	2 748

Note(s):-
(1) Years ended 7 July of that stated except for diatomite
(2) Ethiopia is believed to produce feldspar and platinum group metals

Gabon

Commodity	Units	2001	2002	2003	2004	2005
Gold, mine	kilograms (metal content)	*70	*70	*70	300	*300
Manganese ore	tonnes	1 791 000	1 856 000	2 000 000	2 459 766	2 900 000
Crude petroleum	tonnes	15 000 000	14 700 000	12 000 000	11 800 000	11 690 000
Natural gas	million m^3	100	100	125	102	*100

Gambia

Commodity	Units	2001	2002	2003	2004	2005
Zirconium minerals	tonnes	...	...	12 000	*12 000	*12 000

Ghana

Commodity	Units	2001	2002	2003	2004	2005
Bauxite	tonnes	692 620	683 654	494 716	498 060	606 700
Primary aluminium	tonnes	161 670	131 858	15 909	—	13 400
Diamond	carats	1 132 102	963 493	904 089	905 344	1 065 923
Gold, mine	kilograms (metal content)	70 049	69 575	70 756	63 140	66 530
Manganese ore	tonnes	1 076 666	1 135 828	1 509 432	1 597 085	1 719 589
Crude petroleum	tonnes	450 000	350 000	410 000	370 000	*370 000
Salt	tonnes	68 076	99 593	*250 000	*265 000	*265 000
Silver, mine	kilograms (metal content)	1 900	2 129	3 080	3 035	*3 300

Note(s):-
(1) Small amounts of steel are believed to be produced in Ghana

Guinea

Commodity	Units	2001	2002	2003	2004	2005
Bauxite	tonnes	17 312 100	17 480 000	17 072 200	18 799 800	19 236 900
Alumina	tonnes (Al_2O_3 content)	674 300	669 835	723 026	778 000	729 600
Diamond	carats	323 232	491 160	666 000	739 784	*740 000
Gold, mine	kilograms (metal content)	16 256	16 666	16 631	15 236	17 474
Salt	tonnes	*15 000	*15 000	*15 000	*15 000	*15 000

Ivory Coast

Commodity	Units	2001	2002	2003	2004	2005
Diamond	carats	309 000	306 000	230 000	*230 000	*230 000
Gold, mine	kilograms (metal content)	3 672	3 570	1 313	1 219	*1 500
Crude petroleum	tonnes	288 126	754 289	928 895	1 020 452	*1 000 000
Natural gas	million m^3	1 062	1 610	1 457	*1 500	*1 500

Kenya

Commodity	Units	2001	2002	2003	2004	2005
Diatomite	tonnes	441	1 333	353	330	243
Fluorspar (a)	tonnes	118 850	85 015	80 201	117 986	109 594
Gold, mine (a)	kilograms (metal content)	1 545	1 477	1 543	567	616
Gypsum	tonnes	8 200	*9 000	*10 000	*11 000	*11 000
Kaolin	tonnes	700	*700	*700	*700	*700
Lead, refined	tonnes	*1 000	*1 000	*1 000	*1 000	*1 000
Salt (b)	tonnes	5 664	18 848	21 199	31 139	26 595
Sodium carbonate, natural	tonnes	297 780	304 110	352 560	353 835	360 161

Note(s):-
(1) Kenya is believed to produce magnesite and small amounts of steel

(a) Exports
(b) Lake Salt

Lesotho

Commodity	Units	2001	2002	2003	2004	2005
Diamond	carats	1 140	721	1 899	26 607	52 036

Liberia

Commodity	Units	2001	2002	2003	2004	2005
Diamond	carats	155 000	80 000	60 000	30 000	*30 000

