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CURRENT STATUS AND FUTURE POTENTIAL OF LEAD AND ZINC SUPPLY-DEMAND IN AFRICA

Contents

Executive Summary

Africa holds vast reserves of lead and zinc, accounting for a significant share of global resources, yet its current contribution to world production remains modest. At present, the continent produces roughly 2% of global lead mine output and 3–4% of global zinc output, with most concentrates exported for processing abroad.

Over the next decade, Africa's role in the lead and zinc supply chain is expected to expand. Rising demand for base metals, driven by population growth, rapid urbanisation, infrastructure development, and the global energy transition, will create new opportunities for investment in mining, refining, and battery recycling. The continent's vehicle sector, closely tied to lead–acid battery demand, is growing, particularly in North and Southern Africa.

Nonetheless, challenges remain. Weak infrastructure, political and regulatory uncertainty, and environmental pressures continue to constrain investment and limit value addition. Most ores are exported in raw form, reflecting a deficit in local smelting and refining capacity. Strengthening governance, expanding processing industries, and formalising the recycling sector are essential to capture greater economic benefits.

If these constraints are addressed, Africa has the potential to transform its abundant resources into engines of industrialisation and diversification, positioning itself as a more influential actor in the global lead and zinc markets.

Introduction

Africa possesses substantial mineral potential, holding approximately 30% of the world's total mineral reserves. The continent therefore offers unparalleled opportunities for investment in the extractive industries.

Despite this potential, Africa currently accounts for only around 8% of global mineral production. This figure varies by commodity, but it remains significantly below the continent's reserve base. Moreover, the majority of output is exported in its raw form for processing abroad. Limited industrialisation within the sector has curtailed opportunities for local value addition and reduced the wider economic benefits that could otherwise be derived from mineral resources.

Industrialisation is not the sole constraint on Africa's mining sector. Challenges such as inadequate infrastructure, limited accessibility, political instability, and security concerns also play a critical role in hindering progress.

The African Union (AU) has sought to address these barriers through policy development, coordination, and advocacy, with the aim of ensuring that mineral resources contribute to sustainable economic growth and structural transformation.

In 2009, the Africa Mining Vision (AMV) was adopted as a shared strategic framework. Its purpose is to create conditions that support the "transparent, equitable and optimal exploitation of mineral resources to underpin broad-based sustainable growth and socio-economic development". Endorsed by AU Heads of State and Government, the AMV is built upon nine core pillars:

1. Mining revenues and mineral rents management;
2. Geological and mining information systems;
3. Building human and institutional capacities;
4. Artisanal and small-scale mining;
5. Mineral sector governance;
6. Research and development;
7. Environmental and social issues;
8. Linkages and diversification;
9. Mobilising mining and infrastructure investment.

To align national policies with these principles, the Country Mining Vision (CMV) was introduced in 2013. This was followed in 2014 by the African Minerals Development Centre's CMV Guidebook, designed to provide technical and policy support to AU member states. Agenda 2063, launched in 2013 and formally endorsed in 2015, complements the AMV by setting out a broader framework for Africa's long-term economic transformation. In 2017, the African Minerals Governance Framework was introduced to monitor national-level progress in implementing CMVs. More recently, in 2023, the African Green Minerals Strategy was established to position Africa within the global green energy transition, with an emphasis on the sustainable mining of critical minerals such as lithium, cobalt, and rare earth elements.

The Extractive Industries Transparency Initiative (EITI), a Norwegian-based organisation, has also played an important role. Its mission is to strengthen governance and accountability in the management of natural

resources. More than 50 countries, including many in Africa, have committed to the EITI Standard. Current African participants include Angola, Burkina Faso, Chad, Côte d'Ivoire, the Democratic Republic of the Congo, the Republic of the Congo, Gabon, Ghana, Guinea, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Niger, Nigeria, Senegal, Seychelles, Sierra Leone, Tanzania, Togo, Uganda, and Zambia. Several others, such as Cameroon, the Central African Republic, Ethiopia, and São Tomé and Príncipe, are presently suspended owing to compliance issues.

In 2023, the AU launched the Pan-African Resource Reporting Code (PARC) as a standardised framework for public reporting on minerals and energy resources. Based on the African Minerals and Energy Resources Classification and Management System (AMREC), and aligned with continental financial and security regulations, PARC is a key implementation tool of the AMV. Its aim is to strengthen transparency, accountability, and governance in Africa's extractive industries.

These initiatives collectively seek to improve the credibility of African governments, attract foreign investment, and create a more sustainable mining sector.

Earlier efforts to support the industry include the World Bank's 1992 report *Strategy for African Mining*, which analysed the decline in mining performance and proposed measures to accelerate growth.

More recently, the Brookings Institution's Foresight Africa 2025–2030 report has identified key priorities for the continent, particularly with respect to accelerating progress towards the Sustainable Development Goals (SDGs) by 2030. A central theme of the report is the strategic management of critical minerals such as lithium, cobalt, and copper. It emphasises that these resources must not only generate export revenue but also drive industrialisation, employment creation, and regional integration through local value addition. The report calls for inclusive development, with particular attention to youth and women, alongside improved governance and the adoption of emerging technologies such as artificial intelligence.

Foresight Africa 2025 is closely aligned with both the AMV and Agenda 2063, advocating transparent, inclusive, and innovative approaches to development. It highlights the importance of effective governance and multilateral partnerships with key global actors such as the United States, China, and the G20. The report thus serves as both a policy guide and a call to action for building a resilient and equitable African future.

I. Africa in the World: social and economic indicators

A. Population

According to United Nations (UN) data, the world's population has expanded significantly over the past six decades (Figure 1). Africa has been at the centre of this growth, recording the highest relative increase: from 283 million in 1960 to almost 1.5 billion in 2023, representing more than a fivefold rise. By 2050, Africa's population is projected to increase by a further 950 million, reaching around 2.5 billion. This means that whereas in 1960 only one in eleven people globally was African, by 2050 more than one in four will be.

Of the eight countries expected to account for more than half of global population growth between now and 2050, five are in Africa: the Democratic Republic of the Congo, Egypt, Ethiopia, Nigeria, and the United Republic of Tanzania.

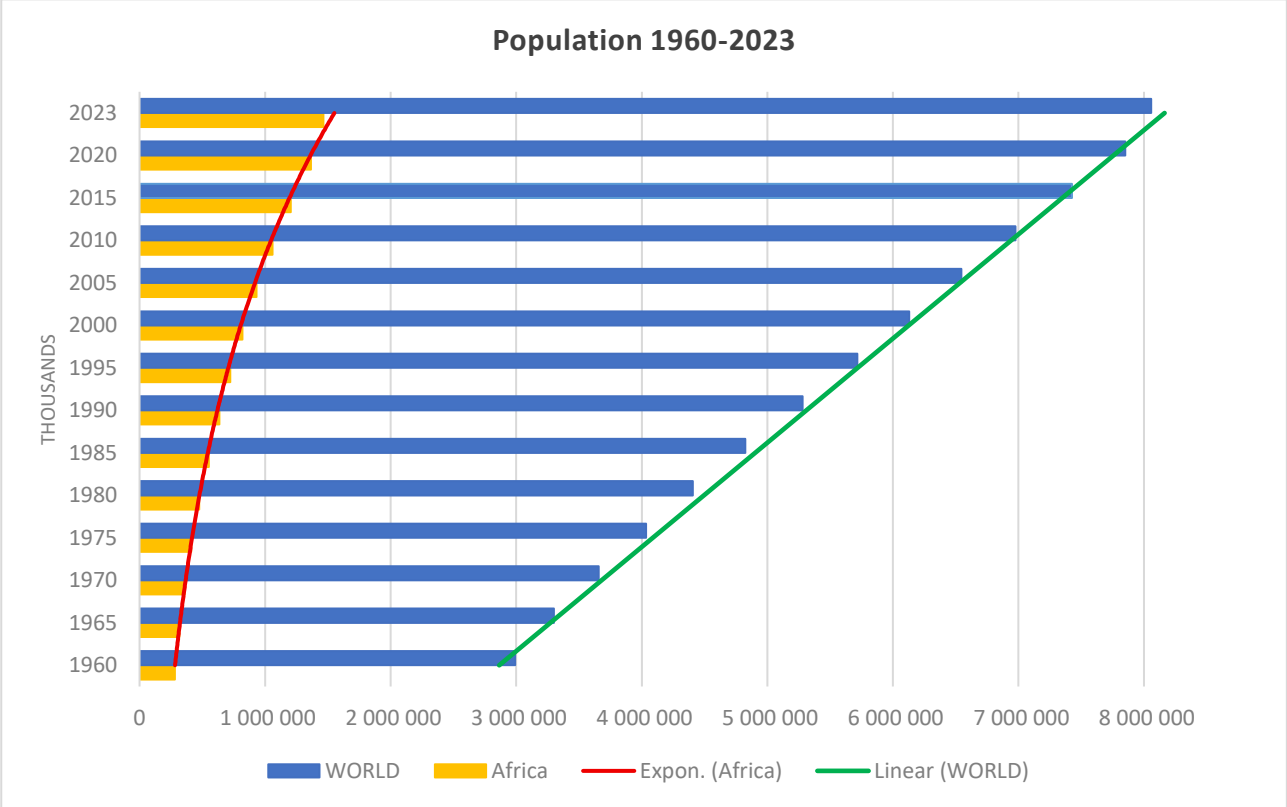

Figure 1 – World and African population

This rapid population growth reflects, in part, improvements in life expectancy, which has risen from 41 years in 1960 to 64 years in 2023, and is projected to reach 70 years by 2050. At the same time, fertility rates have declined steadily, from an average of 6.6 children per woman in 1960 to 4.0 in 2023, with a further reduction to 2.6 expected by 2050.

B. Gross Domestic Product

In global terms, Africa's annual GDP growth (percentage change) has broadly followed world GDP trends (Figure 2).

From 1991 to 2023, Africa's GDP growth demonstrated resilience, with several periods of strong performance, often outpacing global averages.

Both Africa and the world economy, however, have remained vulnerable to global shocks, with subsequent recoveries following major downturns, notably during the recessions of 1991, 2009, and 2020.

