Africa Finance Corporation

State of Africa's Infrastructure Report 2025

Mobilizing Domestic Capital

Instrumental Infrastructure.
Instrumental Africa.

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Foreword

Africa is navigating 2025 amid deepening global volatility. With external capital becoming scarcer and less reliable, infrastructure has emerged not just as a development need, but as a strategic lever for resilience, competitiveness, and economic sovereignty. This edition of the State of Africa's Infrastructure Report (SAI 2025) comes at a time of heightened urgency, but also unprecedented opportunity.

Over the past year, infrastructure has consistently proven itself as a critical driver of Africa's economic resilience and long-term transformation. It is the platform through which jobs are created, goods are moved, energy is accessed, and innovation-driven sectors and climate goals are realized. At Africa Finance Corporation (AFC), we believe it is time to change the narrative. Africa's infrastructure challenge is not merely a gap to close—it is a generational opportunity to shape new markets, catalyze investment, and lay the foundations for broad-based, sovereign-led prosperity.

Nowhere is this more evident than in the energy sector. Africa holds the world's largest untapped hydropower and geothermal reserves, abundant solar resources, and substantial natural gas reserves. Unlocking these resources is not simply a moral or socio-economic imperative, it is the engine that will power Africa's entire transformation toward prosperity. Developing these resources is essential not just for energy access, but for powering industrialization, digital expansion, and economic transformation. Energy infrastructure must be designed not only to expand household access, but to drive industrial activity, power a future digital and data economy, and lift overall economic productivity. In short, Africa's energy systems must evolve beyond meeting basic consumption needs—they must become engines of structural transformation, enabling the growth of manufacturing, minerals processing, data centers, and other energy-intensive sectors that anchor competitive economies.

This same strategic lens must be applied to Africa's industrialization. Africa has long exported crude oil while spending valuable foreign exchange on growing fuel imports. Today, that equation is starting to shift, with new refining hubs emerging—led by Nigeria and Angola—as the continent begins to capture more value locally. Fertilizers represent another opportunity. Africa holds all three critical inputs—phosphate, gas, and potash—and can become a global player in agro-industrial value chains. A self-sufficient steel industry is also essential. With rising iron ore output and shifting trade dynamics, Africa must invest in upstream production, downstream manufacturing, and transport infrastructure to support a competitive steel supply-chain.

Infrastructure ecosystems must evolve to match this ambition. A third wave of port privatizations is unfolding—more investor-driven and performance-focused—laying the foundation for efficient, trade-enabling gateways. Rail investment is gaining momentum, with a new generation of corridors designed as economic platforms, not just transport links. The Lobito Corridor is a standout model: linking Angola, Zambia, and the DRC, it is unlocking copper reserves while anchoring broader trade, logistics, and industrial development.

Africa's scale can be a competitive advantage. Secondary and regional airports, with the right investments in cargo logistics, customs efficiency, and route development, can enable time-sensitive value chains in sectors such as horticulture, pharmaceuticals, and e-commerce—positioning air transport as a key enabler of intra-African trade.

Financing this infrastructure transformation must begin with African capital. The future of African infrastructure depends on African finance. That means building deeper financial markets, strengthening development finance institutions, and unlocking long-term domestic capital. Pension funds, insurance pools, sovereign wealth funds, and diaspora remittances represent stable, patient sources of finance that remain largely untapped.

New AFC Research confirms that Africa already holds the resources to accelerate this journey. We estimate the continent's domestic capital pools at over $4 trillion - including more than $1.6 trillion across the non-bank sector: $455 billion in pensions, $320 billion in insurance, $250 billion in public development banks, $150 billion in sovereign wealth funds, and $473 billion in foreign reserves, including $38 billion in gold holdings. These are the most robust bottom-up estimates to date, though actual figures are likely even higher due to data gaps in key markets.

The core challenge is not the availability of capital—but its intermediation. Too much of Africa's wealth is invested in low-risk, short-term instruments rather than channeled into productive sectors. Overcoming this requires stronger financial institutions, deeper capital markets, and a broader mix of investment vehicles that can mobilize long-term savings into infrastructure, industry, and innovation.

At AFC, we believe in African solutions, African agency, and African ambition. This report reflects that ethos. It focuses on the sectors and investment models where momentum is building—from clean energy and digital infrastructure to value-added manufacturing and logistics corridors. It highlights catalytic examples and scalable approaches that blend public and private capital for maximum impact.

This report is not just a diagnosis—it is a call to action. Africa no longer has the luxury of incremental progress. It needs bold, coordinated, system-level change: stronger regional integration, deeper public-private partnerships, and infrastructure ecosystems that power industries—not just projects.

We invite our partner governments, investors, development institutions, and the private sector—to engage with this report as a strategic blueprint for Africa's infrastructure-led transformation.

Samaila Zubairu
President & CEO
Africa Finance Corporation

Mobilizing Domestic Resources for Africa's Economic Transformation

- **Africa holds some $4 trillion in domestic capital**. New AFC Research provides the most accurate, bottom-up estimate to date of Africa's investible capital base, comprising institutional assets (pension, insurance, sovereign funds), commercial bank assets, and foreign currency reserves. This conservative estimate underscores the scale of untapped resources available to finance Africa's development—if effectively intermediated.

- **Sustained development is domestically driven.** Global experience, particularly in Asia, shows that structural transformation is built on high domestic savings, coordinated long-term planning, and strong financial institutions that can effectively channel national capital into infrastructure, industry, and productivity-enhancing investment. These lessons are increasingly relevant for Africa's journey toward industrialization and infrastructure-led growth.

- **Africa's banking system remains under-leveraged**. Despite holding approximately $2.5 trillion in assets, the sector remains fragmented and lacks the size and depth to finance long-term development. Strengthening and scaling African banks is critical to closing the savings-investment gap and unlocking capital for large-scale infrastructure and industrial projects critical to structural transformation.

- **Institutional investors remain a major untapped source of development finance for Africa.** With over $777 billion in assets under management, pension funds and insurance companies hold substantial potential to finance long-term development. Yet a large share remains allocated to short-term, low-risk instruments. Reform momentum is growing in countries such as Nigeria and Namibia, where regulatory changes are beginning to align savings with infrastructure and industrial investment. Similar efforts are underway in South Africa and Kenya.

- **Public development banks and sovereign wealth funds have a bigger role to play in driving Africa's development priorities.** Collectively managing some $400 billion, these institutions are often underutilized due to fragmented mandates and weak alignment with national development plans. Emerging models—such as the expanding role of Caisses de Dépôts in the CFA franc zone—offer promising frameworks for mobilizing domestic savings through mission-oriented intermediation vehicles tailored to local contexts.

- **Remittances are a resilient and underutilized source of investment capital.** In 2024, they reached over $95 billion, highlighting their growing role as a stable and counter-cyclical source of external finance that remains largely untapped as a source for development financing.

- **Deeper, more integrated capital markets are essential to mobilize long-term finance.** Capital markets across Africa remain shallow and fragmented, constraining their ability to pool and allocate domestic savings at scale. Strengthening regulatory harmonization, enabling cross-border listings, and operationalizing platforms such as the African Securities Exchanges Association (ASEA) and the African Exchanges Linkage Project (AELP) will be vital to creating a liquid and investable regional capital ecosystem.

- **Tackling informality is critical to unlocking Africa's domestic capital at scale.** In many African economies, the informal sector accounts for up to 90% of employment and 40% of GDP—placing significant portions of income and economic activity beyond the reach of formal financial systems, taxation, and long-term savings mechanisms. Expanding financial inclusion and scaling digital public infrastructure can help integrate informal actors into the formal economy, deepen the pool of investible capital, and lay the foundations for inclusive growth. With Africa's demographic window at its most favorable, the time to act is now.

Africa stands at a critical inflection point. Rapid population growth, accelerating urbanization, and the continent's urgent infrastructure and industrialization needs are generating sustained, large-scale investment requirements. However, traditional sources of external financing—official development assistance, foreign direct investment and sovereign borrowing—are proving increasingly insufficient, procyclical, and, in many cases, poorly aligned with Africa's long-term development priorities. These constraints are being compounded by a shifting global economic landscape: tighter global financial conditions, declining donor budgets, and a resurgence in protectionist policies in advanced economies, which have reduced both the availability and predictability of external capital. These developments underscore Africa's need for a more resilient and internally anchored financing strategy.

As highlighted in the AFC 2024 State of Africa's Infrastructure (SAI 2024) Report, the COVID-19 pandemic severely eroded fiscal space and access to international capital markets. Since then, successive global shocks – including supply chain disruptions, food and energy-price surges, and more recently, escalating trade tensions between major economies—have compounded macroeconomic vulnerabilities and raised borrowing costs. In response, African policy makers are increasingly turning to domestic sources of finance, including national savings, sovereign wealth and stabilization funds, public development banks, and capital markets.

This pivot is not merely a tactical reaction to constrained external financing conditions, it reflects a deeper structural imperative. The global development experience consistently shows that sustained transformation is strongest when anchored in the mobilization and productive use of domestic capital. The experience of East and Southeast Asia highlights the central role of high domestic savings rates, disciplined financial intermediation, and deep local capital markets in financing national development.

Africa's renewed focus on domestic resource mobilization should be viewed as a needed rebalancing, towards maximizing the value of internal capital while using external resources more strategically. For too long, development models have leaned heavily on foreign capital as the primary engine of growth. Yet global evidence suggests that external financing is most catalytic when it complements—not substitutes—domestic resource mobilization. This principle is increasingly informing national policy frameworks and reform agendas across the continent.

Mobilizing domestic resources at scale is now an urgent policy priority. New AFC Research conservatively estimates the combined value of Africa's domestic capital pools at some $4 trillion[1]. This includes approximately $1.1 trillion in institutional capital—spanning pension funds, insurance companies, sovereign wealth funds and public development banks—$2.5 trillion in commercial banking assets, and more than $470 billion in external reserves. The actual figure is likely higher, given data gaps in several key jurisdictions. Yet the effective deployment of these resources into the productive economy remains limited by shallow capital markets, weak financial intermediation, and institutional constraints.

This chapter examines the strategic role of domestic capital in financing Africa's development. It draws policy insights from international experience on the role of national savings and capital market deepening in successful development transitions. It presents new data on the size and composition of Africa's domestic capital pools, evaluating their potential to support infrastructure investment, industrial development, and economic diversification. The chapter concludes by outlining the institutional, regulatory, and market-building reforms needed to unlock and intermediate these resources at scale—beginning with larger, stronger financial institutions and deeper, more liquid domestic capital markets.

[1] All numbers in this report are expressed in US dollar equivalent unless stated otherwise.

1.

Learning from Asia: Domestic Capital at the Heart of Structural Transformation

The global economic environment is increasingly shaped by protectionist policies in advanced economies, with donor countries prioritizing domestic agendas and adopting more inward-looking stances. This shift is narrowing the space for external financing and concessional support, compelling developing countries—particularly in Africa—to consider alternative strategies grounded in the mobilization of domestic resources.

For African economies, this pivot is not a temporary adjustment but a strategic imperative. The historical experience of structural economic transformation across the world reveals a consistent pattern: successful transitions have largely been underpinned by the effective mobilization of domestic capital. In 19th-century Europe and North America, and more recently in post-war East and Southeast Asia, rapid industrialization was financed predominantly through local savings and financial intermediation mechanisms. A robust and trustworthy financial system played a central role in converting household and corporate savings into long-term productive investment.

While foreign direct investment continues to feature prominently in Africa's development narrative, the continent's long-term vision aligns more closely with endogenous financing models. The African Union's Agenda 2063 articulates a bold target: 70–90% of the continent's development financing needs should be met through internal sources—including fiscal revenues, corporate and sovereign savings, deepened capital markets, and increased intra-African investment flows.

To understand the practical dimensions of such a transition, it is instructive to examine the experience of East and Southeast Asia, particularly the "Asian Tigers" (Hong Kong SAR, the Republic of Korea, Singapore, and Taiwan Province of China) and the emerging middle-income economies of Indonesia, Malaysia, and Thailand. These economies achieved structural transformation between the 1960s and 1990s through deliberate policy choices that prioritized domestic resource mobilization, institutional development, and capital formation.

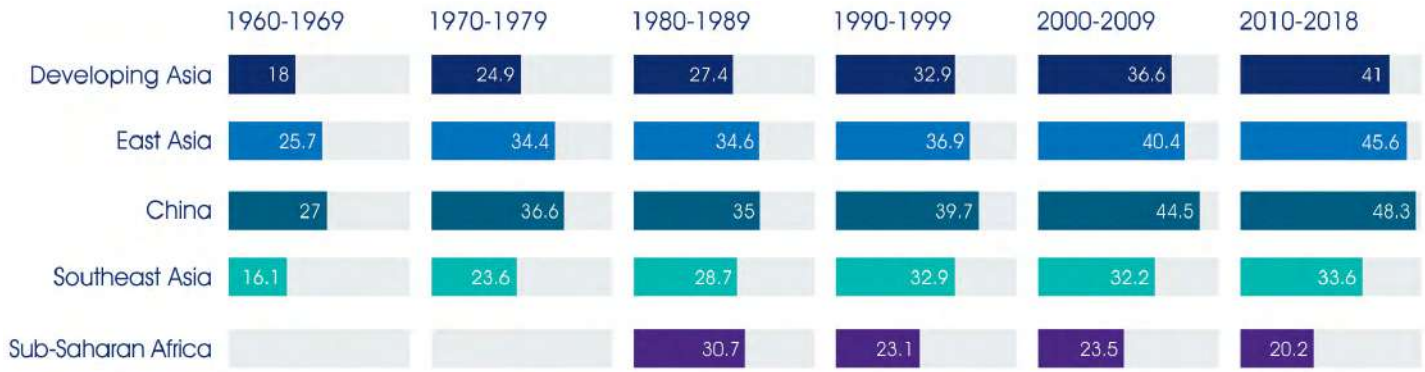
A key feature of Asia's growth model was the sustained accumulation of physical and human capital. Critically, this was not driven by external inflows but by high domestic savings rates, which rose sharply in the early stages of development. Between the 1960s and 1970s, many of these countries doubled their domestic savings as a share of GDP and continued to build on this momentum—culminating in average savings rates that exceed 40% of GDP today, among the highest globally.

This outcome was achieved through a combination of interlinked policy measures. Among them: maintaining generally positive real interest rates on deposits to incentivize savings; strengthening the banking system to ensure its integrity and security; and building institutional confidence in the financial system[1]. A credible, bank-based financial system encouraged higher levels of financial savings, while sustained macroeconomic stability—including low inflation and prudent fiscal management, further supported private investment and long-term capital formation.

The result was a virtuous cycle: higher domestic savings enabled greater investment in infrastructure, industry, and human capital—fueling productivity growth and reinforcing economic resilience. These experiences offer valuable policy insights for African economies as they seek to mobilize domestic capital to drive inclusive, long-term development.

[1] See for instance IMF, & John, P. (1994). The East Asian Miracle: Building a Basis for Growth. International Monetary Fund (IMF), External Relations Department.

Figure 1:
During Asia's economic transformation, Asian economies' savings jumped from the lowest to the highest in the world
gross domestic savings, % of GDP

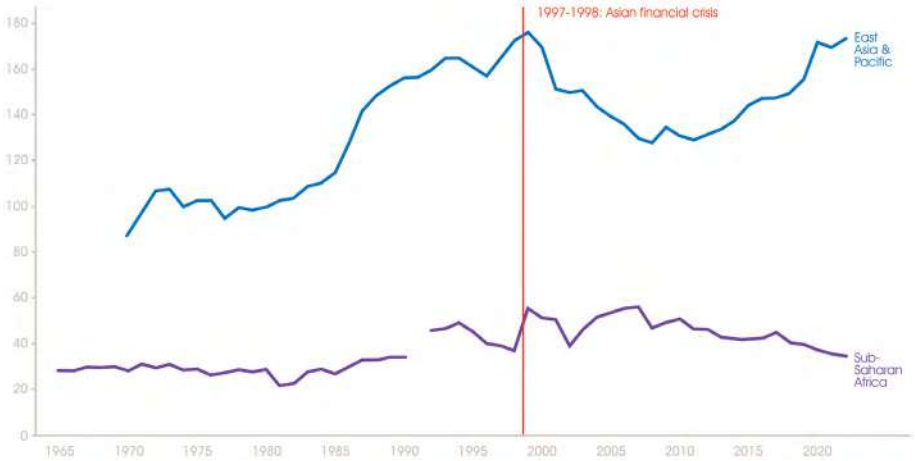


Source: Asia's Journey to Prosperity, Asian Development Bank (2020)

The policy and infrastructure ecosystem across many Asian economies was deliberately articulated to support structural transformation. Countries that experienced rapid and sustained growth during Asia's economic ascent shared several foundational characteristics that were instrumental to their success. Among these were coherent education and agricultural policies that raised labor productivity and facilitated human capital accumulation, alongside a consistent policy commitment to enabling private sector investment. Private investment was actively supported through the provision of complementary infrastructure, targeted tax incentives, and fiscal measures aimed at reducing the cost of imported capital goods. In parallel, several countries deployed forms of directed credit and mild financial repression to channel domestic savings toward priority sectors. This policy mix contributed to significant gains in agricultural productivity, alongside a sharp acceleration in the growth of manufactured exports[2].

Over time, these dynamics created a virtuous cycle of high domestic savings, rising investment, and sustained productivity growth—reducing reliance on external financing and reinforcing the self-financing capacity of the state and private sector[3].

Figure 2:
Bank credit has been and remains the most important source of private sector financing in most Asian economies
Domestic credit to private sector % of GDP



Source: World Bank

Asia's transformation was underpinned by the deliberate sequencing and development of financial infrastructure—beginning with the establishment of strong, well-capitalized banking systems, and later completed by the gradual deepening of capital markets.
A predominantly bank-based financial system played a pivotal role in channeling domestic savings into productive domestic investment, particularly through state-owned and public development banks. In most Asian economies, bank credit has historically constituted—and continues to represent—the primary source of private sector financing. This is evidenced by the steady growth in domestic credit to the private sector as a percentage of GDP (Figure 2).

Banks were instrumental in supporting the region's transformation by effectively intermediating savings into long-term investment. This intermediation was enabled by a suite of coordinated policy measures, including the creation of public development banks, directed credit policies to prioritize lending to strategic sectors, credit guarantees for small and medium-sized enterprises, moderate interest rate controls, and restrictions on outward capital flows. Collectively, these measures enhanced the capacity of the financial sector to serve national development goals, while ensuring that domestic capital remained anchored in the local economy.

[2]IMF, & John, P. (1994). The East Asian Miracle: Building a Basis for Growth. International Monetary Fund (IMF), External Relations Department.
[3]Asian Development Bank (2020) Asia's Journey to Prosperity: Policy, Market, and Technology Over 50 Years. Chapter 7 "Investment, Savings, and Finance. https://www.adb.org/sites/default/files/publication/549191/asias-journey-chapter-7.pdf

The expansion of long-term financing through capital markets occurred during a second phase of Asia's financial development. Following the Asian Financial Crisis of the late 1990s, governments across the region prioritized the diversification of investment sources to reduce systemic reliance on bank credit. A central pillar of this strategy was the deliberate deepening of local capital markets—particularly bond markets—to complement the role of banks and better support infrastructure finance, housing, and corporate investment.
In response to the crisis, many countries introduced comprehensive reforms aimed at enhancing regulatory frameworks, strengthening credit rating systems, and facilitating domestic institutional investor participation in long-duration instruments. These efforts were designed not only to expand the availability of domestic long-term capital, but also to mitigate currency and maturity mismatches that had amplified financial vulnerabilities[4].

