
A SYSTEMS-LEVEL ATLAS

AFRICA

VOLUME IV

Economic and Resource Systems

Macroeconomic Structures · Natural Resource Geography · Agriculture & Food Systems · Industrialization & Manufacturing Futures

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About This Volume

AFRICA: AN ENCYCLOPEDIC REFERENCE — 2026 EDITION

Volume IV of an eight-volume reference work compiled and edited by Marie-Soleil Seshat Landry and published by Landry Industries Inc. under the Marie Landry's Spy Shop imprint, Moncton, New Brunswick, Canada.

Volume III examined how the modern African state is governed. **Volume IV turns to how it makes its living.** It maps the continent's macroeconomic structure, its extraordinary endowment of the minerals the energy transition depends on, the paradox of a food-importing continent that holds most of the world's unused farmland, and the long struggle to industrialise. A single argument runs through all four chapters: Africa's economic predicament is less a story of scarcity than of *value capture* — of who refines, who manufactures, who profits, and where.

A NOTE ON FIGURES AND CITATION INTEGRITY

This is the most data-intensive volume in the series, and economic figures vary by source, methodology, and year. Where reputable sources disagree — on the size of the food-import bill, the exact electricity-access gap, or cobalt's precise share of supply — this volume gives the reported range rather than a false single figure, and keys every quantitative claim to the numbered *References*. All data was verified against an identifiable public source in June 2026; nothing is reproduced verbatim. Monetary values are in US dollars unless stated, and refer to the most recent year available at the time of writing.

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VOLUME FOUR

Economic and Resource Systems

A three-trillion-dollar economy growing among the fastest on Earth, yet whose growth barely outpaces its population; the planet's richest store of the metals that power clean technology, exported mostly as raw ore; most of the world's unused farmland on a continent that imports its food. This volume maps the structures behind the paradoxes.

1. Macroeconomic Structures
2. Natural Resource Geography
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CHAPTER THIRTEEN

Macroeconomic Structures

Africa's economy is at once one of the world's fastest-growing and one of its most structurally constrained — a roughly three-trillion-dollar continent whose growth is largely eaten by population, whose workers are overwhelmingly informal, and whose money and debt are only partly under its own control.

To understand the African economy one must hold two facts together. The headline numbers are genuinely dynamic: the continent is growing faster than the global average and is home to a dozen of the world's twenty fastest-expanding economies. Yet beneath the growth lies a structure — informal, externally oriented, and monetarily constrained — that has proven remarkably persistent, and that determines whether headline growth reaches ordinary lives.

Scale and Growth

Africa's combined output was roughly US\$2.83 trillion in nominal terms in 2025 — about US\$10.8 trillion at purchasing-power parity — making it the world's fifth-largest continental economy, with a nominal income per head near US\$1,930.^[2] Growth has been strong: the African Development Bank reported real GDP expansion of 4.2 percent in 2025, up from 3.1 percent in 2024 and ahead of the global average, with growth projected to reach 4.3 percent in 2026 and 4.5 percent in 2027; twelve of the world's twenty fastest-growing economies in 2025 were African.^[1] The crucial qualifier is demographic: because population is rising fast, GDP *per capita* grew only about 1.9 percent — too slow to transform living standards quickly. Remittances from the diaspora, at US\$104.6 billion and rising, have become the continent's single largest source of external non-debt finance, outstripping foreign investment flows.^[1]

The Informal Majority

The defining structural fact of African economic life is informality. Around 83 percent of the continent's workforce is employed informally — a share that has barely shifted in two decades, down only marginally from 84.3 percent in 2005 — and the informal economy generates an estimated 30 to 40 percent of GDP.^[3] In sub-Saharan Africa more than 80 percent of employment is informal and roughly 90 percent of consumer spending is still conducted in cash.^[4] This is a dual economy: a small formal sector of government, services, and limited industry, alongside a vast informal one characterised by low productivity

and working poverty — nearly 29.3 percent of employed Africans lived on under US\$2.15 a day in 2024.^[5]

WHY INFORMALITY MATTERS STRUCTURALLY

- It starves the state of revenue: countries with high informality forgo an estimated 5 to 12 percentage points of GDP in potential public revenue, limiting spending on health, education, and infrastructure.^[3]
- It leaves workers exposed: by ILO estimates, between 60 and 80 percent of African workers have no access to any formal social protection.^[3]
- Headline unemployment is therefore misleading — about 6.7 percent in 2024 — because most people cannot afford *not* to work, and so are counted as employed even in survival activities.^[5]
- Mobile money and digital platforms are emerging as the most promising route to formalisation, building financial identities for the unbanked (developed in Volume VI).^[4]