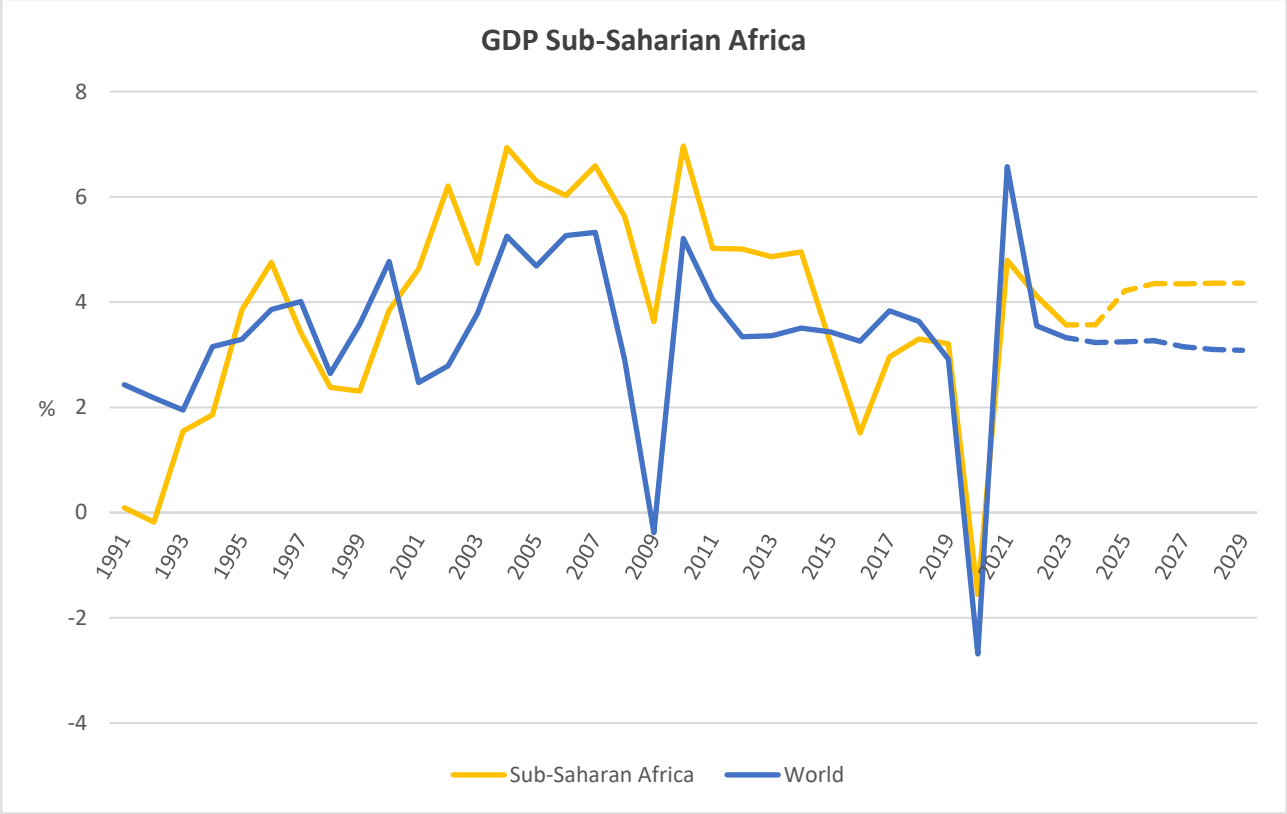

Figure 2 – GDP Growth, constant prices (annual percent change)
Source: IMF – World Economic Outlook, October 2024

The continent's largest economies—Algeria, Egypt, Ethiopia, Nigeria, and South Africa—together account for more than half of Africa's GDP (Figure 3).

Between 2001 and 2008, China's industrial boom drove up metal prices, fuelling strong GDP growth in resource-rich African countries. Between 2002 and 2014, African GDP growth was supported not only by higher commodity prices, but also by political stability, economic reforms, the expansion of services and technology, demographic growth and associated increases in domestic consumption, and financial assistance from international institutions such as the IMF and World Bank.

The 2008–2009 Global Financial Crisis had only a modest impact on Africa's GDP, with recovery beginning in 2010, supported by Chinese economic stimulus. However, between 2012 and 2015, the sharp decline in commodity prices created significant economic stress and stagnation across several countries.

Stabilisation occurred between 2016 and 2018, aided by China's Belt and Road Initiative. In 2020, the COVID-19 pandemic caused severe disruption to trade and industry, depressing metal prices and leading to widespread GDP contractions.

In 2021–2022, renewed demand combined with tight supply chains pushed up commodity prices, driving a strong rebound in many African economies. By 2023, however, rising global interest rates weighed on demand, contributing to falling prices and slower growth across the continent.

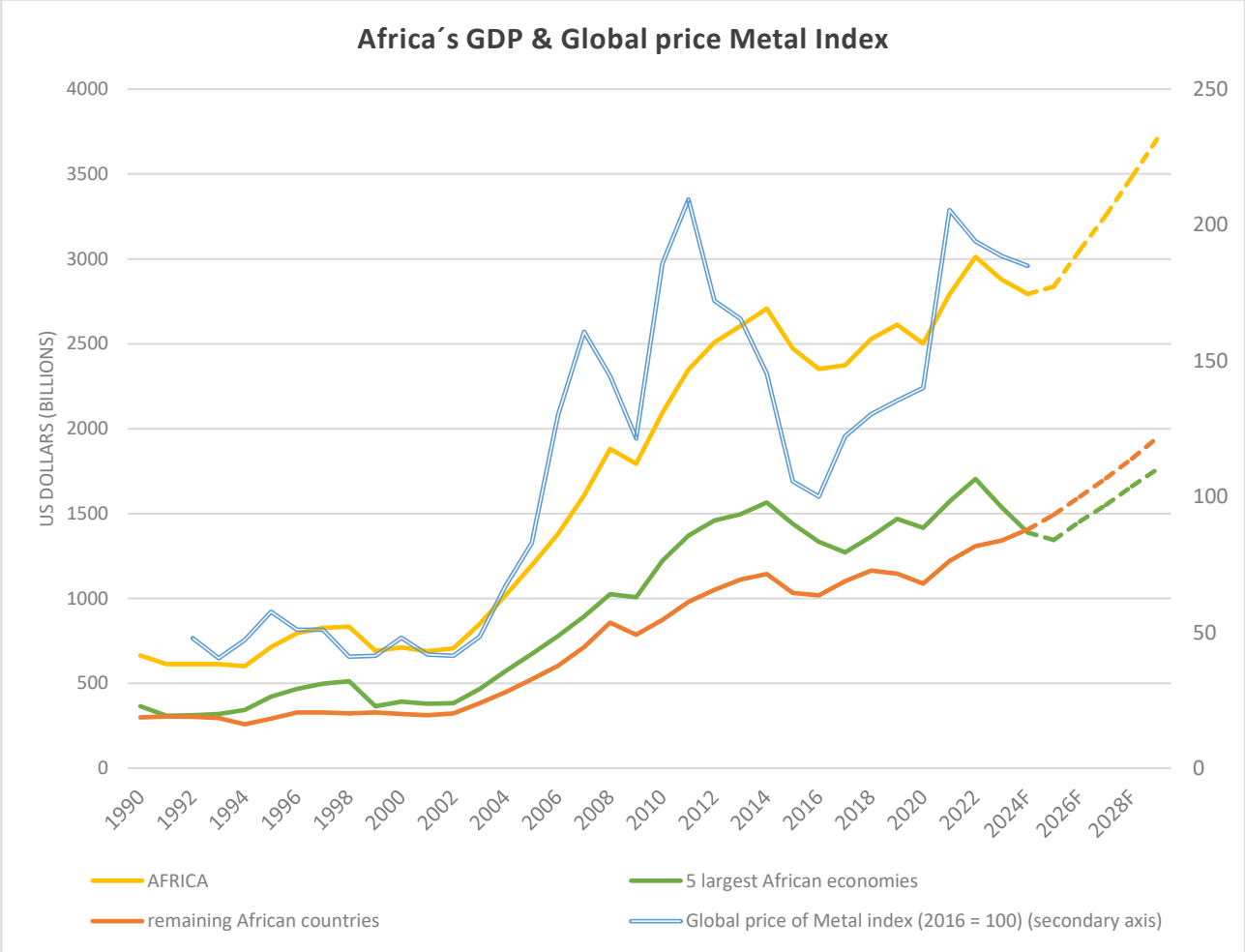

Figure 3 – Africa´s GDP (current prices) and Global price of Metal index (2016=100) Annual, Not Seasonally Adjusted. The five biggest countries are Algeria, Egypt, Ethiopia, Nigeria and South Africa. Source: IMF

Overall, Africa's economic performance remains tightly linked to metal markets. While commodity booms bring rapid growth, downturns expose vulnerabilities. Building long-term resilience will require diversifying economies beyond resource exports and strengthening fiscal and trade systems.

C. Vehicles

The vehicle market is a useful indicator of lead demand, as this sector is a major consumer of lead-acid batteries.

i. Production

Vehicle production in Africa has broadly followed global trends (Figure 4). The steepest declines were recorded in 2009 and 2020, corresponding to the global recessions following the “Great Recession” and the COVID-19 pandemic, respectively.

Since 2013, Africa’s production figures have risen sharply. This growth was driven primarily by Morocco, following the opening of the Renault-Nissan factory in Tangier in 2012. In addition, Peugeot-Citroën (PSA) inaugurated a plant in Kenitra, Morocco, in 2019. Morocco benefits from a strategic geographic position, providing easy access both to European markets and to the wider African region. Its proximity to Europe in particular is an advantage for rapid vehicle shipments, making it a competitive alternative in terms of logistics and costs.

The disruption caused by the COVID-19 pandemic in 2020 affected global vehicle production, and Africa was no exception. Nevertheless, African production has since surpassed pre-pandemic levels, once again led by Morocco.