Regional cooperation played catalytic role in this process. The launch of the Asian Bond Markets Initiative (ABMI) in 2002–2003 by the ASEAN+3 countries (including China, Japan, and South Korea) marked a significant step toward regional financial integration. The ABMI aimed to deepen local currency bond markets as a means to strengthen financial stability and build resilience to external shocks. Its outcomes were far-reaching: between 2005 and 2019, Asia's local currency bond markets expanded from $2 trillion to over $16 trillion, becoming a cornerstone of the region's development finance architecture. The ABMI also supported the development of regional liquidity pools, credit enhancement mechanisms, and shared market infrastructure. Critically, it facilitated greater availability of long-term, local currency financing, thereby reducing dependence on short-term, foreign currency-denominated debt—particularly in infrastructure sectors where long asset durations require matching financial instruments.

Asia's development trajectory offers valuable lessons for Africa—not as a rigid template, but as a demonstration of what is achievable when domestic resources are mobilized through coherent strategy, institutional reform, and regional coordination. At the heart of Asia's success was a coordinated policy framework that aligned public investment, private sector incentives, and national development goals.

Africa, too, holds the building blocks of such a transformation. The continent is not capital-poor: it already manages over $1.1 trillion in assets across pension funds, insurance firms, sovereign wealth funds, and development finance institutions. In addition, Africa's banking system accounts for some $2.5 trillion in assets. Harnessing this capital through targeted reforms, financial deepening, and institutional strengthening can lay the foundation for a self-sustained, investment-led development path.

[4]Asian Development Bank (2020) Asia's Journey to Prosperity: Policy, Market, and Technology Over 50 Years. Chapter 7 "Investment, Savings, and Finance. https://www.adb.org/sites/default/files/publication/549191/asias-journey-chapter-7.pdf

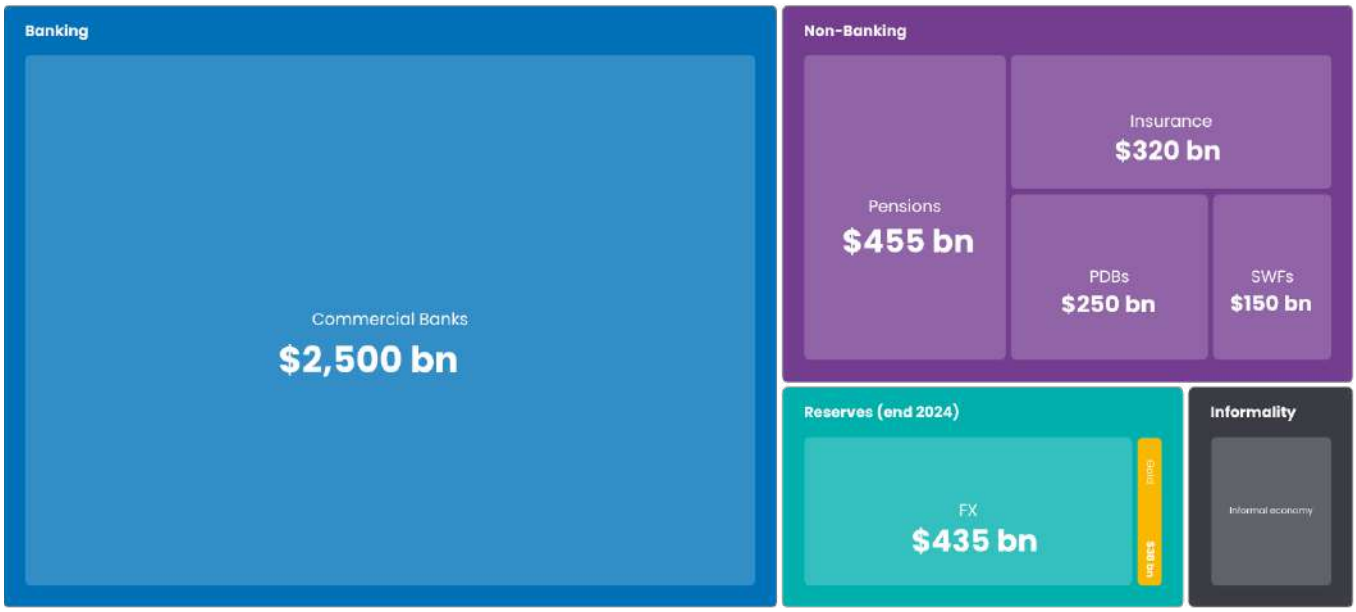
2.

Sizing and Tapping Africa's Domestic Capital Pools

Africa's development must be increasingly financed from within. AFC Research conservatively estimates that domestic institutional capital pools—spanning pensions, insurance, sovereign funds and development banks—exceed $1.1 trillion. This estimate is based on new bottom-up research that locates capital pools by country and asset class and provides data that can be verified. The dataset can be accessed within our Statistical Annexes (Table 1) and will provide the basis for yearly adjustments and updates. Importantly, this capital remains underutilized due to shallow markets, limited instruments, and institutional gaps.

International experience, notably in Asia, shows that high domestic savings and strong financial systems are central to structural transformation. In the African context, pension and insurance funds ($777 billion) and sovereign wealth and development banks ($400 billion) are underexposed to long-term investments while commercial banks remain under-leveraged. Fragmented capital markets and pervasive informality further constrain mobilization.
Unlocking these domestic resources at scale is essential to finance Africa's infrastructure, industrialization, and inclusive growth.

The $4 trillion opportunity[5]



Source(s): AFC Research estimates. Data for commercial banks is collated from Intelligence Africa and includes foreign banks' assets;; data for pensions and insurance is aggregated from a range of national and regional sources (central banks, national/regional regulatory agencies, and industry associations); data for public development banks is sourced from the DFI Database of the Institute of New Structural Economics at Peking University and the French Development Agency; data for external reserves is sourced from the IMF. Size of informality is conversatively assumed by applying a 20% savings rate on 35% of Africa's GDP. Refer to Statistical Annex for country breakdown.

2.1. From Safe Havens to Strategic Assets: Repositioning Pension and Insurance Capital

Africa stands at a demographic inflection point. With the continent's working-age population growing faster than anywhere else globally, there is a critical window to mobilize long-term domestic capital through pension and insurance systems before population ageing begins to set in. This is not only a social imperative—it represents a strategic opportunity to expand the continent's investible capital base and finance its development ambitions from within.

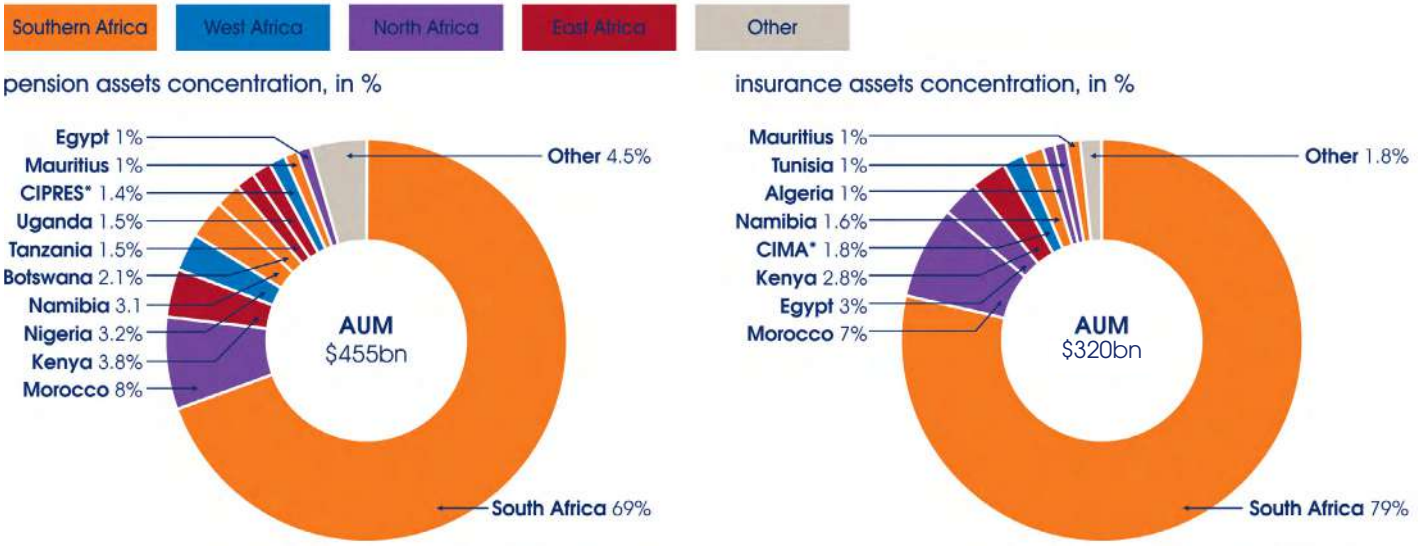
According to AFC Research, Africa's pension funds now manage approximately $455 billion in assets under management (AUM). This estimate draws on the most recent national data from regulators, central banks, and industry associations, and represents one of the

[5]The breakdown of capital pools provided here focuses exclusively on institutional and banking assets, specifically those held by pension funds, insurance companies, sovereign wealth funds, and public development banks for countries where data is available. It does not include other sources commonly referenced in broader continental capital estimates, such as fiscal revenues, high-net-worth individual (HNI) wealth, or estimates of illicit financial flows (IFFs). For a detailed breakdown, please refer to the Statistical Annex in Table 1. .

most comprehensive continental assessments to date. It captures the strong growth of AUM in countries such as Kenya and South Africa—the latter alone accounting for over $315 billion, or 70% of the continent's pension assets. In contrast, Nigeria's AUM has declined in dollar terms due to currency depreciation, despite continued growth in local currency terms. Importantly, these estimates exclude several large economies with limited data availability—including Algeria, Ethiopia, Libya, and Sudan—suggesting the true scale of pension capital is likely even higher.

Figure 3:

African pension and insurance assets are growing but concentrated in a limited number of countries



Source: AFC Research, based on latest year available.

Note: Aggregated data excludes Algeria, Burundi, CAR, Comoros, Djibouti, Eritrea, Ethiopia, The Gambia, Libya, São Tomé and Príncipe, Somalia, South Sudan, and Sudan.

*CIPRES includes Benin, Burkina Faso, Côte d'Ivoire, Congo Rep., D.R. Congo, Gabon, Guinea Bissau, Equatorial Guinea, Madagascar, Mali, Niger, Senegal, Chad and Togo.

Note: Aggregated data excludes Burundi, Cabo Verde, Comoros, D.R. Congo, Djibouti, Eritrea, Eswatini, The Gambia, Guinea, Lesotho, Liberia, Libya, Madagascar, Malawi, Mauritania, Mozambique, Rwanda, São Tomé and Príncipe, Seychelles, Sierra Leone, Somalia, South Sudan, Sudan, Zambia and Zimbabwe.

*CIMA includes Benin, Burkina Faso, Cameroon, CAR, Congo Rep., Côte d'Ivoire, Gabon, Guinea Bissau, Equatorial Guinea, Mali, Niger, Senegal, Chad and Togo.

The insurance sector also holds significant untapped potential. Our research across 28 countries representing over 80% of continental GDP indicates that insurance assets exceed $320 billion, with South Africa alone accounting for nearly $258 billion—around 79% of the total. However, insurance penetration remains extremely low in most markets, both in terms of premium volumes and population coverage. Structural constraints—mirroring those facing the pensions system—have similarly limited the expansion of inclusive insurance markets across Africa. High levels of informality, low financial literacy, limited public trust in formal financial institutions, and the absence of mandatory participation frameworks have all contributed to the sector's narrow reach. Life insurance, which aligns more naturally with long-term investment objectives and is well suited for infrastructure financing, accounts for less than 30% of insurance policies in most African countries. Instead, the industry is predominantly skewed toward non-life segments such as auto, health and industry insurance—largely driven by regulatory mandates and compulsory business lines[6].

Expanding pension coverage and formalizing informal economies are critical to broadening Africa's domestic capital base. Pension participation remains low across most African countries, reflecting limited incomes and the dominance of informal and rural employment. In many sub-Saharan economies, the informal sector accounts for up to 90% of total employment, placing the majority of workers beyond the reach of contributory pension systems. As a result, pension assets remain heavily concentrated among public sector and formal private workers. Yet the untapped potential is substantial. With the informal economy estimated by the IMF at 25–65% of GDP[7] and an average savings-to-GDP ratio of 20%[8] pre-COVID, formalizing even the lower bound could generate over $200 billion in additional formal savings—unlocking a powerful source of long-term domestic investment capital.

[6]8.Beck, T., Maimbo, S. M., Faye, I., & Triki, T. (2011). Financing Africa: Through the crisis and beyond. ank
[7]IMF. (2017). Regional Economic Outlook. Sub-Saharan Africa: Restarting the Growth Engine. See also Informal Economy Database from World Bank/Elgin, C., M. A. Kose, F. Ohnsorge, and S. Yu. (2021). "Understanding Informality", C.E.P.R. Discussion Paper 16497, Centre for Economic Policy Research, London
[8]World Bank. World Development Indicators (average 2010-19).

Kenya's Experience: Expanding Coverage through Innovation

Kenya has made notable strides in integrating informal sector workers into pension systems. With roughly 83% of its workforce operating informally, the government has introduced a suite of targeted micro-pension schemes. The Haba Haba scheme, launched in 2019 by the National Social Security Fund (NSSF), allows self-employed individuals to save flexibly via mobile money platforms such as M-Pesa and WhatsApp. Other initiatives, including the Mbao Pension Plan and the Kenya National Entrepreneurs Savings Trust (KNEST), offer portable, low-cost solutions tailored to micro-entrepreneurs and informal workers. As of late 2023, Kenya's pension assets exceeded KES 2.2 trillion (over $17 billion), positioning it as the third-largest pension market in Africa. This trajectory demonstrates how inclusive frameworks can deepen long-term savings while advancing financial inclusion.

Misaligned Incentives: Conservative Allocations and Sovereign Exposure

Despite the scale and long-term nature of Africa's pension and insurance capital, allocation patterns remain heavily skewed toward low-risk, short-term instruments. Across the continent, institutional portfolios are dominated by government securities, term deposits, and listed equities (Figure 4). These conservative investment behaviors are shaped by a mix of macroeconomic, regulatory, and institutional factors that have collectively limited the contribution of long-term savings to productive sectors such as infrastructure, housing, manufacturing, and climate-resilient development. As a result, Africa's most significant pool of long-term capital continues to operate with a short-term horizon, undermining its potential to contribute to the continent's structural transformation.

Africa's allocation structure significantly weakens the developmental impact of long-term savings and amplifies systemic exposure to sovereign credit risk. Current allocation practices limit participation in real economy sectors—such as infrastructure, manufacturing, and digital services—that are essential for structural transformation and inclusive growth. At the same time, they create excessive concentration in sovereign-related instruments, thereby increasing vulnerability to fiscal and macroeconomic shocks. In many African markets, domestic banks are the principal buyers of government debt, meaning institutional investors—especially pension funds—are effectively linked to sovereign creditworthiness through both their asset allocations and the financial system as a whole. This interdependence compounds systemic risk and constrains the counter-cyclicality of long-term capital during fiscal or external shocks[9].

Moreover, the persistence of this allocation pattern reinforces a feedback loop that diverts scarce long-term capital away from transformative sectors. Without proactive policy and regulatory reforms to expand the investable universe and de-risk private sector instruments, Africa's largest pools of long-duration capital will continue to operate within a short-term, risk-averse framework—undermining their ability to support sustainable development. The drivers of this misalignment include:

- **High-yield macro environments:** Fiscal imbalances leading to elevated domestic interest rates and persistent sovereign risk premia make short-term government securities highly attractive relative to long-duration, riskier alternatives. In many markets, real yields on treasury instruments remain significantly above inflation, incentivizing liquidity over duration.
- **Regulatory rigidity and limited asset classification:** Infrastructure and other long-term assets are often not explicitly recognized within statutory investment guidelines. Only a handful of jurisdictions—most notably Nigeria—classify infrastructure as a distinct asset class. Elsewhere, infrastructure is either subsumed under broader "alternative assets" categories or not captured at all. This regulatory ambiguity constrains asset managers' ability to allocate meaningfully to long-term projects.
- **Institutional capacity gaps:** Many pension and insurance fund managers lack the technical expertise to assess project risk, conduct due diligence, or structure investments in infrastructure and private markets. Without internal capacity or external advisory support, infrastructure is frequently perceived as too complex or illiquid.
- **Shallow capital markets and limited investable pipeline:** In many countries, domestic capital markets are characterized by low liquidity, few investable instruments, and a weak pipeline of bankable infrastructure projects. This limits the supply of suitable long-duration assets and reinforces conservative portfolio behaviors.
- **Public institutional design and implicit mandates:** A significant proportion of pension funds in Africa remain publicly managed or closely aligned with government financial strategies. This institutional design often prioritizes capital preservation, liquidity,

[9]World Bank. (2022). Finance de long terme : rôle de la CIPRES et contribution des Organismes de Prévoyance Sociale au développement des marchés des capitaux. Note Technique

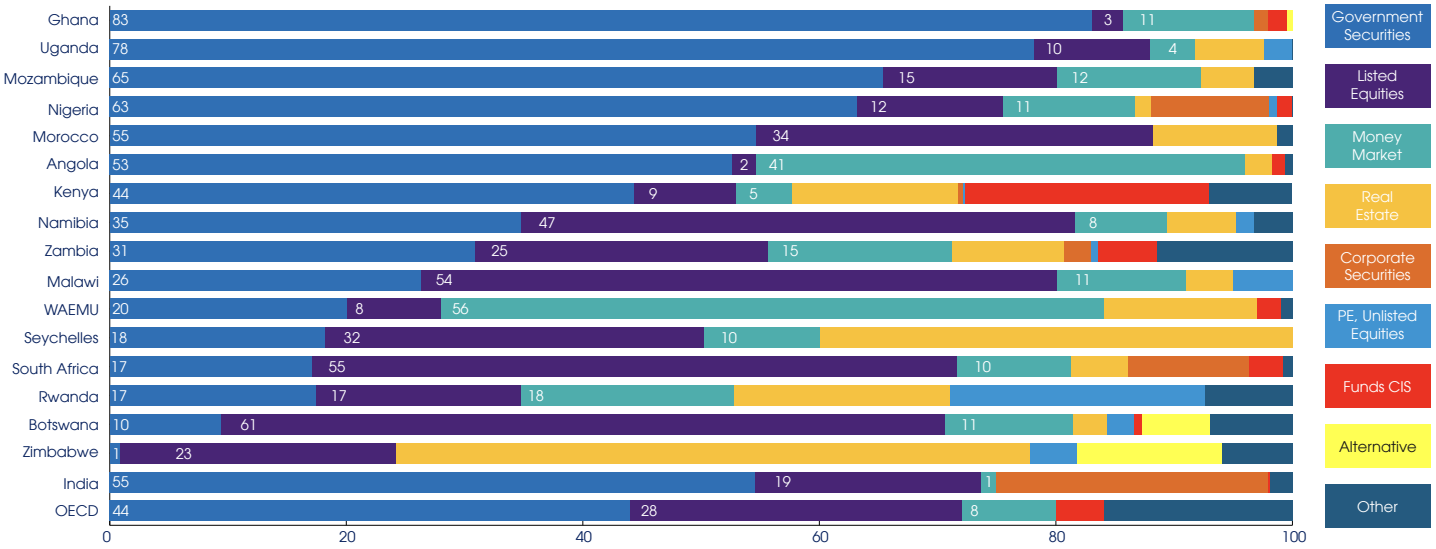
and alignment with public borrowing needs—further reinforcing the bias toward sovereign debt and real estate over diversified private sector investments.