Monetary Sovereignty and the CFA Franc

Money itself is a site of contested sovereignty. Fourteen African countries use the CFA franc, split into two zones — the West African franc (XOF), used by eight members and managed by the BCEAO in Dakar, and the Central African franc (XAF), used by six and managed by the BEAC in Yaoundé — together covering some 180 million people, each pegged to the euro at a fixed rate of 655.957.^{[9][11]} The arrangement delivers low inflation and stability, but critics argue it constrains monetary autonomy and perpetuates a neo-colonial tie to France and the euro. Reform is under way but partial: the requirement to deposit half of foreign-exchange reserves with the French Treasury was ended for the West African zone in 2019, and ECOWAS plans a new common currency, the ECO, now slated for 2027 — yet because the euro peg and a French guarantee role persist, sceptics dismiss the ECO as a “rebranded CFA franc.”^{[10][11]} The debate maps directly onto the sovereignty politics of Volume III.

Debt and the IMF

Africa’s debt burden has become its most acute macroeconomic vulnerability. External debt surpassed US\$1 trillion in 2024, roughly double the 2020 figure, and at least 22 low-income African countries are in or at high risk of debt distress.^{[6][8]} External debt service reached about US\$89 billion — roughly twice the level of foreign direct investment — trapping countries in a cycle in which repayment crowds out development spending, and IMF programmes now operate in around ten African countries.^[7] Two structural features make the problem intractable. First, the composition of debt has shifted from Western official

lenders toward China (roughly 12 percent of the total) and private bondholders, whose uneven participation complicates restructuring.^{[7][8]} Second, governance is skewed: as one prominent report observed, sub-Saharan Africa holds about 5 percent of IMF votes yet absorbs around half of its loans.^[7] Senegal's 2024 discovery of some US\$11 billion in hidden debts — pushing public debt to 132 percent of GDP — illustrates how quickly the picture can deteriorate.^[7]

The macroeconomic paradox, then, is real growth that does not yet translate into rising incomes, layered atop a cash economy the state cannot fully tax, inside monetary and debt structures the continent only partially governs. Loosening those structural constraints — not merely raising the growth rate — is the central macroeconomic challenge of the decade.

CHAPTER FOURTEEN

Natural Resource Geography

Africa holds an outsized share of the minerals the twenty-first century runs on — and exports most of them as raw ore, capturing only a sliver of their value. This is the engineered dependency of the earlier volumes, updated for the age of the battery.

Nothing connects this reference work more tightly than the gap between what Africa possesses and what it captures. The continent accounts for roughly 30 percent of the world's mineral resources, and as the global economy electrifies, that endowment has moved from the periphery of the world economy to its strategic centre.^[12] Whether this translates into African prosperity or merely a new chapter of extraction is the defining resource question of the era.

The Mineral Endowment

The energy-transition metals are where Africa's dominance is starkest. The Democratic Republic of the Congo alone produces roughly 70 percent — by some estimates 70 to 80 percent — of the world's cobalt, mining about 254,000 tonnes in 2024, some thirteen times Indonesia's output, and holds around 71 percent of proven global reserves; Africa as a whole holds about 57 percent of cobalt reserves, of which the DRC accounts for 97 percent.^{[14][16]} The DRC is also the world's second-largest copper producer after Chile, with some of the highest ore grades anywhere, and sits atop vast deposits of coltan.^[17] Beyond the Congo, South Africa, Gabon, and Ghana together supply more than 60 percent of global manganese; Zimbabwe, the DRC, and Mali hold globally significant lithium; and South Africa dominates the platinum-group metals.^[12] To this must be added the older extractive economy of oil and gas, concentrated in Nigeria, Angola, Algeria, and Libya.

The Value-Chain Trap

The central problem is not extraction but value capture. African producers remain confined to the lowest-value end of the supply chain, exporting raw material while refining, manufacturing, and profit accrue elsewhere.^[17] The figures are stark: around 99 percent by value of the DRC's cobalt is exported in unrefined form as oxides and hydroxides, and only a small share of African cobalt is refined on the continent at all, in South Africa.^[14] Downstream, China refines an estimated 60 to 70 percent of the world's lithium and cobalt and some 90 percent of its rare earths and graphite, and processes more than half of the DRC's cobalt.^[15] The pattern is precisely the colonial export structure described in Volume

