TRADE AND INVESTMENT OPPORTUNITIES IN AFRICA

The Natural Resources Sector

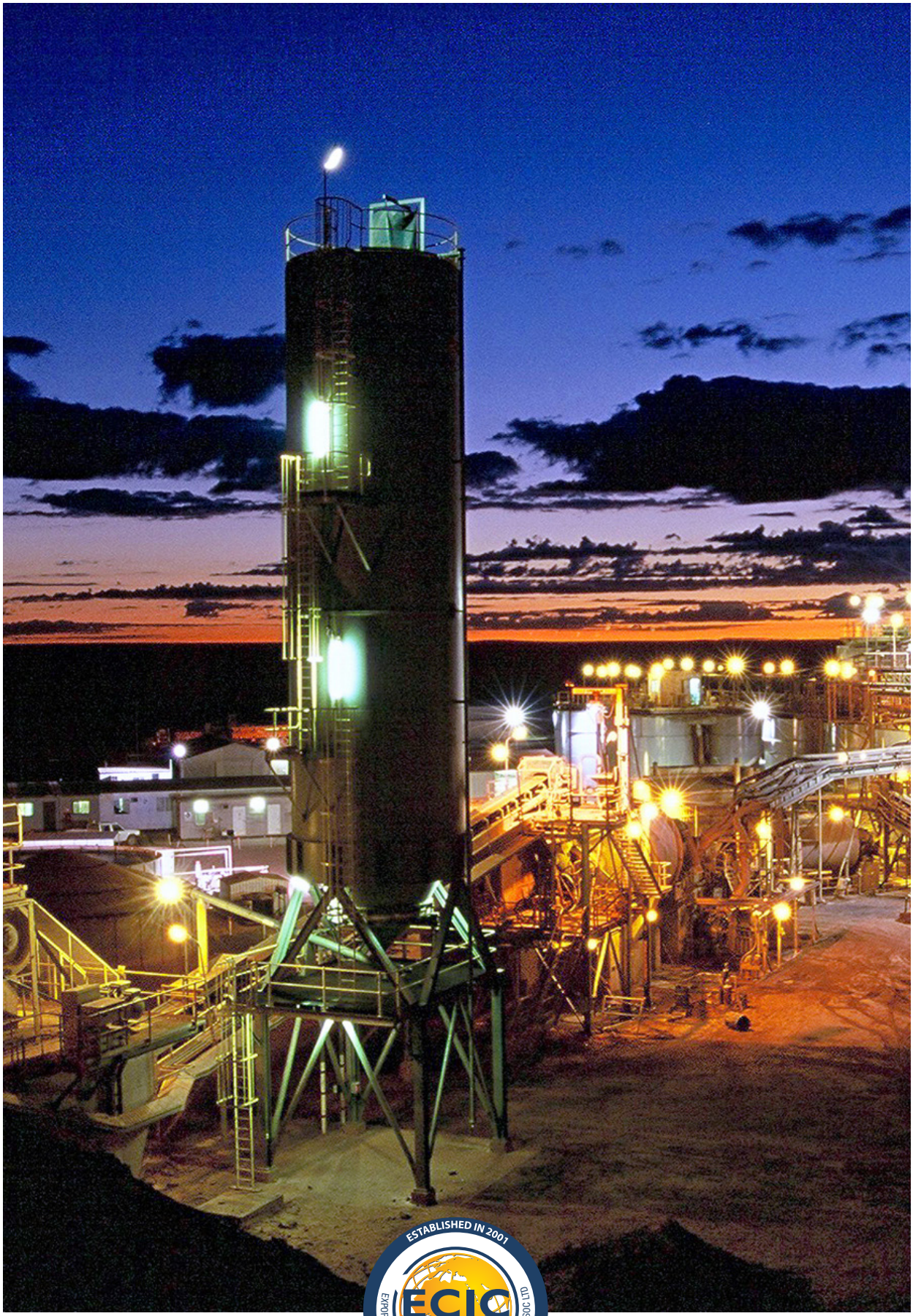
LIST OF ACRONYMS

AfDB	African Development Bank
B-BBEE	Broad-based Black Economic Empowerment
BEE	Black Economic Empowerment
Bpd	Barrels per day
CIL	Carbon-in-leach
DRC	Democratic Republic of Congo
dti	Department of Trade and Industry
ECIC	Export Credit Insurance Corporation of South Africa
ENH	Empresa Nacional de Hidracorbanetos
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GTL	Gas-to-liquids
IEA	International Energy Agency
IMF	International Monetary Fund
LNG	Liquefied Natural Gas
M&A	Merger and Acquisition
Mtpa	Million tons per annum
MT	Metric tons
PDNs	Previously Disadvantaged Namibians
PetroSA	Petroleum Oil and Gas Corporation of South Africa
PGM	Platinum-group metals
PRI	Political risk insurance
SACEEC	South African Capital Equipment Export Council
SADC	Southern African Development Community
SAOGA	South African Oil and Gas Alliance
tcf	Trillion cubic feet
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNECA	United Nations Economic Commission for Africa
US EIA	United States Energy Information Administration
USA	United States of America
USGS	United States Geological Survey
WAGP	West African Gas Pipeline

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES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1. INTRODUCTION

There is no doubt that the natural resource sector has been a catalyst of Africa's growth for the past decade. According to the International Monetary Fund (IMF), the natural resources sector constituted a major component of real Gross Domestic Product (GDP) growth in over 15 African states, including over half of all growth in Angola, Equatorial Guinea, Ghana, the Republic of Congo, Mozambique and the Democratic Republic of Congo (DRC)[1]. Moreover, the United Nations Conference on Trade and Development (UNCTAD) shows that most of the US$50 billion of Africa's Foreign Direct Investment (FDI) inflows in 2012 went to resource-rich countries, such as Angola, Mozambique and Nigeria, and largely into extractive industries[2].

Higher commodity prices have increased returns and incentivised investment in resource-rich African countries. Additionally, firms entering underdeveloped countries have often had to invest in the infrastructure required to facilitate the production and transportation of resources. These countries have not only contributed to growth in the natural resources sector, but have also improved efficiencies for other sectors that are able to use the infrastructure.

Despite the push towards economic diversification, investments in the natural resources sector in the region are set to remain an important growth driver. This is due to the region's vast potential of unexplored mineral and hydrocarbon reserves and high commodity prices (notwithstanding recent declines). To date, the continent is believed to contain roughly 30% of the world's mineral reserves, much of it unexplored. The mineral wealth of Africa includes a major portion of the world's reserves of bauxite, chromite, cobalt, diamonds, fluorspar, gold, manganese, phosphate rock, platinum-group metals (PGM), titanium minerals, vanadium, and zircon[3]. The continent further boasts significant untapped oil and natural gas reserves respectively estimated at 8% and 10% of the world's proven reserves[4]. Accordingly, the continent has experienced the second-largest increase in both percentage and dollar terms in exploration activity. In 2013, exploration expenditure on the continent reached close to 20% of the global total, and this influx of interest has opened up new jurisdictions.

The general observation indicates that investors who once viewed Africa as a risky jurisdiction are reassessing their perception of the continent as a whole and have placed more weight on African natural resources projects for growth.

1 International Monetary Fund. 2012. *Regional Economic Outlook: Sub-Saharan Africa: Sustaining growth amid global uncertainty*. World Economic and Financial Surveys. Washington, DC. [Online]. Available at: http://www.imf.org/external/pubs/ft/reo/2012 /afr/eng/sreo0412.pdf.

2 UNTAD. 2013. *World Investment Report 2013 – Global value chains: Investment and trade for development*. United Nations: New York and Geneva.

3 Besada, H and Martin, P. 2013. *Mining Codes in Africa: Emergence of a "fourth" generation?* The North-South Institute: Ontario.

4 Data from the United States Energy Information Administration (US EIA).

2. THE IMPORTANCE OF THE NATURAL RESOURCES SECTOR TO AFRICAN ECONOMIES

For many African countries, mineral and hydrocarbons exploration and production constitute significant part of their economies and remain key to economic growth. Over the past decade, natural resources extraction constituted a major component of real GDP growth in over 15 African states. In 2012, the natural resources sector accounted for over 80% of the GDP of Equatorial Guinea, 70% of the GDP of the Republic of Congo, Libya, and Sudan and South Sudan, and more than 40% of the GDP of Angola and Gabon (see Table 1).

Table 1: Natural resources contribution to selected African economies

Country	Percentage of GDP	Percentage of foreign revenue	Percentage of government revenue
Algeria	40%	98%	70%
Angola	47%	90%	80%
Botswana	26%	84%	50%
Cameroon	9%	40%	25%
Republic of Congo	70%	90%	80%
DRC	12%	95%	10%
Equatorial Guinea	89%	90%	28%
Gabon	48%	90%	60%
Libya	70%	97%	90%
Mozambique	2%	57%	2%
Namibia	11%	53%	25%
Nigeria	16%	95%	80%
Sudan and South Sudan	70%	95%	98%
Zambia	11%	84%	6%

Source: United Nations Economic Commission for Africa et al., *African Economic Outlook 2013 and Extractive Industries Transparency Initiative country reports*[5].

The natural resources sector also constitutes a significant and increasingly important share of exports and tax revenues for much of Africa. For example, the hydrocarbons industry accounts for 90% or more of the export earnings for Algeria, Angola, the Republic of Congo, Equatorial Guinea, Gabon, Libya, Nigeria, and Sudan and South Sudan. Mining and metals account for over 80% of export revenue for Botswana (diamonds, copper, nickel, soda ash) and Zambia (copper and cobalt), over 50% of export revenue for Mozambique (aluminium and coal) and Namibia (diamonds, uranium, gold, zinc)[6].

5 United Nations Economic Commission for Africa et al., *African Economic Outlook 2013 and Extractive Industries Transparency Initiative country reports*.

6 Ibid.

The sector also makes an important part of African governments' income. Oil accounts for around 80% of the Angolan government's fiscal revenues. The Libyan and Sudanese governments depend the most on hydrocarbon in Africa, with oil and gas accounting for 90% and 98% of government revenue respectively. In Algeria, the oil and gas industry remains crucial to government coffers – with the industry accounting for 70% of fiscal revenues[7].

Although the natural resources sector has been the main engine of growth and sources of export and government revenue for most African economies, its capital-intensive nature, weak backward and forward linkages with other sectors and a lack of beneficiation have limited its impact on employment. In Angola, for example, the oil and gas sector employs less than 1% of the workforce and the industry employs a little over 2 400 Gabonese, which is less than 2% of the total workforce. In Mali, while the mining industry accounts for up to 17% of national GDP and 70% of exports, this translates into direct employment for only 13 000 people in mining communities[8]. The situation is exacerbated by the growing use of new technologies, which has constrained employment opportunities in the sector, as well as increased expatriate staff quotas[9].

3. AFRICAN FRONTIER MARKETS IN THE NATURAL RESOURCES SECTOR

In 2012, there were 22 noteworthy exploration projects in Africa with expenditure close to 20% of the global total. This influx of interest has opened up new jurisdictions. Countries such as Burkina Faso have become increasingly important gold producers. Malawi has emerged as a significant uranium producer. East Africa has demonstrated its oil and gas potential. West Africa is being touted as the world's iron ore frontier market. Accordingly, companies are following geological trends from more established jurisdictions to new regions.

Table 2 provides an overview of selected major ongoing explorations in the natural resources sector in Africa.

Table 2: Selected major ongoing explorations in the natural resources sector in African economies

Subregion	Oil and gas	Metals and minerals
Central Africa	Cameroon, Chad, Gabon	Gabon (manganese), Cameroon (iron ore), Central African Republic (uranium), DRC (copper, cobalt, gold, silver, zinc)
East Africa	Tanzania, Uganda, Kenya	Eritrea (gold), Ethiopia (gold), Tanzania (gold, uranium)
North Africa	Algeria	Algeria (phosphate), Morocco (phosphate), Egypt (phosphate)
Southern Africa	Angola, Mozambique	Mozambique (coal, iron ore), Zambia (copper), Botswana (copper and coal), Malawi (uranium), Madagascar (nickel)
West Africa	Ghana, Ivory Coast, Sierra Leone, Liberia, Equatorial Guinea	Sierra Leone (iron ore), Senegal (iron ore), Guinea (iron ore), Liberia (gold), Burkina Faso (diamonds)

Source: *US Geological Survey, Mineral Commodity Summary, 2012.*

7 Ibid.

8 Thomas, S. 2010. *Mining taxation: An application to Mali. International Monetary Fund Working Paper.* [Online]. Available at: http://www.imf.org/external/pubs/ft/wp/2010/wp10126.pdf.

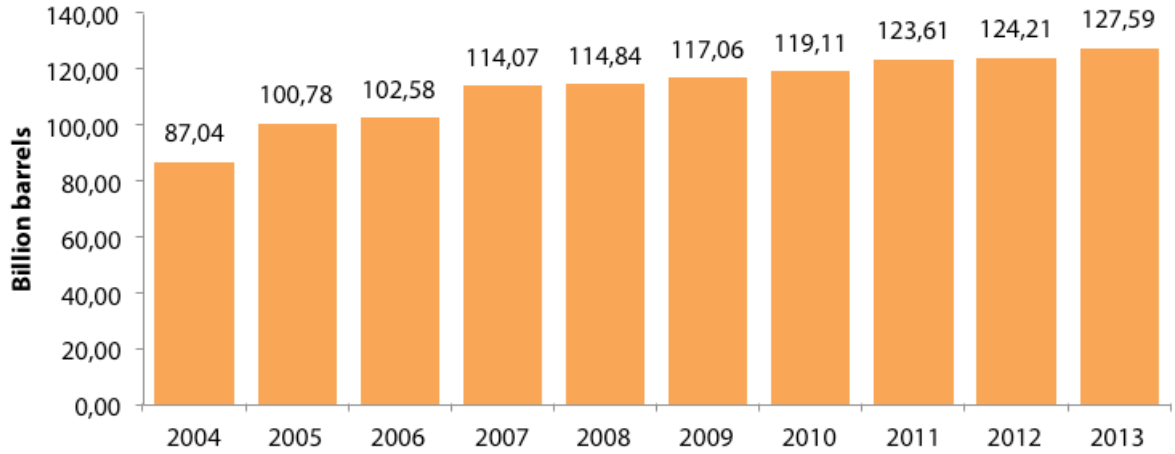
9 Akabzaa, T. 2009. Mining in Ghana: Implications for national economic development and poverty reduction. In: Campbell, B. (ed.). *Mining in Africa: Regulation and Development:* 25–65. Pluto Press: New York.

3.1 HYDROCARBONS

Africa represents one of the fastest growing and highest potential **hydrocarbons** exploration and production areas in the world. Up to 70 oil and gas discoveries have been made in the region over the past five years[10]. Most of the new developments are still in the relatively early stages of what promises to be a huge build-up of infrastructure and activity.

The booming oil and gas industry is seeing greater interest in all regions, including frontier states such as Namibia, Togo, Liberia and areas where exploration and production had been diminishing over the last few years. This includes countries such as Ghana, Côte d'Ivoire (Ivory Coast) and South Sudan. The crown jewels are, however, the new players on the east coast, particularly Mozambique and Tanzania.According to figures from the United States Energy Information Administration (US EIA), Africa's **proven oil reserves** have grown by 3.7% in the past ten years, from 87 billion barrels in 2004 to 128 billion barrels in 2013. This trend is anticipated to continue (see Figure 1).