Libya

Commodity	Units	2001	2002	2003	2004	2005
Gypsum	tonnes	*175 000	*150 000	*150 000	*175 000	*175 000
Pig iron	tonnes	1 060 000	1 161 000	1 336 000	1 586 000	1 700 000
Crude steel	tonnes	846 000	886 000	1 007 000	1 026 000	1 255 000
Crude petroleum	tonnes	63 777 000	*61 550 000	69 000 000	75 800 000	82 060 000
Natural gas	million m^3	6 180	6 210	6 400	7 000	11 700
Salt	tonnes	*40 000	*40 000	*40 000	*40 000	*40 000
Sulphur and pyrites Recovered (a)	tonnes (sulphur content)	*15 000	*15 000	*15 000	*15 000	*15 000

Note(s):-
(a) From petroleum refining and/or natural gas

Madagascar

Commodity	Units	2001	2002	2003	2004	2005
Beryl (a)	tonnes	7	1	*1	12	*12
Chromium ores and concentrates	tonnes	60 923	10 737	45 040	77 386	140 847
Coal	tonnes	13 375	...	...	...	...
Gold, mine	kilograms (metal content)	294	2 802	10	0	—
Graphite	tonnes	12 580	7 522	2 170	7 770	*7 700
Mica	tonnes	123	102	*70	*70	*70
Salt	tonnes	26 000	17 000	*23 000	*23 000	*23 000
Tantalum and niobium minerals						
Columbite	tonnes	...	—	...	40	...

Note(s):-
(a) Includes ornamental and industrial products

Malawi

Commodity	Units	2001	2002	2003	2004	2005
Coal	tonnes	34 410	43 372	47 037	40 891	44 900

Note(s):-
(1) Malawi is believed to produce vermiculite

Mali

Commodity	Units	2001	2002	2003	2004	2005
Gold, mine	kilograms (metal content)	41 273	56 019	45 529	37 916	44 156
Salt	tonnes	*6 000	*6 000	*6 000	*6 000	*6 000

Mauritania

Commodity	Units	2001	2002	2003	2004	2005
Gypsum	tonnes	*100 000	*100 000	*100 000	*100 000	*100 000
Iron ore	tonnes	10 300 000	9 600 000	10 100 000	10 700 000	*10 700 000
Salt	tonnes	*6 000	*6 000	*6 000	*6 000	*6 000

Note(s):-
(1) Small amounts of steel are believed to be produced in Mauritania

Mauritius

Commodity	Units	2001	2002	2003	2004	2005
Salt (a)	tonnes	6 800	7 000	7 200	7 000	7 900

Note(s):-
(a) Sea salt

Morocco

Commodity	Units	2001	2002	2003	2004	2005
Barytes	tonnes	467 056	487 626	356 394	355 800	475 700
Bentonite and fuller's earth						
Bentonite	tonnes	71 741	58 754	71 544	...	...
Fuller's earth (a)	tonnes	40 664	43 243	14 944	*15 000	*15 000
Coal						
Anthracite	tonnes	1 908	302	214	...	...
Cobalt, mine	tonnes (metal content)	1 337	1 335	1 391	*1 600	*1 600
Cobalt metal	tonnes	1 341	1 354	1 341	1 593	1 613
Copper, mine	tonnes (metal content)	5 357	4 994	4 818	4 400	*4 000
Feldspar	tonnes	12 015	19 402	*20 000	*20 000	*20 000
Fluorspar	tonnes	96 500	94 910	81 225	*81 000	*85 000
Gold, mine (b)	kilograms (metal content)	1 191	2 747	1 863	*1 493	*1 500
Gypsum	tonnes	*550 000	*600 000	*600 000	*600 000	*600 000
Iron ore	tonnes	7 976	8 736	4 019	...	...
Pig iron	tonnes	*15 000	*15 000	*15 000	*15 000	*15 000
Crude steel	tonnes	...	...	...	...	205 000
Lead, mine	tonnes (metal content)	76 748	62 417	39 387	44 200	53 000
Lead, refined	tonnes	58 178	71 840	61 473	25 000	*53 000
Manganese ore	tonnes	13 757	17 484	18 064	*16 500	*16 000
Mercury	kilograms	*10 000	*10 000	*10 000	*10 000	*10 000
Crude petroleum	tonnes	10 100	12 800	*12 500	*12 500	*12 500
Natural gas	million m^3	50	49	*49	*49	*49
Phosphate rock	tonnes	21 766 000	23 028 000	23 338 000	26 675 000	28 788 000
Salt	tonnes	233 816	266 903	236 443	240 000	*240 000
Silver, mine	kilograms (metal content)	280 700	276 800	200 430	196 000	*240 000
Strontium minerals	tonnes	1 879	3 780	*2 700	*2 700	*2 700
Talc						
Talc	tonnes	5 844	6 708	1 959	*2 000	*2 000
Pyrophyllite	tonnes	21 042	33 686	28 338	...	...
Zinc, mine	tonnes (metal content)	89 631	90 513	85 200	87 000	128 000