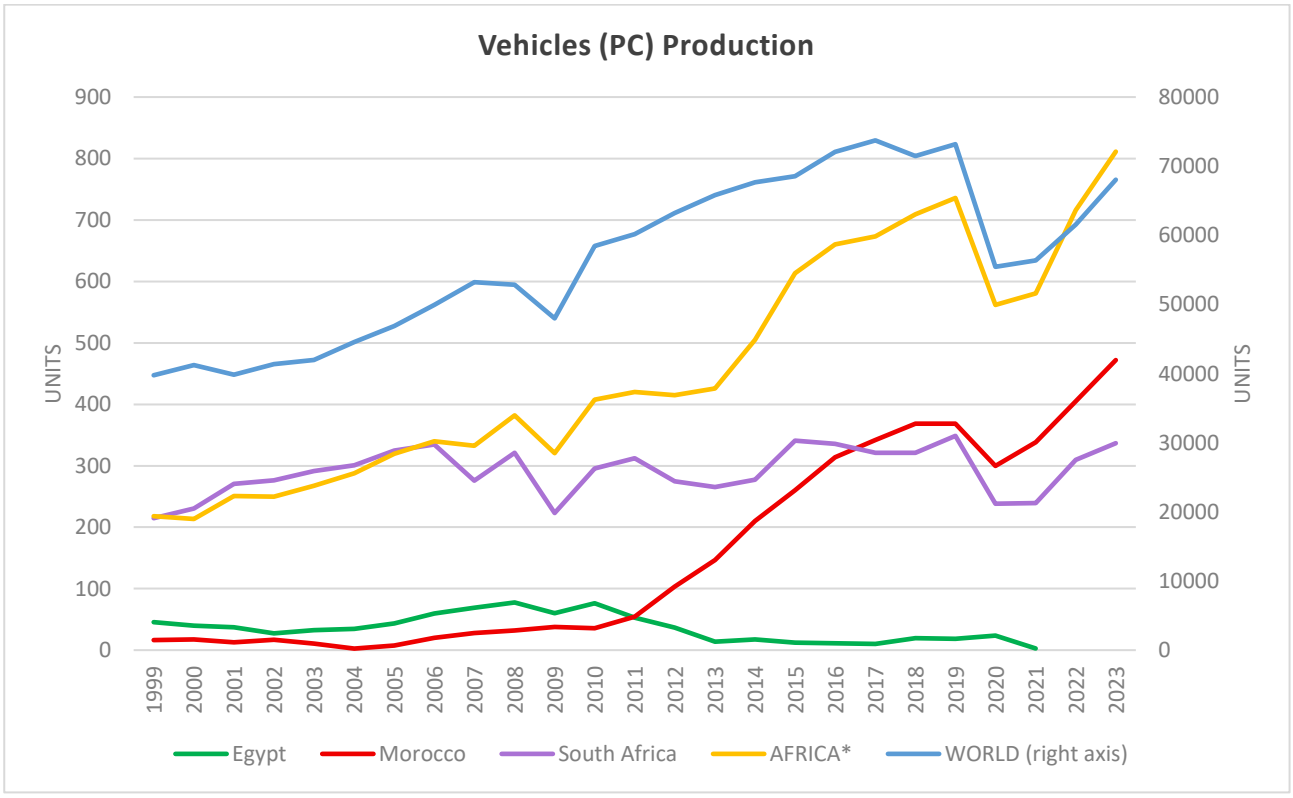

*Figure 4 – Personal Cars Production. *only for data available*
Source: OICA

Figure 5 illustrates the evolution of each continent's share in global vehicle production. Asia, Oceania, and the Middle East have grown steadily in prominence and now account for more than half of the world's motor vehicle production. Africa's share remains modest but is showing gradual and sustained growth.

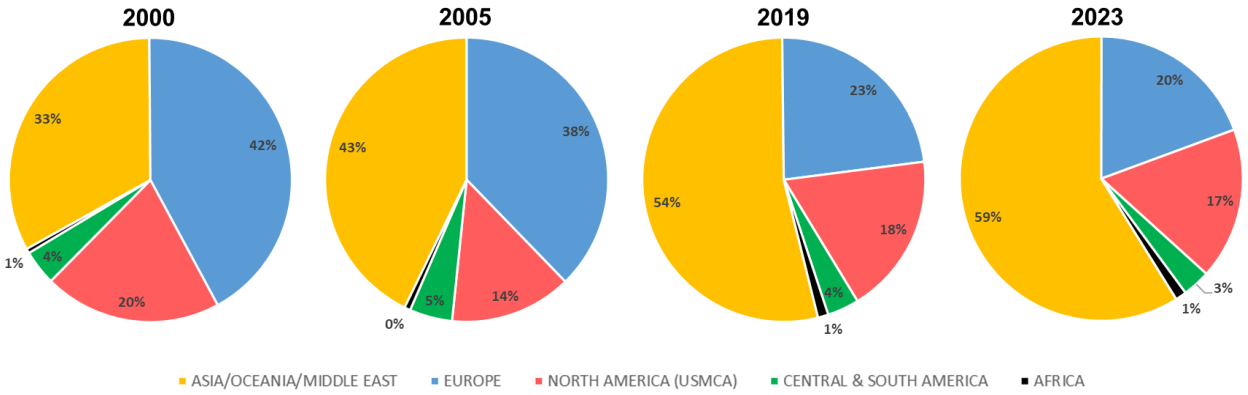

Figure 5 – World motor vehicle production by Continent. Source: OICA

ii. Sales

A global upward trend in vehicle sales was observed until 2017, after which volumes declined through to 2020 (Figure 6). This downturn reflected a combination of several world economic factors, and, most significantly, the disruption caused by the COVID-19 pandemic, which led to factory shutdowns and temporary dealership closures. After 2020, sales recovered thereafter, and by 2023 global figures exceeded those of 2019, reversing the earlier downward trend.

In Africa, Egypt, Morocco, and South Africa together account for more than half of all passenger car sales. Following growth in the early 2010s, sales declined substantially. Between 2014 and 2023, combined sales in Africa fell by around 60%. The contraction was driven above all by Egypt, where annual sales dropped from more than 270,000 units in 2014 to under 70,000 in 2023. Morocco also recorded a moderate decline, while South Africa experienced a partial recovery in the early 2020s, which helped to offset the overall downturn.

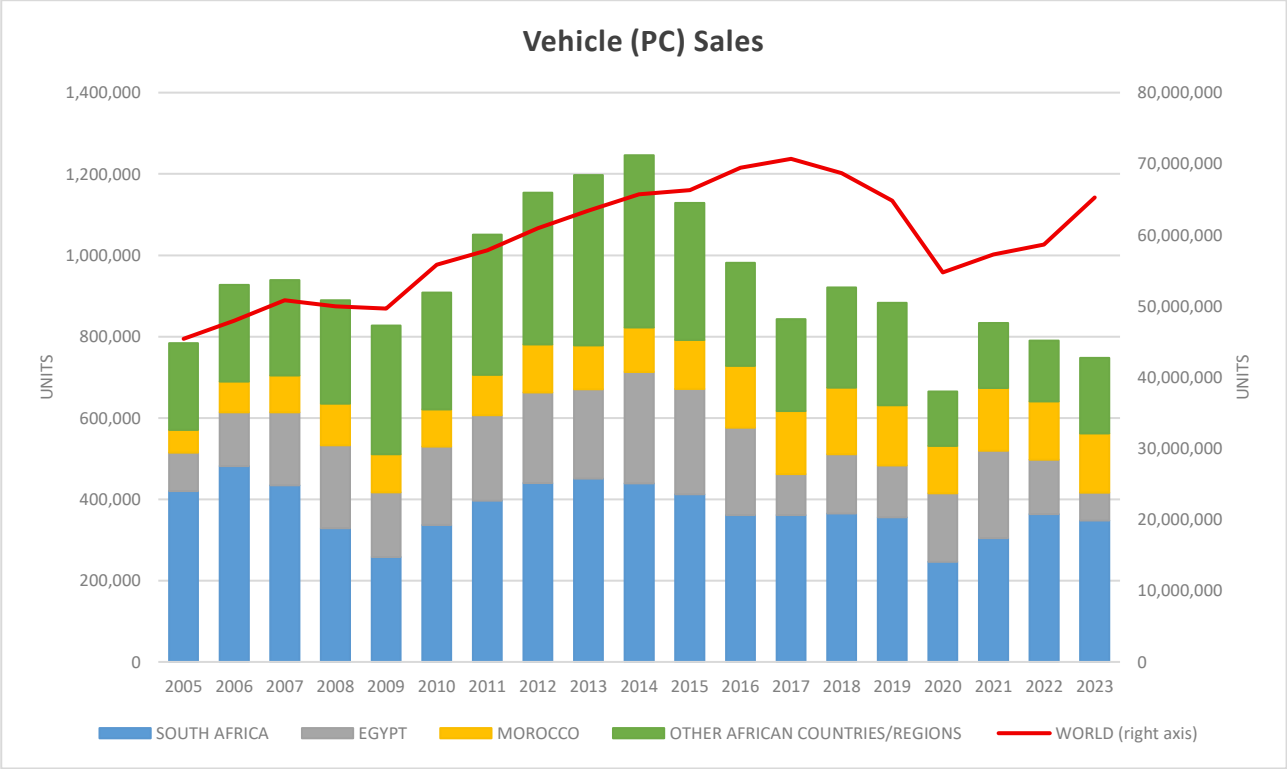

Figure 6 – Vehicle Sales (PC - personal cars). Source: OICA

As expected, Asia, Oceania, and the Middle East are also the largest markets for vehicle sales, with their share of the global total continuing to rise (Figure 7).

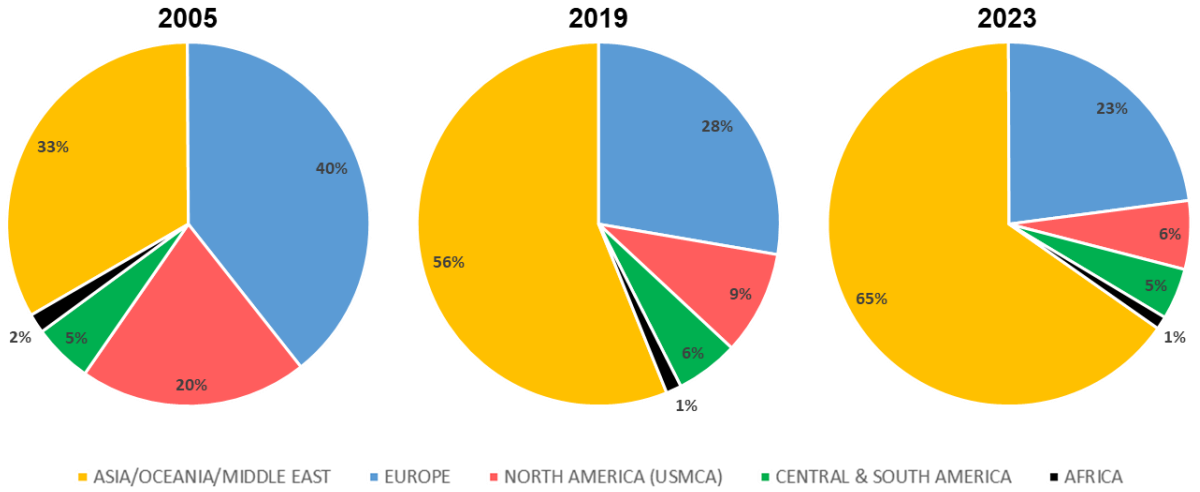

Figure 7 – Passenger Car Sales by Continent. Source: OICA

II. Mining

A. Lead and Zinc Mining Production

Lead mine production in Africa has experienced considerable fluctuations over the past decades (Figure 8).

Between 1960 and 1979, production of lead concentrates averaged around 200,000 tonnes per year, with the variability typical of extractive industries. From 1974 to 1976, output fell sharply, driven mainly by a collapse in global lead prices, which declined by more than 40% in two years. Production subsequently recovered as prices stabilised, supported by new operations such as Zeida in Morocco and Black Mountain in South Africa.

Lead mine output peaked in 1981, followed by a prolonged decline lasting until 2000. This period saw the closure of several important mines, including Zeida (Morocco), Marievale (South Africa), and Kabwe (Zambia). The opening of Bougrine mine (Tunisia) had little effect on overall output. After 2000, further closures occurred, including Touissit (Morocco), Pering (South Africa), and Bougrine (Tunisia). Since 2002, African production has stabilised at relatively modest levels, reflecting the absence of major new projects.