Figure 1: Africa's proven reserves of crude oil (2004–2013)

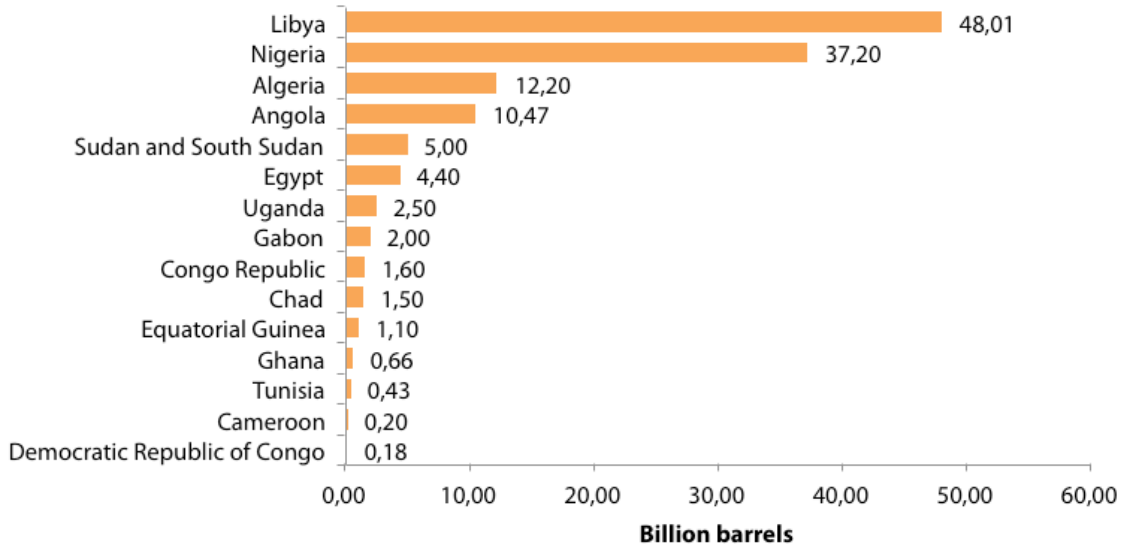


Source: US EIA.

In 2013, there were 21 African countries with proven oil reserves. According to Figure 2, Libya has the largest oil reserves on the continent, followed by Nigeria, Algeria and Angola. These four countries accounted for approximately 84.6% of Africa's proven oil reserves in 2013.

10 Akinkugbe, R. 2013. *African Oil and Gas Outlook 2013*. Ecobank Group: Lagos.

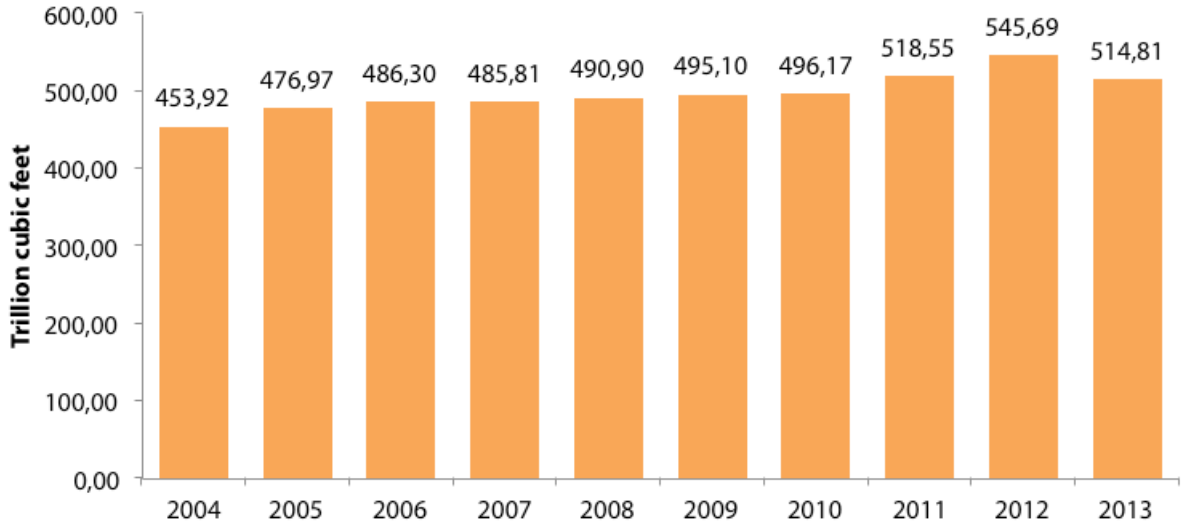
Figure 2: Africa's proven reserves of crude oil by country (2013)



Source: US EIA.

Data from the US EIA further shows that Africa's **proven reserves of natural gas** have grown from 454 trillion cubic feet (tcf) in 2004 to 515 tcf in 2013, representing a growth of 1.5% (see Figure 3). Furthermore, recent further discoveries of sizable natural gas reserves in Tanzania and Mozambique point to significant upward potential for these figures. Development of unconventional gas resources –largely in Algeria, Libya and South Africa – could also substantially add to the potential new supply.

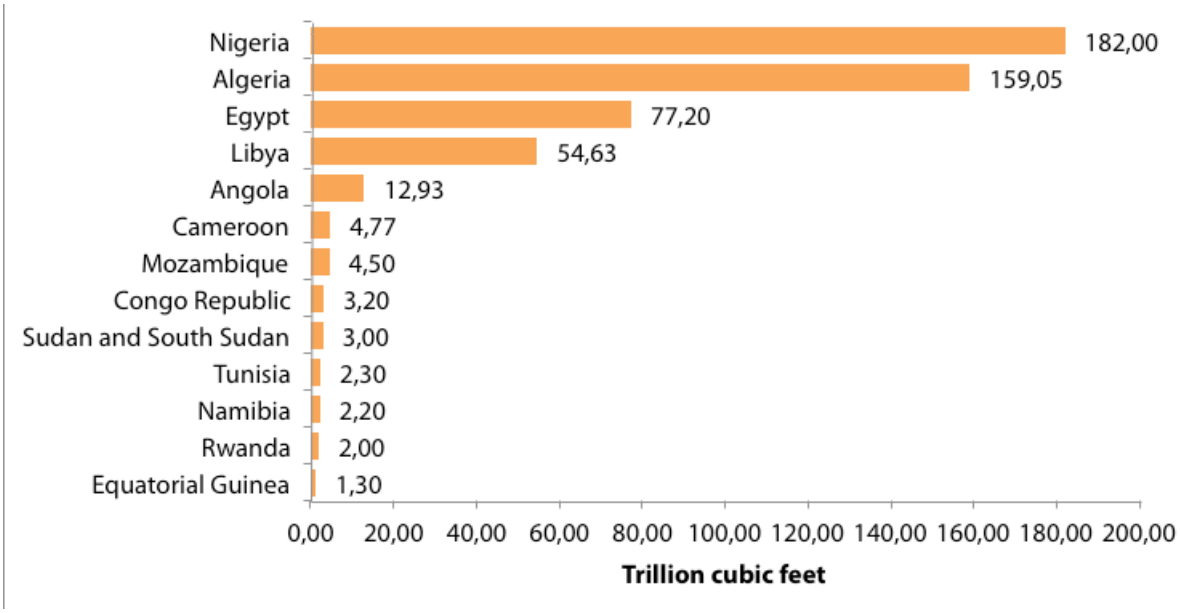
Figure 3: Africa's proven reserves of natural gas (2004–2013)



Source: US EIA.

In 2013, there were 24 African countries with proven gas reserves, with Nigeria having the largest natural gas reserves on the continent. Nonetheless, North Africa, including countries such as Algeria, Egypt and Libya, remains the continent's leading region for natural gas production, accounting for approximately 57% of the continent's proven reserves. Including Nigeria and Angola, the top five countries with the highest gas reserves accounted for approximately 94% of Africa's proven reserves. Substantial finds of natural gas in Mozambique and Tanzania have also lifted the prospects for these countries to become major exporters of Liquefied Natural Gas (LNG) over the medium to long term.

Figure 4: Africa's proven reserves of natural gas by country (2013)



Source: US EIA.

Annexure 1 shows Africa's oil and gas footprint according to the individual countries.

3.1.1 Central Africa

The region is currently pursuing pre-salt oil and gas exploration to offset the long-term decline in production from maturing fields. This is already underway in the Republic of Congo, the DRC and Gabon.

The success story of pre-salt discoveries offshore of Brazil has led international oil companies to search for similar geological formations elsewhere. As the continents of the Americas and Africa were joined during the Cretaceous period 120 million years ago, particular attention is focused on the coast of Central Africa, which has common geological ancestry with Brazil's Santos Basin. Seismic data, combined with an integrated study using potential field and geological data, has revealed significant pre-salt sediments in the Congo basin[11]. The pre-salt data resembles the geology observed around recent Brazilian pre-salt discoveries.

The Republic of Congo is the eighth-largest producer of oil in Africa. Recent estimates predict that the country's reserves could last for another 40 years at the current rate of production. Gas reserves are estimated at between 1.7 trillion and 2.6 trillion cubic metres, which translate to 20 years of production at the current rate[12].

11 Martin, J, Toothill, S, Gulland, J, Veritas, CGG, Moussavo, M. 2009. Presalt basins identified in Gabon. *Exploration and Production Magazine*.

12 United Nations Economic Commission for Africa (UNECA), Africa Development Bank (AfDB), OECD Development Centre and United Nations Development Programme (UNDP). 2013. *African Economic Outlook 2013: Regional Update*. UNECA, AfDP, OECD, UNDP: Addis Ababa and Paris.

Similar to the Republic of Congo, the biggest potential for Gabon lies in the prospectivity of the pre-salt section. The pre-salt hydrocarbon system has been very successfully exploited in the onshore and shallow water areas of the South Gabon Basin, but it has never been explored in the deepwater areas. Seismic data indicates the extension of the Ezanga salt province into the deeper water, together with probable Dentale and Gamba formations in the South Gabon subbasin[13].

By the same token, Equatorial Guinea is considered very rich in oil and gas resources. The country's proven crude oil reserves were estimated at 1.1 billion barrels in 2013, while proven natural gas reserves were estimated at 1.3 tcf[14].

3.1.2 East Africa

East Africa is considered the continent's newest hydrocarbons frontier. The region's potential is spurred by the discovery of oil onshore in Uganda in 2006, and offshore discoveries of natural gas in Tanzania. Uganda's oil reserves are estimated at 3.5 billion barrels. According to the US EIA, Tanzania had 0.23 tcf of proven natural gas reserves in 2013[15]. However, upward revisions to this number are likely to be made in the coming years, supported by the number of large discoveries made in recent years. So far, a probable 40 tcf of gas deposits have been found in the waters of Tanzania, subject to validation of commercial viability[16]. Moreover, in March 2012, British explorer Tullow Oil Plc announced that it had discovered some oil in the Turkana region in Kenya[17]. Should the oil find prove to be commercially viable, investment could rise strongly in the medium to long term.

3.1.3 North Africa

In North Africa, Algeria presents one of the largest oil and gas opportunities on the continent. According to the US EIA, Algeria had an estimated 12.2 billion barrels of proven oil reserves at the end of 2013 – the third biggest in Africa. However, Algeria's full hydrocarbon potential still has to be reliably established. Algeria expects to double its gas production in the next seven to ten years after making a number of significant oil and gas finds in maturing and new fields. Investment in shale gas also has significant potential in the country. Data from the US EIA shows that Algeria has 231 tcf of recoverable shale gas reserves, although the commercial viability of these reserves is yet to be determined[18].

Libya is exceedingly well endowed with hydrocarbon resources. Libya, with its proven crude oil reserves of 48 billion barrels, singlehandedly accounts for nearly 38% of the continent's proven oil reserves. The country has 12 oilfields with reserves of over one billion barrels each and two others with reserves of between 0.5 billion and one billion barrels. The country is considered to have technically recoverable shale gas reserves of about 290 tcf[19].

13 Ibid.

14 Data from US EIA.

15 Data from US EIA.

16 *Oil Review Africa Magazine 6*. 2013.

17 Accessed at http://en.wikipedia.org/wiki/Tullow_Oil .

18 *US EIA Country Analysis Brief*.

19 *US EIA Country Analysis Brief*.

3.1.4 Southern Africa

Substantial finds of natural gas in excess of 127 tcf in Mozambique have lifted the prospects for the country to become another African super player. Mozambique is envisaged to become a noteworthy exporter of LNG by 2025, should it successfully construct the envisaged LNG plant by 2018[20].

Angola's hydrocarbon potential is considered massive. While the US EIA indicated Angola's proven oil reserves to be 10.5 billion barrels in 2013, it is in fact conservatively estimated that remaining oil reserves are around 12 to 15 billion barrels, with the bulk located offshore and in the Cabinda area. In 2011, Angola signed a number of ultra-deepwater deals with oil majors in subsalt blocks in the Kwanza Basin, where oil volumes are forecast to be of commercial quantities. If prospects are as favourable as projected, Angola could extend its life as a major oil exporter by an additional 30 years and the country should be able to increase its oil production to eclipse that of Nigeria[21]. With respect to natural gas, Angola had an estimated 12.9 tcf of proven natural gas reserves in 2013 – an increase from a level of only 2 tcf in 2007.

Namibia is a continuing hotspot for oil and gas exploration, although its pre-salt potential has come to dominate Southern Africa oil exploration. Oil deposits amounting to an estimated 11 billion barrels were found off the coast of Namibia in mid-2012[22]. This discovery has spurred further exploration along the west coast of the country in the Orange River basin.The largest potential gas reserves in Southern Africa are in South Africa's shale beds beneath the Karoo region, estimated by the US EIA to exceed 400 tcf.West Africa

3.1.5. West Africa

Gas exploration intensified along the West African coast in 2012 with major discoveries reported in Ghana, Ivory Coast, Togo and Liberia. These discoveries are expected to spur major gas developments in these countries in the medium to long term. The region's demand for power has risen considerably over the last few years and will significantly drive gas demand in the near future.

The Jubilee oil field in Ghana is considered to be the largest find offshore in West Africa in the last decade. The US EIA indicates Ghana's proven reserves of oil to be 0.66 billion barrels. Apart from the Jubilee field, there are a number of other oil prospects in Ghana, such as the Tweneboa, Enyenra and Ntomme fields, all of which could underpin Ghana's oil production levels over the medium term.

Nigeria has the second-largest oil reserves in Africa after Libya and is the continent's primary oil producer. Nigeria's 37.2 billion barrels of oil reserves also place it among the top 10 countries in terms of reserves on a global basis. Nigeria had an estimated 182 tcf of proven natural gas reserves in 2013, which made Nigeria the eighth-largest natural gas reserve holder in the world. Nigeria's proven gas reserves could potentially be as high as 600 tcf if deliberate steps are taken to explore for gas as opposed to coincidental discovery during oil exploration. Nigeria's natural gas reserves are projected to last over 100 years[23].