Note(s):-
(1) Morocco is believed to produce white arsenic, wollastonite and small amounts of steel

(a) Smectite
(b) Metal production

Mozambique

Commodity	Units	2001	2002	2003	2004	2005
Bauxite	tonnes	8 597	9 119	11 793	6 723	9 518
Primary aluminium	tonnes	266 000	273 200	407 400	547 100	553 700
Bentonite and fuller's earth						
Bentonite	tonnes	1 611	580	684	578	547
Beryl	tonnes	1	54	78	45	146
Coal						
Bituminous	tonnes	27 600	43 512	36 742	16 525	3 417
Salt	tonnes	*10 000	*80 000	*80 000	*80 000	*80 000
Tantalum and niobium minerals						
Tantalite	tonnes	27	47	189	712	281

Note(s):-
(1) Mozambique is believed to produce rare earth minerals and perlite

Namibia

Commodity	Units	2001	2002	2003	2004	2005
White arsenic (a)	tonnes	738	852	389	1 264	29
Copper, mine	tonnes (metal content)	15 003	18 040	16 175	11 174	10 157
Copper, smelter	tonnes	27 718	26 670	26 306	24 704	21 699
Diamond	carats	1 487 316	1 537 505	1 454 756	2 003 868	1 902 484
Fluorspar	tonnes	81 245	81 084	79 281	104 785	114 886
Gold, mine	kilograms (metal content)	2 852	2 947	2 298	2 205	2 649
Lead, mine	tonnes (metal content)	12 827	12 088	16 112	14 338	14 320
Manganese ore	tonnes	...	...	...	—	7 320
Salt	tonnes	564 841	455 912	651 431	750 821	573 248
Silver, mine (b)	kilograms (metal content)	20 396	43 632	29 367	27 153	34 102
Sulphur and pyrites						
Pyrites	tonnes (sulphur content)	34 491	1 817	15 893	1 829	518
Zinc, mine	tonnes (metal content)	37 622	41 042	108 000	202 000	246 000
Zinc, slab	tonnes	—	—	47 436	120 533	132 818
Uranium, mine	tonnes (metal content)	2 237	3 369	2 663	3 483	3 080
Wollastonite	tonnes	284	742	585	406	253

Note(s):-
(1) Nambia is believed to produce feldspar, graphite and mica

(a) Output of Tsumeb Corp. only, trioxide equivalent of reported black arsenic
(b) Smelter and/or refinery production

Niger

Commodity	Units	2001	2002	2003	2004	2005
Coal	tonnes	163 275	182 916	188 915	200 384	*200 000
Gold, mine	kilograms (metal content)	30	28	30	1 531	3 500
Gypsum	tonnes	3 205	17 652	17 851	34 944	*35 000
Salt	tonnes	*2 000	*2 000	*2 000	*2 000	*2 000
Uranium, mine	tonnes (metal content)	2 919	3 076	3 143	3 273	3 093