As a result of these structural constraints, Africa's long-term institutional capital continues to operate with a short-term horizon. Without targeted reforms to realign incentives, expand the investable universe, and strengthen asset manager capabilities, the continent risks missing a critical opportunity to leverage its domestic capital base for transformational investment.

Figure 4:

African pension assets are largely allocated to low-risk, short-term instruments

pension assets allocation in % over 2022-24 (latest year available)



Source: AFC Research based on Central Banks and regulatory agencies data; estimates for WAEMU are drawn from the World Bank's Technical Note (May 2022). Long-term Financing: Role of CIPRES and Contribution of Social Security Institutions to the Development of Capital Markets.

Notes:

Ghana: money market instruments include bank securities and cash; Government securities include 2.62% allocated to local government and statutory agency securities

Uganda: money market instruments include cash and demand, fixed deposits and other fixed income

Mozambique: money market instruments are bank deposits only

Nigeria: Gornment securities include 1.1% of state government securities; money market instruments also include cash

Morocco: only a single "fixed income" category is disclosed. It is comprised here as "government securities" with not distinction between sovereign and corporate debt

Angola: money market instruments include mostly term deposits

Kenya: Funds allocations are entirely made to "guaranteed funds"; money market instruments include fixed and time deposits; other investments include offshore investments and other current and fixed assets

Zambia: money market instruments are term deposits only; other investments include mostly offshore investments along with supra-national bonds

Malawi: money market instruments include fixed deposits and cash

WAEMU data from 2020 represents the average for CIPRES members, where money market instruments are largely made of term deposits allocated to CDCs (48%)

Seychelles: listed equities include domestic and emerging market equity

Rwanda: money market instruments are bank deposits

Botswana: most listed equity investments are made offshore or in dual-listed equities; other investments include offshore bonds; money market instruments include pula cash and offshore cash; funds include ETFs

South Africa: data for FSCA-regulated funds only (excl. GEPF). Shares of equities includes 23.5% to foreign equities

India's asset allocations cover PFRDA-regulated funds only (about $160 bn).

Reorienting Pension Capital Toward Productive Investment

Encouragingly, a growing number of African countries have begun implementing concrete measures to redirect pension capital toward the productive sectors of the economy. These reforms are aimed at broadening the investment landscape to support greater private sector participation and more strategic capital allocation to priority sectors such as transport, energy, digital infrastructure, and manufacturing.

Key policy interventions include the expansion of eligible asset classes, the revision of statutory investment limits to reduce overconcentration in government securities, and the raising of ceilings for private sector and alternative investments. In parallel, governments and regulators are supporting the development of new financial instruments and dedicated investment vehicles to channel long-term domestic savings into infrastructure and enterprise finance. Institutions are also investing in capacity-building initiatives to strengthen risk assessment capabilities and implement sound asset-liability management (ALM) frameworks. Collectively, these efforts reflect a growing political commitment to align long-term savings not only with capital preservation and liquidity, but also with sustainable development impact.

Regulatory Innovation: Namibia's Domestic Investment Mandate

Namibia offers a compelling example of how targeted regulation can channel institutional capital into domestic development, even in the context of a relatively shallow financial market. Historically, Namibian pension and insurance funds—despite a high national savings rate—invested a significant share of their assets offshore due to limited local investable opportunities. This changed with the introduction of Regulation 29 by the Namibia Financial Institutions Supervisory Authority (NAMFISA), which mandates that pension and insurance funds allocate at least 1.75% (and up to 3.5%) of their portfolios to newly established, unlisted Namibian companies.

To support implementation, NAMFISA facilitated the creation of an ecosystem of Unlisted Investment Managers (UIMs) and Special Purpose Vehicles (SPVs) that serve as intermediaries for channeling institutional capital into domestic private enterprises. The regulatory framework is accompanied by robust supervisory oversight of both the investment managers and their vehicles. While still in its early stages, the impact has been notable: as of March 2024, Namibia had 31 licensed UIMs and 21 regulated SPVs, with total unlisted assets under management reaching N$4 billion (approximately $215 million), up from N$871 million in 2017. Though challenges remain, Namibia's experience demonstrates how calibrated regulatory mandates—short of outright financial repression—can expand the role of institutional investors in financing domestic development, even in smaller or less mature capital markets.

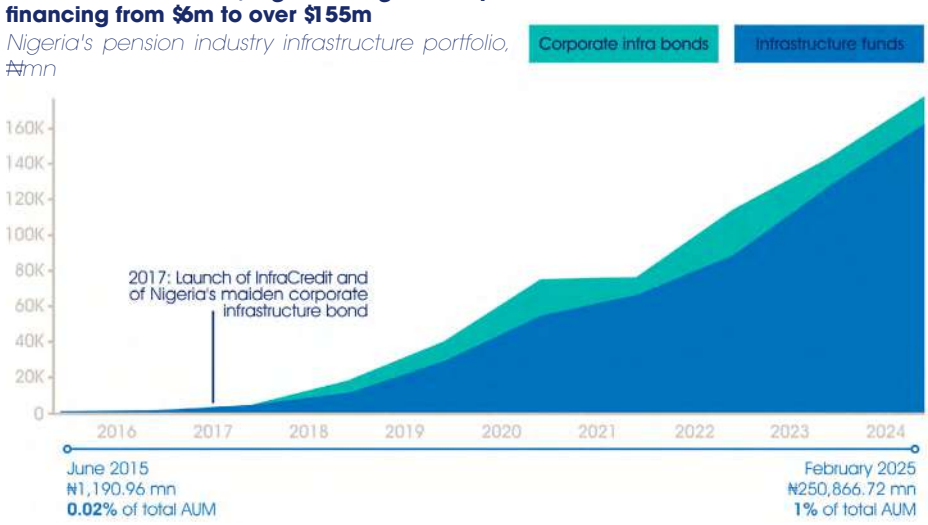
De-risking Through Guarantees: Nigeria's InfraCredit Model

Nigeria provides a complementary model that demonstrates how market-based de-risking mechanisms can mobilize pension capital into infrastructure without imposing direct allocation mandates. As of early 2025, Nigeria's pension assets under management exceeded N22.8 trillion (approximately US$14.2 billion), making it one of the largest institutional capital pools on the continent. However, the effective deployment of this capital in long-term infrastructure had been constrained by credit and liquidity risks.

To address these barriers, Nigeria established InfraCredit in 2017—a public-private guarantee institution created with support from the Nigeria Sovereign Investment Authority (NSIA), GuarantCo, Africa Finance Corporation (AFC), and other partners. InfraCredit provides local currency guarantees for corporate infrastructure bonds, enabling them to reach investment-grade ratings required by pension funds under existing regulatory frameworks.

Since its inception, InfraCredit has catalysed local currency bond issuances for a range of infrastructure projects, including renewable energy, gas distribution, logistics, and industrial development. By enhancing creditworthiness and reducing perceived risk, InfraCredit has effectively bridged the gap between long-term domestic capital and infrastructure financing in a frontier market context. As a result, Nigerian pension fund allocations to infrastructure have grown from N1.2 billion (0.02% of total AUM) to over N242 billion (1% of total AUM)—equivalent to some $155m (Figure 5)—demonstrating the catalytic potential of targeted credit enhancement.

Figure 5:
In less than a decade, Nigeria has grown its pension funds allocation to infrastructure financing from $6m to over $155m
Nigeria's pension industry infrastructure portfolio, ₦mn



Source: PenCom

2.2. From Reserves to Results: Unlocking the Development Mandate of Public Capital Institutions

Public capital institutions, including public development banks (PDBs) and sovereign wealth funds (SWFs)—constitute a critical, though underutilized, pillar of Africa's financing architecture. Collectively managing some $400 billion in assets, these institutions have the potential to provide long-term, patient capital aligned with national development goals. However, the landscape remains highly fragmented, with inconsistent governance standards, varying levels of operational maturity, and in many cases, mandates that are either unclear or outdated. Strengthening the strategic role of public capital institutions through clearer mandates, stronger governance, and enhanced coordination could unlock a powerful and catalytic source of development finance.

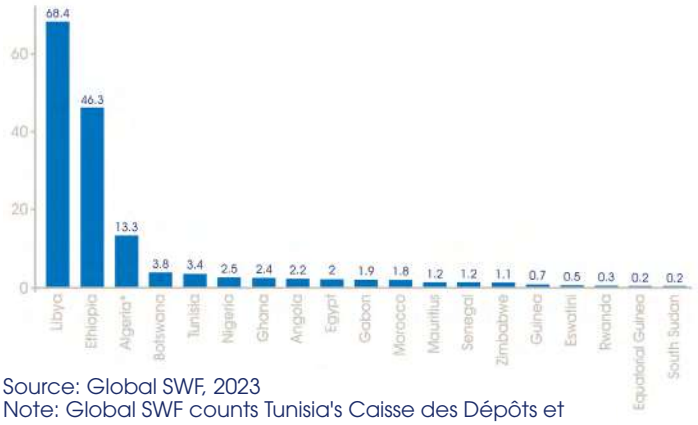
Repositioning Sovereign Wealth Funds for Structural Transformation

Africa's sovereign wealth funds manage more than $150 billion in assets[10]—modest by global standards but increasingly relevant in the context of constrained public finances and growing development needs. According to Global SWF, the continent is now home to 39 SWFs, with the highest asset concentration in North Africa and Ethiopia, followed by medium-sized funds in Botswana, Nigeria, Angola, and Ghana.

Modernizing fund mandates—particularly for the older generation of SWFs—will be key to unlocking the full development potential of these institutions. While many African SWFs were originally established for macroeconomic stabilization or intergenerational savings, there is growing momentum toward positioning them as active strategic investors. Most legacy funds remain conservatively managed, with external portfolios heavily weighted toward low-risk foreign assets and limited visibility in the domestic economy. In contrast, a new generation of SWFs—including those in Ethiopia, Egypt, and Cape Verde—have been explicitly designed as instruments of national development. These newer vehicles feature mandates that support domestic infrastructure, industrialization, and climate adaptation, while also crowding in private and foreign capital.

[10] UNCTAD. (2025). Leveraging the Potential of Sovereign Investors for Infrastructure Investment in Africa. Technical and statistical report; Global SWF data

Figure 6:
African sovereign wealth funds manage over $150 bn of assets
assets under management in 2023, US$ bn



Source: Global SWF, 2023
Note: Global SWF counts Tunisia's Caisse des Dépôts et Consignations (CDC) in its sovereign wealth fund category.
*Algeria's sovereign wealth fund was depleted in 2015

Between 2012 and 2024, an estimated 56% of all SWF investments in Africa originated from foreign sovereign investors—led by funds from the UAE, Qatar, and Oman (Table 1). These investments have been concentrated in infrastructure, logistics, and energy. Countries such as Morocco and Egypt have successfully attracted such capital through the creation of state-owned investment platforms that serve as credible co-investors, capable of de-risking projects and aligning external capital with national development priorities.

Sub-Saharan Africa can leverage similar strategies. The Qatar Investment Authority's recent investment in Rwanda illustrates that even smaller economies can mobilize foreign sovereign capital when supported by strong governance, investable pipelines, and transparent institutional frameworks. The priority now is to scale credible investment vehicles, strengthen risk absorption capacity, and align domestic and foreign sovereign capital with Africa's broader development ambitions.

Table 1:
Cumulative investments in North Africa and SSA in $bn and number of deals, by origin of funds, 2012-2024*
in $bn and number of deals

	North Africa		SSA		Total	
Type	Number	Value	Number	Value	Number	Value
Domestic	14	2.4	92	24.5	106	26.9
Intra-regional	1	0.1	9	0.6	10	0.6
Foreign**	33	23	32	12.4	65	35.4
Total	48	25.5	133	37.5	181	62.9

Source: UNCTAD, based on Global SWF and information from The Financial Times, fDi Markets.com) and Refinitiv.
*until October 2024 only
**Most foreign sovereign investors in Africa come from the Middle East (Oman, Qatar, and UAE) and most of the deals are in infrastructure and energy. The creation of state-owned vehicles in Morocco and, recently, in Egypt, has been the catalyst for foreign Middle East investors to commit large sums of capital to these countries.

Scaling the Impact of Public Development Banks

Alongside SWFs, Africa is home to over 100 public development banks (PDBs), with combined assets of approximately $250 billion[11] as of 2023. However, the sector is characterized by high concentration: just six institutions—the African Development Bank, Caisse de Dépôt et de Gestion (Morocco), Afreximbank, BADR-Algeria, Credit Agricole of Morocco, the Africa Finance Corporation, and the Trade and Development Bank (TDB)—account for 70% of total PDB assets on the continent.

Although African PDBs represent nearly 20% of the world's development banks by number, they hold just 1.9% of global PDB assets[12], reflecting their relatively small scale. Many institutions operate with limited capitalization and narrow mandates, constraining their ability to undertake transformative investments or play a significant counter-cyclical role during shocks. In an environment of tightening fiscal space, better capitalized and more strategically aligned PDBs can serve as vital instruments for mobilizing finance into infrastructure, climate adaptation, and industrial value chains.

Revitalizing Africa's public capital institutions is not only a matter of unlocking domestic resources, it is essential for crowding in private finance, blending concessional resources, and anchoring long-term investment strategies. The next phase of Africa's economic transformation will depend in part on how effectively these institutions evolve to meet that challenge.

[11]Xu, Jiajun, Régis Marodon, Xinshun Ru, Xiaomeng Ren, and Xinyue Wu. 2021. "What are Public Development Banks and Development Financing Institutions?——Qualification Criteria, Stylized Facts and Development Trends."China Economic Quarterly International, volume 1, issue 4: 271-294. DOI: https://doi.org/10.1016/j.ceqi.2021.10.001
[12]Public Development Bank: A Reference Book, Agence Française de Développement (AFD) and the Finance in Common Secretariat (FiCS).
Complimented by, and updated with, Intelligence Africa data where relevant.

Box 1: The Rise of Caisses de Dépôts in the CFA Franc Zone—Translating Political Commitment into Productive Domestic Investment

Across the CFA Franc zone, Caisses de Dépôts (CDCs) are emerging as specialized public institutions designed to channel regulated domestic savings into long-term, public-interest investments. These institutions are not deposit-taking in the conventional banking sense. Instead, they serve as intermediaries—consolidating liquidity held across various parts of the financial system and redeploying it toward national development priorities.

What sets CDCs apart is the diversity and structure of their funding base, which typically includes:

- Regulated savings accounts (with interest rates, tax treatment, and withdrawal conditions defined by public authorities);
- Social security contributions from public agencies—such as pension funds, health insurance schemes, and other statutory social protection entities;
- Deposits from regulated professions (e.g., notaries, lawyers);
- Surplus funds from public entities and government-affiliated institutions.

Unlike commercial banks, CDCs do not generally mobilize savings directly from individuals. Instead, they centralize and manage pools of liquidity already accumulated elsewhere—typically in commercial banks or specialized financial institutions. In this way, CDCs operate as long-term public investors, bridging the gap between available domestic capital and investment needs in infrastructure, housing, and underserved sectors. Their structure often earns them classification as de facto public development banks (PDBs), although their mandate and business models are institutionally distinct.

While the CDC model draws inspiration from France's Caisse des Dépôts et Consignations, its adoption in Africa is more recent and evolving. The earliest CDCs were established in Morocco (1959) and Senegal (2006), but the past decade has seen a notable acceleration in their proliferation. New CDCs have been launched in Gabon, Mauritania, and Tunisia during the 2010s, followed by Niger (2017), Benin (2018/2021), Côte d'Ivoire (2019), Burkina Faso (2018/2023), Cameroon (2023), Mali (2024), and the Republic of Congo (2024). Within both the WAEMU and CEMAC regions, most member states have now either established a CDC or are in the process of doing so.

Comprehensive financial data remains limited, but the DFI Database maintained by Peking University and the French Development Agency reports combined assets of over $42 billion across five CDCs in Morocco, Tunisia, Benin, Gabon, and Mauritania—with Morocco's CDG alone accounting for 85% of that total.

CDCs are typically characterized by:

- Strong equity buffers, which enhance their risk-bearing capacity;
- Long-duration liabilities, allowing them to invest in illiquid or high-impact sectors;
- Independence from short-term political and financial cycles, positioning them as stable, countercyclical investors.

These features enable CDCs to fill a critical institutional gap in the financial ecosystem—deploying long-term capital into sectors that are underserved by commercial finance, such as infrastructure, social housing, energy, SME finance, and increasingly, digital and territorial development. For example, Gabon's CDC allocates 40% of its portfolio to infrastructure, energy, and housing, while Senegal's CDC actively co-finances housing, transport, and renewable energy projects.