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20 Akpata, U, Bredenhann, C, White, D. 2013. *From promise to performance: Africa Oil and Gas Review*. Pricewaterhouse Coopers: London.

21 KPMG. 2013. *Oil and gas in Africa – Africa's reserves, potential and prospects*. KPMG: Johannesburg.

22 Kearney, AT. 2013. *Southern Africa's oil and gas opportunity*. AT Kearney Inc.: Johannesburg.

23 KPMG. 2013. op. cit.

3.2. MINING AND METALS

The mining and metals industry is the mainstay of the continent. FDI is primarily targeted at this sector as the continent is mineral rich, hosting 95% of the world's total platinum, 34% of its chromium, 49% of its cobalt, 64% of its diamonds, 34% of its bauxite and 29% of its manganese (see Table 3)[24].

Table 3: World and African commodities reserves

Key resource	Units	African reserves	World reserves	Percentage of world reserves
Platinum	Million kg	63	66	95
Diamonds	Million carats	385	600	64
Cobalt	Million MT	367	750	49
Bauxite	Million MT	240	750	32
Chromium	Million MT	120	350	34
Manganese	Million MT	182	630	29
Gold	Thousand MT	8	52	15
Coal	Billion MT	35	645	5
Copper	Million MT	27	680	4

Source: *US Geological Survey, Mineral Commodity Summary, 2012.*

Annexure 2 shows the geographical spread of Africa's mining and metals deposits.

3.2.1 Central Africa

Central Africa has an immense geological wealth. For example, the sedimentary basins of the DRC contain more than 1 100 minerals, including 30% of the world's diamond reserves, 60% of its cobalt reserves, and 10% of its copper reserves. The country also holds deposits of gold and diamonds. The untapped mineral wealth of the DRC is estimated to be US$24 trillion[25]. The Republic of Congo is increasingly being seen as a frontier market for iron ore exploration and mining. The country's iron reserves are more than 10 billion tons, while potassium and phosphate reserves are assessed at about 1 billion tons and 500 million tons respectively[26]. Cameroon, Chad and Equatorial Guinea are also known to contain undeveloped deposits of bauxite, gold and other minerals, but limited exploration has left them undefined.

3.2.2 East Africa

East Africa has several mineral belts that produce, among other commodities, tanzanite and gold. Tanzania has known, but undeveloped deposits of iron ore, nickel, cobalt, phosphate and uranium. To this end, the Tanzanian government hopes to increase the mining industry's economic contribution to 10% of GDP by 2025. The country is also rapidly becoming a mining hub for the region, with a service sector geared towards servicing neighbouring countries[27].

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24 US Geological Survey. 2012. *Mineral commodity summaries 2012*. US Government Printing Office: Virginia.

25 Macig. 2014. *The official mining in Africa country investment guide 2014.*

26 International Monetary Fund. 2013. *Republic of Congo 2013 Article IV Consultation, IMF Country Report 13/282.* International Monetary Fund Publication Services: Washington DC.

27 Maciq. 2014. op. cit.

Burundi has large reserves of lateritic nickel, vanadium, phosphates, carbonatites, peat and limestone. The country has the world's second-largest reserves of coltan – estimated at 200 million tons, but its landlocked position is aggravated by a lack of infrastructure, a poor business climate and a relatively unskilled labour force[28].

The region has taken significant strides towards building significant infrastructure projects to underpin natural resources development. This includes infrastructure development corridors such as the Northern Corridor (Burundi, DRC, Kenya, Rwanda and Uganda), the Central Development Corridor (Tanzania, Burundi, Rwanda, DRC and Uganda) and the Dar es Salaam Corridor (Tanzania and DRC).

3.2.3 North Africa

A KPMG report points out that approximately 85% of global phosphate reserves are located in North Africa[29]. Morocco alone holds about 77% of the global phosphate deposits (92.4% of the total African reserves), while Algeria has potential ore reserves estimated at 3.5 million tons. Algeria also has potential gold reserves that are estimated at 3 million ounces and potential lead and zinc reserves estimated at 150 million tons[30]. Egypt also has substantial phosphate deposits, with reserves of 700 million tons. North territories have untapped mineral deposits as well, including diamonds, gems (precious and semi-precious stones) and uranium.Southern Africa

3.2.4 Southern Africa

Southern Africa is the resource hub of the continent and is home to some of the continent's largest players. The region produces two-thirds of Africa's mineral exports by value. The dominant player in the region is South Africa[31].Until recently, the diamond industry has been Botswana's traditional strength. However, the country also has well-known coal reserves, estimated at more than 200 billion tons, of which 7.1 billion tons are measured reserves[32]. After the government lifted the moratorium on coal mining, the development of the coal sector has been prioritised to meet urgent domestic power needs and to diversify the country's economy away from its reliance on diamond exports. By far the biggest challenge for Botswana's long-term coal export plans will be the difficulty of moving the coal to ports.

Mozambique is Africa's second-largest coal producer after South Africa. The north-western province of Tete is at the heart of Mozambique's burgeoning coal rush. The region is endowed with one of the world's richest undeveloped coal reserves. The reserves are estimated at approximately 6.7 billion tons, of which thermal coal accounts for roughly 25–30% and coking coal 70–75%[33]. It is further estimated that the province could be producing 25% of the world's coking coal by 2025[34]. Moreover, the country's mineral sands remain essentially unexploited. These are estimated at 100 million tons, with the potential to provide 20% of global demand for titanium. The tantalum, limestone, gold, uranium and iron ore endowments provide opportunities for further exploration and diversification. However, infrastructure constraints remain crippling.

Namibia has substantial resources of diamonds, uranium, zinc, salt and copper. Namibia also has deposits of gold, lead, tin lithium, cadmium, vanadium and fluorspar. Phosphate deposits were recently found in the sea offshore

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28 UNECA, AfDB, OECD Development Centre and UNDP. 2013. *African Economic Outlook 2013: Burundi*. UNECA, AfDP, OECD, UNDP: Addis Ababa and Paris.

29 KPMG. 2013. *Mining in Africa towards 2020*. KPMG: Johannesburg.

30 Piper, DLA. 2012. *Mining in Africa – A legal overview*. DLA Piper

31 KPMG. 2013. op. cit.

32 Africa Business Initiative. 2012. *Investment climate update: Botswana, 4(1)*. US Chamber of Commerce: Washington DC.

33 ENRC. . Exploration report on licenses in the Tete Province, Cahora Bassa District, Mozambique. *ENRC Internal Company Report*. Tete, Mozambique.

34 The International Resource Journal. 2011. Talking Tete – Mozambique's new mining epicentre. [Online]. Available at: http://www.internationalresourcejournal.com/mining/mining_july_11/mozambique_s_new_mining_epicentre.html.

of the central coast of Namibia[35]. The country has the potential for large expansion – particularly in secondary industries – through further exploration of mineral beneficiation opportunities, including the identification and development of upstream activities. Despite the volatile nature of the Zimbabwean mining industry, the sector has significant potential. Zimbabwe holds an estimated 30% of the world's diamond reserves, as well as substantial deposits of gold, PGM and coal[36]. Zambia's endowment of mineral resources is substantial. Its mineral wealth includes metals, gemstones, industrial, agricultural, building and energy minerals. The production of metallic minerals dominates the mining sector. Nevertheless, the full potential of these and other known mineral deposits has yet to be realised.

Similar to Eastern Africa, the region has also adopted a development corridors strategy to support the extractive sector. Key infrastructure projects are undertaken under the auspices of the North-South Corridor (Tanzania, DRC, Zambia, Malawi, Botswana, Zimbabwe, Mozambique and South Africa), the Nacala Development Corridor (Zambia, Malawi and Mozambique), the Beira Corridor (Zimbabwe, Mozambique, Zambia, Malawi and South Africa), the Trans-Kalahari Corridor (Namibia, Botswana and South Africa) and the Trans-Caprivi Corridor (Namibia, DRC, Zambia and Zimbabwe).

3.2.5 West Africa

West Africa is increasingly being seen as a boom area for iron ore exploration and gold mining. A 2012 estimate by Frost & Sullivan put proven iron ore reserves in the region at 400 million tons by 2020[37]. West Africa's iron ore deposits are globally reputed to be high-grade and generally associated with low process costs. The deposits stretch from the Ivory Coast to Liberia. It is envisaged that global demand from infrastructure, construction and the automotive industries is set to drive growth in the region's iron ore industry.

Despite the discovery of iron ore deposits, Sierra Leone is among the largest producers of titanium and bauxite. This country is also a major producer of gold. Furthermore, there are known deposits of chromite, platinum, lignite, clays and base metals such as copper, nickel, molybdenum, lead and zinc. Diamonds cover about a quarter of the country in the east and south-east regions. With the prospect of new modern gold and diamond mines opening in the next three to five years, it is estimated that the annual mineral export revenues of Sierra Leone could exceed US$370 million[38].

Nigeria's mining and metals industry has the capacity to rival the oil and gas industry. There are approximately 34 different categories of minerals in the country. This includes significant deposits of gold, tin, iron tantalite, iron ore, zinc and lead. The Nigerian government is pursuing diversification away from oil production by implementing a major restructuring programme for the mining sector.Guinea has known minerals, including bauxite, gold and iron ore. The country is considered to have up to half of the world's bauxite reserves, more than 4 billion tons of high-grade iron ore and undetermined quantities of uranium[39].

Significant reserves of gold, diamonds, iron, nickel, cobalt, copper, manganese and bauxite have been identified in the Ivory Coast. Gold production is expected to increase from 7 tons per annum in 2013 to 20 tons per annum by 2020[40].Notwithstanding the region's mineral wealth, infrastructure constraints will hinder the realisation of the mining and metals industry's full potential.

35 Piper, DLA. op. cit.

36 Unknown. SA, Zim Earn Mining Top Spots. *Fin 24*. 3 February 2014.

37 Tawii, C. 2012. *West Africa: The new iron-ore frontier*. Frost and Sullivan.

38 Piper, DLA. op. cit.

39 Accessed at http://en.wikipedia.org/wiki/Guinea#Mining.

40 KPMG. 2013. Op .cit.

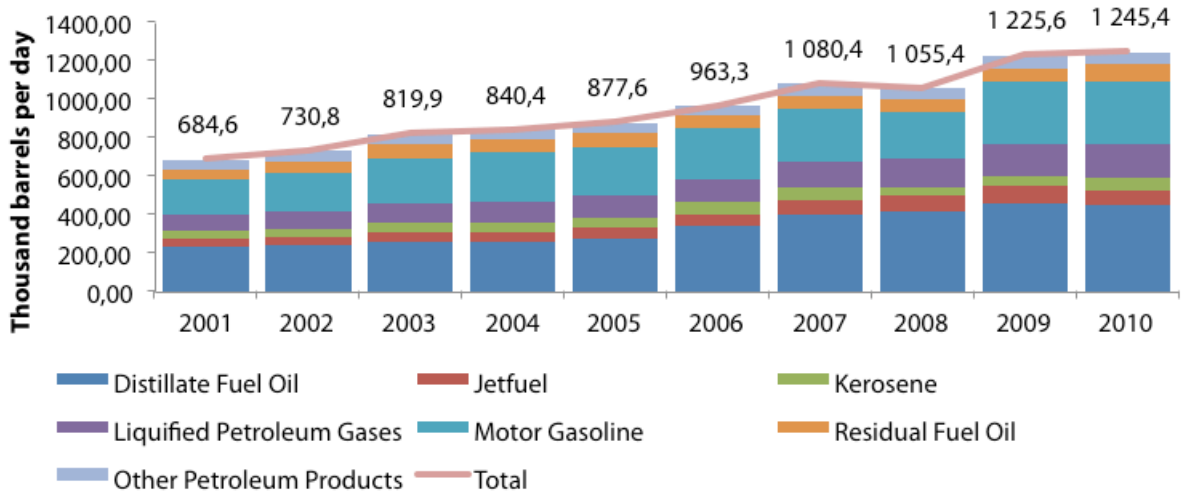
4. TRADE ANALYSIS

4.1 AFRICAN IMPORTS OF MINING AND RELATED PRODUCTS AND SERVICES

Despite its immense natural resources endowment, Africa is still only a marginal player in the export of processed and refined products. Its global share of processed and refined products is miniscule, which underlines its lack of competitive processing and refining capabilities. As a result, most of Africa's resources are exported without significant value addition. With a few exceptions, most resource-rich countries import more processed and refined products than they export. For example, countries such as Angola and Nigeria export crude oil, only to import refined oil again later at an additional cost. Challenges in the mineral processing and refining industry on the continent include high operating costs (due to the small size of plants), poor yields, lack of appropriate skills and technological know-how, inadequate auxiliary infrastructure and a non-supportive regulatory environment.

For exploration and production activities, projects depend largely on inputs from foreign countries for their set-up and operations. Almost all of the equipment, machinery and spare parts, most consumable materials, as well as skilled labour, have to be imported. Unfortunately, there is no available data on Africa's imports of machinery, equipment and services related to natural resources extraction. Nevertheless, it is assumed that net imports are most likely to be substantial.The downstream African oil industry comprises 44 refineries in 25 countries with a total distillation capacity of 3 million barrels per day, which represents 4% of the world's total production[41]. Unfortunately, this is not adequate to meet the ever-increasing demand for refined petroleum products on the continent.

Figure 5: Africa's imports of refined petroleum products



Source: US EIA.

According to Figure 5, Africa's demand for refined petroleum products has increased from 685 000 barrels in 2001 to 1.2 million barrels in 2010 – an increase of nearly 7%. The demand is dominated mainly by distillate fuel oil and motor gasoline, both accounting for two-thirds of the total demand. Demand for refined products is projected to rise by up to 40% to 4.3 million barrels in 2020, equating to an annual growth rate of between 3 and 4%[42]. This will be driven mainly by faster urbanisation of major cities, rapid economic growth and regional integration of businesses. This situation is further exacerbated by the low capacity of Africa's refineries, underpinning continuing dependence on imports.

41 Mbendi. 2013. *Oil and gas in Africa – Overview.*

42 Ecobank Research. 2013. *Middle Africa oil and gas outlook in 2013 – Middle Africa Annual Outlook.*

4.2 SOUTH AFRICAN EXPORTS OF MINING AND RELATED PRODUCTS AND SERVICES

Determination the exportation specifically of mining and related products and services is a complex issue because it is not easy to quantify what is destined for natural resource extraction as opposed to other markets. This is because trade data is classified by sector rather than by end user. Nevertheless, exports of mining and related products and services can be divided into two broad categories: exports related to new mining projects, and exports related to servicing existing mines.

Data from the South African Capital Equipment Export Council (SACEEC) shows that, in 2012, mining equipment constituted 19% of the total South African exports into the continent, and just over 50% of the total machinery and capital equipment exports into Africa. Since 2003, the share of Africa in South Africa's mining exports has been increasing by about 20% per annum. A significant amount of exports result from the global expansion of South African mining companies, which then utilise the equipment or services of the South African suppliers with whom they have a pre-existing relationship. Unfortunately, the services export data related to natural resources extraction is not available. However, net export earnings are likely to be substantial and significantly positive.