II — raw materials out, finished goods in — reproduced in the battery age, and concentration is intensifying rather than easing: the market share of the top three mining countries for key energy minerals rose from 73 to 77 percent between 2020 and 2024.^[18]

ASSERTIONS OF “MINERAL SOVEREIGNTY” (2025)

- The DRC suspended all cobalt exports in early 2025 — with prices at a nine-year low — then resumed in October 2025 under strict quotas: 18,125 tonnes for the rest of 2025 and 96,600 tonnes annually for 2026–27, less than half its 2024 output.^[16]
- Zimbabwe and Namibia have imposed lithium export restrictions, and Malawi has banned raw-mineral exports — part of a continental push to force value-addition onshore.^[16]
- The limits are real: when the US and China struck a minerals truce in late 2025, they prioritised bilateral accommodation over Global-South diversification, exposing the ceiling on African leverage.^[16]
- The US convened its first Critical Minerals Ministerial in February 2026, and export-control measures have proliferated worldwide since 2023.^{[17][18]}

Land and Water

Africa’s resource wealth is not only subterranean. The continent also holds roughly 60 percent of the world’s uncultivated arable land and major freshwater systems — the Congo, Nile, and Niger basins among them — endowments that frame the agricultural paradox examined in the next chapter.^[20] Here too the question is the same: whether abundance is converted into domestic value or exported as raw potential.

The resource paradox of modern Africa is therefore sharply drawn. The continent most essential to the global energy transition risks repeating the extractive pattern that has defined its economic history for centuries — unless, as a growing number of governments are now attempting, the capture of value can be moved onshore. That contest, more than the size of the reserves themselves, will determine whether minerals make Africa rich.

CHAPTER FIFTEEN

Agriculture and Food Systems

The starkest paradox on the continent: Africa holds most of the world's unused farmland and most of its people farm, yet it imports tens of billions of dollars of food each year while hundreds of millions go hungry.

Agriculture is the economic foundation of African life — the largest employer on the continent and the sector on which food security, rural incomes, and political stability all rest. It is also the arena of the continent's most confounding contradiction. By any measure of natural potential, Africa should be a food exporter to the world. In practice it is a net importer, and the gap between potential and performance is among the most consequential development failures of the age.

The Productivity Paradox

Africa holds roughly 60 percent — nearly 65 percent by the African Development Bank's 2026 estimate — of the world's uncultivated arable land, yet remains a net food importer, spending on the order of US\$50 to 80 billion a year on food imports (around US\$70 billion by the AfDB's reckoning) with projections rising toward US\$110 billion by 2030.^{[19][20][22]} Productivity is the core failure: African cereal yields average about 1.68 tonnes per hectare against a global average of 4.2.^[19] Agriculture's share of GDP has slipped to about 17 percent in 2025, from 18 percent in 2020, even as it remains the largest single employer; an estimated 307 million people face hunger or undernourishment, and on current trends close to 60 percent of the world's chronically hungry will be in Africa by 2030.^[19] The causes are structural and compounding: low use of fertiliser and improved inputs, dependence on rain-fed cultivation, fragmented smallholdings, weak rural infrastructure, climate shocks — the FAO estimates extreme climate events have cut sub-Saharan agricultural productivity by 34 percent since 1961 — and, increasingly, conflict across the Sahel, Sudan, and the Great Lakes.^[23]

Smallholder Foundations

African agriculture rests on smallholders, who produce up to 80 percent of the food consumed in sub-Saharan Africa, mostly on small, rain-fed, low-input plots.^[21] Alongside this subsistence base sits a commercial and export tier — cocoa, coffee, cotton, and horticulture — producing the cash crops inherited from the colonial economy. The smallholder system carries deep agronomic knowledge, including crop diversification and agroforestry,

and the continent is home to tens of thousands of edible plant species, only a fraction of which are widely cultivated — a reservoir of under-used potential.

The Logistics and Loss Problem

A striking share of what Africa grows never reaches a plate. Post-harvest losses run at 30 to 50 percent, costing more than US\$4 billion a year — enough, by one estimate, to feed 1.6 billion people — the product of inadequate storage, cold chains, roads, and processing. ^[21] Moving food, in other words, matters as much as growing it. The fiscal consequences are severe: in countries such as Zimbabwe, Guinea, and Sudan, the food-import bill exceeds total foreign-currency earnings, draining the reserves that Chapter 13 showed are already under strain. ^[22]

The Transformation Bet

The opportunity is correspondingly large. The African Development Bank projects the continent's food and agriculture market will grow from about US\$280 billion in 2023 to US\$1 trillion by 2030, and the AfCFTA (Volume III) could sharply expand intra-African agricultural trade once tariffs fall. ^{[22][20]} The strategy that follows is consistent across the development literature: shift from raw export crops toward staple foods for domestic markets, invest in value-added processing, cut post-harvest losses through better logistics, and finance smallholders directly. The food paradox, like the minerals paradox before it, turns out to be less about scarcity than about productivity, infrastructure, and value capture — the same structural themes, transposed to the land.