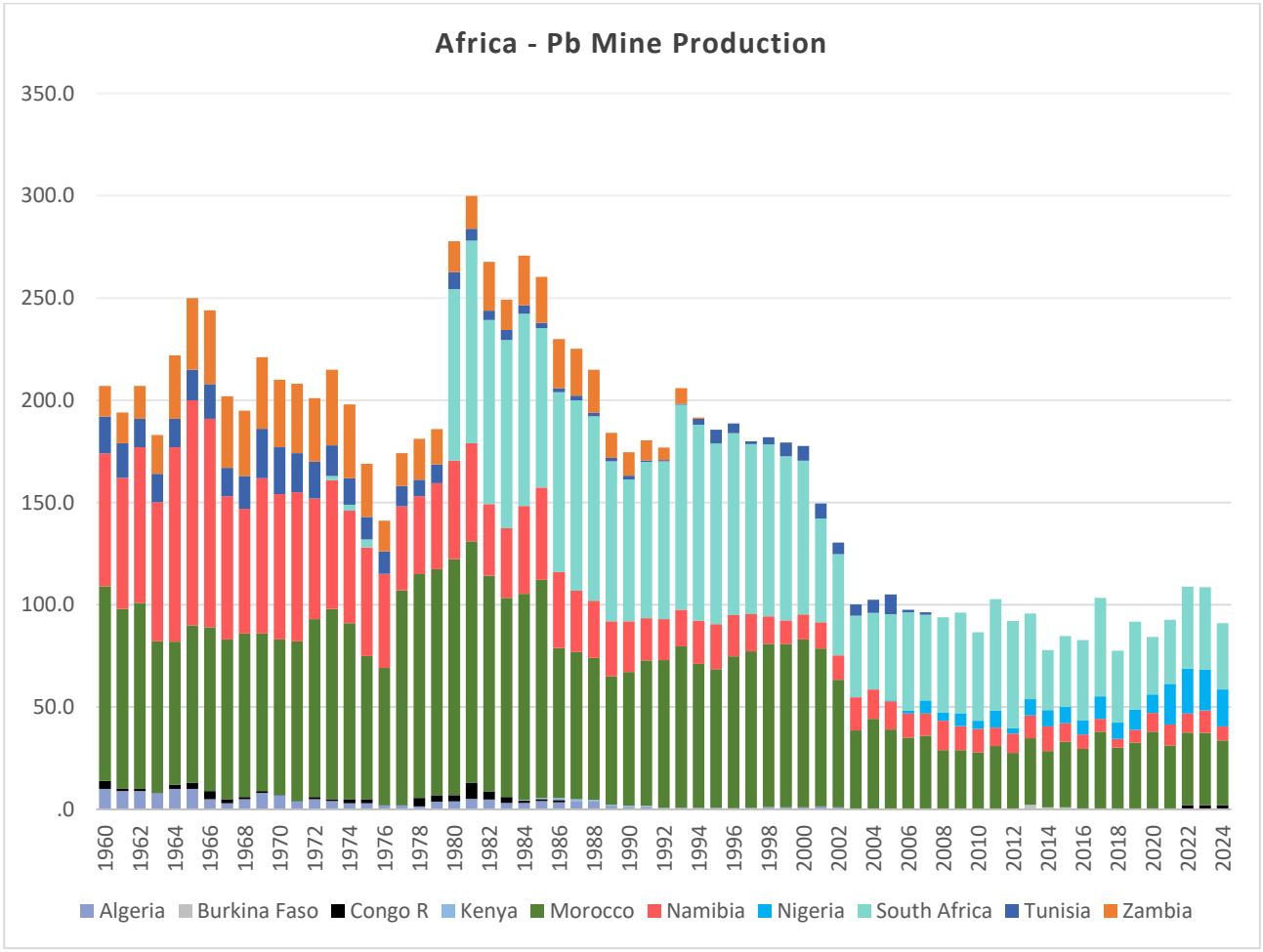

Figure 8 – Lead mine production in Africa 1960-2024 (thousand tonnes). Source: ILZSG

Zinc concentrate production has shown greater stability and a general upward trend (Figure 9). From 1960 to 1988, production averaged about 275,000 tonnes annually. The closure of Mibladen and Ahouli (Morocco) and the decline of reserves elsewhere were largely offset by the commissioning of the Black Mountain Complex in South Africa. Output later fell due to the closure of Kipushi (DRC) and Kabwe (Zambia), but was supported by expansions in Morocco's Guemassa district and the opening of Bougrine (Tunisia).

A new growth phase began in 2003 with the opening of Skorpion (Namibia). The closure of Bougrine in 2005 and a decline in Morocco's zinc output in 2006 brought production back to stable levels until 2013. From 2013 onwards, new mines such as Perkoa (Burkina Faso), Bisha (Eritrea), and Gamsberg (South Africa) contributed additional capacity. However, closures and disruptions—including Skorpion in 2020 and Perkoa in 2022 (after severe flooding)—limited overall growth.

The reopening of Kipushi mine in mid-2024 has already had a visible impact on total zinc production, and output is expected to rise significantly in the coming years.

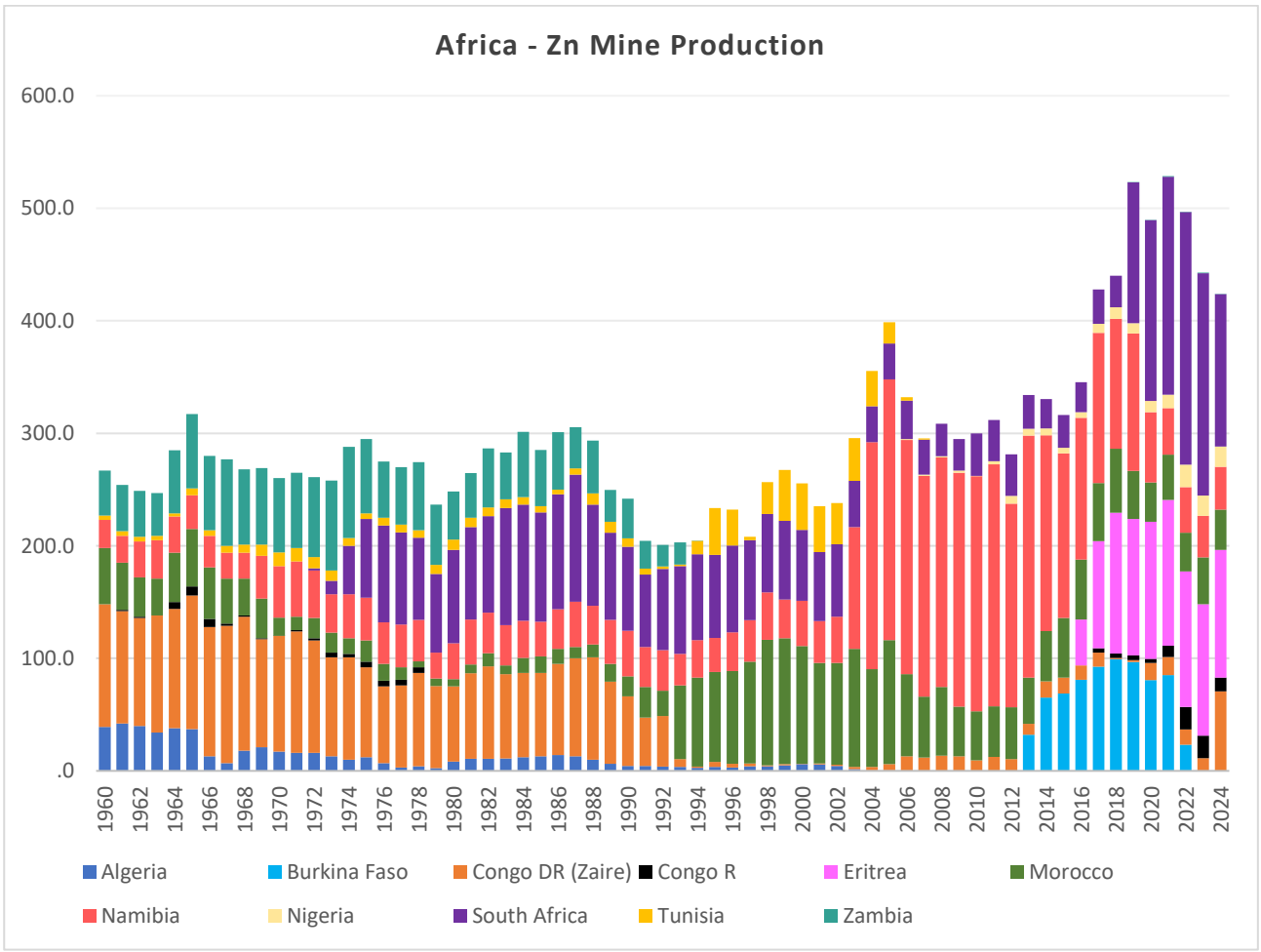

Figure 9 – Zinc mine production in Africa 1960-2024 (thousand tonnes). Source: ILZSG

B. Mines

At present, only seven African countries produce lead and zinc concentrates, with a total of 14 mines in operation (Figures 10 & 11). Africa accounts for roughly 2% of world lead mine output and 3.6% of world zinc output.

Figure 10 - Lead and Zinc mining countries in Africa

In 1960, Africa's shares were substantially higher (8.7% for lead and 7.9% for zinc). The subsequent decline reflects underinvestment, political instability, weak infrastructure, and broader economic volatility.

Recent years have also seen closures due to operational or financial pressures. At Perkoa (Burkina Faso), production was suspended in April 2022 following catastrophic flooding, and the operator, Trevali, subsequently filed for bankruptcy. Skorpion (Namibia), which began production in 2003, suffered from ore depletion, declining grades, dewatering problems, and high costs. The mine was placed on care and maintenance in 2020. Its owner, Vedanta Zinc International, is pursuing a "Refinery Conversion Project" to enable sulphide processing, though no restart date for mining has been announced.

Country	Mine	Ownership	Type	Pb Capacity	Zn Capacity
Congo DR	Kipushi	Ivanhoe Mines	u/g		280 000
Congo R	Boko-Songho	SOREMI	o/p		11 000
	Yanga-Koubenza	SOREMI	o/p	20000	18 000
Eritrea	Bisha	Bisha Mining (Zijin Mining Group)	o/p		125 000
Morocco	Aguerd N'Tazoult	Société Minière de Tennous (SOMITE)	u/g		2 000
	Draa Sfar (Draa Sfar & Koudiat Aicha deposits)	Compagnie Minière de Guemassa (Groupe Managem)	u/g	10 000	46 000
	Tighza	Compagnie Minière de Touissit	u/g	25 000	4 000
Namibia	Rosh Pinah	Appian Capital Advisory LLP	u/g	15 000	50 000
Nigeria	Ishiagu	Pedmacgrek Mines Ltd	o/p	15 000	12 000
South Africa	Black Mountain Complex - Deeps and Swartberg	Vedanta Zinc International	u/g	55 000	40 000
	Black Mountain Complex - Gamsberg	Vedanta Zinc International	o/p	12 000	250 000

Figure 11 – Africa Pb and Zn operating mines

Among operating assets (Figure 12), Vedanta Zinc International holds the largest combined capacity, accounting for 44% of lead and 35% of zinc output. This comes primarily from the Black Mountain Complex (South Africa), which includes underground operations (Deeps and Swartberg) and the open-pit Gamsberg. Expansion works are under way to double Gamsberg's processing capacity to 500,000 tonnes per year, with reserves and resources supporting a mine life of approximately 50 years.