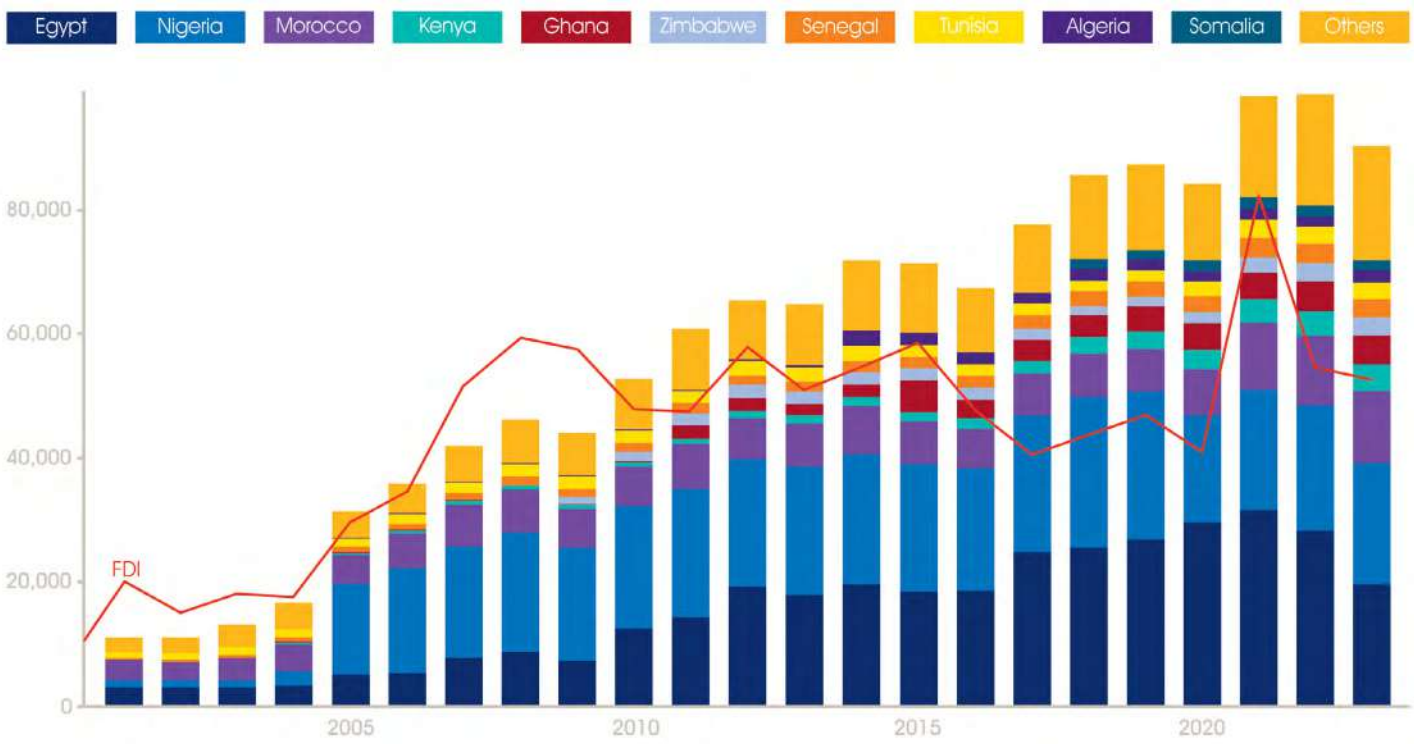
Although many African CDCs are still in the early stages of operational and financial scale-up, they represent a promising vehicle for anchoring national development strategies. By consolidating fragmented savings, absorbing early-stage risk, and aligning capital with long-term investment priorities, CDCs can play a catalytic role in advancing structural transformation—especially in environments where capital markets remain shallow and access to long-term finance is constrained.

2.3. Diaspora Engagement for Investment: Building on Established Financial Links

Decades of financial and macroeconomic instability have driven significant outflows of both capital and labour from Africa, contributing to a fragmentation of domestic investment potential. According to estimates by Ndikumana and Boyce, over $420 billion in capital flight occurred from 40 Sub-Saharan African countries between 1970 and 2004. Much of this outflow took place through informal or opaque channels, contributing to a long-standing disconnection between African financial systems and wealth held abroad. In recent years, however, growing remittance inflows have provided a more transparent, legitimate, and increasingly structured channel through which Africa can begin to reconnect with offshore African wealth. At their core, remittances are more than just household transfers—they represent an opportunity to anchor diaspora engagement within broader national development strategies.

In 2024, Africa received over $95 billion in remittances from its global diaspora—an amount roughly equivalent to total FDI inflows to the continent that year. The largest recipients were Egypt, Nigeria, and Morocco, followed by a growing number of mid-sized economies with substantial emigrant populations. Remittances have proven to be a stable and resilient source of external finance, often outperforming portfolio flows and official development assistance in terms of consistency. Indeed, with the exception of 2024, remittances have exceeded FDI flows to Africa in each of the past several years.

Figure 7:
Remittance flows into Africa have become a stable source external finance, more resilient than FDIs or aid
Remittance flows, $ mn



Source: World bank-KNOMAD, UNCTAD

While remittances are primarily directed toward household consumption and social obligations, they reveal the presence of trusted financial channels that could be leveraged for more structured investments—particularly through instruments such as diaspora bonds. The potential of these flows has long been recognized. As early as 2012, African governments endorsed the establishment of an African Diaspora Investment Fund, a pan-African diaspora database, and an African Institute for Remittances. While progress on these initiatives has been uneven, the foundations for engagement remain relevant.

Several African countries have experimented with diaspora bonds, with mixed results. Ethiopia's 2011 bond for the Grand Renaissance Dam, Kenya's early diaspora bond initiative, and Egypt's Suez Canal certificates struggled to gain traction, largely due to weak investor confidence, unclear regulatory frameworks, and insufficient legal protections. In contrast, Nigeria's $300 million diaspora bond in 2017—equivalent to 1.4% of the country's remittances that year—was fully subscribed. The issuance benefited from clearly defined terms, credible oversight, and competitive yields, demonstrating that with the right design, African governments can mobilize meaningful volumes of long-term diaspora capital.

Four Foundations for Mobilizing Diaspora Investment

These experiences highlight the central conditions required to unlock the full investment potential of remittance-linked capital:

- **Build investor trust.** Governance, repayment reliability, and legal protections are essential. Instruments must offer transparent terms, enforceable rights, and a strong track record to reassure diaspora investors—particularly those with prior exposure to sovereign risk.
- **Mitigate macroeconomic risks.** Exchange rate volatility, inflation, and capital controls erode investor appetite. Issuing diaspora instruments in foreign currency, indexing them to inflation, or offering globally competitive returns can help address these concerns.
- **Clarify purpose and impact.** Diaspora investors respond more positively to instruments linked to specific, visible, and nationally relevant projects—such as infrastructure, renewable energy, or healthcare—than to general-purpose fundraising. Tangible outcomes and transparent reporting enhance engagement.
- **Tailor products and outreach.** Africa's diaspora is highly diverse, spanning income levels, regions, and professional sectors. Product design should reflect this diversity, offering low-denomination patriotic bonds for retail savers and larger, yield-driven notes for institutional or high-net-worth diaspora investors.

3.

Building the African Financial Architecture to Mobilize and Deploy African Capital

One of the central lessons from Asia's economic transformation is that a resilient, self-financed development model depends on the deliberate construction of domestic financial infrastructure. This begins with strong, well-capitalized banking systems that are aligned with national development priorities and capable of intermediating long-term credit. Over time, these bank-based systems must be complemented by deep and integrated capital markets—both domestic and regional—to expand the investible resource base and catalyze private sector participation at scale. For Africa, the imperative is clear: accelerating the formalization of economies, building larger and more development-oriented financial institutions, and deepening capital markets to ensure that growing domestic savings are effectively channeled into productive investment.

Addressing Informality: The Missing Link in Financial Mobilization

Structural informality remains one of the most significant barriers to Africa's ability to mobilize and intermediate domestic capital. Across much of the continent, a substantial share of the labor force operates outside formal employment structures, without access to pensions, insurance, formal banking, or structured savings mechanisms. In several countries, the informal sector accounts for 80–90% of total employment and contributes over 40% of GDP, yet its contribution to long-term national savings remains negligible.

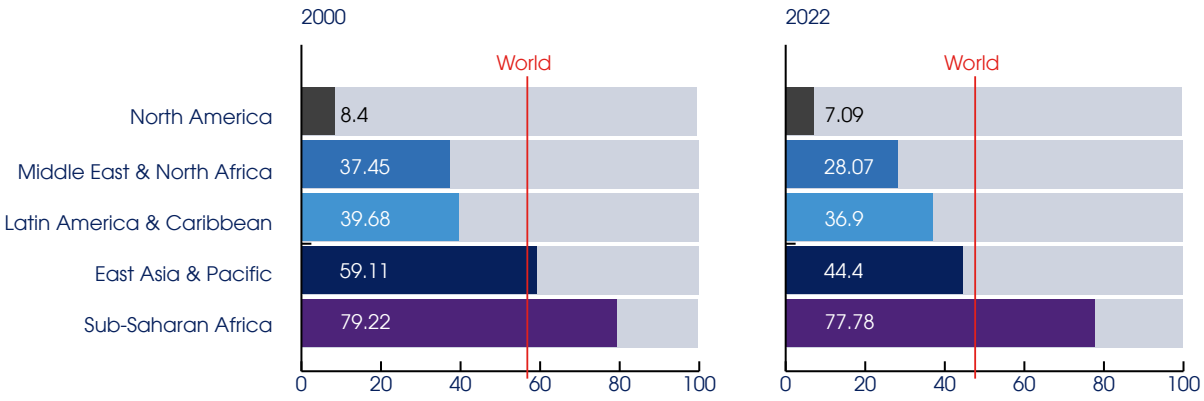
This pervasive informality weakens both fiscal capacity—through foregone tax revenues—and financial intermediation, by excluding millions of potential savers and borrowers from formal financial systems. As a result, significant volumes of capital remain trapped in low-productivity, unrecorded activities, limiting the ability of governments and financial institutions to mobilize, aggregate, and redeploy domestic resources toward developmental priorities.

Overcoming this challenge will require integrated policy responses, including:

- Labor market formalization strategies, supported by regulatory reform, social protection mechanisms, and incentives for small businesses to enter the formal economy;
- Financial inclusion initiatives, leveraging digital platforms and mobile money to provide informal workers with access to formal savings and credit products;
- Targeted fiscal instruments, such as simplified tax regimes and voluntary contribution schemes, to expand the reach of pension and insurance systems among informal workers.

Formalization is not merely an administrative goal—it is foundational to expanding the capital base available for long-term development finance.

Figure 8:
Informality represents about 40% of Africa GDP and over 80% of employment, thereby preventing domestic resources mobilization
self-employed, % of total employment



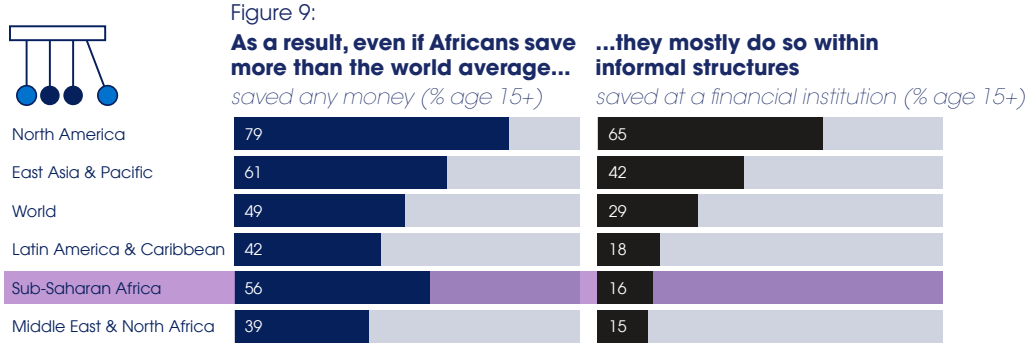
Source: World Bank, ILO

Survey data suggests that Africans save as much—or even more—than the global average[13]. However, the vast majority of these savings are held outside formal financial institutions (Figure 9). Across the continent, household savings are dominated by non-financial and informal assets, including livestock, trading stock, and grain. Meanwhile, financial savings are often channeled into informal institutions such as rotating savings and credit associations (ROSCAs), limiting their capacity to be intermediated into long-term investment or support structural economic transformation.

This disconnect between Africa's saving behavior and financial intermediation presents a major constraint to capital mobilization. Non-financial savings, while critical for household resilience, are typically illiquid, poorly diversified, and outside the reach of national investment systems. Consequently, despite high savings potential, much of Africa's capital remains underutilized for broader development purposes.

Encouragingly, the rapid expansion of mobile money platforms has begun to shift this landscape. With nearly half of the world's mobile money accounts located in Africa, digital financial services are expanding beyond payments to offer savings, credit, and insurance products—thereby strengthening financial inclusion. According to GSMA's State of the Industry Report on Mobile Money 2025, savings has become the second most commonly offered adjacent service after payments. Between 2023 and 2024, the number of mobile money users saving via these platforms grew by over 20 percentage points in countries such as Ethiopia and Nigeria. In Kenya for instance, over 45% of users reported using mobile money to save, underscoring the platform's growing role in formalizing savings and bridging the gap between financial activity and investment mobilization.

Figure 9:



Source: Global Findex Database 2021, World Bank

Digital Public Infrastructure (DPI): A Foundational Lever for Formalization

Digital public infrastructure (DPI) represents one of the most powerful tools available to formalize African economies and expand the domestic resource base. DPI encompasses foundational digital systems—including digital identification, interoperable payment platforms, and data-sharing frameworks—that enable secure, inclusive access to public services and formal financial channels (see Section 5: Digital Infrastructure). When effectively deployed, DPI has proven especially effective in reaching vulnerable and excluded populations, particularly when integrated into Government-to-Person (G2P) payment systems and social protection programs.

By linking government (social) transfers to formal financial accounts, DPI provides an immediate and tangible incentive for individuals to engage with the formal financial system. According to the World Bank's Global Findex 2021, 865 million adults globally opened their first bank or mobile money account specifically to receive government transfers—underscoring the potential of digital systems to drive inclusion at scale.

For Africa, investing in DPI is not simply a matter of improving service delivery—it is a foundational step toward building more inclusive, transparent, and financially integrated economies. DPI enables individuals and businesses to participate in formal savings, credit, and insurance systems; supports the digitization of small-scale and informal trade; and enhances governments' ability to mobilize domestic revenues, track economic activity, and allocate public resources with greater transparency and efficiency.

In the context of persistent informality and low financial intermediation, DPI should be recognized not just as a tool for administrative efficiency but as a critical platform for institutional trust-building, fiscal expansion, and financial deepening. Research consistently[14] shows that the quality and credibility of institutions strongly influence formal saving behaviors. This alone should serve as a compelling call to action: recognizing DPI as essential to Africa's evolving financial architecture can help to unlock the continent's vast untapped savings potential.

[13]Global Findex Database, World Bank
[14]Elliot Boateng, Frank W. Agbola & Amir Mahmood (2019): Does the quality of institutions enhance savings? The case of Sub-Saharan Africa, Applied Economics.

4.

Bridging Africa's Intermediation Gap: Building Deeper Banking Systems and Capital Markets

To fully mobilize and deploy its growing pools of domestic capital, Africa must build the financial infrastructure necessary to transform informal, household, corporate, and public savings into long-term productive investment. This requires both strengthening development-oriented banking systems and deepening domestic and regional capital markets. Without these foundational elements, Africa's savings will continue to accumulate in low-yield, low-impact instruments—failing to support the continent's structural transformation.

Strengthening the Role of Banks in Intermediation

African banking systems must evolve to meet the continent's long-term development financing needs. One of the defining features of East and Southeast Asia's economic take-off was the strategic use of well-capitalized, development-aligned banks to direct domestic capital into infrastructure, housing, and industrial sectors. In Africa, financial inclusion and deposit mobilization are growing, but the mechanisms for intermediation remain weak.

Recent analysis from the World Bank's Global Findex and financial sector data reveal that African banks are relatively well-capitalized and highly liquid but underperform in channeling funds to the real economy. Non-interest income accounts for 24.9% of total income for the median African bank, compared with 13.9% for the median non-African developing country bank[15]—a reflection of limited credit activity and high reliance on fees and commissions.

Although African financial systems have deepened over the past two decades, progress on intermediation has lagged. Between 2005 and 2022, the median African low-income country doubled its bank deposits-to-GDP ratio from 12.3% to 24.8%. However, private credit to GDP increased only modestly—from 9% to 16%, in stark contrast to non-African developing countries, where it rose from 28% to 45% over the same period[16].

This persistent intermediation gap is reflected in low loan-to-deposit ratios, which average 74% in Africa, compared to 109% in non-African developing economies. Instead of directing liquidity toward private sector credit, many African banks allocate a disproportionate share of assets to government securities, foreign assets, or excess reserves—constraining their development impact.

Recent research shows that while African banks are more profitable, liquid, and better capitalized (in equity-asset terms) than their global peers, their asset base is significantly smaller. The median African bank holds assets of approximately $455 million, compared to $1.2 billion for the median non-African bank[17]. According to AFC estimates based on Intelligence Africa data, total assets of commercial banks across Africa stand at almost $2.5 trillion—equivalent to roughly $1,585 per capita. By comparison, Chinese banks hold over $60 trillion in assets, or over $42,800 per capita, underscoring the scale of Africa's financial infrastructure gap.

Policy Priorities to Deepen Banking Systems

To bridge this intermediation gap and transform African banking systems into engines of structural transformation, several policy priorities stand out:

- **Recapitalization and consolidation.** Raising minimum capital thresholds and encouraging consolidation, particularly in smaller or fragmented markets, can improve banks' capacity to underwrite long-term investments and strengthen systemic resilience.
- **Incentivizing long-term, productive lending.** Policymakers can introduce incentives and guidance frameworks that prioritize credit to strategic sectors, as successfully implemented in many Asian economies during their industrialization phases.
- **Leveraging financial system diversification.** Sovereign wealth funds, development finance institutions, and credit guarantee schemes can co-invest and co-lend alongside banks, absorbing early-stage risks and attracting additional private capital into infrastructure, energy, and manufacturing.

[15]World Bank (December 2023), Banking in Africa: Opportunities and Challenges in Volatile Time. Policy Research Working Paper 10632
[16]idem
[17]idem

Capital Market Deepening for Long-Term Finance

Beyond banking, capital markets must play a central role in diversifying Africa's sources of long-term finance and expanding the investable pipeline for domestic and institutional investors. More than half of African countries now have a stock exchange—the most recent being Ethiopia, which launched its exchange in January 2025—but most remain constrained by limited liquidity, shallow banking systems, and low domestic savings mobilization.

Even relatively active exchanges struggle with scale and fragmentation. In this context, regional integration offers a powerful opportunity to pool resources, harmonize rules, and attract greater investor interest. Africa already hosts two functioning regional exchanges—the Bourse Régionale des Valeurs Mobilières (BRVM) in West Africa and Bourse des Valeurs Mobilières de l'Afrique Centrale (BVMAC) in Central Africa—that demonstrate the potential for cross-border capital market development.

Regionalizing Africa's Capital Markets

Regional cooperation is essential to unlocking scale, improving liquidity, and enhancing investor confidence. Key priorities include:

Harmonizing regulations, disclosure standards, and tax regimes across jurisdictions to enable seamless cross-border transactions;
Standardizing trading platforms and clearing systems to support cross-listings and facilitate investment flows;
Creating regional fund passporting frameworks to allow pooled savings and institutional capital to circulate across borders.

Global precedents reinforce this approach. In Southeast Asia, the ASEAN Capital Markets Forum (ACMF) has advanced regional integration through regulatory convergence and collective investment schemes. In Europe, Euronext has successfully unified multiple national exchanges under a single governance and trading framework.

Africa's own African Exchanges Linkage Project (AELP), led by the African Securities Exchanges Association (ASEA), provides a promising foundation. However, real progress will require sustained political will, deepened coordination across monetary and regulatory authorities, and a shared vision for capital market integration that serves Africa's long-term development goals.

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In the current regional and global context, the mobilization of domestic resources is no longer merely a financing option—it is a strategic imperative for African sovereignty, economic resilience, and long-term prosperity. Strengthening domestic capital mobilization enables African countries to reduce dependence on volatile external flows, assert greater ownership over their development agendas, and finance growth on terms aligned with national priorities.

The time has come for African governments, investors, and institutions to build financial systems that reflect the scale and ambition of the continent's development goals—deep, inclusive, and capable of driving transformation from within. Crucially, domestic capital mobilization is also the foundation for closing Africa's vast infrastructure gaps across energy, transport, manufacturing, and digital sectors. These are the systems that will unlock the next phase of industrialization, enhance competitiveness, and deliver inclusive, broad-based growth.