5. INVESTMENT ANALYSIS

5.1 FOREIGN DIRECT INVESTMENT IN AFRICA'S NATURAL RESOURCES SECTOR

In 2012, FDI flows into Africa were highest (above US$3 billion) in Nigeria, Mozambique, South Africa, DRC and Ghana. It is noteworthy that they are all resource-rich countries – underscoring the natural resources sector's continued central role in attracting FDI to the continent.

5.1.1 Oil and gas

In the oil and gas industry, more investment has been seen in the upstream than in the downstream segment, as crude oil and gas in the region complement Asia's large downstream, power and manufacturing industries. Private investment in the downstream segment has been relatively weak due to the continent's limited market connectivity. Although there is growth potential, the regional market is segmented. Individual markets are small and are generally not well connected to other markets to justify downstream investment – particularly large-scale operations that could provide economies of scale. Poor business environments and inefficient price regulations further weaken interest[43].

Upstream mergers and acquisitions (M&A) in Africa increased from US$10.6 billion in 2012 to US$17.4 billion in 2013 – representing a rise of 64% year-on-year[44].

Central and West Africa experienced a rise in M&A activity due to the newfound deposits in emerging oil and gas frontier markets and renewed exploration appetite in mature markets. There was a distribution of deals across the region with exploration asset deals in the Ivory Coast, Republic of Congo, Senegal and Gabon, while there were a small number of corporate acquisitions and asset deals in Nigeria. In North Africa, Morocco and Egypt led the M&A transactions that involved some big companies as new entrants to exploration assets in the region. The rest of the region saw low deal volumes, driven by political volatility.Table 4 shows the top oil and gas deals in Africa in 2012.

Table 4: Top oil and gas deals in Africa (2012)

Value (US$ millions)	Acquirer company	Country of origin	Target country
4.210	China National Petroleum Corporation	China	Mozambique
3.100	Sinopec International Petroleum Exploration and Production Corporation	China	Egypt
2.640	Oil and Natural Gas Corporation Ltd	India	Mozambique
2.475	Oil and Natural Gas Corporation Ltd and Oil India Ltd	India	Mozambique
1.520	China National Petrochemical Corporation	China	Angola
481	Actis LLP	United Kingdom (UK)	Morocco
300	Glencore Xstrata plc	Switzerland	Chad

Source: Nedbank, Ecobank and ENSAfrica 2013. *Deal Drivers Africa – A comprehensive review of African M&A.* MergerMarket: London.

43 Business Monitor International. 2013. *Asian money complements hydrocarbon riches.* Business Monitor International: London.

44 Nedbank, Ecobank and ENSAfrica. 2013. *Deal drivers Africa – A comprehensive review of African M&A.* MergerMarket: London.

The increase in M&A activity in Eastern and Southern Africa has largely been driven by the huge gas discoveries made offshore in Tanzania and Mozambique. For example, four transactions by Asian multinational companies accounted for six deals in Mozambique's Rovuma basin (see Table 4) valued at a total of US$9.3 billion. This included China National Petroleum Corporation acquiring a 20% interest in Eni East Africa SpA for US$4.2 billion, Oil and National Gas Corporation Ltd striking two deals to acquire 20% in Rovuma Offshore Area 1 Block for US$4.1 billion, and Oil India purchasing a 10% interest in the same block for US$990 million[45]. South Africa and Namibia also continued to attract new entrants to the Southern Africa region. Namibia's pre-salt basin and its high prospectivity has been the focus of potential buyers and ongoing farmout processes by a number of companies.A report by Ernst & Young shows that Asian national oil companies have been dominant in M&A activity on the continent. Despite this, the region has also experienced new entrants in the form of independent energy companies from Asia and Europe, and private equity groups from Europe and the Americas[46].

5.1.2 Mining and metals

Africa's share of global exploration budgets rose to 17%, with the continent receiving approximately US$3.4 billion in 2012. The increase in exploration and mine development in Africa has been primarily focused on gold and silver exploration, with both commodities accounting for approximately 50% of reported African exploration projects. Base metals accounted for about 15%, iron ore projects accounted for about 10%, and PGM projects accounted for 7%. Early-stage projects accounted for about 69% of the 2012 activity, and feasibility-stage projects accounted for about 10%. African countries that experienced the highest levels of exploration activity in 2012 were – based on the number of exploration sites as compiled by the United States Geological Survey (USGS) – Botswana, DRC, Mali, Guinea, Namibia, South Africa, Burkina Faso, Ghana and Zambia[47]. These countries are known producers of gold, diamonds, PGMs, chrome and base metals.Figure 6 shows that Africa's M&A value increased from US$7.3 billion in 2007 to US$20 billion in 2012, which represents a 48% increase over the past seven years. M&A activity continued to be resilient in the first three quarters of 2013, with 115 deals taking place at a total value of US$26.6 billion.

45 Ernst & Young. 2013. *Global oil and gas transactions review 2013*. Ernst & Young: London.

46 Ibid.

47 Wilburn, D, Stanley, K. 2013. *Annual review 2012 – Mining and exploration reviews*. US Geological Survey: Washington DC.

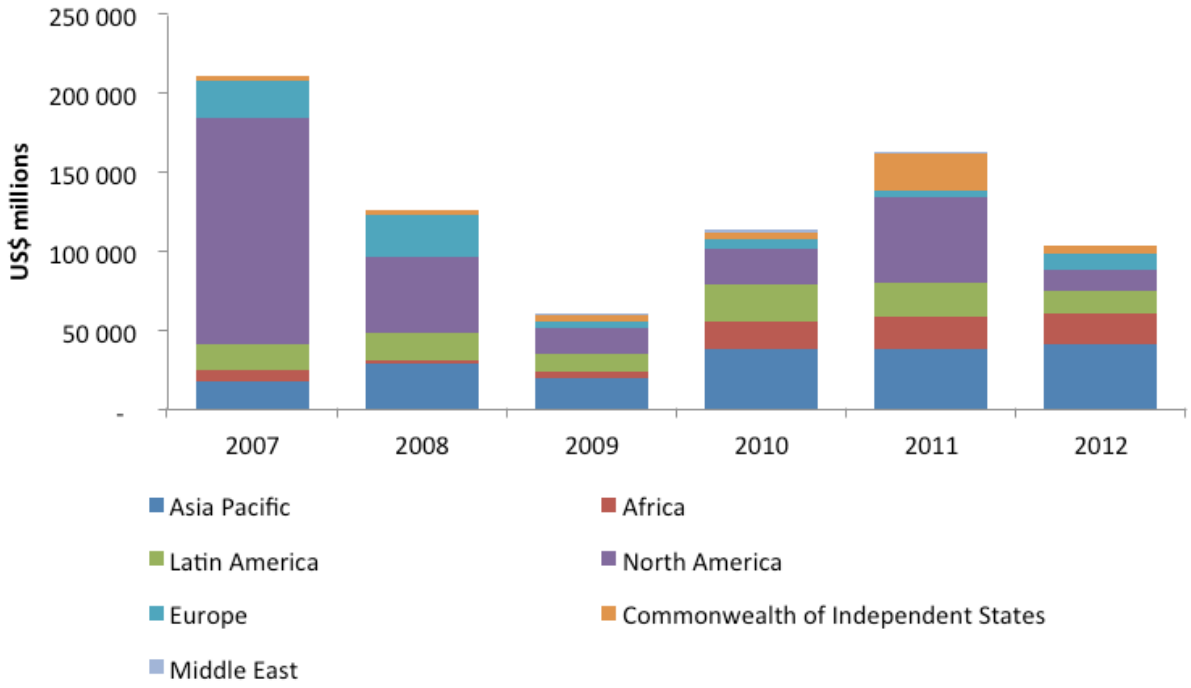


Figure 6: Value of deals by target region (2007–2012)

Source: Ernst & Young. 2013. *Mergers, acquisition and capital raising in mining and metals 2012 trends, 2013 outlook – When opportunity knocks, who answers?* Ernst & Young: London.

In the mining and metals industry, major companies' drive to strengthen the new projects pipeline and achieve growth from consolidations was a catalyst for M&A activity in 2012. The acquisition of junior exploration companies by major mining companies is a trend that is expected to continue into the near future.As illustrated in Figure 7, the most targeted resource-rich country for M&A activity during 2012 was South Africa. The DRC, Sierra Leone and Namibia followed South Africa as top African destinations, which were primarily targeted by Chinese state-owned enterprises for copper, iron ore and uranium respectively. Although South Africa was the top African destination for M&A, deal activity in South Africa's mature mining and metals sector largely stemmed from industry reorganisation in response to widespread labour unrest, higher-than-inflation wage and energy cost increases, and a rise in the number of transactions restructuring previous Broad-based Black Economic Empowerment (B-BBEE) deals during the year[48].

48 Ernst & Young. 2013. op. cit.

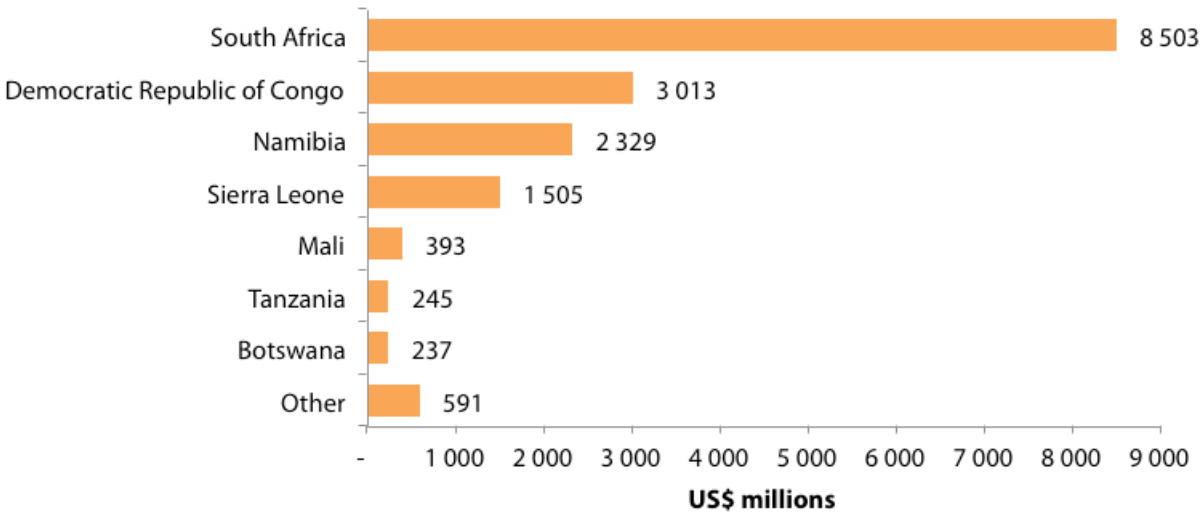


Figure 7: Value of Africa inbound deals by target country (2012)

Source: Ernst & Young. 2013. *Mergers, acquisition and capital raising in mining and metals 2012 trends, 2013 outlook – When opportunity knocks, who answers?* Ernst & Young: London.

As indicated in Table 5, the largest deal in African mining was Anglo American's acquisition of a stake in the De Beers Group worth US$5.2 billion.

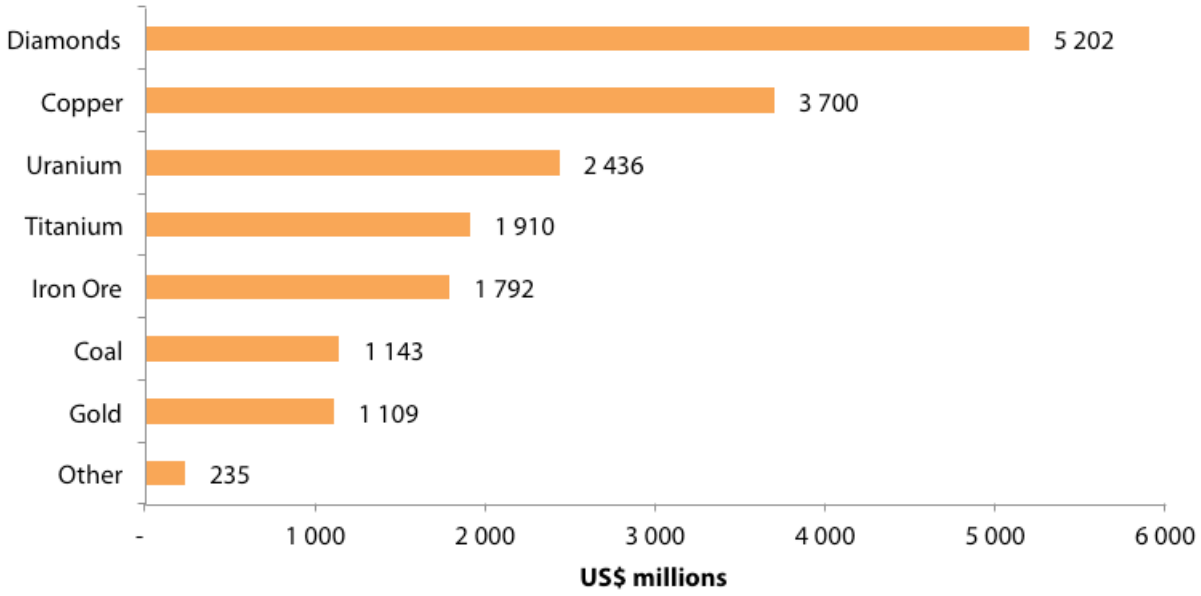
Table 5: Top 10 mining deals in Africa (2012)

Target commodity	Value (US$ millions)	Acquirer company	Country of origin	Target country
Diamonds	5.200	Anglo American	UK	South Africa
Titanium	1.910	Rio Tinto	UK	South Africa
Iron ore	1.500	Completed Shandong Iron and Steel Group Co Ltd	China	Sierra Leone
Copper	1.283	China Minmetals Corporation	China	DRC
Uranium	1.271	China Guangdong Nuclear Power Holding	China	Namibia
Copper	1.250	Eurasian Natural Resources	UK	DRC
Uranium	1.009	China Guangdong Nuclear Power	China	Namibia
Iron ore	921	Anglo American	UK	UK
Copper	550	Eurasian Natural Resources	UK	DRC
Gold	494	Weather Investments II	Egypt	Ivory Coast

Source: Ernst & Young, op. cit. and KPMG, op. cit.

As indicated in Figure 8, and in line with Table 5, diamonds were the most targeted commodity in 2012, with copper, uranium, titanium and iron ore ranking second, third, fourth and fifth respectively.