Ivanhoe Mines controls the second-largest zinc capacity in Africa via the Kipushi mine in the Democratic Republic of the Congo. This underground mine, which first began production in 1924, was placed on care and maintenance in 1993 owing to political instability and persistently low metal prices. After more than three decades of inactivity, Ivanhoe, in partnership with Gécamines, undertook extensive rehabilitation work and constructed a new concentrator. Operations were successfully restarted ahead of schedule in May 2024. The mine is now ramping up to full capacity, with average annual production expected to reach around 280,000 tonnes of zinc in concentrate. Kipushi's resource base of 11.8 million tonnes of measured and indicated zinc mineral resources provides a strong foundation for sustained long-term output.

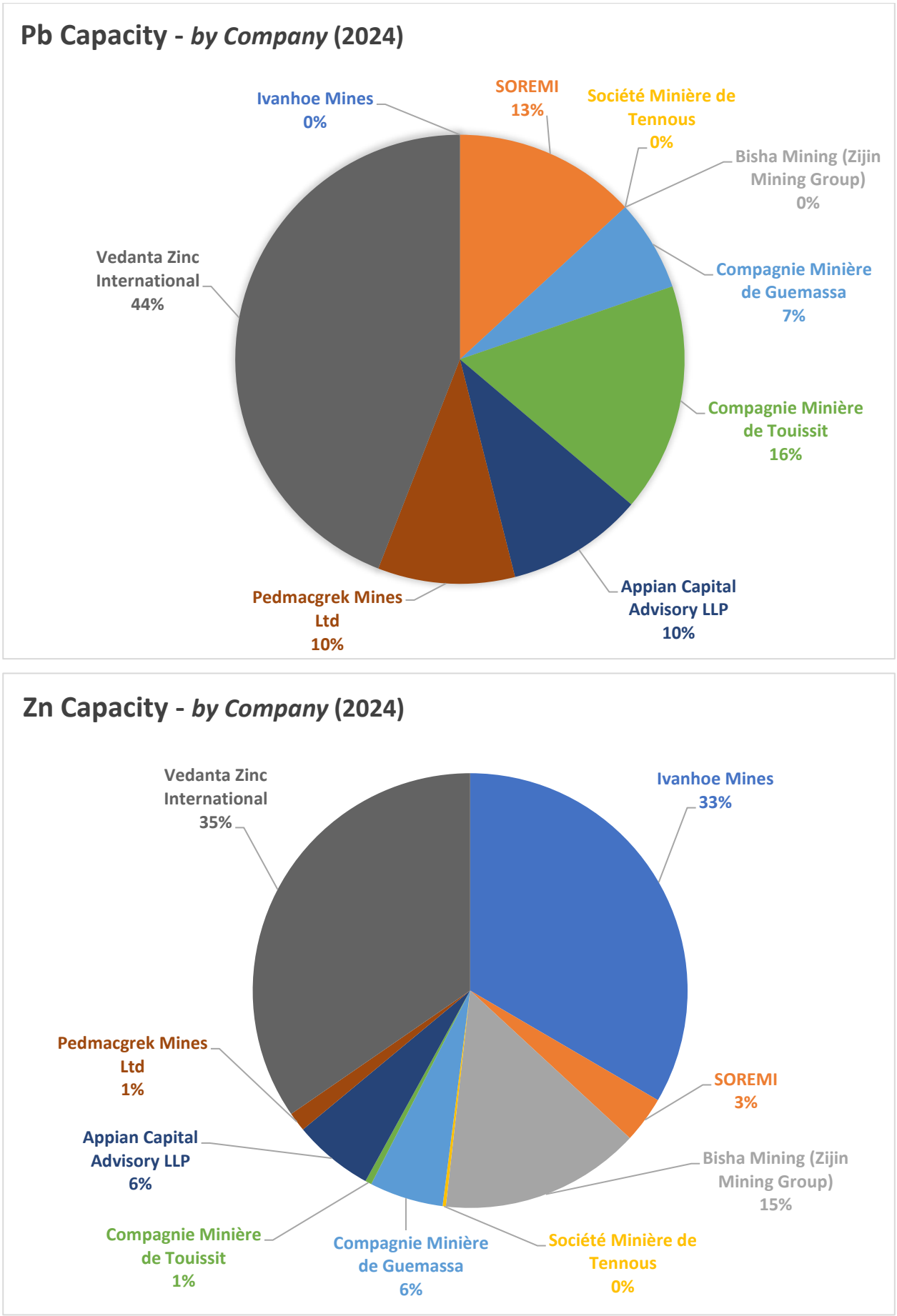

Figure 12 – Africa's Lead and Zinc production capacity by company

Lead production is moderately concentrated, with South Africa and Morocco together accounting for 67% of capacity (Figure 13). For zinc, South Africa and the DRC dominate, providing about 68% of capacity, with Namibia, Eritrea, and Morocco playing smaller roles (Figure 15).

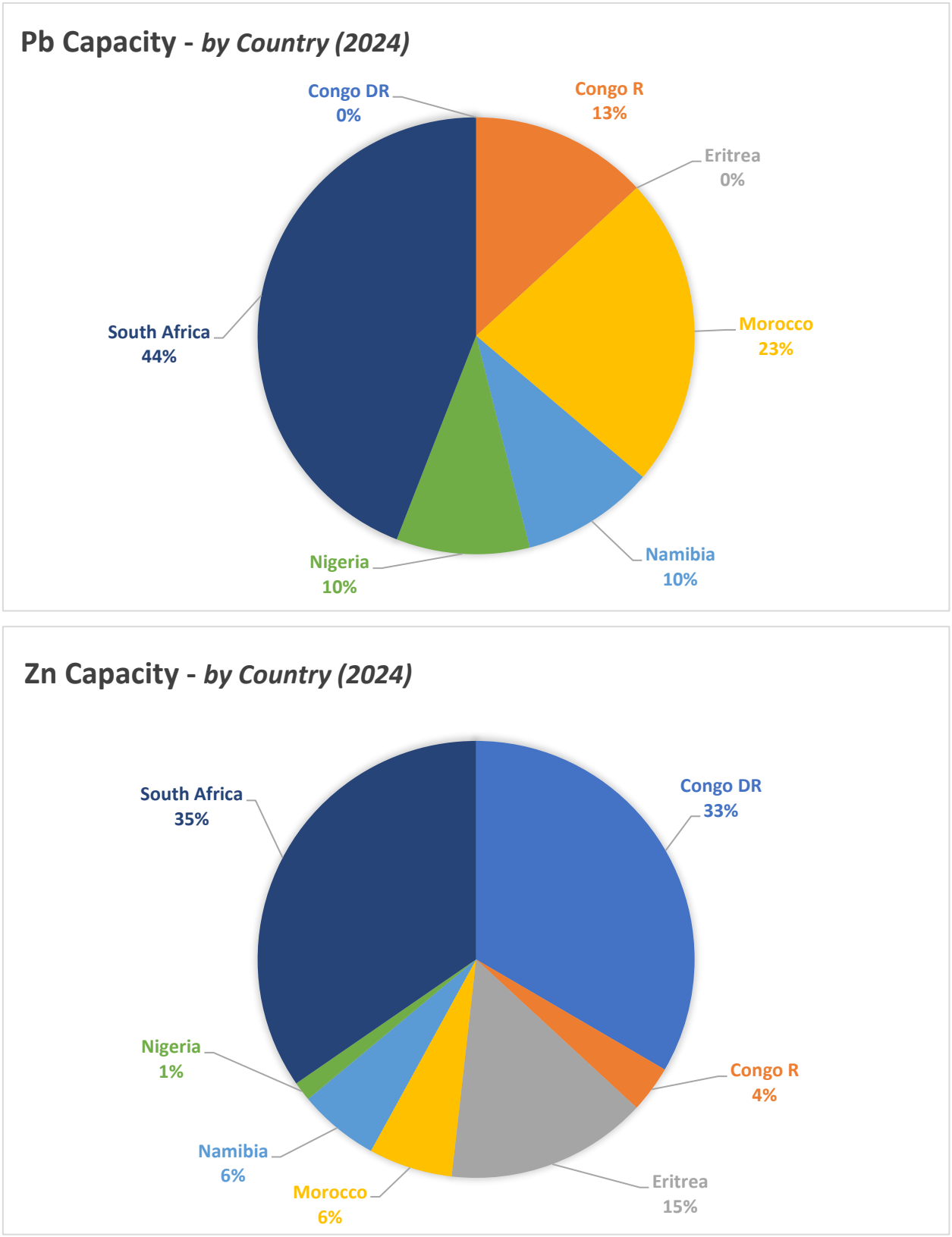

Figure 13 – Africa's Lead and Zinc production capacity by country

C. New Mine Projects

A number of new mining projects are under way or under consideration (Figures 14 & 15).

Currently Committed

	Country	Project	Type	Comments
Pb/Zn	Algeria	Tala Hamza	u/g	Construction began in late 2024. Engineering, Procurement & Construction contract signed with Sinosteel (Nov 2024). First production expected 2027
	Namibia	Rosh Pinah 2.0	u/g	Expansion project under Appian Capital to raise capacity from 10 to 16 kt Pb and from 50 to 75 kt Zn by 2026
Zn	Eritrea	Asmara	u/o	Development linked to existing Cu–Ag–Au operations. First copper ore shipped April 2024; zinc circuit commissioning delayed to 2026/27
	South Africa	Gamsberg Phase II	o/p	Expansion to nearly double output to 500 kt by 2026. Capital cost ~US$470m
		Prieska	u/o	Feasibility study to be completed Q1 2025; trial production and recruitment under way. Expected start up 2027

Figure 14 – Projects currently committed (2024)

Under Consideration

	Country	Project	Type	Comments
Pb	Morocco	Jbel Khetem	u/g	Initial drill works for potential new Pb-Ag mine completed
Zn	Burkina Faso	Perkoa	u/g	Possible restart subject to dewatering and ownership resolution; potential 90 kt Zn
	Namibia	Skorpion Mine	o/p	Potential reactivation of 100 kt Zn mine (care and maintenance since 2020)
		Tsumeb Smelter Tailings	tailings	Recovery of Zn and Ge from tailings under study
Pb/Zn	Gabon	Kroussou	o/p	Early-stage study; confirmed high-grade mineralisation in 2022
	Morocco	Bled Jemâa	u/g	Surface mapping, initial drill work, chemical and mineralogical analysis for potential new Pb-Zn-Ag-Au mine completed. Further drill activity underway
		Tiouli West	u/g	Drilling in progress
	Namibia	Berg Aukas	u/g	Reopening under study; PFS completed 2018, DFS planned. Potential 25 kt Zn, 5 kt Pb
		Namib	u/g	Reopening under study; placed on care and maintenance 2020. Exploration update Nov 2023. Possible 4kt Pb and 11kt Zn
	Zambia	Kashitu	u/g	Early-stage exploration

Figure 15 – Projects under consideration (2024)

III. Smelting & Refinery

A. Lead

Lead metal production in Africa has shown a modest upward trend over time (Figure 16). The bulk of refined lead now originates from secondary production, largely through the recycling of used lead–acid batteries.