CHAPTER SIXTEEN

Industrialization and Manufacturing Futures

For decades Africa has been told that industrialisation is its road to prosperity. Instead its share of global manufacturing has shrunk — though a handful of countries, and a continent-wide push to electrify, hint at a possible turning point.

The minerals and the farmland represent Africa's raw potential, manufacturing is where that potential would be converted into broad-based prosperity and jobs. It is here, however, that the continent's economic record is most disappointing — and understanding why is essential to understanding both the present predicament and the routes out of it.

The Deindustrialisation Problem

Manufacturing's share of African GDP has stagnated under 13 percent since 2020 — about 12.7 percent in 2023, up only slightly from 12.2 percent in 2016 — and the continent's share of global manufacturing output has fallen from roughly 3 percent in the 1970s to under 2 percent today, a trajectory economists call premature deindustrialisation.^[24] As of 2023 only five countries — Nigeria, Egypt, South Africa, Algeria, and Morocco — had manufacturing value added exceeding US\$10 billion, while low-end services and subsistence agriculture still employ around 60 percent of the workforce.^[24] The roots are historical: post-independence import-substitution drives that faltered, followed by the structural-adjustment liberalisation of the 1980s and 1990s, which removed protective tariffs and saw many local industries collapse under import competition, compounded since by inconsistent policy and, above all, by the cost and unreliability of inputs — especially power.^[24]

The Energy Bottleneck

No constraint binds African industry more tightly than electricity. Nearly 600 million people — about half the continent, some 571 million by the World Bank's count — lack access to electricity, representing more than 80 percent of the entire global access gap, and unreliable supply costs African economies an estimated 2 to 4 percent of GDP each year.^{[26][27]} The flagship response is Mission 300, launched by the World Bank and African Development Bank in 2024 to connect 300 million Africans by 2030; by early 2026 some 43 million had been connected, against roughly US\$90 billion in committed finance and an annual energy-investment gap estimated near US\$160 billion.^[27] The shape of the solution

is changing fast: more than half of new electricity access in sub-Saharan Africa between 2020 and 2022 came from off-grid solar and mini-grids, and over 55 percent of the continent's energy already comes from renewable sources.^[27] Reliable power is the precondition on which every industrial ambition depends.

WHERE INDUSTRIALISATION IS WORKING

- **Morocco** has built deliberate automotive and aerospace clusters; automobiles, at roughly US\$8 billion, are now its single largest export category, within total exports of about US\$67.5 billion in 2024.^{[24][29]}
- **Ethiopia** raised manufacturing value added from about 3.4 percent of GDP in 2012 to 7.4 percent in 2023 through industrial parks in textiles, apparel, and leather — progress disrupted, but not erased, by conflict.^[24]
- **Egypt** sustains a broad industrial base in textiles, fertilisers, and electronics, while Rwanda, Ghana, and Senegal advance through special economic zones and export-processing zones.^{[25][28]}
- The AfDB found 37 of 52 countries improved their industrial-development scores between 2010 and 2021, and projects manufacturing could reach 16 percent of GDP by 2043, adding some US\$168 billion and around 35 million jobs.^{[25][28]}

The Demographic Clock

Industrialisation is not merely an economic preference but a demographic necessity. Roughly 12 million young Africans enter the labour market every year, and without the job creation that manufacturing and modern industry provide, the much-discussed “demographic dividend” (Volume V) risks curdling into a demographic crisis.^[27] Shifts in global supply chains have opened a window for African producers, but they must compete with deeply established Asian manufacturing bases.

Africa's industrial future thus hinges on three linked tasks drawn together in this volume: solving the energy bottleneck, sustaining consistent industrial policy rather than treating industrialisation as a slogan, and moving up the value chains in minerals and agriculture rather than exporting raw potential. Whether the continent accomplishes them is, in the end, the difference between a demographic dividend and a demographic emergency — the question carried forward into the society and future-trajectory volumes that follow.

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END OF VOLUME IV — ECONOMIC AND RESOURCE SYSTEMS

Volume V — *Society, Demographics & Culture* — continues the reference in the next installment.