Figure 8: Value of Africa inbound deals by target commodity (2012)

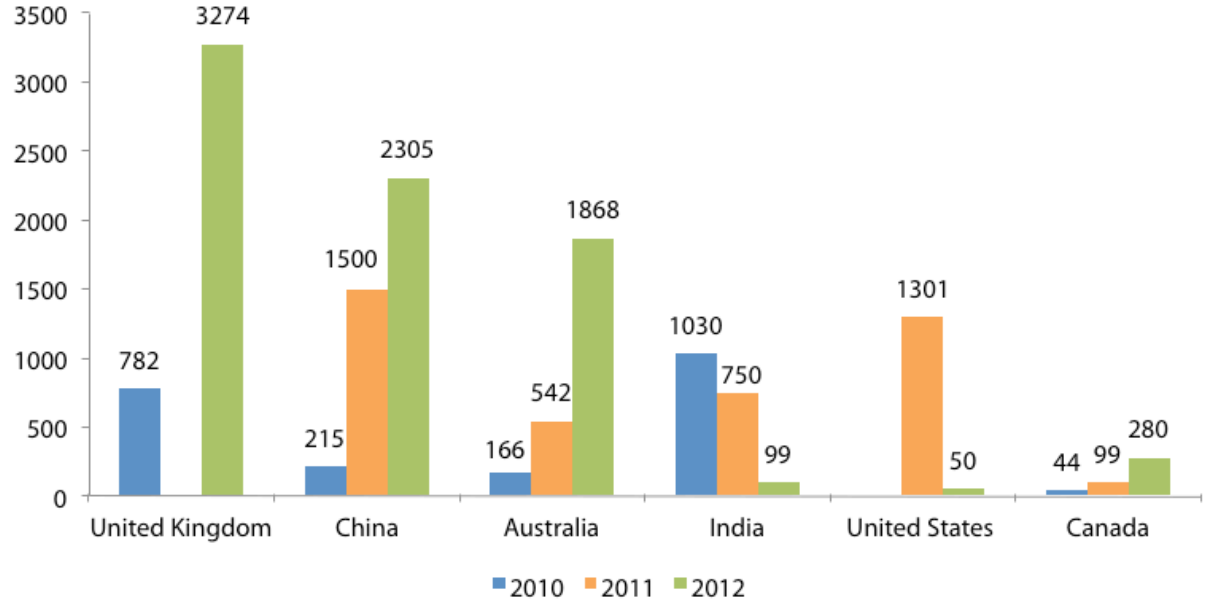


Source: Ernst & Young. 2013. *Mergers, acquisition and capital raising in mining and metals 2012 trends, 2013 outlook – When opportunity knocks, who answers?* Ernst & Young: London.

Investments in the mining and metals industry are dominated by multinational companies. These companies are continuing to increase their stake. The high cost of mining in developed countries has led to an increased presence of multinational mining companies that seek investment opportunities in Africa, which offers relatively low costs of production. This includes the world's biggest companies such as BHP Billiton, Rio Tinto, Anglo American and Xtrata. More than 200 Australian companies are currently operating more than 650 projects across 37 African countries[49].Figure 9 shows that the UK invested US$4.1 billion (involving a number of deals) from 2010 to 2012. China and Australia followed the UK with US$4 billion and US$2.6 billion respectively, while Canada invested the least (US$423 million).

49 African Development Bank. 2012. *Mining industry prospects in Africa*. African Development Bank: Tunis

Figure 9: Annual M&A investment by source country in the African mining industry



Source: KPMG. 2013. *Merger and acquisition FDI into Africa's Mining Sector.* KPMG.M&A investment by the increased significantly in 2012, driven largely by the US$921 million increase by Anglo American Plc of its interest in South Africa's Kumba Iron Ore Limited. M&A investment by China, Australia and Canada also increased significantly in 2012, while investment by India and the USA experienced a significant decline[50].

5.2 SOUTH AFRICAN INVESTMENT FOOTPRINT IN AFRICA'S NATURAL RESOURCES SECTOR

South African companies such as AngloGold Ashanti, Exxaro Resources, Sasol and Goldfields, to name a few, are prominent in the natural resources sector across the continent. Ghana, Mali, Zimbabwe and the DRC appear to be the main countries of interest for South African companies in Africa.

5.2.1 HYDROCARBONS

A number of South African companies are involved in the upstream segment of the hydrocarbons industry across the continent. The opposite is true in the downstream segment, where only Sasol and the state-owned company Petroleum Oil and Gas Corporation of South Africa (PetroSA) play key roles in a number of African countries.

PetroSA participates in upstream projects regionally, with its most recent endeavours consisting of purchasing a small stake in Ghana's Deepwater Jubilee field and signing a cooperation agreement with the DRC's Cohydro for joint oil exploration[51]. PetroSA has also entered into a Joint Study Agreement with Petromoc and Empresa Nacional de Hidracorbanetos (ENH) for the joint evaluation of the gas-to-liquids (GTL) opportunities in Mozambique. The concept for a GTL plant that can produce 40 000 barrels per day is under consideration and a concept study has been concluded to support joint evaluation by PetroSA, ENH and Petromoc. The company has also invested in oil and gas exploration in Egypt, Nigeria, Gabon, Equatorial Guinea and Namibia[52].

50 KPMG. 2013. *Merger and acquisition FDI into Africa's mining sector.* KPMG: Johannesburg

51 Government Communication and Information System. 2012. *South Africa Yearbook 2012/13.* Government Printers. Pretoria.

52 PetroSA. 2013. *Integrated Annual Report 2013*. PetroSA.

Sasol develops and commercialises technologies. The company also builds and operates world-scale facilities to produce a range of product streams, including liquid fuels, chemicals and electricity. Through its international arm, Sasol Petroleum International, the company explores, develops, produces and invests in a number of projects across Africa, including Mozambique, Nigeria and Botswana. For example, in Mozambique, Sasol is developing a 140-megawatts gas-fired electricity generation plant in partnership with power utility, Electricidade de Moçambique. The company also holds an interest in three deepwater exploration licences in Nigeria. In Botswana, the company has a joint venture agreement with Origin Energy of Australia to explore for coal-bed methane. The joint venture, Kubu Energy Resources, acquired three prospecting licences covering an area of 2 970 km^2 in the Central Province. The joint venture is planning a number of exploration activities over the next two years to determine the quantity of natural gas available and the feasibility of commercial development. Sasol has a further 27.8% interest in the Etame Marin Permit (operated by Houston-based VAALCO Energy) in Gabon[53].

There are over 200 companies registered under the South African Oil and Gas Alliance (SAOGA) that also provide supporting services to the upstream offshore oil and industry. The main companies include Algoa Oil & Pipeline Services (Pty) Ltd, DCD-DORBYL Marine, Dormac Offshore, Electro Wave, Global Spec, Hydron Hydraulics, Ropetec, SGB-Cape and Toprope. Key products and services include the following:

- Design, fabrication or construction specialised modules or facilities for the oilfields
- Vessel repairs and maintenance
- Equipment and materials suppliers

In recent years, the industry has undertaken many large oil and gas vessel repair or upgrade projects for clients such as Transocean, Pride International, Chevron, Acergy, Saipem and others[54].

53 Sasol company website accessed at http://www.sasol.com/about-sasol/international-energy-cluster/sasol-petroleum-international/operations-sasol-petroleum.

54 Information from the South African Oil and Gas Alliance.

5.2.2 Mining and metals

South Africa has emerged as an increasingly dominant and important foreign investor, especially in the Southern African Development Community (SADC) region, and increasingly in West Africa. Companies such as AngloGold Ashanti, Gold Fields, De Beers and Exxaro are now operating on a large scale throughout the continent.

De Beers and the various companies within the De Beers Family of Companies are in the diamond mining, diamond trading and industrial diamond manufacturing sectors. The company has operations in Botswana and Namibia. Mining in Botswana takes place through the mining company Debswana, a 50-50 joint venture with the Government of the Republic of Botswana. In Namibia, it takes place through Namdeb, a joint venture with the Government of the Republic of Namibia. De Beers' current exploration activities include Angola and geophysical surveys and drilling near Orapa Mine in Botswana[55].

Exxaro Resources is one of the largest South African-based diversified resources groups, with interests in the coal, mineral sands, ferrous and energy commodities. The company operates facilities and offices in Botswana and the Republic of Congo. In Botswana, the company has invested in the exploration of a coal-bed methane exploration project and has acquired African Iron Limited, paving the way for production at its Mayoko iron ore project in the Republic of Congo[56].

Gold Fields Limited is one of the world's largest unhedged producers of gold. The company operates two mines in Ghana, namely Tarkwa and Damang. The Tarkwa mine consists of six open pits, two heap leach facilities and a carbon-in-leach (CIL) plant, while the Damang mine consists of four open pits, as well as surface stockpiles and a CIL processing plant[57].

Kumba Iron Ore is the fourth-largest iron ore producer in the world and the largest in Africa. In line with the global iron ore rush in Central Africa, the company has set its exploration sights on the region. To this end, the company has agreed to collaborate with London-listed Ferrex, to fund an exploration programme into a possible iron ore mine in Gabon[58].

55 De Beers Group company website accessed at http://www.debeersgroup.com/Operations/Mining/Mining-Operations/.

56 Faku, D. Exxaro seals deal for Congolese iron mine. *Business Report*, 4 February 2014. [Online]. Available at: http://www.iol.co.za/business/companies/exxaro-seals-deal-for-congolese-iron-mine-1.1642585#.UwCw_dr8liQ

57 Gold Fields company website accessed at http://www.goldfields.co.za/global_main.php.

58 Seccombe, A. Kumba Iron Ore. Anglo looking to build organically in Gabon. *Business Day*, 20 December 2013. [Online]. Available at: http://www.bdlive.co.za/business/mining/2013/12/20/kumba-iron-ore-anglo-looking-to-build-organically-in-gabon

AngloGold Ashanti has the following mining operations in five countries in the region:

- Iduapriem and Obuasi in Ghana
- Siguiri in Guinea
- Morila, Sadiola and Yatela in Mali
- Navachab in Namibia
- Geita in Tanzania

AngloGold Ashanti also conducts an active greenfields exploration programme in the DRC. This programme mainly focuses on the Mongbwalu concession and the Kibali joint venture with Randgold Resources and the DRC government[59].

SENET is one of South Africa's leading project management and engineering firms in the field of mineral processing. The company has completed projects in, has operated in, or has clients and/or representation in a number of African countries, including Angola, Botswana, Burkina Faso, Central African Republic, the Ivory Coast, DRC, Eritrea, Ethiopia, Egypt, Ghana, Guinea, Libya, Mali, Mauritania, Mozambique, Namibia, Nigeria, Senegal, Seychelles, Tanzania, Zambia and Zimbabwe.

There are also companies that service the mining and extractive sector. These companies offer a range of products and services, including commercial explosives, transport equipment, blasting, engineering and construction services. Some of the companies include AECI, Africa Oxygen, Omnia-BME, Group Five, Bell Equipment and Grinaker-LTA.

6. THE POLICY AND REGULATORY ENVIRONMENT IN THE NATURAL RESOURCES SECTOR

6.1 OVERVIEW

Natural resources sector regulations and codes have undergone fundamental changes in recent years in Africa. The boom in commodity prices, coupled with larger profits registered by multinational companies, mounting pressure from populations to meet the development challenges facing African countries, and externally driven regulatory codes in the natural resources sector have all put pressure on governments to renegotiate contracts and revise mining codes to include remedial processes and favourable policies[60].Accordingly, across Africa, governments are increasing taxes and royalties, legislating for more equitable revenue-sharing codes, placing social investment requirements, and reviewing restrictions on foreign ownership and requirements for indigenous shareholdings. Calls for the beneficiation of resources are also on the rise, as governments are looking to their geology as a path to socio-economic development.

59 Anglo Gold Ashanti. *Annual Integrated Report 2012*. Accessed on the company's website http://www.aga-reports.com/12/ir/operating-reviews/continental-africa.

60 Besada, H and Martin, P. op. cit.

6.1.1 Ownership requirements

Across Africa, legal systems of countries consider the ownership of natural resources before they are extracted. In some countries, the state is the owner, and in other countries, rights to the resources go with land ownership. In some countries, rights of some resources are vested in the state, and in others they are vested in the landowner. With a few exceptions, the dominant position in Africa is that natural resources are owned by the state. Some countries in the region even have mandates for a minimum percentage of government ownership for exploration and operations. For example, Ghana, the DRC and the Republic of Congo require a minimum of 10% of the share capital of the mining company to be owned by the government. In Algeria and Zimbabwe, changes in the law have placed a 49% cap on foreign ownership of strategic mines. Foreign companies must enter into partnerships or joint ventures with local firms or government, with the latter always having majority ownership[61].

6.1.2 Licensing

As an industry based on the exploitation of non-renewable resources, resource extraction is subject to licensing in most African jurisdictions. Typically, there are at least two and sometimes more types of licences, each providing a set of rights, obligations and conditions. Table 6 illustrates various resource extraction titles in place in selected African countries.

Table 6: Mining titles in selected African countries

Region/country	Exploration	Exploitation
Republic of Congo	1 year	25 years
Gabon	3 years	25 years
Tanzania	3 years	25 years
Algeria	3 years	30 years
Egypt	4 years	30 years
Libya	1 year	30 years
Angola	5 years	35 years
Botswana	3 years	25 years
Mozambique	5 years	25 years
Zambia	2 years	25 years
Burkina Faso	3 years	20 years
Ghana	3 years	30 years
Guinea	3 years	10 years
Ivory Coast	3 years	20 years
Nigeria	3 years	25 years

Source: Piper, DLA. op.cit and various governments' websites.

61 Piper, DLA. op. cit.

Despite standard exploration and extraction licences, there is, however, considerable variation in licensing practice throughout the continent. Some countries provide a third category of holding licence to cover the period between completion of exploration and commencement of development. In some countries, licenses are routinely supplemented by a government agreement, while in others a government agreement effectively replaces licensing as the primary means of granting resource extraction rights. In some countries, government agreements are only used in addition to licensing to provide a special regime for the development of individual major projects[62].

6.2 FISCAL REGIME

The fiscal regimes governing natural resource extraction in Africa include taxes, royalties, concession and licence fees, rents and the various fiscal incentives offered to companies engaged in resource exploitation. The overarching goal of the fiscal regimes is to aid the economic development aspirations of resource-rich countries. These regimes are discussed below.

6.2.1. Royalties and taxes

Royalties and taxes are predicated on the concept of economic rent, which is the difference between the value of production and the costs of extracting the resources. With a few exceptions, most of the African countries for which data is available utilise ad-valorem or sales royalty. An ad-valorem royalty is assessed on the market value of the mineral produced, and its value is highly dependent on the relevant commodity price[63]. Its main virtue is that it is less onerous on mining companies relative to unit royalty when commodity prices fall and much easier to implement than profit royalty in countries where tax administration capacities are limited or where losses are uncommon.

As illustrated in Table 7, the different categories of minerals are assessed at different royalty rates, mainly due to the differences in the amount of rent generated. Specifically, prices of precious stones or metals are higher than the prices of base metals for a given quantity. Therefore, the highest royalty rates are usually assessed on mineral stones such as diamonds and gems. This group is followed by precious metals, such as gold, silver and platinum, which have an average royalty rate of approximately 4%. The base metal class, including iron, is assessed at an average of 3%. This type of royalty rate differentiation is applied in countries such as the DRC, Guinea, Mozambique, Nigeria, Sierra Leone, Tanzania, and Zambia (see Table 7).

In addition to royalties, resource-rich countries participate in sharing the economic rent by imposing taxes on resource extractors. These taxes are mostly profit-based or value-based and include corporate income tax, withholding tax on dividends accruing to non-residents, resource rent tax and value-added tax. The most common type of resource tax in Africa is the corporate income tax that is levied at a predetermined percentage rate of a company's revenues less the cost of generating revenues. Investors in the extractive sector tend to face, on average, a 35% corporate income tax across most African tax jurisdictions.