Nigeria

Commodity	Units	2001	2002	2003	2004	2005
Barytes	tonnes	*5 000	*5 000	*15 000	*15 000	*30 000
Coal						
Sub-bituminous	tonnes	10 000	10 000	*10 000	*10 000	*10 000
Iron ore	tonnes	...	7 850	8 635	8 479	*8 000
Crude steel	tonnes	...	...	...	40 000	100 000
Kaolin	tonnes	32 090	52 352	57 587	...	...
Lead, refined	tonnes	*5 000	*5 000	*5 000	*5 000	*5 000
Crude petroleum	tonnes	99 523 000	88 874 000	106 859 000	123 600 000	127 260 000
Natural gas	million m^3	15 680	15 120	19 200	22 388	21 800
Tantalum and niobium minerals						
Tantalite	tonnes	*25	*25	*25	*25	*25
Tin, mine	tonnes (metal content)	2 890	789	891	1 374	*1 500
Tin, smelter	tonnes	2 870	728	801	—	—

Note(s):-
(1) Nigeria is believed to produce rare earth minerals and small amounts of steel
(2) No detailed information on the tantalum bearing tin slags is available but small amounts are produced in Nigeria

Rwanda

Commodity	Units	2001	2002	2003	2004	2005
Tantalum and niobium minerals						
Columbite-tantalite	tonnes	241	96	128	63	63
Tin, mine	tonnes (metal content)	169	197	300	547	500
Tungsten, mine	tonnes (metal content)	142	153	78	120	*120

Senegal

Commodity	Units	2001	2002	2003	2004	2005
Bentonite and fuller's earth						
Attapulgite	tonnes	121 100	176 454	176 857	*180 000	*180 000
Gold, mine	kilograms (metal content)	*550	*600	*600	*600	*600
Phosphate rock						
Phosphate rock	tonnes	1 876 400	1 549 100	1 499 600	1 576 000	1 541 700
Aluminium phosphate (a)	tonnes	20 610	1 557	3 516	1 600	1 800
Salt	tonnes	109 800	171 500	235 000	167 800	*168 000

Note(s):-
(a) Including lime phosphates

Sierra Leone

Commodity	Units	2001	2002	2003	2004	2005
Diamond	carats	224 188	351 860	506 819	693 104	668 709
Salt	tonnes	2 889	1 821	1 004	—	—
Titanium minerals						
Rutile	tonnes	—	—	—	—	150

Somalia

Commodity	Units	2001	2002	2003	2004	2005
Gypsum	tonnes	*1 500	*1 500	*1 500	*1 500	*1 500
Salt	tonnes	*1 000	*1 000	*1 000	*1 000	*1 000

South Africa

Commodity	Units	2001	2002	2003	2004	2005
Primary aluminium	tonnes	662 497	706 916	732 717	866 074	846 213
Antimony, mine	tonnes (metal content)	5 476	5 746	5 291	4 967	*6 000
Asbestos						
Chrysotile	tonnes	13 393	13 311	6 218	—	—
Bentonite and fuller's earth						
Bentonite	tonnes	108 306	98 313	145 060	55 859	139 833
Attapulgite	tonnes	9 200	13 918	14 585	20 419	34 241
Chromium ores and concentrates	tonnes	5 502 010	6 435 746	7 405 391	7 676 799	7 502 762
Coal						
Anthracite	tonnes	1 607 000	1 304 965	1 206 105	1 486 619	1 639 414
Bituminous	tonnes	222 105 086	218 900 000	236 670 504	241 884 911	242 724 560
Cobalt, mine	tonnes (metal content)	373	366	271	309	268
Cobalt metal (a)	tonnes	373	366	271	329	268
Copper, mine	tonnes (metal content)	141 900	90 000	89 338	85 710	103 907
Copper, smelter	tonnes	117 200	117 000	112 000	89 300	105 500
Copper, refined	tonnes	104 700	99 100	93 300	87 300	98 600