In many parts of the continent, secondary smelting has become the only viable method of producing refined lead. More than 85% of global lead consumption is linked to lead–acid batteries, and the growing stock of used batteries in Africa provides a ready supply of recyclable material. With demand for automotive and industrial batteries continuing to expand — particularly in backup energy systems and renewable power storage — the volume of recyclable batteries is increasing accordingly.

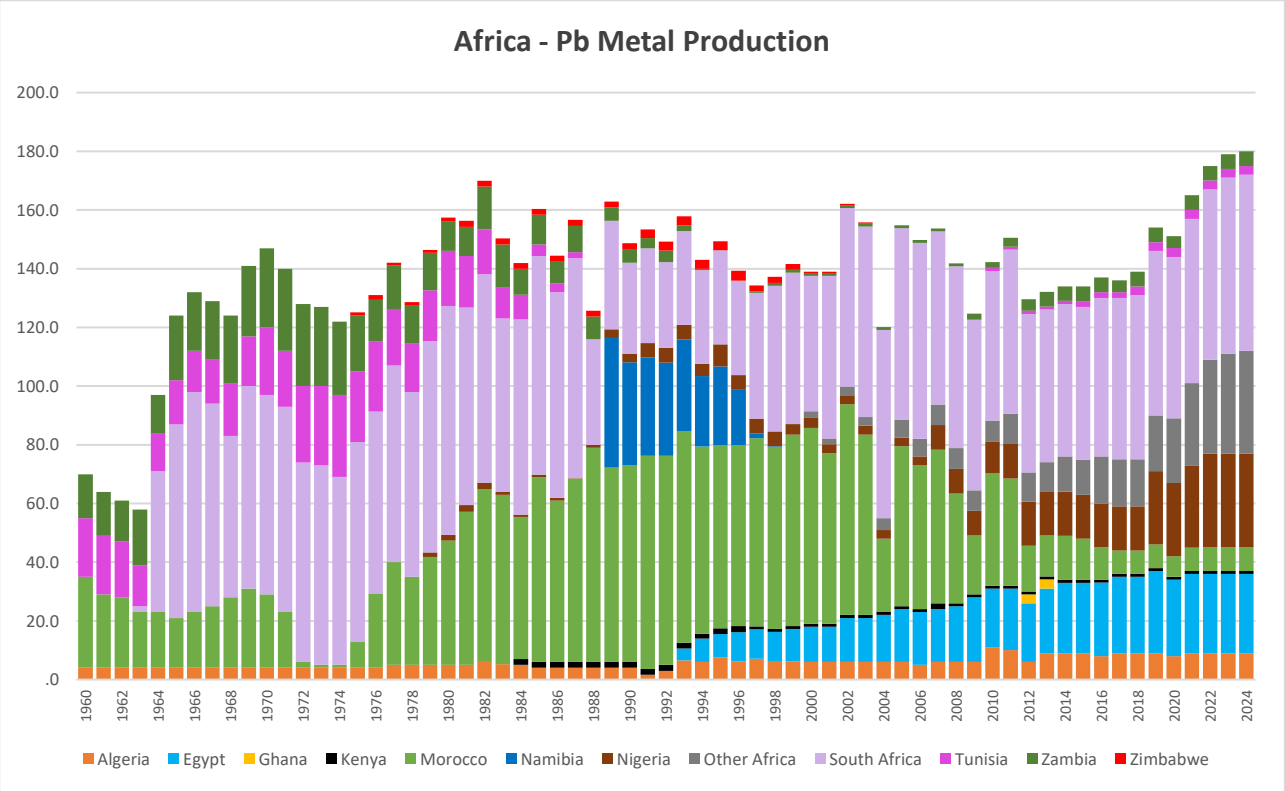

Figure 16 - Lead metal production in Africa 1960-2024 (thousand tonnes). Source: ILZSG

This transition offers several advantages. Secondary production consumes less energy and produces fewer emissions than primary smelting, while also supporting circular economy principles by reducing the need for virgin ore extraction. However, recycling practices in Africa remain uneven. Informal and unregulated recycling operations, often lacking adequate environmental controls and safety standards, pose serious health and ecological risks. Workers at these sites are frequently exposed to hazardous conditions, underlining the need for stricter regulation and formalisation of the sector.

B. Zinc

Zinc metal production in Africa has followed a different trajectory (Figure 17). A significant increase occurred in the 1960s with the commissioning of the Zincor refinery in South Africa. This facility processed zinc sulphide concentrates from mines in South Africa and Namibia, as well as zinc oxide fume generated as a by-product from slag smelting operations in the Democratic Republic of the Congo. Zincor provided the backbone of African zinc refining capacity for several decades.

Production peaked again between 2004 and 2011 following the development of the Skorpion mine and refinery in Namibia, which provided a substantial increase in African zinc refining capacity. However, strategic divestment by Exxaro led to the closure of Zincor in 2012, significantly reducing Africa's zinc metal output. The situation worsened in 2020 when Skorpion was placed on care and maintenance, bringing its associated refinery offline.

At present, the Republic of the Congo is the only African country producing zinc metal with output remaining at modest levels. Refining is carried out by Société de Recherche et d'Exploitation Minière (SOREMI), which processes oxide ores from its local mines.

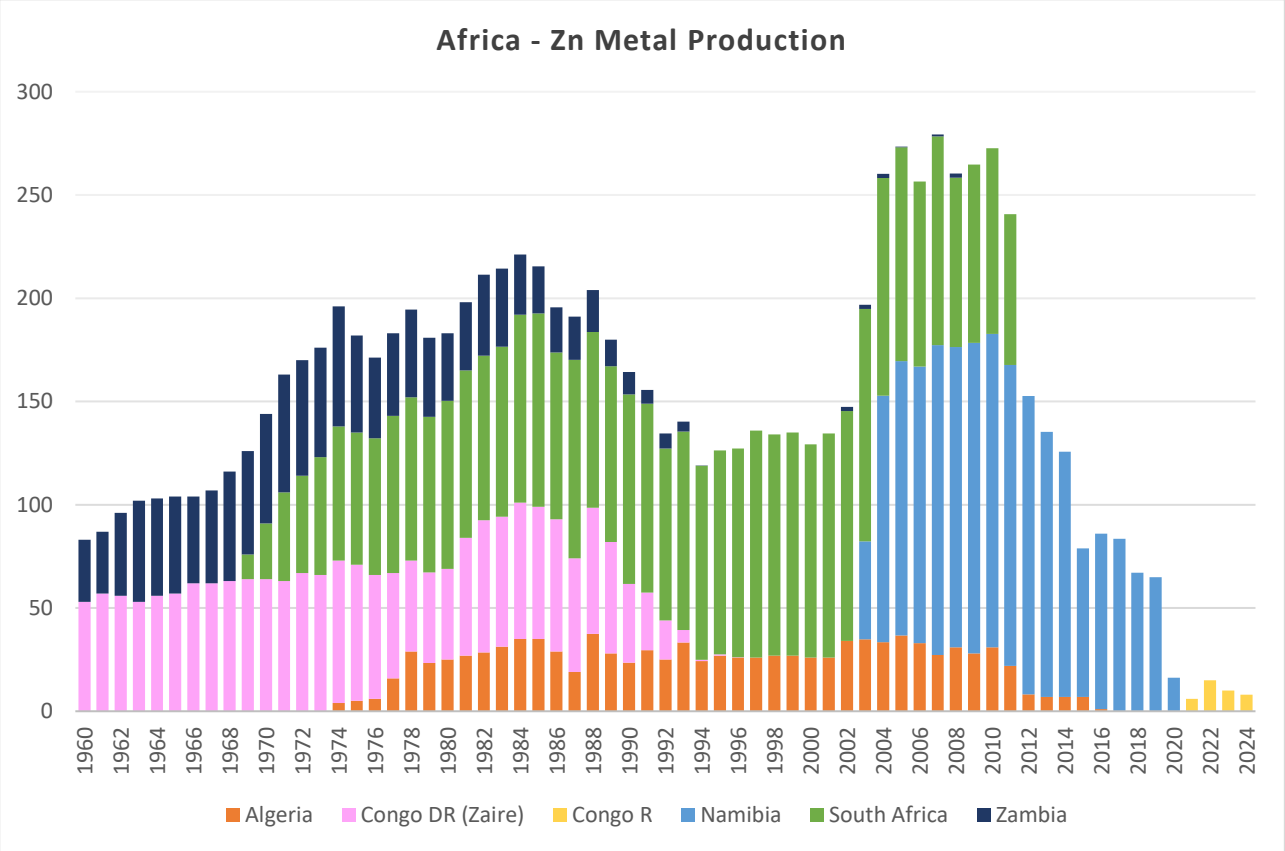

Figure 17 – Zinc metal production in Africa 1960-2024 (thousand tonnes). Source: ILZSG

C. New Smelter Projects

As the information available is scarce, the Group has only recorded a handful of new smelters that have been commissioned since 2017. Two lead smelters were opened in this period: one in Algeria (2010) and another in Ghana (2019), both based on secondary feedstock.

However, several projects remain under consideration (Figure 18):

	Country	Project	Company	Notes
Pb	Congo Rep.	Soremi Pb refinery	SOREMI	A direct leach lead oxide refinery adjacent to existing Zn/Cu facilities, with a potential capacity of 18 kt. No recent updates have been issued
Zn	Namibia	Skorpion Zn smelter	Vedanta Zinc International	Vedanta Zinc International studying reactivation, expansion, and technological upgrades to allow sulphide concentrate processing; potential 200 kt/y
		Tsumeb Zn smelter	Sinomine Resource Group	Sinomine Resource Group considering recovery of zinc (and germanium) from tailings adjacent to the Tsumeb copper smelter
	South Africa	Gamsberg	Vedanta Zinc International	Vedanta Zinc International studying the construction of a refinery adjacent to the Gamsberg mine; potential capacity 300 kt Zn

Figure 18 – New smelter projects under consideration (2024)

IV. Usage

The global consumption of lead and zinc has evolved significantly over the decades, shaped by industrial demand, technological change, and regulatory measures. Trends can be divided into four distinct periods, which apply broadly to both metals (Figures 19 & 20):

Recovery from World War II / Steady Growth (1960-1974)

Consumption of lead and zinc increased steadily during this period, driven by post-war economic expansion, industrialisation, and urbanisation. The automotive and construction industries were central to this growth. Lead–acid batteries achieved widespread adoption alongside the rapid rise in vehicle ownership. Lead was also used extensively in paints, plumbing, and as a petrol additive. Zinc, with its broad applications in galvanising steel, die-casting alloys, and brass, was indispensable for infrastructure development and manufacturing, particularly in advanced economies such as the United States, Europe, and Japan.

Oil crisis / Stabilization (1975-1993)

Lead consumption plateaued as environmental concerns and regulatory interventions took hold. Many developed countries began to phase out lead in petrol and paints, though demand for lead–acid batteries remained robust. Zinc usage stabilised during this period, reflecting slower economic growth following the oil crises of the 1970s. Recycling efficiencies and material substitution also helped restrain demand growth, although zinc retained a strong role in construction and automotive production.