62 Baker & McKenzie. 2013. *Global Mining Guide 2013*. Baker & McKenzie.

63 The production/unit royalty is assessed on the quantity (i.e. ounces or tons) of mineral produced, and the value is independent of the commodity price and the profit-based royalty is a rate assessed on the profit of the operation.

Table 7 shows the level of corporate income tax and royalties in selected African countries.

Table 7: Corporate taxes and royalties in selected African countries

Country	Corporate Tax	Royalties		
		Precious Stones	Precious Metals	Base Metals
Botswana	25%	10%	5%	3%
Burkina Faso	20%	7%	3–5%	3%
DRC	30%	2.5%	2%	0.5%
Gabon	35%	4% to 6%		
Ghana	35%	5%		
Guinea	35%	10%	5%	2%
Egypt	20/40.55%			
Ivory Coast	25%	2.5– 3%		
Liberia	25%	3–10%		
Mozambique	32%	10%	6–10%	3–5%
Nigeria	30%	3–5%		
Sierra Leone	37.5%	6.5%	5%	3%
Tanzania	30%	5%	4%	3%
Zambia	30%	5%	5%	3%

Source: DLA Piper.2012. *Mining in Africa – A legal overview,* various governments websites.

6.2.2 Fiscal incentives

Exploration costs, mine development, equipment imports and commodity price cycles are often subject to special tax treatment and this varies from one country to another. Exploration expenses are incurred before taxable income is available and so governments provide special provisions for how pre-production (pre-income) exploration expenses are handled for future income tax purposes. For example, in Tanzania, an immediate deduction is given for developmental capital expenditures[64].

Most African countries provide generous tax incentives to encourage mining development as a means of accelerating the recovery of capital costs once production commences. Governments have acknowledged that mine development is capital intensive and an operation will initially need to import large quantities of specialised equipment and machinery. Accordingly, countries provide some sort of relief from value-added tax, and customs and excise duties on equipment purchases.

Other countries allow a company to consolidate books from all operations for determining income tax liability. In instances where negotiated agreements are in force, income from an operation governed by an agreement may be "ring fenced", even though the general tax law does not impose ring-fencing restrictions.

64 Pricewaterhouse Coopers. 2012. *Corporate income taxes, mining royalties and other mining taxes – A summary of rates and rules in selected countries*. Pricewaterhouse Coopers.

In some instances, when a mining company makes an investment in a country, it is possible, in some jurisdictions, to agree to a level of fiscal stability with the government. This is to ensure that the holder will not be adversely affected by changes in law, level of customs or other duties, taxes and royalties. Such tax stability agreements are prevalent, for example, in Ghana, the DRC and the Republic of Congo. Such a fiscal stability agreement will then apply for as long as the extractor holds the resource rights, and in respect of all participating interests subsequently held by the extractor in respect of the resource rights. If the government breaches a fiscal stability agreement and the failure has an adverse economic effect on the royalty that the extractor (who is a party to the fiscal stability agreement) should pay, the extractor is either entitled to compensation regarding the increase in the royalty or an alternative remedy that eliminates the impact of the government's failure. The fiscal stability agreements therefore have an economic value.

However, the existence of a tax stability agreement does not necessarily ensure that the government will not try to renegotiate the tax stability agreement should the country have a substantial drop in tax revenues or increase in government expenditures during a crisis or economic downturn. A report by Pricewaterhouse Coopers indicates that, in some jurisdictions (for example, the DRC, the Republic of Congo and Tanzania), there has been a trend to limit the use of mining losses incurred in one mining site to offset against profits generated from another site belonging to the same company in determining income tax liability[65].

6.3 BENEFICIATION REQUIREMENTS

Many governments are now seeking to have minerals beneficiated in-country prior to export. In order to ensure in-country beneficiation, governments are imposing export bans, while others have introduced steep export levies on unrefined ores. For instance, in 2011, Zimbabwe banned the export of chrome in an effort to develop internal refining capacity[66].Where beneficiation is legislated, some countries have created an environment that incentivises the investment needed to propel downstream businesses. For example, smelters, refineries and other downstream processes in Botswana attract low and negotiated rates of 0 to 15%, and the government has adopted "flexible" regulations on employment and currency exchange[67].

6.4 LOCAL CONTENT REQUIREMENTS

Governments in most countries endowed with natural resources use local content policies to develop in-country capacity and indigenous capabilities to capture more of the work and value presented by the sector.

For example, countries such as Tanzania, Ghana, Nigeria, Uganda and Mozambique all have policies or are drafting policies and regulations in which local content requirements will compel companies to provide detailed training and recruitment plans and programmes that encompass technology transfer and the training of locals in all phases of their extraction activities. The Gabonese law requires that Gabonese nationals hold at least 90% of all jobs in the hydrocarbon sector, while all executive jobs should be held by Gabonese citizens[68]. In some instances, governments require companies to invest in supplier development and procuring locally.Furthermore, socio-economic policies aimed at increasing the number of under-represented or previously disadvantaged black populations in Africa were revised in Namibia and Zimbabwe. In Namibia, a new legislation was put in place to

65 Ibid.

66 Reuters. 2011. Zimbabwe bans chrome exports, to boost refining.

67 Piper. DLA. op. cit.

68 KPMG. 2013. *Oil and gas in Africa – Africa's reserves, potential and prospects*. KPMG: Johannesburg.

replace the country's Black Economic Empowerment (BEE) policy with the New Equitable Economic Empowerment Framework, which was aimed at promoting the participation of previously disadvantaged Namibians (PDNs) in the country's economic activities. Under the new law, state-owned financial institutions would assist PDNs in buying shares in private firms of existing businesses on commercial or near-commercial terms to be negotiated between buyers and sellers[69]. In Sierra Leone, mining companies are also required to provide 0.1% of annual revenue to fund community initiatives[70]. In Ethiopia, the holder of a mining licence is required to participate in a community development plan in the licence area and is required to allocate funds for this[71]. In Guinea, there are mandatory conclusions of community development agreements, setting the conditions of the implementation of local development, including, for example, 0.5% contribution payment for local community development based on the company's turnover achieved on the mining title of the area[72].

In most jurisdictions where there is newly found resource wealth, local communities are not just looking for minimal disruption, but also aim to share the economic and social benefit from local project operations. They have a lot of power to disrupt projects if their needs and interests are not met. This can be a huge challenge, especially when there is no clear government policy on how firms should invest in social projects to benefit the communities in which they operate. For example, in 2012, more than 700 families in Mozambique's Tete region demonstrated against a lack of access to water, electricity and agricultural land in an area to which they had been resettled by Brazil's Vale. The families launched a legal case against the state, alleging human rights abuse[73].

South African mining firms have been credited with a number of social and economic projects around the continent through their investments in the natural resources sector. For example, AngloGold Ashanti commissioned a junior secondary school and an early childhood development centre for Ghana's Iduaprim and Bibiani communities. The company further established community farms to help farmers produce passion fruit and pawpaw. It has also established business training programmes, such as the EMPRETEC programme for the youth of the community to provide them with the necessary education and skills to help them find employment. The acronym EMPRETEC is derived from the Spanish words for entrepreneur and technology (*emprendedores* and *tecnología*). AngloGold Ashanti's Obuasi Mine also implemented HIV/Aids awareness programmes to help educate miners and their families about the disease and to provide them with treatment[74].

6.5 OTHER REQUIREMENTS

Considering infrastructure deficit, some African countries have introduced legislation requiring new mining ventures to make supplementary investments, while simultaneously necessitating the re-investment of state royalty revenues into public works. Major efforts to rehabilitate railway systems have recently been undertaken in Angola, the DRC, Zambia, Tanzania, Liberia, Gabon and Mozambique[75]. For example, Vale spent US$3.4 billion to rehabilitate 680 km of railway lines in Mozambique and to extend the railway network by 230 km to reach the

69 Bermudez-Lugo, O. 2013. *Minerals Yearbook – The mineral industry of Namibia*. USGS: Washington DC.

70 De Backer, S. 2012. Mining investment and financing in Africa – Recent trends and key challenges. A paper delivered at Africa's Mining Industry: The Perceptions and Reality Conference, Toronto, March 2012. Webber Wentzel: Cape Town.

71 Ibid.

72 Piper, DLA. op. cit.

73 Flak, A. and Mapote, W. Mozambique coal, gas: boom for all, or just a few? Reuters, 19 June 2012.

74 Besada, H. 2006. *Case studies on the impact of South African mining investment in Africa. Brenthurst Discussion Paper 10/2006*. The Brenthurst Foundation: Johannesburg.

75 Besada, H and Martin, P. op. cit.

port of Nacala[76]. In Sierra Leone, African Minerals Ltd rebuilt a railway network for the purposes of exporting iron ore[77] in 2011.

The extractive industry is also starting to be used by governments as a way of strengthening their financial markets and banking institutions. Angola has drafted legislation requiring oil firms to open accounts with domestic banking institutions, from which all payments related to their oil operations must be processed[78]. Meanwhile, Mozambique is considering requiring all oil and gas companies currently operating, or those wishing to extract gas and oil, to be listed on Mozambique's stock exchange[79]. The objective is to strengthen their economies against foreign currencies and to get companies to raise capital in local markets.

7. THE EXPERIENCE OF SOUTH AFRICAN COMPANIES DOING BUSINESS IN AFRICA

A survey was conducted of South African exporters and investors in the natural resources in order to build on the findings of the desktop research. The survey included technical questions relating to prospects for investment growth in the natural resources sector in Africa, challenges experienced in the sector when venturing into the continent, and instruments to mitigate risks. In addition to the questions, the questionnaire requested ideas on how the South African government and international financial institutions can play a role in supporting outward FDI and exports in the natural resources sector. To further buttress desktop research work, due diligence visits were also undertaken in Ethiopia and Nigeria.

7.1 SURVEY FINDINGS

African natural resources industries are viewed by South African mining companies as some of their most lucrative ventures on the continent, offering the highest return on investment on average, despite the high risks associated with political turmoil, civil unrest and economic upheaval. The most attractive aspects of investing in African mining and extractive markets include improving infrastructure, increased political stability, high economic growth rates, an emerging middle class and growing consumerism.

According to South African exporters and investors, access to qualified staff, political risk, uncertain government policy and corruption emerged as the top risks and challenges for doing business on the continent. Transport and logistics unsurprisingly ranked highly as a challenge. Delays in moving goods across borders within and between regions are well documented and this is a key priority for the African Union and the various regional economic communities. Delays at African customs are, on average, longer than in the rest of the world. These delays add a tremendous cost to importers and exporters, and increase the transaction costs of trading among African countries.

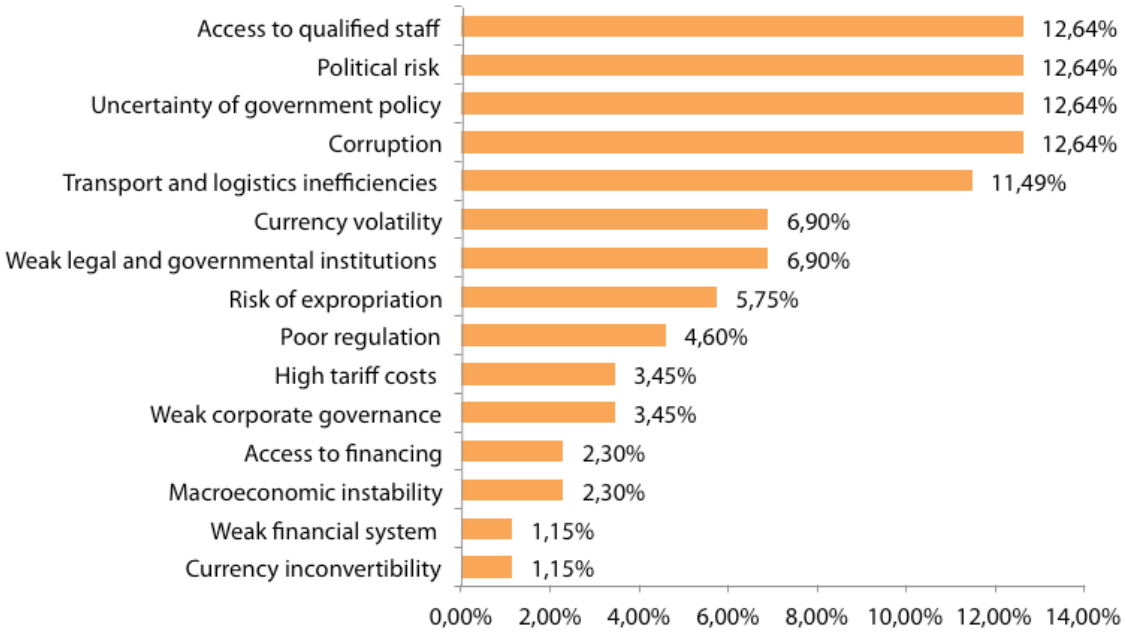
76 Scholvin, S. Transport infrastructure projects in Central and Northern Mozambique. *Transport World Africa*, 19 December 2013.

77 De Backer. op. cit.

78 Pricewaterhouse Coopers. 2013. op. cit.

79 Ibid.

Figure 10: The main challenges of investing in African mining and extractive market



Source: Export Credit Insurance Corporation of South Africa (ECIC) survey.

A weak legal system is also a problem for South African companies doing business in Africa. In many instances, the judicial system is weak and heavily under the influence of government. For example, in Ethiopia, the judicial system is considered inadequately staffed and inexperienced, particularly with respect to commercial disputes. While property and contractual rights are recognised, and there are commercial and bankruptcy laws, judges often lack understanding of commercial matters and scheduling of cases often suffers from extended delays. Contract enforcement remains weak. There is no guarantee that the award of an international arbitral tribunal will be fully accepted and implemented by the authorities. Moreover, the system is not as independent and free from government scrutiny as in the case of South Africa[80]. In other places, such as in Nigeria, the process of arriving at judgments pertaining to business disputes is extremely slow. This is primarily due to an inefficient judicial system, corruption and government bureaucracy[81].