Transport & Logistics

Scaling Up Infrastructure for Economic Integration

- **Africa's ports are undergoing a historic wave of investment**, driven by surging trade volumes, the arrival of larger vessels, and diversified investor interest. New capacity additions in Egypt, Ghana, and Senegal signal growing demand for high-performance maritime and transshipment hubs—underscoring the opportunity for strategic port and inland logistics investment.

- **Operational efficiency and hinterland connectivity are critical to unlocking value.** Maximizing returns on port investments requires coordinated upgrades across customs systems, dry ports, and multimodal corridors. Without efficient hinterland access, new capacity risks underutilization and supply chain bottlenecks.

- **Railway development is regaining momentum, with evolving investment models.** Strategic rail corridors across East, West, and North Africa are advancing with support from both public and private capital. New frameworks—including multi-user concessions and access charge models—are creating opportunities for logistics-focused rail investments with cross-border impact.

- **Road infrastructure remains a high-need, high-impact investment area**—especially in landlocked and secondary markets. Updated data reveal sharp disparities in road quality and density, with limited private participation outside of mining corridors. Policy reforms, including viable PPP frameworks and corridor-based tolling models, are needed to attract investment in road rehabilitation and rural connectivity.

- **Airports and air cargo infrastructure are underutilized assets with untapped trade potential.** Targeted investment in cargo handling, cold storage, and multimodal linkages can enhance Africa's competitiveness in agri-exports, e-commerce, and time-sensitive manufacturing. Stronger regional aviation connectivity and regulatory harmonisation are prerequisites for growth.

- **Inland logistics assets are emerging as efficiency drivers and investment multipliers.** Dry ports, inland container depots, and one-stop border posts are beginning to reduce congestion and improve throughput. East and Southern Africa are showing early success, while West and Central Africa offer a early-mover opportunity for infrastructure investors.

Upgrading Africa's transport and logistics infrastructure is essential to unlocking industrialisation, supporting rapid urbanization, and advancing the continent's ambitious intra-African trade goals. Delivering on these objectives will require a modern, integrated, and climate-resilient network spanning roads, railways, ports, airports, and critical logistics assets such as dry ports, container depots, and border facilities.

The previous edition of this report underscored the sheer scale of Africa's infrastructure gap and investment opportunity. It demonstrated that while Africa's port infrastructure has captured significant investor interest, the broader logistics value chain – including roads, railways and air cargo – remains underdeveloped, inefficient, and disconnected.

Yet, the challenge has evolved: catching up is no longer sufficient. By 2050, Africa's population could grow by an additional one billion people—placing extraordinary strain on already stretched infrastructure and underscoring the urgency of a fundamental transformation in how goods and people move across the continent. Future-ready infrastructure must not only expand in scale but also build in climate resilience and operational efficiency.

In this edition, we extend our previous analysis by examining the sector's evolution over the past year. We assess where integration is beginning to take hold and identify the models and corridors showing early signs of success. The chapter explores opportunities to re-balance investment across the value chain—from rail revitalisation to regional air cargo—and highlights the policy and financing shifts needed to unlock private sector capital at scale. The goal remains clear: to enable Africa's infrastructure to serve as a catalyst for industrialisation and integration, not just extraction.

1.

Ports: Entering a New Phase of Investment, Volume Growth and Strategic Connectivity

Africa's port sector is undergoing a structural transformation characterized by the emergence of a third wave of port privatization. This new phase reflects evolving post-COVID-19 geopolitical and economic conditions. Three key drivers stand out:

- Tight fiscal conditions and high debt burdens have compelled governments to accelerate private sector participation. Even traditionally cautious countries such as South Africa, Tanzania and Kenya are opening their ports to private operators. As of 2025, Guinea-Bissau, Kenya and Tunisia remain the only countries on the continental mainland without formal port concessions.
- Geopolitical realignment and a desire for investment diversification have encouraged the entry of non-traditional partners from emerging markets. Following the Philippines' International Container Terminal Services, Inc (ICTSI), the world's largest, independent terminal operator, new investors from Turkey, the United Arab Emirates, and Morocco are establishing a strong presence.
- Rising container volumes, growing domestic consumption, and the deployment of larger vessels are straining existing capacity, prompting both public and private actors to invest in port modernization and associated hinterland infrastructure to improve port connectivity. Port investors are increasingly recognizing the need to engage beyond the terminal gates to remain competitive.

The African Ports Race: Continued Momentum, Diversified Investment

Until now, Africa's port privatization journey has progressed through two investment cycles. The first, beginning in the 1980s, introduced early entrants such as Bolloré. A second wave followed the 2008 global financial crisis, marked by expanded global corporate participation and increased consolidation among shipping lines and port operators. This led to widespread terminal concessions involving European and Chinese firms such as Bolloré (now AGL), TIL (MSC), APM (Maersk), Hutchison Ports, China Merchants Group, and CHEC[1]. Combined, these investment cycles of the past decade led to a robust "ports race", described in the 2024 AFC State of Africa's Infrastructure Report.

New capacity additions since 2020 reflect the emergence of a third wave of port privatization. This new and third phase is distinguished by a diversification of investment partners, deeper private sector involvement, and a growing emphasis on addressing inland logistics bottlenecks that constrain trade and growth. With 16 landlocked countries, efficient hinterland connectivity remains critical for Africa's economic integration, and the urgency to improve it is rising alongside population growth and increasing port traffic.

Traditional and new investment partners are deepening their footprint. In 2023–24, Abu Dhabi Ports, Marsa Maroc and Turkey's Albayrak Group showed growing appetite to expand operations across the continent, joining more traditional investors in the signing of new ports deals. The period saw new concessions signed at Luanda (AD Ports), Banjul (Albayrak), Walvis Bay (AGL), Lobito (AGL), Dar es Salaam (DP World), Pointe-Noire (AD Ports), Safaga (AD Ports), Malabo and Bata (Albayrak), and the planned Sanyang port (Albayrak). Additional agreements extended the Port of Maputo concession to 2058[2] and created a joint venture between CMA CGM and Marsa Maroc for the Nador West Med terminal in Morocco.

[1]Lamarque, Hugh and Nugent, Paul. (2022). Transport Corridors in Africa. Woodbridge.
[2]The Maputo Port Development Company includes a partnership between state-owned CFM (49%) and the Portus Indico (51%) consortium made of South Africa's Grindrod, DP World and Mozambique Gestores

To handle record volumes, African ports must become more efficient and improve hinterland connectivity

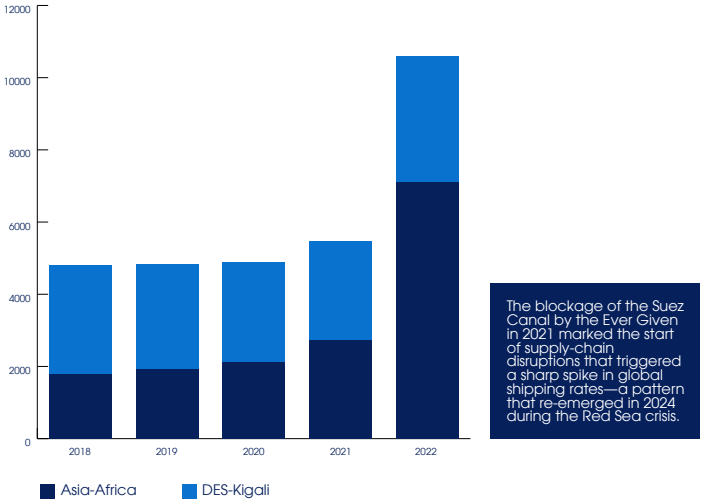
More frequent port calls made by larger vessels are intensifying pressure on ports to adopt modern cargo-handling processes, technologies and equipment, digitized logistics and efficient intermodal systems. Recent data shows record growth in cargo volumes across Africa's ports, putting further pressure towards efficiency. In 2023, notable milestones included:

- Dar es Salaam surpassing 20 million tonnes;
- Abidjan, Lomé, and Maputo exceeding 30 million tonnes each;
- Mombasa crossing 40 million tonnes, bolstered by disruptions in Red Sea shipping routes (see *Box 2*);
- Maputo consolidating its role as a logistics hub for South Africa - with South African transit traffic growing by 10 million tonnes over two years[3];
- Traffic growth across export-oriented ports such as San Pedro in Côte d'Ivoire (cocoa and minerals), Nacala-a-Velha in Mozambique (coal), Nouadhibou in Mauritania (iron ore), Lüderitz in Namibia (manganese), and multiple bauxite ports in Guinea (Kamsar, Taressa, Dapilon, Katougouma).

To handle growing traffic and stay competitive, efficiency must become a priority. Congestion at ports and on inland corridors remain the major drivers of dwell times that increase the price of moving goods before the cargo even gets on the road. According to the World Bank and S&P Global's 2023 Container Port Performance Index, most African ports rank poorly due to high dwell times and poor connectivity with the hinterland – typically due to a lack of multimodality and lack of warehousing/ storage infrastructure. Only Tanger Med in Morocco (4th globally) and Port Said in Egypt (16th) stand out as exceptions. Ports such as Berbera, Mogadishu, Alexandria, and Conakry have improved but remain outside the global top 100. South Africa's container terminals—Durban, Ngqura, and Cape Town—remain among the lowest ranked.

Lowering logistics costs is essential to unlocking Africa's intra-regional trade potential. Today, it is often cheaper to ship a container from China to an African port than to move it overland across the continent. A striking example: transporting a container over the 1,500 km journey from Dar es Salaam to Kigali can cost more than importing it from Asia—a route over six times longer. This cost imbalance, driven by weak multimodal connectivity, inefficient border procedures, and fragmented infrastructure, undermines the very foundation of the African Continental Free Trade Area.

Figure 10:
The Cost of Hinterland Logistics
Shipping rates on the Asia-Africa route, combined with road freight data on the Central Corridor out of Dar es Salaam illustrate the disproportionate cost of inland transport across the African continent.



Source:UNCTAD, CCTTFA
Note: Asia-Africa shows the annual full container load gate-in, gate-out rates in USD for a 40ft container; DES-Kigali shows the annual average road freight charges for a 22-27 tonnage container between the Port of Dar es Salaam and Kigali

[3]Growth is driven by transit of South African chrome, ferrochrome and coal that is exported via Maputo

Technology holds the key to unlocking faster, more reliable port operations in Africa. Despite growing investments in terminals, most ports continue to rely on manual processes and fragmented systems that delay cargo clearance and drive-up logistics costs. To correct course, ports authorities must coordinate the adoption of digital tools, including maritime single windows[4] (MSW), automated gate systems, cargo tracking, and real-time data sharing[5] .

New approaches to maintain and operate common marine infrastructure can help drive performances. While private investment has improved terminal operations, common marine infrastructure—such as access channels and berths—remains under-maintained and poorly coordinated. Expanding private participation to include the management of these shared assets, alongside the rollout of modern port community systems, would go a long way in improving cycle times and reducing congestion.

In line with efforts to improve ports logistics, a broad-based reform agenda is unfolding to strengthen port-hinterland linkages across Africa. East and Southern Africa have seen early successes through the deployment of one-stop border posts (OSBPs) and dry ports, aimed at reducing coastal congestion and improving cargo flows across transit corridors. In East Africa, OSBPs have helped reduce transport costs by as much as 62 to 87 percent[6]. While OSBPs remain less common in other regions, the development of dry ports and inland container depots (ICDs) is a growing trend across Africa, offering practical solutions to logistics constraints. These inland facilities reduce port dwell times by providing off-site customs and storage capacity, while also facilitating smoother cargo movement along domestic and regional corridors.

This trend has reinforced the strategic role of port-hinterland connectivity in national logistics policies. In East and Southern Africa, state-owned operators such as Kenya Port Authority, Ethiopia Shipping and Logistics, and Botswana Railways are spearheading development. In West Africa, shipping lines and terminal operators are increasingly investing in inland infrastructure. Dry ports are particularly viable in countries with both road and rail systems, supporting a modal shift that lowers final delivery costs. Ethiopia and Kenya have expanded dry port capacity in tandem with new standard gauge rail (SGR) lines linking to Djibouti and Naivasha, respectively. Tanzania, which is constructing its own SGR network, plans seven dry ports under its Updated National Ports Master Plan. To support these projects, strong cooperation and dialogue with logistics actors – shipping lines in particular – will be key to support the usage and bankability of dry ports areas.

Private port investors—traditionally focused on maritime terminals—are now extending their involvement inland. AGL, with a legacy in rail concessions, currently operates over 30 dry ports in West Africa. APM Terminals has also expanded its ICD footprint, including a joint venture with Angola's pension fund (Gestão de Fundos) to develop ICDs in Angola. Public-private partnership (PPP) models are becoming more prevalent, with active projects in Nigeria and Egypt pointing to rising investor confidence in inland logistics assets.

[4]A Maritime Single Window (MSW) is a digital platform that allows all parties involved in a port call—such as shipping lines, port authorities, customs, immigration, and other regulatory bodies—to submit standardized information and documents through a single entry point.
[5]For more on this, see "Status of Digitalisation and Policy Impediments in African Ports," SSATP Working Paper, March 2024
[6]"One-stop border posts in East Africa: impact on transport costs and issues for further analysis", Research reports, Overseas Development Institute, July 2023.

Box 2: The Red Sea Crisis Was a Critical Test of the Resilience and Capacity of Africa's Indian Ocean Ports

The Red Sea crisis that began in late 2023, following Houthi-backed attacks on commercial shipping, marked a significant disruption to one of the world's most vital maritime corridors. Building on the vulnerabilities exposed by the 2021 Suez Canal blockage, the escalation of conflict in the Red Sea prompted a prolonged rerouting of vessels around the Cape of Good Hope. This detour extended shipping distances by as much as 53 percent, contributing to a surge in freight rates, longer delivery times, and widespread disruptions across global supply chains. The crisis had direct economic implications for Africa, with Egypt alone losing an estimated $7 billion in Suez Canal revenues in 2024.

At the same time, the crisis created temporary strategic opportunities for African ports located along the Indian Ocean. With the East–West maritime route between Asia and Europe diverted southward, select ports were able to act as bunkering stations, replenishment stops, or transshipment nodes. Those ports that offered deeper berths (at least 16 meters), available capacity, and integrated logistics ecosystems experienced notable traffic gains. The Port of Mombasa registered a historic throughput of 41.1 million tonnes in 2024—an increase of over 5 million tonnes compared to the previous year. Similar traffic upticks were observed in ports such as Toamasina (Madagascar), Port Louis (Mauritius), Beira (Mozambique), Walvis Bay (Namibia), Djibouti, and Dar es Salaam (Tanzania).

However, not all ports were able to capitalize on the temporary redirection of maritime flows. South African ports, in particular, remained constrained by systemic inefficiencies, congestion, and infrastructure limitations, limiting their responsiveness to the shifting patterns of global trade.

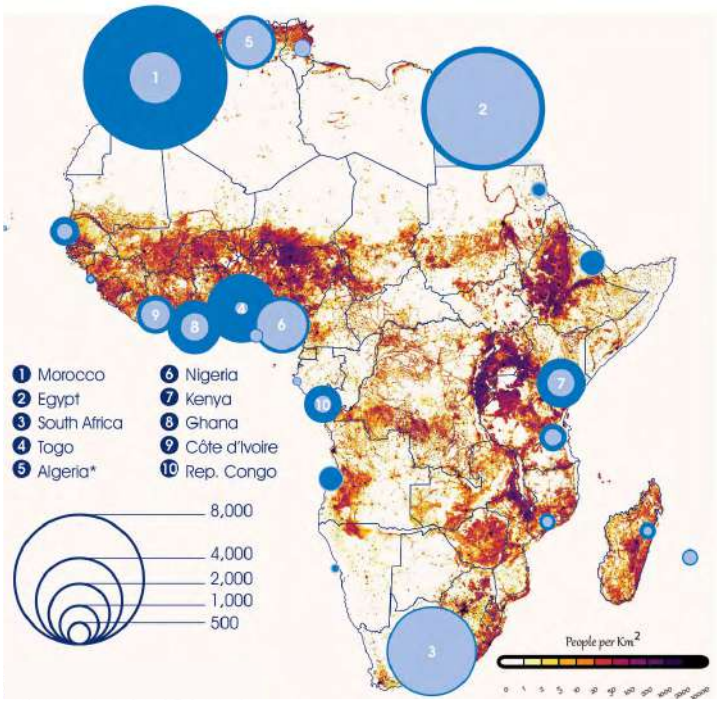
Even among the ports that benefited from higher volumes, the episode underscored the fragility of existing infrastructure and the limited capacity to absorb unplanned surges in traffic. It highlighted the urgent need for sustained investment in port modernization, improved operational efficiency, and stronger integration with hinterland and regional transport networks to enhance resilience in the face of future external shocks.

Fundamentals for Coordinated Investment are Strong

Because ports represent a profitable opportunity to gain access to Africa's growing domestic markets, their investment fundamentals remain strong. Recent data from UNCTAD's Review of Maritime Transport show that Africa experienced the largest global increase in port calls by container ships (+20%) and tankers (+38%) between 2018 and 2023. This surge is driven by the rerouting of cargo due to Red Sea disruptions, but also growing domestic consumption, and rising trade in petroleum and bulk commodities.

Figure 11:
Container ports are helping to meet growing consumption across Africa

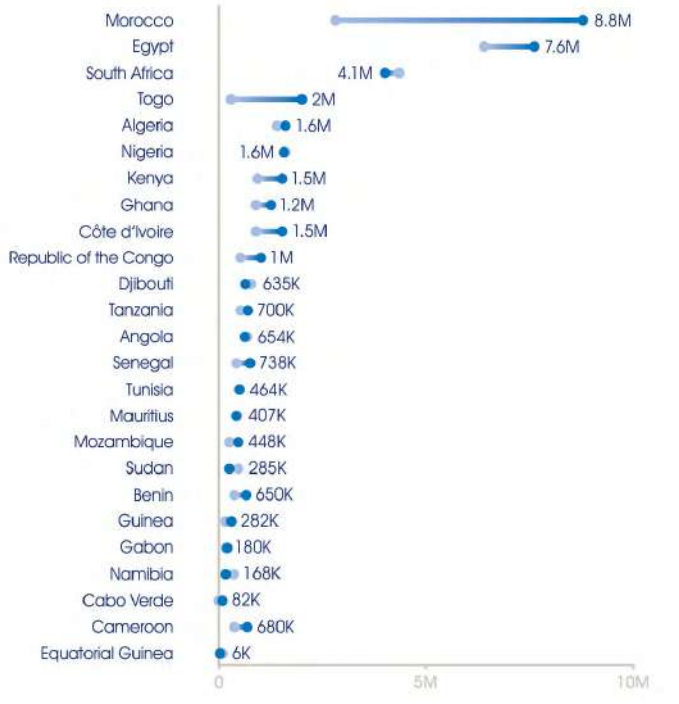
container throughput in thousand TEUs/year 2012 2022



Source(s): World Bank, UNCTAD, Kontour (2024), AFC Research

Dislaimer: The boundaries, colors, denominations, and other information shown on any map in this work do not imply any judgement on the part of the Africa Finance Corporation concerning the legal status of any territory or the endorsement or acceptance of such boundaries.

container throughput, 2012 vs. 2022, in TEUs 2012 2022



Source: UNCTAD, AFC Research
NB: data not available for D.R. Congo

Demographic trends and expanding consumer markets offer profitable opportunities. Population growth forecasts and a growing middle class are positive demand-side dynamics that create long-term revenue visibility for port operators. The same fundamentals explain investments in import-driven container terminals across African coastlines, especially in West Africa – one of the continent's most highly densely populated region. The region's landlocked countries – Mali, Niger and Burkina Faso – also have some of the fastest population growth rates in the world. Their reliance on coastal ports for imports has driven traffic growth at Dakar, Abidjan, Tema, and Lomé. Sustaining this momentum will require continued investment in modern infrastructure, efficient corridor management, and strengthened regional cooperation.