Commodity	Units	2001	2002	2003	2004	2005
Diamond	carats	11 162 630	10 882 614	12 673 379	14 294 662	15 775 720
Feldspar	tonnes	66 062	66 616	57 738	53 721	56 574
Fluorspar	tonnes	286 387	227 000	235 000	275 000	*275 000
Gold, mine	kilograms (metal content)	394 757	398 258	372 766	337 223	294 803
Gypsum	tonnes	382 830	415 387	394 069	452 271	547 581
Iron ore (b)	tonnes	34 757 159	36 484 015	38 085 855	39 322 048	39 542 072
Pig iron	tonnes	7 376 000	7 525 000	7 776 000	7 644 000	7 900 000
Crude steel	tonnes	8 821 000	9 095 000	9 481 000	9 500 000	9 494 000
Ferro-alloys						
Ferro-chrome	tonnes	2 141 008	2 351 122	2 813 000	3 031 515	2 811 836
Ferro-manganese	tonnes	523 844	618 954	607 362	*640 000	*640 000
Ferro-silico-manganese	tonnes	259 176	315 802	313 152	*320 000	*320 000
Ferro-silicon	tonnes	107 557	141 700	135 300	*150 000	*150 000
Ferro-vanadium	tonnes	*11 000	*11 000	*18 000	*23 000	*23 000
Silicon metal	tonnes	39 440	42 500	*48 900	*49 000	*49 000
Kaolin	tonnes	83 500	91 456	86 365	81 901	60 072
Lead, mine	tonnes (metal content)	50 771	49 444	39 941	37 485	42 159
Lead, refined	tonnes	55 000	61 000	65 000	64 000	65 300
Magnesite	tonnes	36 500	87 200	86 100	*85 000	*85 000
Manganese ore						
Metallurgical	tonnes	3 239 903	3 302 129	3 484 801	4 264 762	4 599 289
Chemical	tonnes	26 241	19 516	15 837	17 194	12 810
Mica	tonnes	937	821	980	285	924
Nickel, mine (c)	tonnes (metal content)	36 443	38 546	40 842	39 851	42 497
Nickel, smelter/refinery	tonnes	36 500	38 500	40 800	39 900	42 500
Perlite	tonnes	*1 200	*1 200	*1 200	*1 200	*1 200
Crude petroleum	tonnes	1 025 000	1 025 000	*780 000	1 042 000	1 113 500
Natural gas	million m^3	*2 000	*1 000	...	...	...
Phosphate rock	tonnes	2 419 941	2 803 265	2 642 970	2 735 150	2 577 097
Platinum group metals, mine						
Platinum	kilograms (metal content)	129 746	133 796	148 348	153 239	168 749
Palladium	kilograms (metal content)	62 142	64 244	70 946	76 403	84 908
Other platinum metals	kilograms (metal content)	36 859	41 545	46 856	46 759	58 218
Salt	tonnes	356 582	428 887	437 896	332 673	387 887
Sillimanite minerals						
Andalusite	tonnes	193 225	165 087	164 921	*165 000	*165 000
Silver, mine	kilograms (metal content)	109 600	113 108	87 325	73 124	89 023
Sulphur and pyrites						
Pyrites	tonnes (sulphur content)	150 184	183 004	175 621	165 207	133 245
Recovered (d) (e) (f)	tonnes (sulphur content)	238 128	316 219	438 271	288 435	422 314
Talc						
Talc	tonnes	3 030	2 511	6 719	8 141	8 469
Pyrophyllite	tonnes	14 047	15 587	14 350	28 987	55 278
Titanium minerals						
Ilmenite (g)	tonnes	*1 751 000	*1 649 000	*1 581 000	*1 732 000	*2 000 000
Rutile	tonnes	*122 000	*140 000	*100 000	*100 000	*130 000
Uranium, mine	tonnes (metal content)	903	846	758	752	674
Vanadium, mine	tonnes (metal content)	18 184	25 227	27 172	23 303	22 604
Vermiculite	tonnes	160 265	210 297	182 802	196 893	209 801
Zinc, mine	tonnes (metal content)	61 221	64 173	41 239	32 001	32 112
Zinc, slab	tonnes	109 000	111 000	112 000	105 000	104 000
Zirconium minerals	tonnes	*262 000	*420 000	*370 000	*379 000	*390 000

Note(s):-
(a) Includes metal and metal contained in sulphate
(b) Including by-product magnetite
(c) Includes metal and metal content of sulphate and concentrates
(d) From metal sulphide processing
(e) From petroleum refining and/or natural gas
(f) Including production from synthetic fuels
(g) Processed into slag. In 2005 South Africa produced an estimated 1 200 000 tonnes (85% TiO_2)