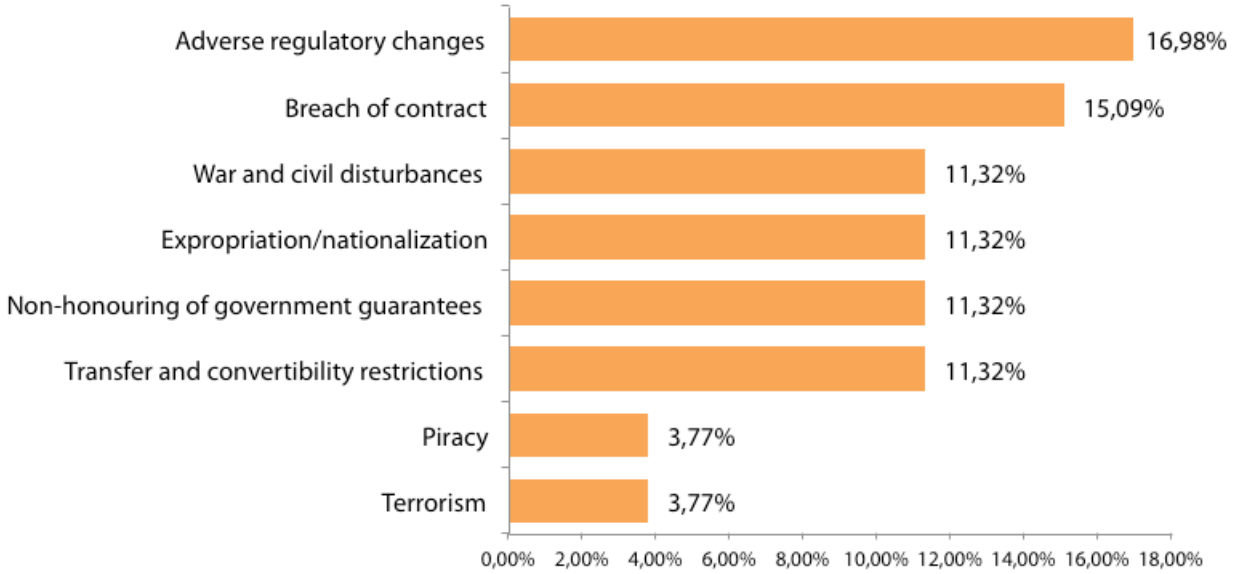
Figure 11 shows that adverse regulatory changes, followed by government breach of contract, were ranked as the highest political risks of concern to local exporters and investors. According to some of the exporters and investors, the African regulatory environment is challenging for a number of reasons. Firstly, there is sometimes the lack of policy clarity, which then heightens perceptions of risk. They concur that, above all, investors seek stability before putting their money into a particular environment. Secondly, there is a lack of policy continuity**.** Changes in government or even just Cabinet reshuffles within the same government sometimes lead to changes in policy, and this can be particularly disruptive in the natural resources sector, where investments require a long-term outlook. Thirdly, there is a lack of policy consistency. If, for example, a country has chosen to make it easy to do business, it should reflect in the time it takes to register a new business, open a bank account, and get work permits. This process requires a concerted effort across all government agencies[82].

80 Interview with Ethiopian government officials, Addis Ababa, 14-18 October 2013.

81 Interview with Nigerian government officials, Abuja, 2-6 December 2013.

82 Email correspondence from a South African exporter/investor, 19 February 2014.

Figure 11: Type of political risk of most concern to investing in the African natural resources sector



Source: ECIC survey.

The ECIC survey has also shown that the bulk of South African exports and investments remain uninsured against political risk. The survey results show that only 11% of the responding firms use political risk insurance (PRI) as a risk mitigation tool. The explanation for this rests partly on the perception that some political risks (for example, political violence) cannot be effectively mitigated by PRI. For breach of contract, bringing in local partners through joint ventures has been the preferred risk mitigation tool. This is the case where there are patronage networks and *de facto* preferences shown to businesses owned by government or associates of the ruling parties, including preferential access to bank credit, foreign exchange, land, procurement contracts and favourable import duties[83]. It is only in the case of expropriations that investors give relatively high marks to PRI, but even for this risk, informal relationships with political leaders continue to be viewed as a more effective approach to risk management[84].

83 A view confirmed by interviews with Ethiopian and Nigerian government officials, in Addis Ababa, 14-18 October 2013 and Abuja, 2-6 December 2013.

84 Email correspondence from a South African exporter/investor, 19 February 2014.

Figure 12: Mechanisms used to mitigate political risk when investing in African countries

Source: ECIC survey.

With a few exceptions, the majority of South African exporters and investors confirmed their intention of maintaining and/or increasing their African investment in the coming years. They are optimistic about future mining prospects on the continent due to political and macro-economic stability and the development of more investor-friendly policies by African states.

8. TRADE AND INVESTMENT OPPORTUNITIES

8.1 UPSTREAM OPPORTUNITIES

Natural resource exploration and development is capital intensive and requires economies of scale, which most African governments do not have. As stated elsewhere in this report, almost all equipment, machinery and spare parts, most consumable materials, as well as skilled labour, have to be imported to undertake any exploration and/or production.

8.1.1 Hydrocarbons

Over the past decade, the development of oil and gas resources and the rapid growth of upstream opportunities in West Africa have led to an increasing demand for dedicated oil and gas services and a marine repair hub. The demand for offshore oil and gas platforms and components, service and repair to support these operations is large and growing. In 2013, SAOGA estimated that there were 72 rigs operating in West Africa, eight to ten rigs in East Africa and a further 42 floating production storage and offloading vessels operating in the region. SAOGA predicts that these numbers are going to increase in the medium to long term[85].The projected growth of offshore activity in both the western and eastern coasts of Africa presents opportunities for South African vessel construction and repair companies. There are opportunities in the design, fabrication or construction of specialised modules or facilities for the oilfields, including storage tanks, processing modules for offshore platforms or onshore facilities, docking facilities, tugs and barges, civil structures, platforms, etc. The port of Saldanha Bay has a large fabrication yard dedicated to offering these services to the regional upstream market.

South African companies have further opportunities to repair, maintain and upgrade various kinds of oil and gas marine vessels. The ports of Cape Town and Saldanha Bay, with their service orientation towards the west coast of Africa, are key marine repair hubs, boasting dry and floating dock facilities that can cater for medium and large vessels. The ports of Durban and Richards Bay are also ideally positioned to service the continent's east coast.

With respect to distribution and logistics services, Cape Town is considered a major logistics and distribution point for materials and equipment into the West African oilfields, providing a wide range of equipment, such as pumps, valves, pipes, motors, instrumentation and process equipment for the specialised needs of the upstream industry.Africa's frontier markets will also require huge investments for developing midstream and downstream capabilities before shipping their products globally. Currently there is a lack of supporting export infrastructure for transportation, including platforms, storage terminals and pipelines. Given the costs and risks inherent in upstream hydrocarbons activities, the best route for South African companies is likely to be through partnerships or consortiums with bigger multinationals.

85 Pillay, K. 2014. Up and midstream oil and gas. Presentation delivered at SAOGA Networking Breakfast, Johannesburg, 20 February 2014.

8.1.2 Mining and metals

South Africa has developed considerable expertise in mining and mining-related supply industries. It has a number of firms located at the global technological frontier. The country's firms are recognised as leaders in turnkey new mine design and operations, mine safety, ventilation, tracked mining, geological services and shaft sinking.Table 8 shows major categories of services and goods that can be offered for upstream mining activities.

Table 8: Major categories of goods and services supplied to upstream mining activities

Exploration and mining • Mineral surveying and deposit and mine modelling equipment and services • Environmental and socio-economic impact assessment and design services • Financing • Borehole drilling and assaying equipment and services	**Consulting/engineering services** • Exploration • Mine planning and design • Geotechnical and surveying • Hydrology • Environmental and social impact assessments • Feasibility studies • Environmental management plan • Civil construction and bulk earthworks • Procurement and management • Shaft sinking • Environmental health and safety • Ventilation • Assaying and sampling • Instrumentation and control • Electrical • Maintenance and stores • Contract mining/mineral processing • Mine closure and land rehabilitation
Underground mining • Underground contract mining services • Handheld drilling equipment • Blasting equipment and consumables • Mobile haulage and drilling equipment • Winding and hoisting equipment	**Open-cast/surface mining** • Open-cast/surface contract mining services • Drilling and blasting equipment and consumables • Haulage and excavating equipment • Crushing and screening equipment

Source: International Study Group. 2009. *Africa's Mining Regimes: Framework Report.*

8.2 DOWNSTREAM OPPORTUNITIES

There is a strategic policy shift towards encouraging beneficiation of natural resources by many African governments. African countries are devising policies and regulations that place emphasis on preference for domestic market over exports, consequently diverting more natural resources for domestic usage once commercial production begins. Governments are also incentivising the investments that are necessary to commence downstream activities.

8.2.1 Hydrocarbons

Governments in Africa are increasingly requiring companies to supply gas as an energy feedstock for local power generation, industry and for general consumption, prior to exporting the products. Local beneficiation of hydrocarbon resources is being prioritised to ensure development for the benefit of the local population. Demand for GTL in many countries is expected to be strong, where it can be used as a substitute for higher cost diesel, motor gasoline and jet fuel. A significant share of this demand can be met with synthetic fuels derived from GTL processes.Access to electricity is also a huge challenge among many African economies, with only 42% of the African population having access to electricity. Africa's increasing population growth rate and economic growth rate are projected to drive annual electricity consumption across many countries. The opportunity to construct gas-fired power plants can reduce countries' reliance on heavy fuel oil, coal and hydropower, which has been affected by droughts in the past.South Africa is the world leader in GTL technologies and the construction of gas-powered electricity plants. The products produced using GTL technologies are a key component of the country's industrial base, with natural gas-based liquid fuels and petrochemicals dominating the industry. The country has a highly developed synthetic fuels industry, producing gasoline and diesel fuels from natural gas.

8.2.2 Mining and metals

Although downstream processing may not have been South Africa's industrial development strategy until recently, the country's extractive industries have created other positive spinoffs. Ecosystems of firms providing support to oil, gas and mining have emerged organically around the extractive sectors.South Africa has a dense network of supplier industries, raw materials and skills. The local value addition of these specialist mining services is estimated at 90%[86]. South Africa is also the world leader in coal-to-liquids technologies, and synthetic coal-based liquid fuels and petrochemicals dominate the manufacturing industry. South Africa is also among the most cost-effective producers of ethylene and propylene in the world, thanks to abundant access to low-grade coal and leading-edge process technology.Table 9 shows typical products and services that could be offered for downstream mining activities.

86 United Nations Economic Commission for Africa and African Union. 2013. *Economic Report on Africa 2013 – South Africa's mining equipment sector challenged to maintain its competitive advantages*. United Nations Economic Commission for Africa: Addis Ababa.

Table 9: Major categories of goods and services for downstream mining activities

Mineral processing	**Smelting and refining**
• Engineering design and project management services • Contract mineral processing services • Communication equipment and services • Concentration equipment and services • Tailings equipment and services • Process control, assaying and testing equipment • Reagents and chemicals	• Drying equipment and services • Smelting and tapping equipment and services • Converting equipment • Environmental equipment and services • Refractory equipment and consumables • Process control, assaying and sampling equipment and services • Reagents and chemicals
Bulk materials handling	
• Conveyor equipment and consumables • Cranes • Valves • Pumps • Materials and storage equipment • Transport vehicles	

Source: International Study Group. 2009. *Africa's Mining Regimes: Framework Report*.

9. KEY RISKS TO WATCH

9.1 SOVEREIGN RISK

Sovereign risk can take various forms, from the risk of changing laws and regulations to resource nationalism issues such as the nationalisation of mining assets.

There has been a tendency in Africa to change the mining and extractive sector regulatory regime following major discoveries and during times of commodity price increases.

A heightened risk of loss resulting from discriminatory legal judgments, adverse changes in regulatory parameters or burdensome administrative processes and corruption is a widely acknowledged risk that accompanies investment in new mining territories, particularly in countries emerging from periods of conflict and/or autocratic rule. Investors must not only contend with the fast pace of reform as governments try to rapidly modernise their legal systems, but also the fact that many of the changes are often expedient to political objectives and revenue targets, rather than good governance. While this affects all kinds of investment projects, it is the high-revenue ones with a large social and environmental footprint, like those in the natural resources sector, that are disproportionately at risk[87].

In drafting new legislation for the natural resources sector, governments increasingly face a trade-off between appeasing popular demand by imposing more stringent terms on investors in order to share the wealth, and maintaining an "investor-friendly" reputation to ensure future FDI inflows.When nations embark on the transition from civil conflict or military rule to civilian democratic governance, it raises the highly subjective concept of "legitimacy". Governments that ascend in a post-conflict context or succeed a non-representational regime will often reject the legitimacy of their predecessor on the basis that they were either not popularly elected or that they relinquished their legitimacy by committing certain abuses (which may have been the cause of conflict in the first place).

Under such circumstances, investors who continue to operate under contracts signed with a disavowed government are liable to be forced into renegotiations or have their concession(s) annulled. Rather than respecting contracts freely entered into by their predecessors, administrations in post-war countries tend to renegotiate contracts under the pretext of securing better terms for the host government.

9.2 SECURITY OF TITLE

Investors from common law countries are often troubled by unfamiliarity with civil law systems, where the government has a different role, and the rights and obligations of parties are governed by an unfamiliar framework of rules. Another point of difference is between countries where the right to mine arises from or is otherwise subject to agreement with the government, in contrast to jurisdictions with a licensing-based system. Agreements with the government can increase certainty in projects in the many resource-rich countries that do not have a comprehensive, cohesive or stable mining law regime. Even where there is a comprehensive mining code, there is often a gap between what the law says and how it is administered, and the licensing regime is not seen as giving the certainty required for major projects. In a number of countries, such agreements become law and override other inconsistent laws[88].

87 Stephens, E. 2013. *West African Mining Sector Report*. World Risk Review.

88 Baker & McKenzie. 2013. op. cit.

9.3 CURRENCY RISK

For mining firms with a substantial portion of their revenue and debt denominated in an internationally recognised currency (such as the USA dollar), fluctuations in exchange rates can have a large impact on their bottom line, especially when the cost of goods sold is denominated in local currencies. For example, Vale and Rio Tinto reported currency losses in 2011/12 due to the impact of exchange fluctuations in the cost of goods sold in local currencies in a broad range of the jurisdictions in which they operate[89].

89 Vale Financial Statements, December 2013 and Rio Tinto 2012 Annual Report.

10. CONCLUSION

Africa is home to the majority of the world's natural resources wealth. Many parts of Africa are seen as an untapped market and therefore a potential growth opportunity.States in **East and Southern Africa** offer a low-risk environment with proven geological potential. With a few exceptions, countries in both regions are considered to boast favourable business environments and are characterised by historical political stability. Accompanying this political security are mining codes that, although not free from problems, compare favourably to those elsewhere. Corporate income tax is fairly standard and state equity participation in mining operations is generally less than in other African regions. Both regions are also notable for the massive infrastructure developments they are undertaking to support the extractive sector. Export and investment opportunities in the region are primarily centred on hydrocarbons, diamonds, copper, coal, uranium and gold. These sectors are poised to grow in importance and size because of new discoveries. Countries such as Botswana, Angola, Kenya, Namibia, Mozambique, Tanzania, Uganda and Zimbabwe hold the greatest potential for untapped hydrocarbons and mineral deposits.

West African countries offer the greatest opportunities given the huge amount of natural resources they are endowed with, most of which are still untapped. Initiatives such as harmonisation of regional mining codes show the region's proactiveness to sustain investor confidence. At the individual country level, Ghana, in particular, offers political stability that rivals most other countries in the region. However, the country's current regulatory framework places a high burden on companies. Nigeria, on the other hand, despite its mature hydrocarbons industry, has a mining industry that remains small and substantially underdeveloped, and faces uncertainty in its regulatory environment due to continued security concerns in the country's north. Mali, one of Africa's largest gold producers, undoubtedly has geological potential, but the country remains politically fragile. Sierra Leone and Liberia are attracting much positive attention for their stability and mining industry growth, after a troubled history. Overall, the iron ore mining rush in the region offers many opportunities. There are also opportunities in gold mining. Pressing energy challenges in the region also offer opportunities in petroleum fuel supplies and the construction of gas-to-electricity plants.The geological wealth of **Central Africa** is obvious, but the region offers a slightly higher risk environment. With a few exceptions, most of the region's markets are characterised by political instability and uncertain business environments. Yet, most countries are hospitable to natural resources investments. The ability of many multinationals to conduct business in the region is evidenced by the strong levels of political support from governments to facilitate the extractive sector's development. Export and investment opportunities are primarily concentrated in bauxite, manganese, diamonds, gold, iron ore and base metal deposits in Gabon, the Republic of Congo, Cameroon and the DRC.