Ports play a key role in anchoring trade corridors and supporting Africa's intra-regional trade agenda. Container throughput has grown most rapidly at ports with explicit transit and/or transshipment strategies. Tanger Med, Lomé, and Pointe-Noire for instance have leveraged location advantages to become regional trans-shipment hubs that supply smaller feeder ports in countries where infrastructure was insufficient to accommodate large container vessels. Tanger Med connects to over 180 ports worldwide, while Lomé supports MSC feeder services to a dozen West African ports.
Other ports have benefited from strong links with their hinterland to build a thriving transit business serving landlocked industries like Niger, Uganda, D.R. Congo, Mali or Zambia. Notably, the D.R. Congo's transit traffic to and from the ports of Mombasa, Dar es Salaam and Beira is growing exponentially. Transit trade with the DRC has doubled at the port of Mombasa (700 kt in 2021 to 1.4 mt in 2023) and surged at Dar es Salaam (from under 2 mt to 3.3 mt in five years).

Africa's Atlantic coast presents the most opportunities for improving port-led trade corridors. East and Southern Afrida – which have the highest levels of intra-regional trade on the continent – already benefit from structured transport corridors whereby ports are linked by rail to their hinterland. These include the Djibouti-Ethiopia corridor, the Northern Corridor (Mombasa), the Central Corridor (Dar es Salaam), and the North-South Corridor served by South African ports. Africa's Atlantic coast is a different story as all trade corridors rely on roads, except for the Abidjan-Ouagadougou corridor whose railway line needs rehabilitation. Strategic projects are currently being developed to provide better connectivity, including the Lobito Corridor between Angola's Port of Lobito and DRC/Zambia, the Trans-Kalahari Corridor between Namibia's Walvis Bay Port and Botswana, and the rehabilitation and upgrade of the Dakar-Bamako railway line (see Section 2.2).

> "D.R. Congo transit traffic is driving significant volumes growth at the ports of Mombasa, Dar es Salaam and Beira"

@Maputo Port Development Company

Outlook: African Port Capacity Expansion (2025–2026)

Port infrastructure across Africa is entering a new phase of expansion, with several major capacity additions expected between 2025 and 2026.

North Africa is poised to lead capacity expansion in the near term, with Egypt at the forefront. In 2025, the country is expected to deliver the largest container terminal additions on the continent. These include the Sokhna New Container Terminal, with an annual capacity of 1.7 million TEUs, and a second terminal at the Port of Damietta, expected to add 3.3 million TEUs. Further developments are underway, with agreements signed in 2023 for the B100 Container Terminal in Alexandria and a second terminal at East Port Said, underscoring Egypt's ambitions to expand its role as a major transshipment hub.

In West Africa, capacity growth will be driven primarily by Senegal and Ghana. Senegal is set to commission the Bargny Sendou Mineral Port, while construction began in late 2024 on DP World's $1.2 billion Port of Ndayane. The new port is expected to deliver an initial capacity of 1.2 million TEUs, with further phases anticipated. In Ghana, the second phase of the Port of Tema's expansion is scheduled for completion in 2025, raising its handling capacity to 3.7 million TEUs. Upon completion, Tema will become the largest container terminal by capacity on the Atlantic coast of Africa.

Central Africa is also witnessing renewed momentum. In Cameroon, AGL has completed the second container terminal at the deep-water Port of Kribi, while further expansions are underway at the Port of Douala. Plans for a new bulk terminal are advancing, and a partnership between Arise IIP and the Douala Port Authority aims to develop the Dibamba Industrial Port Zone. In the Republic of Congo, AGL announced a €400 million investment in 2024 for the construction of the East Mole Congo Terminal in Pointe-Noire, expected to be operational by 2027. Last but not least, DP World selected in early 2025 its contractor for the development of the new Banana Port in the Democratic Republic of Congo (DRC), targeting 450,000 TEUs of handling capacity.

In Southern Africa, capacity additions are advancing under new concession agreements in Angola, Namibia, and Mozambique. However, the most significant short-term development is in Madagascar, where the Japan International Cooperation Agency (JICA)-funded expansion of the Port of Toamasina is underway. The project, centered around the new C4 container terminal, will add 1.175 million TEUs of capacity by 2026/2027, creating a strategic hub in the Indian Ocean.

In East Africa, recent capacity additions have moderated short-term expansion needs. Nonetheless, modest growth is expected as larger-scale projects continue to mature. Recent developments include DP World's investments in Somalia, as well as combined public and private sector efforts in Tanzania. AGL began operations at the Zanzibar Multipurpose Terminal in 2023, while a $60 million expansion of the Port of Mtwara on the mainland has already begun to support increased traffic flows, particularly along the southern corridor with Mozambique.

@Kenya Ports Authority

2.

Railways: A Fresh Investment Cycle Offers Opportunities to Redefine Rail Connectivity in Africa

Africa's railway systems are entering a new phase of development, with growing public and private project activity suggesting that the momentum is real—and growing. Rising demand for efficient, low-emission transport; the strategic need to connect inland markets to ports; and the emergence of multi-use economic corridors are reshaping the case for rail. These projects must now demonstrate that with the right investment frameworks and regional cooperation, rail can once again become a backbone of Africa's logistics systems—linking not just mines, but markets, farms, and factories. This is the promise of Africa's rail revival: to transform a legacy asset into a driver of integration and inclusive growth.

A Renewed Cycle of Expansion

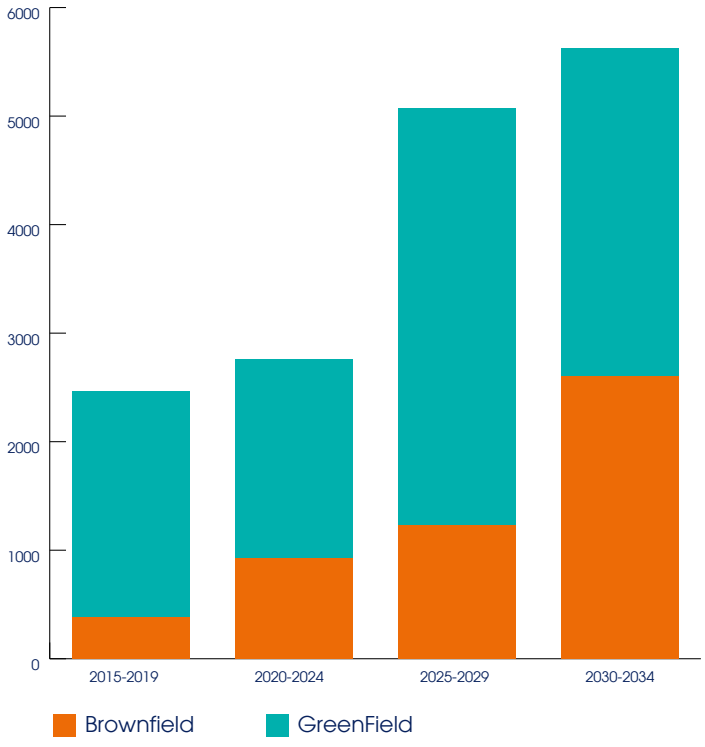
At independence, many African countries inherited railway networks primarily designed for extractive purposes—linking mines to ports with little regard for domestic connectivity or regional integration. These lines, underinvested and poorly maintained over decades, have deteriorated or been dismantled entirely in parts of West and Central Africa. As a result, despite the critical need for railway connectivity, expansion has long lagged other infrastructure sectors.

To map out the existing and future state of African railways, the AFC has launched a digital infrastructure map of African rail corridors. Accessible at http://map.africafc.org/ the map reveals several regional disparities and opportunities.

- North and Southern Africa account for most functional networks, although integration only exist across SADC's cape gauge network. Most visibly, the Lobito Corridor provides a first and critical connection for Atlantic trade connectivity.
- Approximately 15% of Africa's rail network is non-operational given many outdated lines under-rehabilitation in Nigeria, Ghana or Uganda. Sudan's recent conflict has also disrupted operations across one of Africa's largest networks, with only 600 km of its 6,000 km system estimated to still be operational.
- Major high-speed lines are currently under construction in Algeria, Morocco and Egypt; in sub-Saharan Africa, Tanzania, Guinea and Nigeria have the biggest under construction projects.
- Notably, 13 countries—many of them landlocked—still lack direct rail connections to the sea.

Between 2015 and 2024, Africa added approximately 2,000 km of new railway lines, though the nature of these projects has shifted over time (see Figure 12). The 2015–2019 period was characterized by a series of greenfield developments, including the Djibouti–Addis Ababa standard gauge railway (SGR), the Mombasa–Naivasha SGR in Kenya, Nigeria's Abuja–Kaduna and Lagos–Ibadan SGRs, Morocco's Tangiers–Kenitra high-speed line, and Guinea's Boké bauxite railway.
By contrast, the 2020–2024 period saw a shift toward brownfield rehabilitation, reflecting tighter public finances and the impact of the COVID-19 pandemic on infrastructure investment. A notable exception was Tanzania, which commissioned the first phase of its SGR line between Dar es Salaam and Dodoma in 2024.

Figure 12:
A new era of African railways?
Railway networks expansion in km



Source:AFC Research
Note: Access to funding has forced most African governments to spend on rehabilitating old railway lines rather than embark on greenfield expansions. However, public investment plans in selected countries along with growing private sector participation in commodity-driven logistics will change Africa's railway landscape over the coming years.

Africa's railway systems are entering a new phase of development, with growing public and private project activity suggesting that the momentum is real—and growing. Rising demand for efficient, low-emission transport; the strategic need to connect inland markets to ports; and the emergence of multi-use economic corridors are reshaping the case for rail. These projects must now demonstrate that with the right investment frameworks and regional cooperation, rail can once again become a backbone of Africa's logistics systems—linking not just mines, but markets, farms, and factories. This is the promise of Africa's rail revival: to transform a legacy asset into a driver of integration and inclusive growth.

Financing Africa's Rail Revival: The Evolving Role of Public and Private Capital

Multilateral funding will remain critical to supporting railway expansion in Africa. Approximately 90 percent of the continent's railways remain publicly owned and constrained by limited investment capacity, underscoring the continued importance of development finance and multilateral support. A large share of under-construction projects currently benefits from such support, including Tanzania which commissioned 627km of SGR line between Dar es Salaam and Dodoma in 2024, and has an additional 1,179 km under construction towards Lake Victoria, Lake Tanganyika, and border points with Burundi and the Democratic Republic of Congo (DRC).

Private sector participation remains dominated by extractives but shows potential for growth and diversification. Concessions and tolling frameworks are being considered in several countries. Egypt, for instance, is introducing access charges to allow private freight operators to use state-owned infrastructure for the first time while South Africa's Transnet is exploring privatization options on some of its key mineral rail corridors. AFC Research estimates that private and PPP lines could potentially account for 12 percent of Africa's network by the end of the decade, supported by projects such as Guinea's Transguinean Railway and prospective concessioning of the Tanzania–Zambia Railway (TAZARA).

A shift toward broader economic corridor development is emerging. Until now, sector concessions have been typically tied to extractive industries (e.g., Guinea, Liberia, Mozambique, Gabon), with few multi-use systems in place outside of AGL's operations in Côte d'Ivoire–Burkina Faso and Cameroon. While mining continues to drive investment, there is growing political will to ensure such railways serve broader development objectives.

- In Guinea, the 622 km Transguinean Railway—being developed by the Rio Tinto Simfer and Winning Consortium—is a key example. Though designed to export high-grade iron ore from Simandou, the line will also serve agricultural regions and urban centres, anchoring a multi-use economic corridor.
- In Liberia, the government established a National Railway Authority in 2024 to support railway liberalisation. Its goal is to ensure multi-user access to the existing railway infrastructure. The same approach underpins the Lobito Corridor, where the Africa Finance Corporation is leading the development of the greenfield Lobito-Zambia railway line (Lobito II). Once completed, the Lobito Corridor will offer the fastest and most efficient route for exports and imports around the Copperbelt, linking key mining regions, agricultural clusters and businesses in Zambia and D.R. Congo to the Angolan port of Lobito. The railway will both support the anchoring of new value-chains for the processing of minerals and development of battery precursors, but also catalyse opportunities in ecotourism, agribusiness, and power transmission lines.

A Fresh Look at Regional Integration Opportunities

Africa's renewed focus on railway investments offers significant opportunities to deepen regional integration. Unlocking that potential will require deliberate action on several fronts, including stronger political coordination, cross-border regulatory harmonisation, and the mobilization of joint financing—particularly for transnational projects.

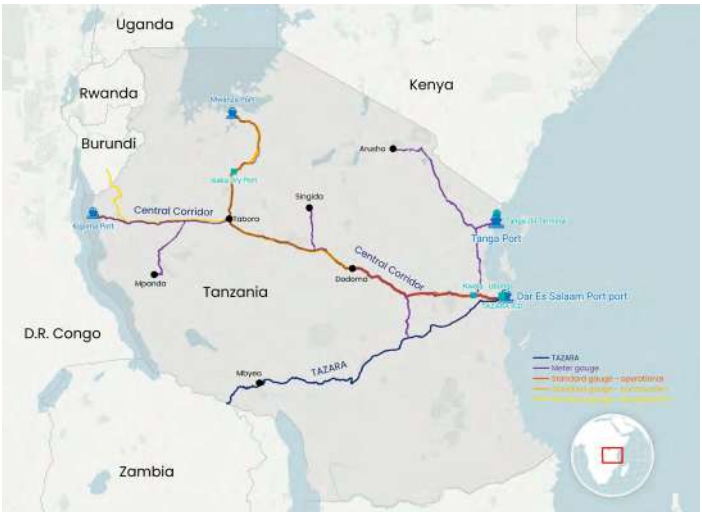
The Southern African Development Community (SADC) remains the continent's most integrated rail zone, underpinned by a cape gauge network linking the Democratic Republic of Congo (DRC) to South Africa. The region is expected increased connectivity in the short- and medium-terms on the back of Atlantic connections via Lobito and potentially Walvis Bay. New intra-connections have also been proposed to double cross-border links between South Africa and Botswana, and between Zimbabwe and Mozambique.

In Central Africa, regional connectivity remains nascent but promising. Cameroon could emerge as a regional rail hub, pending progress on proposed extensions to Chad via CAMRAIL. Feasibility studies were completed in 2024, although uncertainty around financing and routing persist. Separately, Cameroon and the Republic of Congo are advancing development of the Nabeba–Mbalam–Kribi iron ore corridor.

East Africa holds strong potential for expansion around the existing Northern and Central Corridors. Tanzania's SGR is poised to connect with both Rwanda and Burundi, while Uganda's awarded SGR contract envisions seamless integration with Kenya's network at the Malaba border.

Map 1:

Tanzania is building a railway that will significantly grow transit capacity along the Central Corridor



Source: AFC Research

West Africa holds the highest potential for rail-based regional integration, yet progress has been constrained by political instability and limited access to financing. The region includes some of Africa's fastest-growing economies and three landlocked countries—Burkina Faso, Mali, and Niger. At present, the only operational cross-border railway is the Abidjan–Ouagadougou line, which carries less than 1 million tonnes of cargo annually and requires substantial rehabilitation, estimated at $1.2 billion. The Kano-Maradi railway line between Nigeria and Niger – for which the AFC achived financial close in 2025 – is expected to provide fresh regional connectivity, while plans are on the table to rehabilitate and upgrade the Dakar-Bamako axis.

3.

Roads: Disparities Persist, but Investment Activity Reflects Tangible Progress in Select Countries

Road infrastructure remains the primary mode of transport across Africa, carrying an estimated 80 percent of freight and 90 percent of passenger traffic. Yet, despite its centrality, road development has lagged other segments of the continent's transport infrastructure, failing to keep pace with rising logistical and socio-economic demands. Where investments occur, they typically seek to address two core priorities: first, improving connectivity between capital cities, secondary urban centres, ports, and border crossings. Second, extending all-weather access to rural areas—particularly those with agricultural potential—to strengthen food security and promote inclusive growth

Data Limitations Obscure Progress Tracking, but New Estimates Point to Network Expansion

Monitoring the development of Africa's road networks remains constrained by significant data limitations. Many countries conduct road censuses infrequently, and reporting standards vary widely—particularly in the classification of total versus paved roads, and in the differentiation between asphalt, bitumen, and gravel surfaces. These inconsistencies are further compounded by institutional fragmentation, especially where road and highway authorities report separately or lack coordination.

To address some of these challenges, this report adopts a harmonized definition of paved roads as those surfaced with asphalt, bitumen, or cement and suitable for use by standard vehicles, excluding gravel, earth, and rural roads. Based on this revised methodology, Africa's total paved road network is now estimated at approximately 818,000 kilometres—an upward revision of 138,000 kilometres from our earlier estimates.

This upward revision reflects:

- Recent network expansions in Algeria, Cameroon, Côte d'Ivoire, Ethiopia, Ghana, Kenya, Mali, Morocco, and Tanzania
- New data from previously uncovered countries, such as Djibouti, Madagascar, Equatorial Guinea, eSwatini, and Somalia
- Reclassified and updated figures from large markets such as Egypt, Tunisia, and Morocco.

Despite these gains, Africa's road density remains low by global standards, averaging just 2.76 km per 100 km^2, compared with 138 km per 100 km^2 in India—a country with a comparable population but one-tenth of Africa's landmass.

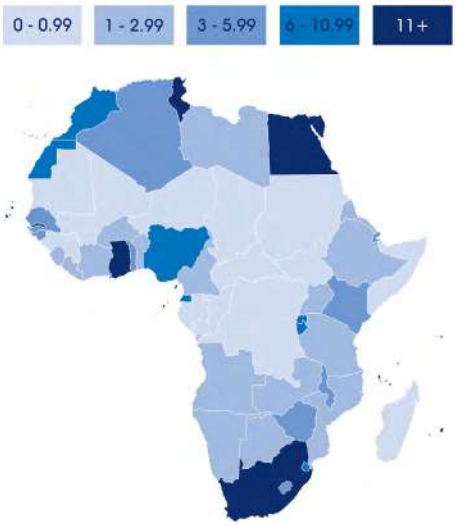
Disparities in coverage remain significant. Algeria, Egypt, and South Africa account for nearly half of Africa's total paved roads. Island nations such as Mauritius, Seychelles, Comoros, São Tomé and Príncipe, and Cabo Verde report the highest densities, though density alone is not a reliable proxy for road quality.