Globalisation / Rapid Growth (1993-2013)

Lead usage surged, driven by rapid industrialisation in China, India, and other emerging economies. The expansion of vehicle production and the spread of backup power systems in telecommunications and renewable energy sectors significantly boosted demand for lead–acid batteries. Zinc usage experienced its sharpest global growth during the same period, underpinned by China's transformation into the world's manufacturing hub. Infrastructure investment, urbanisation, and strong demand for galvanised steel in construction and transport further reinforced zinc consumption.

China slows down / Slowdown (Pb) & Stabilization (Zn) (2013-Present)

Since 2013, lead consumption has slowed, reflecting market maturity and substitution by alternative technologies such as lithium-ion batteries, particularly in electronics and electric vehicles. Nonetheless, lead–acid batteries continue to dominate automotive and industrial applications, ensuring sustained demand. Global zinc usage has stabilised at high levels, tempered by material efficiency gains, recycling, and more moderate industrial growth in emerging markets.

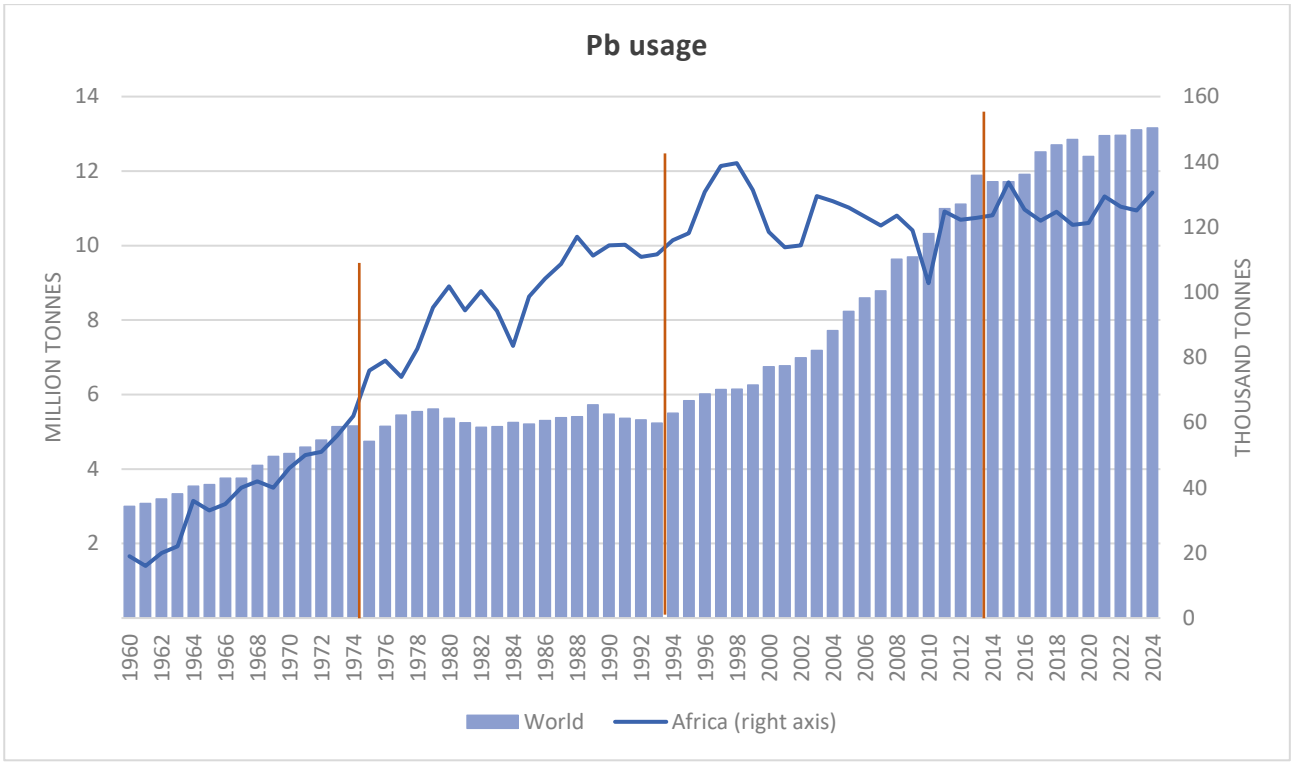

Figure 19 – Lead Usage: World vs Africa (1960 – 2024). Source: ILZSG

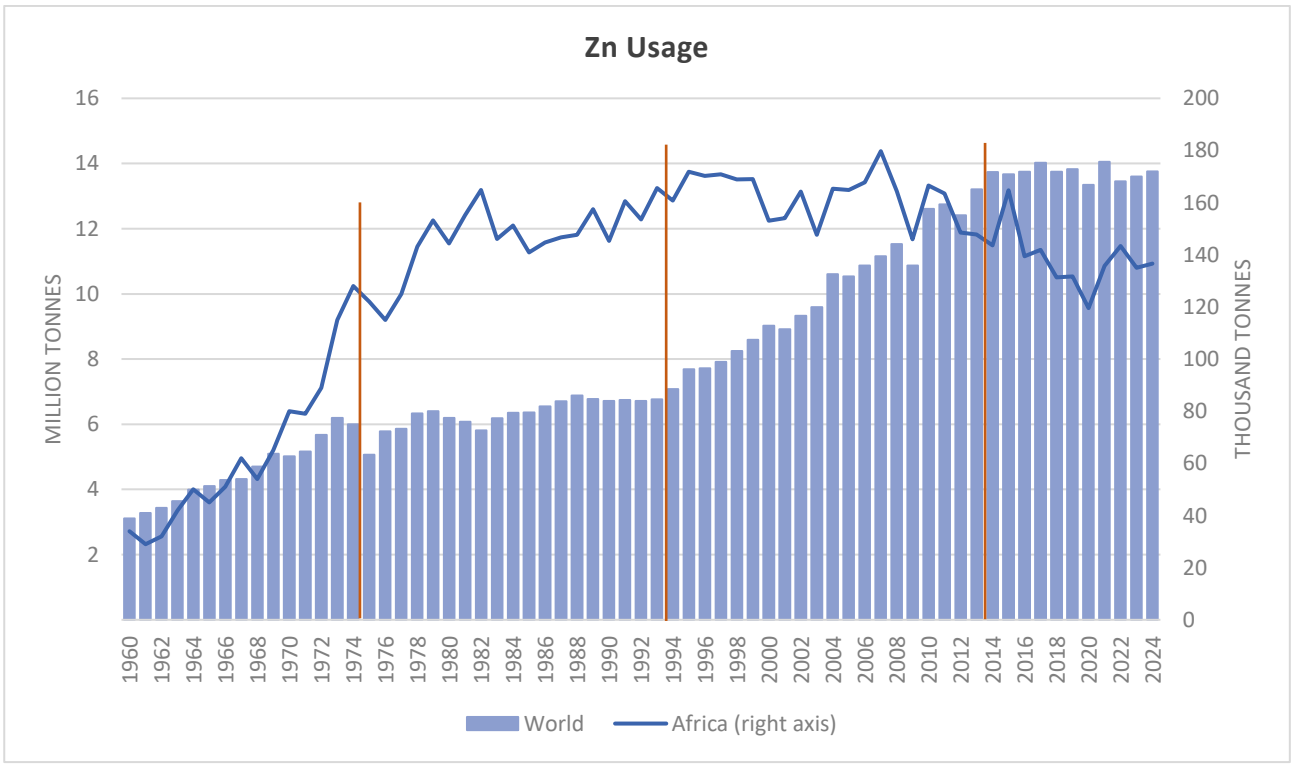

Figure 20 - Zinc Usage: World vs Africa (1960 – 2024). Source: ILZSG

A. Lead

African lead consumption rose steadily from 1960 to 1998, driven by industrialisation and urbanisation. Demand was closely linked to the growing role of lead–acid batteries in both automotive and back-up power systems. By 1998, Africa's lead usage reached its historical peak.

From the late 1990s onwards, consumption levelled off. This shift reflected stricter regulation and increasing awareness of the health risks associated with lead. By 2006, most African countries had eliminated leaded petrol. In 2011, UNEP and WHO launched the **Global Alliance to Eliminate Lead Paint**. Yet progress remains uneven: as of 2023, only 10 African countries had binding regulations on lead paint, while 34 had no legislation in place.

Recycling initiatives and attempts to formalise informal battery recovery have also shaped trends. Although progress is ongoing, informal battery recycling continues to pose environmental and health challenges in several countries.

Between 2010 and 2023 (Figure 21), usage patterns shifted:

- South Africa remained the largest consumer, though volumes fell by around 10% (from 54,611 tonnes in 2010 to 49,387 tonnes in 2023).
- Egypt increased demand from 20,916 tonnes to 27,001 tonnes (+29%).
- Other African countries more than doubled their combined consumption, from 6,000 to 14,004 tonnes.
- Zambia more than tripled usage (from 1,152 to 3,996 tonnes).
- Tunisia and Morocco rose by 63% and 36%, respectively.
- Kenya, while still the smallest among the major consumers, nearly doubled demand (868 to 1,563 tonnes).

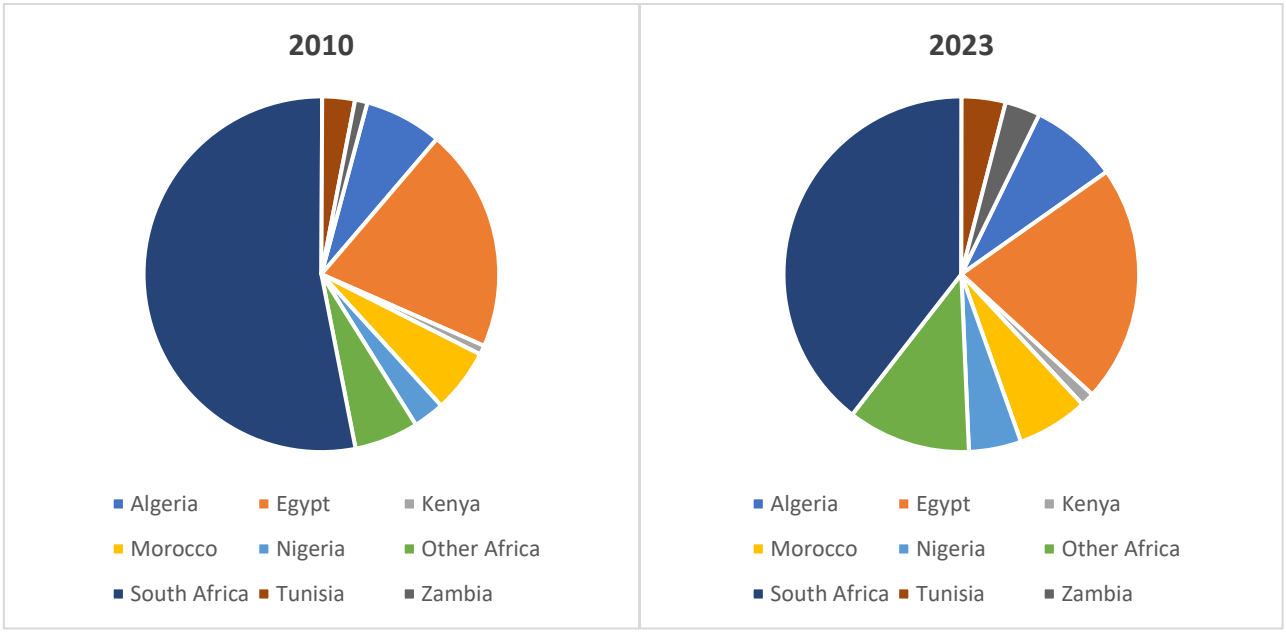

Figure 21 – Evolution of lead usage in Africa: 2010 vs. 2023

B. Zinc

Zinc consumption rose steadily between 1960 and 1982, reflecting the post-independence industrialisation drive in many countries. Demand was tied to construction, automotive production, and the protection of steel through galvanisation.