The **North African** mining and metals industry is underexplored. The biggest challenge to prospective investors in the region's mining industry is a lack of credible information that is hindering investments. The mining industry is also facing major challenges, such as social and environmental pressure from communities living near the mines, water scarcity, market volatility and the disappearance of shallow mine reserves. These challenges make it hard to plan ahead. It is also difficult to attract talent and keep up with technological innovation.

In terms of support from the South African government, local exporters and investors can take comfort from the fact that South Africa is a signatory to double tax treaties with several African countries, including Algeria, Botswana, the Republic of Congo, Egypt, Ethiopia, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Nigeria, Rwanda, Seychelles, Swaziland, Tunisia, Uganda, Zambia and Zimbabwe. These treaties allow tax paid to be offset in one of two countries against tax payable in the other, thus avoiding double taxation. Some forms of

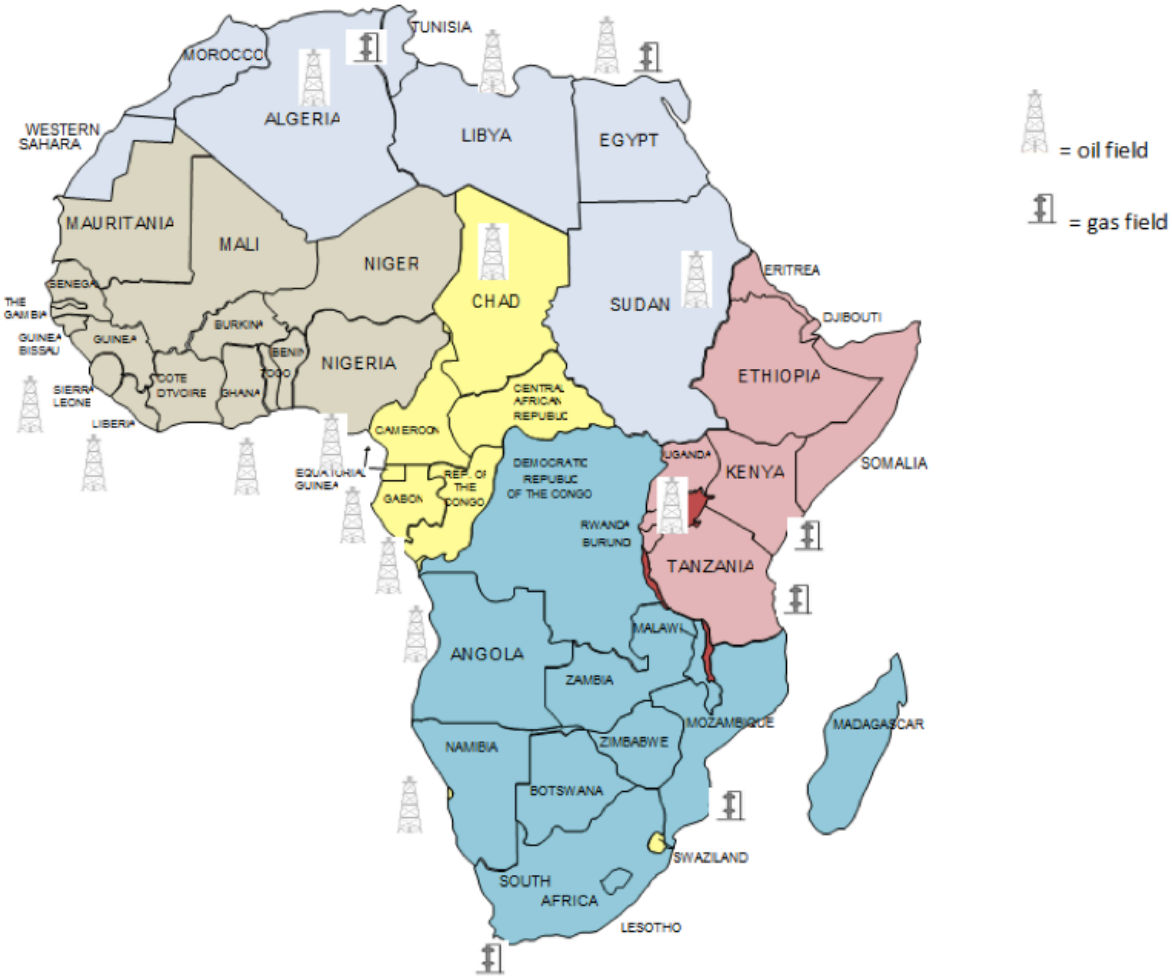
income are exempt from tax or qualify for reduced rates. These include royalties, dividends and capital gains. The South Africa Department of Trade and Industry (the dti) provides manufacturing investment incentives under the auspices of its Manufacturing Investment Programme and Capital Projects Feasibility Grant that can be accessed by local exporters and investors. The Manufacturing Investment Programme aims to enhance the sustainability of manufacturing investment projects by small enterprises and to support large- to medium-sized investment projects in manufacturing. The Capital Projects Feasibility Grant is a cost-sharing scheme towards the cost of feasibility studies that are likely to lead to capital-intensive projects outside South Africa. In developing and broadening export markets for local companies, the dti further offers export marketing and investment assistance and project funding for emerging exporters[90].

It is also important to note that South African financial institutions and development finance institutions offer dedicated mining finance, particularly when it comes to operating in Africa. The institutions have dedicated technical teams with expertise in geology and mine engineering available to assess the risk of a project, its technical merits and feasibility. Where there is a gap in domestic funding, South African exporters and investors can also access funding from regional and multilateral agencies, such as the African Development Bank and the International Finance Corporation.

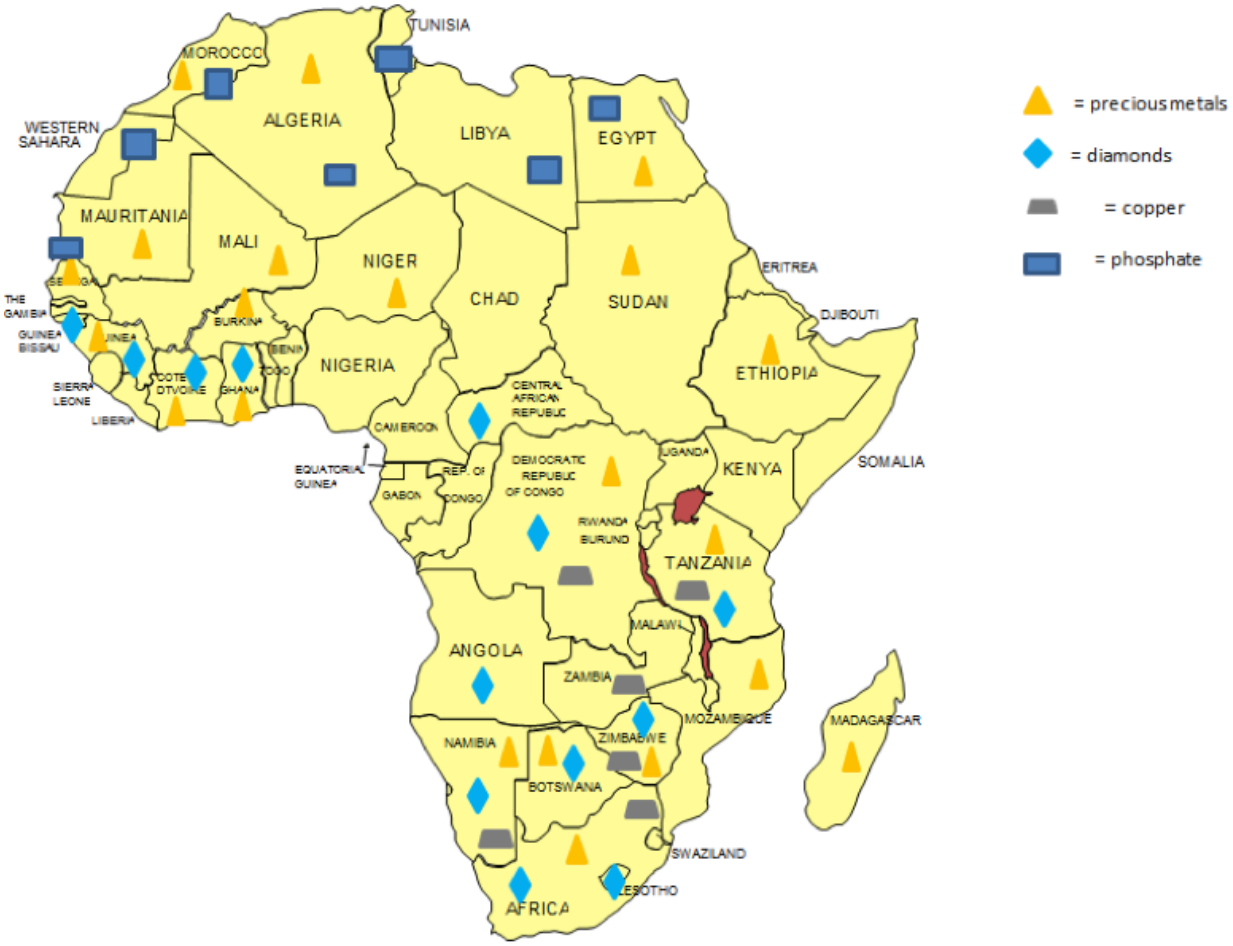
90 Soldaat, B. 2013. Investing into South Africa: Presentation at the SA-Nigeria Outward Investment Mission. Abuja, Nigeria, 2-6 December 2013.


ESTABLISHED IN 2001
ECIC
EXPORT CREDIT INSURANCE CORPORATION OF SOUTH AFRICA SOC LTD

11. ANNEXURE 1: AFRICA'S OIL AND GAS FOOTPRINT



12. ANNEXURE 2: MINING AND MINERAL DEPOSITS OF AFRICA



REGION/ COUNTRY	PRECIOUS METALS AND STONES	METALLIC MINERALS	INDUSTRIAL MINERALS
Central Africa			
Cameroon	Gemstones, gold, diamonds	Nickel, bauxite, iron, tin rutile, cobalt, uranium, tantalite	Lignite, marble, mica, manganese
Central African Republic	Diamonds, gold	Copper, tin, iron, uranium, rutile	Clay, graphite, ilmenite, kyanite, lignite, monazite, quartz, salt, manganese
Chad	Gold		Salt, soda ash
Republic of Congo	Diamonds, gold	Copper, lead, zinc, iron, magnesium	Phosphate, potash, manganese
Equatorial Guinea	Diamonds, gold	Bauxite	
Gabon	Gold, diamonds, PGMs	Uranium, niobium, iron	Phosphate, manganese
East Africa			
Burundi	Gold	Tin, nickel, copper, cobalt, niobium, coltan, vanadium, tungsten	Phosphate, peat
Djibouti		Copper	Salt, basalt, gypsum
Eritrea	Gold, silver	Copper, lead, zinc, magnesium, iron, nickel	Asbestos, feldspar, potash, talc, basalt, granite, gypsum, kaolin, marble, pumice, quartz, salt
Ethiopia	Gold, silver, platinum, gemstones	Tantalum	Salt, diatomite, feldspar, gypsum, soda ash, granite, marble, pumice, rhyolite, silica sand, kaolin
Kenya	Gemstones, gold	Lead, zircon, iron, titanium	Soda ash, fluorspar, diatomite, salt, gypsum, mica, meerschaum, kaolin
Rwanda	Gold, gemstones	Tin, tungsten, tantalum, niobium, columbium	Pozzolana
Somalia	Gemstones		Salt, gypsum
Uganda	Gold, diamonds	Copper, tin, lead, nickel, cobalt, tungsten, uranium, niobium, tantalum, iron	Gypsum, kaolin, salt, kermiculite, pozzolana, marble, soapstone
North Africa			
Algeria	Gold, silver	Mercury, wolframite, lead, zinc, iron	Phosphate, barite, kaolin, bentonite, diatomite, feldspar, gypsum, pozzolana, salt, marble, rhyolite, sulphur, fuller's earth

REGION/ COUNTRY	PRECIOUS METALS AND STONES	METALLIC MINERALS	INDUSTRIAL MINERALS
Egypt	Gold	Lead, tantalum, uranium, copper, tin, iron, zinc, magnesium	Granite, marble, phosphate, coal, gypsum, sulphur, salt, soda ash, barite, asbestos, bentonite, feldspar, fluorspar, kaolin, manganese, vermiculite
Libya		Iron	Gypsum, salt, sulphur
Morocco	Gold, silver	Lead, zinc, copper, nickel, tin, uranium, mercury, cobalt, antimony, iron	Phosphate, coal, barite, fluorspar, bentonite, salt, talc, fuller's earth, feldspar, gypsum, manganese
Sudan	Gold, silver	Chromite	Gypsum, marble, salt, mica, kaolin
Tunisia	Silver	Lead, zinc, iron	Phosphate, fluorspar, zinc, barite, gypsum, lime
Southern Africa			
Angola	Diamonds, gold, silver, PGMs	Uranium, nickel, chromium, bauxite, copper, lead, iron, zinc	Phosphate, granite, marble, salt, gypsum, lignite, mica, peat, manganese
Botswana	Diamonds, gold, PGMs, semi-precious gemstones	Copper, nickel	Cobalt, coal, soda ash, salt
DRC	Diamonds, gold, silver	Copper, zinc, tin, nickel, lead, coltan, cobalt, tungsten, niobium	Coal, manganese
Lesotho	Diamonds	Uranium	Dimension stone, bituminous shale, coal
Madagascar	Gemstones, PGMs, diamonds, gold	Chromium, nickel, bauxite, copper, cobalt, titanium, uranium, iron	Coal, graphite, labradorite, quartz, agate, salt, gypsum, feldspar, mica, marble, zircon, beryl
Malawi	Gemstones	Copper, nickel, titanium, uranium	Coal, kaolin, phosphate, zircon
Mozambique	Gold, coal, gemstones, diamonds	Bauxite, iron, niobium, tantalum, titanium, beryllium	Diatomite, salt, quartz, marble, bentonite, rutile, zircon, ilmenite
Namibia	Diamonds, gold, silver, gemstones	Copper, lead, zinc, tin, uranium, tantalite	Salt, fluorspar, granite, marble, sodalite, wollastonite, manganese
South Africa	Gold, PGMs, platinum, diamonds, gemstones, palladium	Lead, zinc, bauxite, copper, nickel, iron, chromium, uranium, vanadium, titanium, cobalt, antimony	Coal, phosphate, kyanite, zircon, vermiculite, fluorspar, ilmenite, silicon, cement, asbestos, bentonite, feldspar, gypsum, kaolin, mica, manganese, rutile
Swaziland	Gold, diamonds		Coal, kaolin, talc, soapstone

Notes