Sudan

Commodity	Units	2001	2002	2003	2004	2005
Chromium ores and concentrate	tonnes	20 500	14 000	37 000	26 000	*21 654
Gold, mine	kilograms (metal content)	5 438	5 258	*5 500	*5 000	4 739
Gypsum	tonnes	2 422	*5 000	*5 000	*5 000	*5 000
Crude petroleum	tonnes	10 400 000	11 500 000	12 600 000	14 900 000	18 560 000
Salt	tonnes	77 783	83 000	*84 000	*84 000	*84 000
Silver, mine	kilograms (metal content)	1 600	3 300	2 800	2 900	*2 900

Swaziland

Commodity	Units	2001	2002	2003	2004	2005
Coal						
Bituminous	tonnes	*450 000	553 000	*550 000	488 314	221 701

Tanzania

Commodity	Units	2001	2002	2003	2004	2005
Bauxite	tonnes	...	...	...	...	1 640
Coal						
Bituminous	tonnes	77 789	79 210	54 610	65 041	30 795
Copper, mine	tonnes (metal content)	3 600	4 200	3 700	4 300	3 700
Diamond	carats	254 271	239 761	236 382	303 920	219 640
Gold, mine	kilograms (metal contents)	30 088	43 320	48 018	48 176	45 405
Gypsum	tonnes	72 000	78 650	33 232	59 231	23 119
Phosphate rock	tonnes	4 000	*7 650	3 738	6 570	1 975
Salt	tonnes	65 000	71 200	58 978	57 062	51 166
Silver, mine	kilograms (metal contents)	6 861	6 690	7 986	13 216	12 891

Note(s):-
(1) Tanzania is believed to produce bentonite

Togo

Commodity	Units	2001	2002	2003	2004	2005
Phosphate rock	tonnes	1 061 600	1 280 600	1 471 200	1 115 200	1 020 900

Tunisia

Commodity	Units	2001	2002	2003	2004	2005
Barytes	tonnes	2 208	5 539	5 000	1 813	—
Gypsum	tonnes	*100 000	*100 000	*100 000	109 000	113 000
Iron ore	tonnes	206 500	179 200	160 300	256 000	206 400
Pig iron	tonnes	191 600	151 900	35 800	—	—
Crude steel	tonnes	238 400	200 500	86 000	70 000	65 800
Lead, mine	tonnes (metal content)	6 942	5 081	*5 000	5 332	8 407
Crude petroleum	tonnes	3 343 900	3 475 600	3 100 000	3 343 100	3 400 900
Natural gas	million m^3	2 530	2 386	2 700	2 529	2 585
Phosphate rock	tonnes	8 105 900	7 735 100	7 889 900	8 050 800	8 203 600
Salt (a)	tonnes	712 400	615 800	819 000	1 117 000	1 120 300
Silver, mine	kilograms (metal content)	3 650	*3 000	*3 000	*2 000	*4 000
Zinc, mine	tonnes (metal content)	40 098	35 692	38 000	29 011	15 713

Note(s):-
(a) Sea salt

Uganda

Commodity	Units	2001	2002	2003	2004	2005
Beryl	tonnes	...	...	...	207	19
Cobalt metal	tonnes	512	*450	—	459	638
Gold, mine (a)	kilograms (metal contents)	6 090	7 590	4 160	...	...
Iron ore	tonnes	...	...	...	—	...
Salt	tonnes	*5 000	*5 000	*5 000	*5 000	*5 000
Tantalum and niobium minerals						
Columbite-tantalite	tonnes	11	6	16	0	0
Tungsten, mine	tonnes (metal content)	14	52	2	63	36
Vermiculite	tonnes	100	664	1 724	2 688	2 574