Between 1983 and 2007, growth slowed and usage stabilised. Economic challenges, debt crises, and fluctuating commodity markets restricted large-scale investment, while recycling helped offset demand.

Consumption fell sharply in 2009 as the global financial crisis depressed industrial activity worldwide. Between 2015 and 2020, usage declined further, affected by high commodity prices and the impact of the COVID-19 pandemic.

Since 2021, zinc consumption in Africa has recovered, returning to levels last seen in 2018. Demand has been underpinned by renewed investment in construction and manufacturing, alongside infrastructure development linked to urban growth.

Between 2010 and 2023 (Figure 22), zinc usage patterns across Africa shifted significantly:

- South Africa remained the largest consumer, though volumes dropped sharply by around 40% (from 91,669 tonnes in 2010 to 55,203 tonnes in 2023).
- Egypt recorded the strongest growth, with demand climbing from 10,056 tonnes to 26,027 tonnes, more than a 2.5-fold increase.
- Algeria rose moderately, from 8,236 tonnes to 10,008 tonnes (+22%).
- Tunisia increased usage from 5,892 tonnes to 6,960 tonnes (+18%).
- Morocco showed marginal growth, rising slightly from 9,886 tonnes to 10,179 tonnes (+3%).
- Nigeria declined significantly, with consumption falling by over half, from 12,996 tonnes to 6,000 tonnes (–54%).
- Kenya also contracted, with usage dropping from 13,800 tonnes to 6,587 tonnes (–52%).
- Other Africa remained stable at 14,004 tonnes in both years.

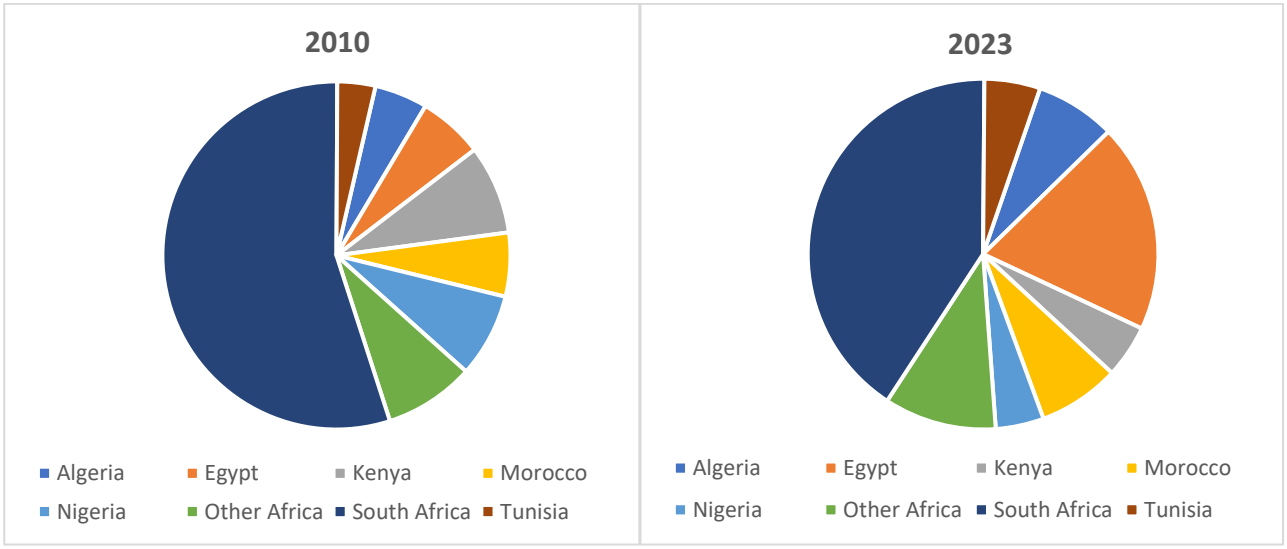

Figure 22 - Evolution of zinc usage in Africa: 2010 vs. 2023

V. Trade

Trade data for lead and zinc highlights clear distinctions between the markets for concentrates and those for refined metals (Figure 22).

- **Concentrates**: African exports of lead and zinc concentrates are overwhelmingly directed to Asia. China dominates as the principal buyer, accounting for approximately 50% of Africa's lead concentrate exports and nearly 84% of its zinc concentrate exports. This reflects China's extensive smelting capacity and continued industrial demand.
- **Refined Metals**: The pattern is markedly different for refined products. The United States is the leading importer of refined lead from Africa, reflecting strong demand for ready-to-use metal in the automotive and battery industries. In the case of refined zinc, India is by far the dominant market. In 2023, India imported around 95% of Africa's refined zinc production, underscoring its reliance on African supply to meet domestic galvanising and manufacturing requirements.

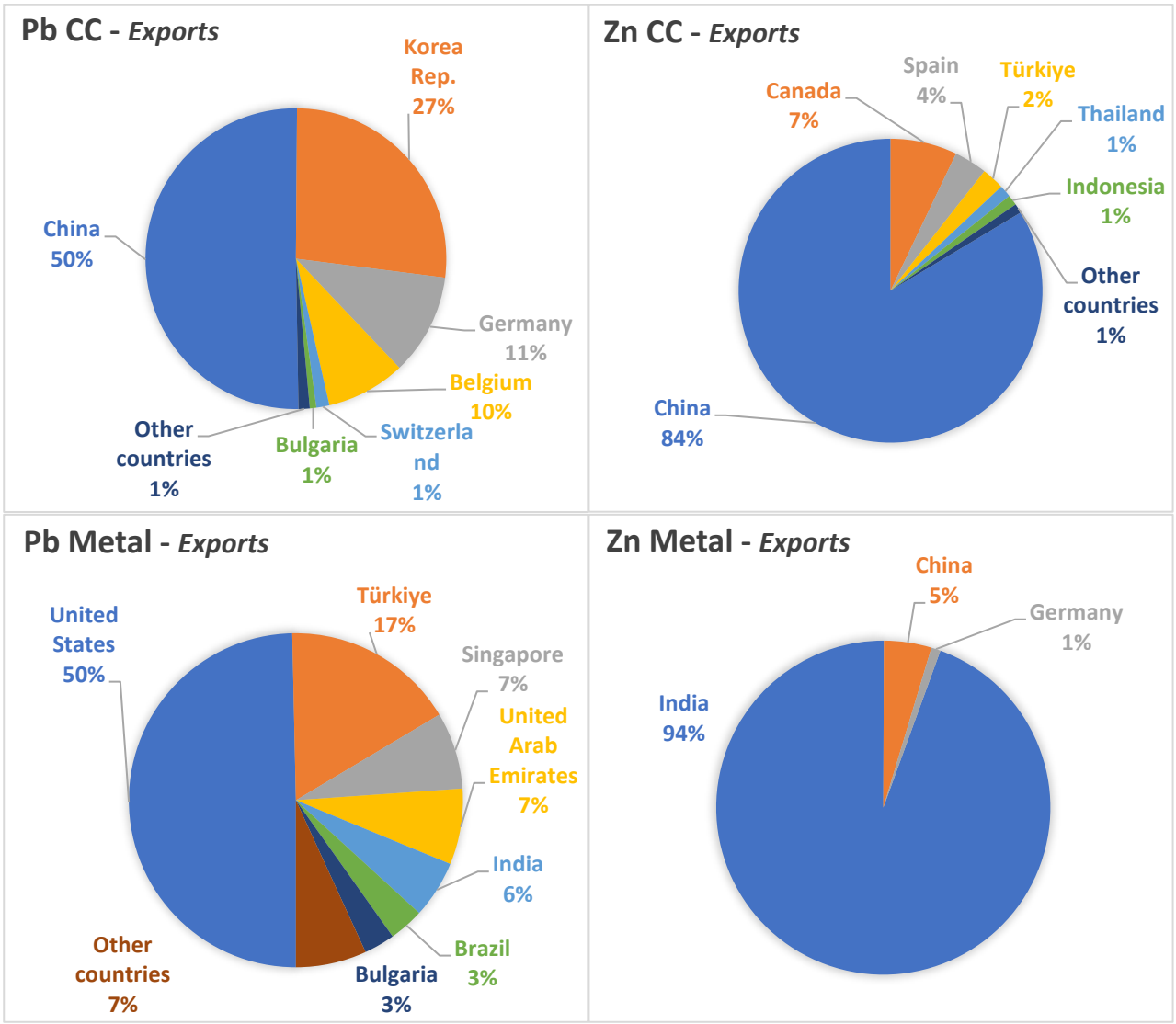

Figure 23 – Africa's lead and zinc imports & exports

VI. Conclusions

Africa holds substantial, yet largely untapped, reserves of lead and zinc, which position the continent to play an increasingly significant role in global supply chains. With rising international demand for base metals, underpinned by rapid urbanisation, expanding infrastructure needs, and the ongoing energy transition, Africa has the potential to strengthen its standing as a major exporter of these resources.

Despite this, processing capacity across the continent remains underdeveloped. Most ores continue to be exported in concentrate form, limiting opportunities for local value addition and constraining wider industrial development. Expanding smelting and refining facilities therefore represents both a challenge and a considerable investment opportunity. Downstream processing, infrastructure development, and the adoption of sustainable mining technologies are areas where targeted investment could generate substantial economic and social benefits.

The strategic importance of lead and zinc should not be understated. Their role in batteries, and galvanizing of steel used in construction, infrastructures and automobile industry, among others, makes them central to Africa's industrialisation agenda and to the continent's ambition of broader economic diversification. Yet the path forward is not without obstacles. Political and regulatory uncertainty, inadequate infrastructure, and the imperative of ensuring environmental and social sustainability continue to present barriers to fully realising Africa's potential.

In sum, Africa's resource base offers enormous opportunities, but success will depend on the continent's ability to attract and sustain investment, expand processing capacity, and strengthen governance frameworks. Only by addressing these challenges can Africa transform its abundant reserves of lead and zinc into drivers of long-term, inclusive economic growth.