In sub-Saharan Africa, much of the existing network is in fair or poor condition. According to the Northern Corridor Transit and Transport Coordination Authority (2021), only 41 percent of corridor roads in Kenya, Uganda, the Congo DRC, Rwanda, South Sudan, and Burundi were rated as being in "good" condition. In Ghana, which has seen measurable investment, only 44 percent of the road network met this threshold as of 2023.

To complement coverage data, this report draws on the IMF's Mean Speed Score, which estimates the average travel speed between major cities as a proxy for road quality and traffic efficiency. Countries such as Namibia, Botswana, and Zimbabwe perform relatively well despite low road density, suggesting efficient use of limited infrastructure. Conversely, countries like Nigeria and Ghana, while reporting higher densities, rank poorly on speed metrics, indicating significant rehabilitation needs (see Map 2).

Map 2:
Roads data in Africa show several gaps in infrastructure capacity and quality

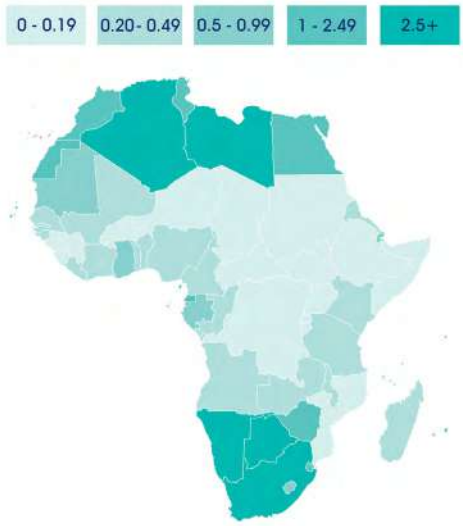
paved road density in km/100km2



Source: AFC Research

Note: Road density is especially low in landlocked Sahelian countries, where vast stretches of arid desert dominate the landscape.

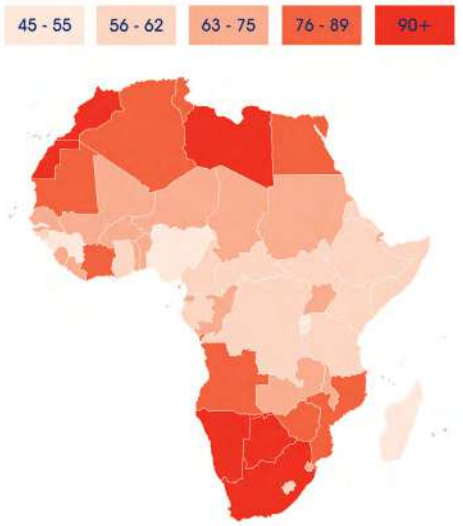
paved road density in km/'000 people



Source: AFC Research

Note: Road density relative to population confirms critical gaps within landlocked countries, and particularly highlights network deficiency in the D.R. Congo.

travel mean speed score between major cities



Source: IMF

Note: A denser network with lower mean speed score is an indication of higher rehabilitation needs to ensure better use of existing roads. For instance, Nigeria and Ghana both have road densities higher than their neighbours but perform relatively poorly on the Mean Speed Score Index.

Disclaimer: The boundaries, colours, denominations and other information shown on this map are for illustrative purposes only and do not imply any judgment on the part of the AFC concerning the legal status of any territory, the delimitation of international boundaries, or the endorsement or acceptance of such boundaries.

Public Investment Remains Dominant, but PPP Models Are Gaining Traction

Road development in Africa remains largely financed by the public sector, reflecting limited private sector appetite. The African Development Bank estimated in its 2018 African Economic Outlook that 80 percent of road investment needs through 2025 would be for preservation—maintenance and rehabilitation—rather than new construction. In line with this, most public procurement over recent years has prioritized upgrading and climate-proofing existing roads, particularly in flood-prone areas.

Preservation is especially critical in landlocked countries that lack rail alternatives and depend heavily on road freight. In West Africa, for instance, Burkina Faso recorded over 170,000 truck entries in 2022—an average of 470 trucks per day, primarily via Lomé and Tema. Niger reported over 63,000 truck entries in 2021, with more than 80 percent transiting through Cotonou.

Governments are increasingly revising their stance on private sector participation to unlock capital for roads. Until now, private sector participation has been limited due to low population densities along major corridors, uncertain traffic volumes, exchange rate volatility, and political sensitivity around user fees. Deteriorating sovereign balance sheets have further reduced the capacity of governments to offer the viability gap funding and guarantees typically required for bankable PPP transactions. Politically, road privatization is also a challenging policy given public resistance to tolls and concerns over affordability.
Nonetheless, several governments are adopting more flexible policy frameworks to attract private investment. Countries including Nigeria, Kenya, Senegal, South Africa, Tanzania, Uganda, and the Republic of Congo have initiated road PPP programs—ranging from isolated pilot projects to more comprehensive national or regional initiatives. Other countries have recently introduced tolling mechanisms to finance network upgrades—including Côte d'Ivoire, Ethiopia, Mozambique, Zambia, and Zimbabwe. While progress varies, these efforts mark a shift toward greater reliance on innovative financing models to close Africa's road infrastructure gap.

The Copperbelt region is emerging as a focal point for road public-private partnership (PPP) activity, with Zambia and the Democratic Republic of Congo (DRC) leveraging mining-driven freight flows to attract private capital. A flagship initiative is the Kasomeno–Kasenga–Chalwe–Mwenda Toll Road, a 25-year, $700 million PPP project developed by GED Africa and financed by Hungarian firm Duna Aszfalt. The project is currently under-construction and is expected to shorten the Lubumbashi–Dar es Salaam route by approximately 500 kilometers—enhancing the efficiency of mineral exports from the region.
In 2024, Zambia signed five additional road PPPs, four of which are located near strategic border crossings with the DRC's mineral-rich Haut-Katanga and Lualaba provinces. That same year, the National Road Fund Agency (NRFA) awarded a 25-year concession to the Chinese Macro Ocean Investment Consortium (MOIC) to upgrade the 327 km Lusaka–Ndola corridor into a dual carriageway. Valued at $650 million, it is the largest road PPP in Zambia since independence.

These developments reflect a broader shift across the continent toward selected private sector participation in road infrastructure. Governments facing fiscal constraints are increasingly turning to PPP models and tolling schemes to finance upgrades and reduce the burden on public budgets. Countries such as Botswana, Namibia, and Angola are actively exploring similar frameworks. In Angola, for example, the government approved a National Tolling and Vehicle Weighing Plan (PNPPV) in late 2024, targeting the rollout of 14 toll stations at key border crossings by 2026.

4.

Airports: Better utilization of air freight can overcome infrastructure barriers and unlock intra-African trade

Africa's airport infrastructure reflects broader trade patterns across the continent and remains highly vulnerable to external shocks. The continent's aviation sector continues to be comparatively small on a global scale, constrained by lower passenger load factors, fragmented airspace regulations, limited cooperation between commercial airlines, and persistent under-utilization of air freight potential. As noted in the AFC State of Africa's Infrastructure Report 2024, these factors collectively undermine both operational efficiency and investment attractiveness.

Although air traffic has gradually recovered following the COVID-19 pandemic, Africa's global market share remains limited. In 2022, the continent accounted for just 2.3 percent of global passengers carried and less than 3 percent of aircraft kilometres flown. Similarly, Africa represented under 3 percent of global passenger and freight tonne-kilometres—a key metric that captures airline efficiency in utilizing available capacity for cargo and passengers.

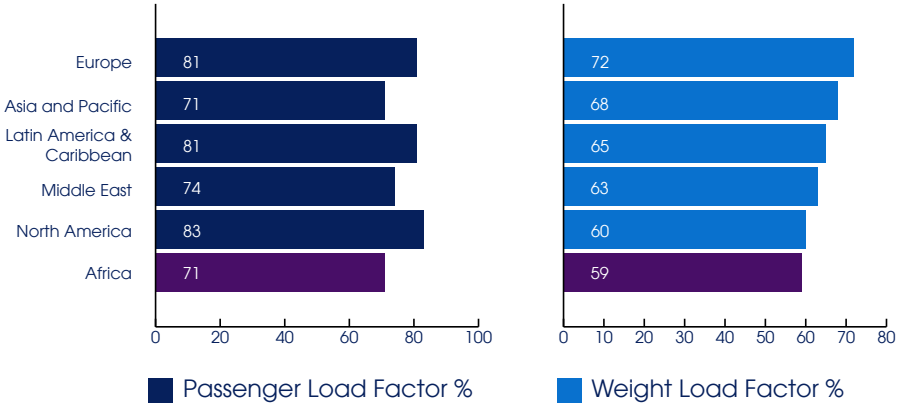
Table 2:
Africa's passenger and air cargo traffic is not representative of its population and economic weight
percentage of world traffic in total (international and domestic) services

Percentage of world traffic in total (international and domestic) services	Aircraft kilometres	Passengers carried	Passenger km	Freight tonne-km	Revenue tonne-km	Tonne-km available
Europe	26	29	30	24	29	26
Africa	3	2	2	3	3	3
Middle East	7	6	10	14	11	11
Asia and Pacific	25	27	22	34	25	25
North America	33	28	29	22	27	29
Latin America and Caribbean	7	9	7	3	6	6

Source: ICAO Air Transport Statistical Results

The underperformance of air cargo stands in contrast to the continent's stated ambitions for enhanced regional trade and integration. While the relatively small size of Africa's passenger market can be partly explained by lower income levels and limited affordability, air freight has the potential to overcome many of Africa's geographic and infrastructural constraints. Transporting high-value and perishable goods by air allows for rapid, long-distance movement over deserts, mountain ranges, and dense tropical forests, bypassing the need for more costly alternatives. Yet, the air freight sector remains highly concentrated, following trade patterns oriented largely toward extra-continental rather than intra-African flows.

Figure 13:
African airlines' performances show an under-utilization of passenger and freight capacity
passenger load factor (PLF) vs. weight load factor (WLF), in %



Source: ICAO Air Transport Statistical Results

Air Traffic Remains Fragmented, with Limited Regional Connectivity

Available data show that Africa's air traffic, like its broader trade flows, remains predominantly international in nature, with limited regional integration. Passenger volumes are overwhelmingly tied to intercontinental routes. In the cargo segment, the picture varies across regions but remains skewed in favor of global trade corridors. According to 2022 data from the African Airlines Association (AFRAA), intra-African cargo traffic accounted for 35 percent of total freight carried by Ethiopian Airlines, compared to only 25 percent for Kenya Airways and Royal Air Maroc. Among North African airlines, intra-regional air cargo activity was negligible.

In West Africa, the situation is similar. Data accessed by AFC suggest that air freight activity in countries like Côte d'Ivoire remains largely oriented towards Europe, with international carriers such as Air France and Corsair dominating cargo operations out of Abidjan. These trends highlight the absence of strong regional air logistics networks and the continued dominance of extra-African partners in shaping the sector's development.

This overreliance on international passenger and cargo routes leaves the sector vulnerable to external demand and supply shocks—ranging from global health crises and conflict-driven airspace disruptions to fuel price volatility and shifts in global trade dynamics. The lack of regional connectivity also weakens the ability of African airlines to capture value across integrated supply chains and inhibits the emergence of a sustainable long-term value proposition for investors.

As African economies expand and diversify, the strategic importance of air transport is likely to grow. The same structural fundamentals that underpin long-term infrastructure demand on the continent—rapid population growth, urbanization, and trade diversification—apply to aviation and airport infrastructure. As efforts to deepen intra-regional trade through initiatives like the African Continental Free Trade Area (AfCFTA) accelerate, air cargo is likely to rise. To support its growth, interventions are required both on the infrastructure and asset side of the industry.

Airport infrastructure, in particular, holds potential to address both short- and long-term logistical challenges. Unlocking this potential will require improved multimodal connectivity, especially through integration with road and rail networks, and a concerted effort to reshape existing trade flows. Africa's geography—characterized by difficult terrain and low population density in some areas—makes air cargo particularly well suited to bridge spatial gaps in supply chains.

Equally important, sector growth requires interventions to support the expansion and modernization of airlines' fleets. African airlines are too often constrained in liquidity, thereby affecting their procurement capacities. The development of the Cape Town Convention (CTC) was a positive step in that regard, providing a treaty to facilitate asset-based financing and leasing of aviation equipment on the continent. More opportunities exist in the space, notably by providing attracting leasing platforms and terms for the continent's airlines.

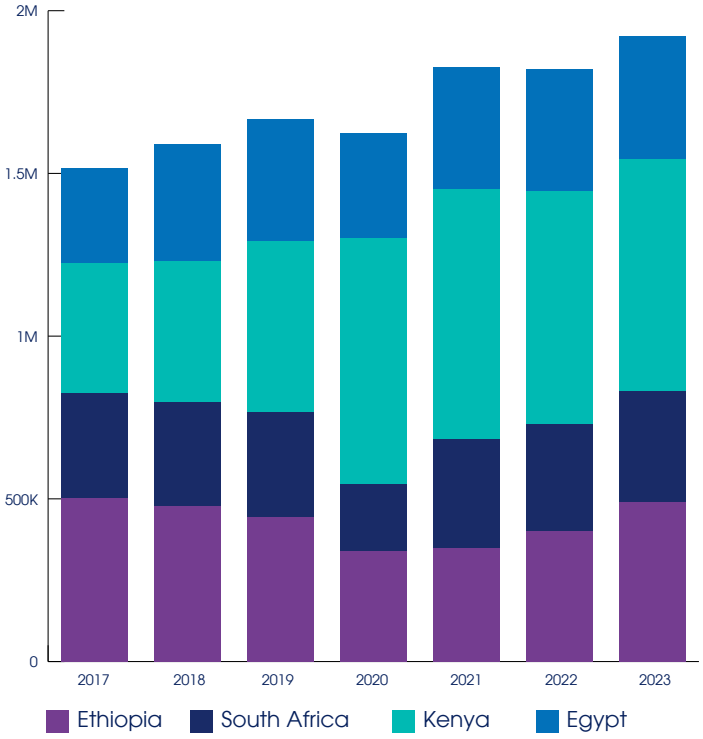
Ethiopia, for example, has leveraged its airport infrastructure to support the development of its textile and garment industry, which benefits from the speed and reliability of air transport. Similarly, Kenya has capitalized on air cargo for the export of fresh produce and flowers. These cases underscore the role of aviation as an enabler of industrial and agricultural value chains, particularly for landlocked or infrastructure-constrained countries.

Cargo Handling and Storage Infrastructure is Supporting the Emergence of Selected African Hubs

While Africa's air cargo market remains underdeveloped in aggregate terms, a small number of countries have built competitive cargo handling and storage infrastructure that has positioned them as regional freight hubs.

Ethiopia stands out as a continental leader. Since the opening of Ethiopian Airlines' second cargo terminal in 2017, the country has recorded exponential growth in air freight volumes. Cargo tonnage rose from 266,000 tonnes in 2016 to nearly 715,000 tonnes in 2023, underpinned by the strategic expansion of dedicated cargo infrastructure and fleet capacity (see Figure 14). Ethiopian Cargo and Logistics now operates a network of nearly 60 destinations, half of which are within Africa, and has established itself as the continent's largest cargo network operator.

Figure 14:
Ethiopia now dominates Africa's air cargo industry via its Addis Ababa cargo hub
Air freight from major African cargo hubs, in tonnes



Source:AFC Research
Note: The jump in cargo traffic by Ethiopian airlines in 2020 and 2021 can be explained both by the opening of its second cargo terminal in Addis Ababa and by the advent of the COVID-19 pandemic during which Ethiopian Airlines facilitated the transportation of millions of tons of personal protective equipment, medical apparatus, vaccines, and essential supplies across Africa.

The airline's cargo operations are supported by a state-of-the-art warehouse facility with a storage capacity of one million tonnes per year, as well as a fleet of 16 dedicated freighter aircraft. As part of its forward-looking strategy, Ethiopian Airlines has also developed a specialized e-commerce warehouse with an annual handling capacity of 150,000 tonnes and plans to expand its freighter fleet to 37 aircraft by 2035. Despite being landlocked, Ethiopia has successfully used its geographic location and aviation strategy to become a global logistics player, particularly in industries—such as textiles—that are well suited for air transport.

In contrast, the other traditional cargo hubs on the continent—Egypt, South Africa, and Kenya—have experienced more modest growth. In both Egypt and South Africa, air freight volumes have only recently returned to pre-2020 levels, with limited evidence of sustained expansion. Kenya, however, has registered steady gains, with total air cargo throughput reaching almost 380,000 tonnes in 2023, largely driven by its strong position in agricultural exports.

Although comprehensive data for many African countries remain limited, selected markets are beginning to show signs of accelerated development. In Rwanda, the launch of a cargo hub through a strategic partnership between RwandAir and Qatar Airways Cargo in 2023 marked a turning point for the country's freight logistics capabilities. Similarly, Côte d'Ivoire has reported a significant increase in air cargo volumes following the modernization and expansion of Abidjan's air cargo terminal.

These examples demonstrate that targeted investment in cargo handling and storage infrastructure, when aligned with broader trade and industrial strategies, can unlock new logistics corridors and support more diversified growth. However, the limited scale of such initiatives and the persistence of regulatory and connectivity challenges suggest that broader regional transformation in the air cargo segment remains a medium- to long-term prospect.

> "Despite being landlocked, Ethiopia has successfully used its geographic location and aviation strategy to become a global logistics player."

While the implementation of the African Continental Free Trade Area (AfCFTA) continues to face delays, regional integration is steadily advancing in East and Southern Africa. In these subregions, growing coordination among regional economic communities and a shared emphasis on trade facilitation have begun to yield measurable outcomes. In East Africa, intra-regional trade has increased from approximately 12 percent in 2000 to 17 percent today, while Southern Africa has seen a more modest rise—from around 10 percent to nearly 12 percent over the same period.

Infrastructure development has been a critical enabler of these regional trade dynamics. Outside of North Africa, East and Southern Africa stand out as the only regions on the continent operating relatively integrated trade corridors supported by a multi-modal mix of ports, roads, railways, airports, pipelines, and inland waterways. These corridors have not only supported the movement of goods across borders but also enhanced economic resilience by diversifying transport options and reducing reliance on single infrastructure modes.

At the continental level, replicating such success stories—and scaling them—is essential to unlock the full potential of regional trade and accelerate structural economic transformation. Persistent supply chain bottlenecks, fragmented infrastructure networks, and capacity constraints continue to hamper progress. Yet they also present a compelling investment opportunity.

Addressing these challenges will require coordinated efforts to decongest and modernize ports, expand and interconnect road and rail networks, and fully leverage the untapped potential of air cargo logistics. These shifts are already underway in selected regions but must be significantly expanded and supported by a broad coalition of public, private, and multilateral partners to generate lasting impact.

As Africa moves toward a more integrated economic future, the alignment of infrastructure investment with regional trade objectives will be central to realising the continent's long-term development ambitions.