Note(s):-
(1) Small amounts of steel are believed to be produced in Uganda

(a) Exports

Zambia

Commodity	Units	2001	2002	2003	2004	2005
Beryl	tonnes	7	7	7	7	*7
Coal						
Bituminous	tonnes	*150 000	*150 000	*150 000	*150 000	*150 000
Cobalt, mine	tonnes (metal content)	4 665	6 144	6 620	5 791	5 472
Cobalt metal	tonnes	4 665	6 144	6 620	5 791	5 422
Copper, mine	tonnes (metal content)	306 909	307 834	346 900	412 300	435 500
Copper, smelter (a)	tonnes	203 000	245 000	245 000	280 100	244 800
Copper, refined	tonnes	307 904	347 235	360 100	407 900	445 600
Gold, mine (b)	kilograms (metal content)	*120	*140	*140	*160	*170
Selenium metal	tonnes	13	*11	*10	*10	*10
Sulphur and pyrites						
Pyrites	tonnes (sulphur content)	25 000	—	—	—	—
Recovered (c)	tonnes (sulphur content)	52 000	52 000	52 000	52 000	52 000
Zinc, slab	tonnes	—	2 000	2 000	2 000	—

Note(s):-
(1) Minor quantities of niobium and tantalum minerals are believed to be produced in Zambia

(a) Including leach cathodes
(b) Contained in blister copper, refinery muds and electrolytic copper
(c) From metal sulphide processing

Zimbabwe

Commodity	Units	2001	2002	2003	2004	2005
Asbestos						
Chrysotile	tonnes	136 327	167 954	143 087	104 457	122 041
Barytes	tonnes	7 464	5 233	4 676	3 486	—
Chromium ores and concentrates	tonnes	780 150	725 822	572 558	668 391	614 720
Coal						
Bituminous	tonnes	4 511 447	3 938 175	2 824 362	3 797 669	2 890 662
Cobalt, mine	tonnes (metal content)	95	74	44	59	275
Copper, mine	tonnes (metal content)	492	1 356	1 374	2 383	2 570
Copper, refined	tonnes	5 300	5 400	5 000	5 800	6 000
Diamond	carats	—	—	—	44 454	243 928
Feldspar	tonnes	1 055	824	816	79	—
Gold, mine	kilograms (metal content)	18 050	15 669	11 514	21 330	13 453
Graphite	tonnes	11 837	9 700	6 280	10 267	4 298
Iron ore	tonnes	360 862	271 812	411 044	228 731	224 229
Pig iron	tonnes	156 000	122 000	182 000	145 000	*145 000
Crude steel	tonnes	149 000	105 000	152 000	135 000	107 000
Ferro-alloys						
Ferro-chrome	tonnes	249 841	258 164	261 095	218 065	218 143
Ferro-silico-chrome	tonnes	16 848	—	—	987	4 882
Lead, refined	tonnes	*1 000	—	—	—	—
Lithium minerals	tonnes	36 103	29 320	12 131	13 710	37 499
Magnesite	tonnes	2 439	2 546	822	749	864
Nickel, mine	tonnes (metal content)	8 009	7 835	6 678	9 776	7 799
Nickel, smelter/refinery	tonnes	19 500	18 900	16 300	16 200	15 900
Phosphate rock	tonnes	87 880	84 926	80 034	83 391	45 705
Platinum group metals, mine						
Platinum	kilograms (metal content)	519	2 053	2 330	4 438	4 833
Palladium	kilograms (metal content)	371	1 728	1 770	3 564	3 879
Other platinum metals	kilograms (metal content)	42	416	441	810	862
Sillimanite minerals						
Kyanite	tonnes	9 682	6 138	5 707	491	—
Silver, mine	kilograms (metal content)	3 344	3 219	2 483	3 216	3 400
Sulphur and pyrites						
Pyrites	tonnes (sulphur content)	21 700	19 000	19 000	42 400	20 041
Talc	tonnes	1 272	1 024	196	—	—
Tantalum and niobium minerals						
Columbite-tantalite	tonnes	30	26	231	27	—
Vermiculite	tonnes	11 632	21 494	13 260	27 150	23 045

Note(s):-
(1) Zimbabwe is believed to produce bentonite and selenium metal