@Road Development Agency Zambia

Energy

The Scale Imperative: Connecting Africa's Energy Future

- **Africa's energy shortfall is the single biggest constraint on economic transformation and the continent's most underappreciated investment opportunity.** Electricity generation is growing at less than 2% per year—well below population and GDP growth—leading to a decline in per capita electricity consumption for the first time in two decades. This signals not just a crisis of access, but a failure to scale, at a time when Africa must dramatically expand energy use to drive industrialisation, competitiveness, and private sector growth.

- **Africa needs to scale its power generation capacity-urgently and decisively.** In 2024, the continent added just 6.5 GW of utility-scale capacity to its grid. By comparison, India added 18 GW in renewables alone, and the United States added 48.6 GW. To meet its development goals, Africa must double or triple its annual energy buildout. This is not just an infrastructure challenge—it is a strategic economic imperative.

- **To correct course, Africa can tap into the world's most underutilized energy resource base**. The continent is home to the largest untapped hydropower potential, the largest conventional geothermal reserves, and receives some of the highest solar irradiation globally. The pipeline of planned generation projects reflect this potential and is evolving towards a greater mix of renewables and gas. But these resources remain largely stranded due to weak infrastructure and limited investment—turning abundance into constraint.

- **Delivering energy at scale will require a fundamental shift in ambition, coordination, and capital mobilization.** Africa needs to add at least 16 GW of new grid-connected generation capacity annually until 2050 and invest $3.2–4.3 billion per year in transmission infrastructure to meet even its most basic growth targets. This opens vast investment opportunities across solar PV, gas-to-power, hydropower, battery storage, and grid modernization.

- **Unified African grids are the only way to unlock scale, reliability, and resilience.** Cross-border interconnectors are already displacing expensive thermal power with cheaper hydropower, reducing curtailment, and expanding market access. But today's regional power pools remain largely siloed. The African Single Electricity Market (AfSEM) offers a roadmap toward one continental market—but realising it will require investment in transmission corridors, regulatory harmonisation, and coordinated planning across borders.

- **The cost of inaction is rising.** Without a radical course correction, 560–570 million people in Africa will still lack electricity access by 2030 – unchanged from today's level. But with the right investments and reforms, Africa can build the world's most dynamic, integrated, and future-ready energy system—powering growth for the next generation.

Closing the Power Gap is Africa's Next Big Investment Opportunity

In last year's report, we argued that Africa's energy challenge could no longer be framed solely as a question of household access. The real constraint lies in the continent's failure to deliver modern energy at scale—the kind of energy that powers factories, supports value chains, and enables structural economic transformation. We adopted the concept of the "Modern Energy Minimum" to benchmark what inclusive, growth-enabling energy looks like, and used Guinea's bauxite sector to illustrate the cost of underpowered economies.

This year, we revisit that premise with even greater urgency. Africa's energy systems remain too small, too fragmented, and too slow-moving. Electricity generation is growing more slowly than population and GDP, leading to declining per capita availability and shrinking room for productive use. In 2024, the continent added just 6.5 GW of utility-scale capacity to its grid—less than half the 16 GW per year which we believe are needed to meet minimum thresholds by 2050. Of all infrastructure gaps, the energy shortfall is the most binding constraint on growth—and the single greatest opportunity for catalytic investment.

Africa has the resource base to power its future: abundant solar, untapped hydropower, strategic gas reserves, and some of the world's most promising wind and geothermal corridors. But these assets will remain underutilized or stranded without the infrastructure and market design to scale them. This year's analysis focuses on how to unlock that potential—by connecting generation to demand, reducing system costs, and creating a power sector that is fit for industrialisation.

At the heart of this agenda lies a simple truth: no individual country can achieve energy transformation alone. Only connected regional grids, underpinned by the African Single Electricity Market (AfSEM), can provide the geographic and financial scale required to integrate renewables, balance supply and demand, and attract the billions of dollars in long-term capital Africa needs. Without this shift in ambition and coordination, the continent risks locking in a low-energy, low-growth trajectory.

But with it, Africa can leapfrog outdated systems, build resilient energy markets, and chart a path toward sustainable, industrial growth. What's needed now is action: in planning, regulation, transmission, and finance—to turn Africa's immense energy potential into a real economic engine.

1.

Electricity Generation Growth Lags Behind Demographic Expansion and Economic Needs

Africa's electricity generation is expanding, but not at the pace required to meet the continent's rising demand. Over the past decade, generation has increased by less than 2 percent per year[1] —well below average real GDP growth of 3 percent and population growth of 2.42 percent between 2013 and 2023. In contrast, electricity supply in other developing regions has grown more robustly, averaging 3.8 percent annually in the Middle East and 4.5 percent in Asia-Pacific over the same period.

This persistent shortfall has deepened Africa's share of the global energy access gap. In 2022, Sub-Saharan Africa accounted for over 83 percent of people without electricity—up from under 50 percent in 2010[2]. While access initiatives have expanded connections in several countries, progress has failed to keep pace with demographic growth. The number of people without electricity has remained largely unchanged in recent years, hovering around 560 to 570 million. According to the latest Energy Progress Report[3], this figure could remain static through 2030 if current trends persist.

Africa's role in global electricity supply has also stagnated. The continent accounted for 3.2 percent of global electricity generation in 2013 and just 3 percent in 2023[4], despite its share of the global population rising from 15.7 percent to roughly 17.7 percent over the same period. By contrast, the Asia-Pacific region expanded its share of global electricity generation from 42 to 51 percent, aligning more closely with its demographic and economic weight.

More concerning is the downward trend in electricity consumption per capita. According to UN statistics, Africa's per capita electricity consumption was approximately 660 kilowatt-hours (kWh) in 2015. By 2022, that figure had declined to just 514.7 kWh per capita—its lowest level since at least 1998[5]. This drop in consumption underscores that even as new connections are made, actual electricity use is falling, often due to poor reliability, affordability constraints, and underdeveloped grid infrastructure.

Taken together, these trends suggest that Africa is not merely experiencing a stagnation in electricity access but a deterioration in meaningful energy consumption. While connection figures have improved in some markets, the volume and reliability of supply remain insufficient to support a sustained structural transformation. Without a significant increase in investment—both in generation and in supporting infrastructure—the region risks entrenching a low-energy equilibrium that could undermine future growth and development.

> "If current trends persist, the number of Africans without electricity access could stay unchanged between now and 2030."

[1] Energy Institute, AFC Research
[2] IEA, IRENA, UNSD, World Bank, WHO. 2024. Tracking SDG 7: The Energy Progress Report. World Bank, Washington DC. © World Bank. License: Creative Commons Attribution—Non commercial 3.0 IGO (CC BY-NC 3.0 IGO).
[3] idem
[4] Statistical Review of World Energy 2024.
[5] Energy Statistics Yearbook, United Nations

2.

Capacity Expansion Remains Inadequate Amid a Growing Shift to Decentralized Generation

Africa added an estimated 6.5 GW of utility-scale generation capacity to its grid in 2024, but this remains far below what is required to meet rising demand and close the persistent energy access gap. Nearly half of the new capacity came from hydropower, including additional units from the Grand Ethiopian Renaissance Dam, Tanzania's Julius Nyerere project, Cameroon's Nachtigal plant, and Uganda's Karuma dam. Solar power accounted for the next largest share, with large-scale projects commissioned in Egypt and South Africa and smaller facilities added across at least nine other countries.

The remaining capacity was split between natural gas (notably in Algeria, Ghana, and Nigeria), coal (South Africa), and wind (South Africa and Morocco). However, in global terms, Africa's additions remain modest. India, for instance, added more than 18 GW of renewable capacity in 2024[6]—three times Africa's total—while the United States added 48.6 GW, led by solar (30 GW) and battery storage (10.3 GW)[7].

To meet its most basic energy needs, Africa should aim for at least 16 GW annually until 2050. Considering population growth, such capacity addition would bring average generation capacity to 0.300 MW per thousand capita, at par with levels seen in India and Indonesia today. We believe both Asian economies offer interesting benchmarks because they have significantly scaled up their power infrastructure over the past two decades and reached their Modern Energy Minimum (1,000 kWh/capita) in recent years. In both countries, we notice a significant scale up of power generation capacity to current levels of 0.280 MW/thousand capita in India and 0.300 MW/thousand capita in Indonesia. Importantly, reaching that level would be a starting point only, as even more electricity would be required to meet growing income levels. In the United States for instance, power generation capacity is as high as 3.55 MW/thousand capita.

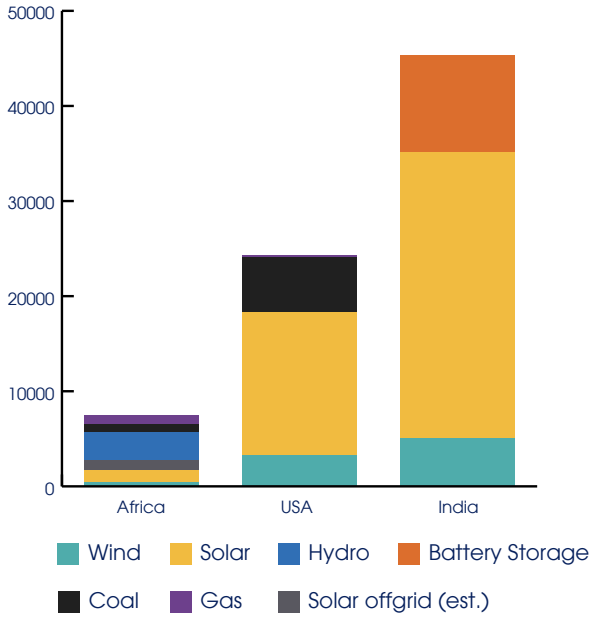
India is particularly interesting because it shares a similar population as Africa and had about the same size of power generation capacity as the continent twenty years ago (130 GW for Africa, 143 GW for India). Yet trajectories widely differ from 2010 onward: India started adding over 25 GW of generation capacity annually in the 2010s (see *Box 5: India's energy transformation offers valuable insights on scaling capacity through infrastructure and market reform*), while Africa's stagnated at below 10 GW. The gap between both regions has severely widened to 150 GW, or the equivalent of three Grand Inga Dams (see Figure 15).

[6] Ministry of New and Renewable Energy
[7] U.S. Energy Information Administration

Figure 15:
The missing scale

Africa's electricity generation capacity additions are missing scale

utility-scale power generation capacity additions by major sources in 2024, in MW

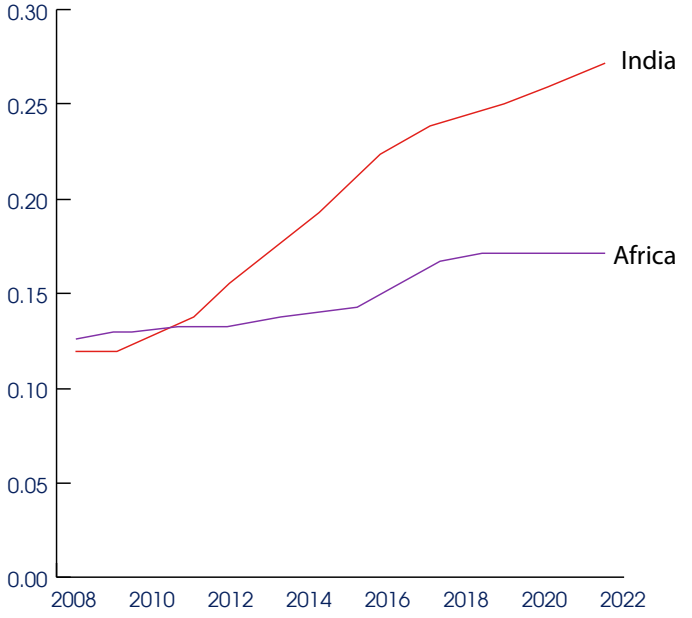


Source: AFC Research, CEA India, U.S. EIA

Note: Data excludes offgrid capacity (mini-grids, rooftops etc). The U.S. did not register any gas capacity addition in 2024, but the country commissioned over 5 GW of gas-to-power in 2023 and expects another 5 GW online in 2025.

India's economic transformation was accompanied by faster energy growth

Installed power generation capacity, in MW/'000 capita



Source: UNSTATS, Central Electricity Authority (India), AFC Research

In parallel, the continued growth of off-grid and captive generation translates systemic shortfalls in centralized electricity supply. While decentralized solutions contribute to energy resilience and diversification, they also underscore structural weaknesses in the formal power system (*see Box 3: Off-Grid and Captive Power in Africa—A Symptom of Unmet Demand and a Missed Opportunity*).

These trends highlight an urgent imperative: significantly scale up centralized, utility-scale generation while improving grid reliability and affordability. Without substantial progress on both fronts, Africa risks deeper reliance on fragmented and often costly off-grid alternatives—exacerbating inequalities and undermining long-term industrial competitiveness.

> "To meet its most basic energy needs, Africa should aim for at least 16 GW annually until 2050"

Box 3: Off-Grid and Captive Power in Africa—A Symptom of Unmet Demand and a Missed Investment Opportunity

The figures on utility-scale capacity additions in Africa tell only part of the story. A growing share of generation is now occurring outside the grid—through off-grid, embedded and captive power systems—particularly in Africa's largest economies, Nigeria and South Africa. These developments reflect not only market innovation but also the continued inability of centralized systems to meet rising urban and industrial demand.

In Nigeria, unreliable public supply has pushed millions of households and firms to rely on petrol and diesel generators. Captive generation is especially widespread among industrial and commercial users, with large enterprises investing in dedicated diesel and gas-fired power plants. Recent spatial data studies by SEforALL suggest that off-grid generation capacity in Lagos State alone could exceed 19 GW—surpassing Nigeria's entire grid-connected generation capacity.
In South Africa, a wave of decentralized investment followed the government's 2022 decision to lift licensing requirements for embedded generation projects. Registered capacity rose dramatically—from just 23 MW in 2019 to 4.5 GW by the end of 2023. Much of this has been driven by the private sector, including utility-scale along with behind-the-meter installations by commercial and industrial users. Estimates from local industry groups suggest that more than 1 GW of private solar capacity was added in 2024 alone.

Despite their scale and significance, these trends remain poorly captured in official statistics. Global data often focuses on off-grid renewables—largely solar rooftops—while thermal generation, a large component of industrial self-generation, is rarely tracked. Yet thermal installations matter: captive plants serving mines, cement factories, or industrial parks can range from 20 MW to 200 MW or more per site, representing substantial capacity additions.

Importantly, the rise of off-grid and captive power underscores a deeper systemic failure. Going off-grid is not always low-cost solution—it is a last resort. A 2019 study by the Energy for Growth Hub found that, once reliability is factored in, self-generated power costs roughly twice as much as grid electricity in Nigeria and South Africa, and up to four times more in Ethiopia[8]. These high costs erode industrial competitiveness and highlight the economic penalty of inadequate grid investment.

Rather than an ideal outcome, the boom in self-generation should be viewed as a market signal—a clear indication of suppressed demand, investment potential, and the urgency of expanding reliable grid access

[8]Energy for Growth Hub. (October 2019). The Reliability-Adjusted Cost of Electricity (RACE): A new metric for the fight against energy poverty.

3.

Africa's Electricity Mix Is Evolving Toward Gas and Renewables

Africa's electricity mix remains dominated by fossil fuels, particularly natural gas and coal, reflecting the large installed capacity in North Africa and South Africa. Together, these subregions account for more than half of the continent's generation, and their reliance on gas and coal gives them outsized influence on the continental mix. In contrast, generation in much of sub-Saharan Africa is more diversified, with hydropower playing a central role in several countries, including Angola, Ethiopia, the Democratic Republic of Congo, Zambia, Mozambique, and Uganda.

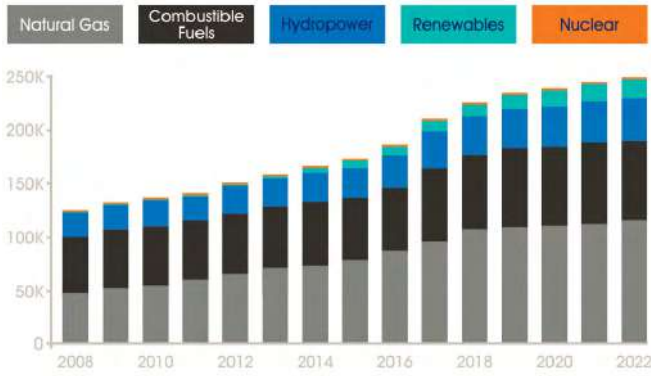
Recent project activity across the continent suggests an ongoing shift in the mix of technologies coming online, with implications for both energy security and emissions. In the short term (2025–2026), two trends are expected to dominate capacity additions:

1. **Baseload hydropower and gas-to-power projects** will lead new generation capacity. Several large hydropower plants are scheduled to bring additional units online, including the Grand Ethiopian Renaissance Dam (GERD) and Julius Nyerere dam in Tanzania, as well as the commissioning of new large dams such as Angola's Caculo Cabaça and Ethiopia's Koysha. On the gas side, Algeria is expected to drive new capacity growth, with several gigawatts currently under construction.
2. **Renewable energy capacity will continue expanding at a modest but steady pace, between 3 and 5 GW per year.** While wind additions remain concentrated in Egypt and South Africa, solar PV is becoming more geographically widespread. Currently, 23 countries have grid-connected solar projects under construction. However, the vast majority are relatively small in scale—typically below 100 MW—limiting the pace of overall renewable penetration.

Figure 16:

Africa's electricity mix is dominated by combustible fuels, primarily natural gas and coal...

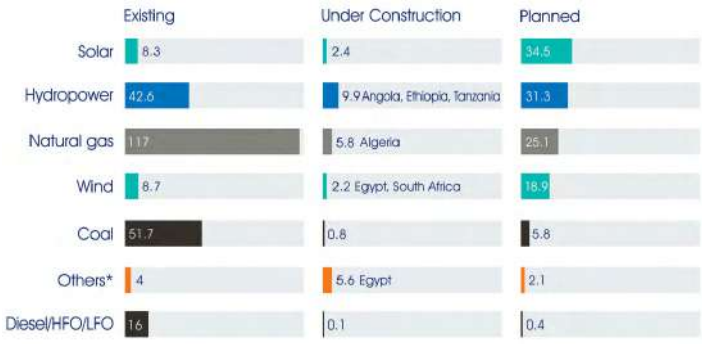
evolution of Africa's installed generation capacity, in MW



Source: AFC Research

... and is evolving towards cleaner sources of electricity.

utility-scale power generation capacity in Africa, in GW, by sources as at December 2024



Note: *Under-construction projects include the 4.8 GW El Dabaa Nuclear Power Plant.

Longer-term project pipelines and policy signals point to a gradual shift toward a lower-carbon electricity mix. This transition is underpinned by three emerging structural trends:

1. **The decline of thermal coal and oil in future pipelines.** The development pipeline for coal and oil-fired power plants is shrinking due to declining investor appetite and policy shifts toward cleaner alternatives. Most countries now favor natural gas as a transition fuel. Several governments—including Senegal, South Africa, and Morocco—are actively pursuing plans to convert existing thermal plants to gas and to expand gas-fired capacity that can provide firm baseload to support renewables. Where coal projects remain under consideration, they are largely seen as last-resort options in countries such as Zambia, Zimbabwe, and Botswana. In such cases, enhanced cross-border electricity trade may help avert new coal developments by allowing access to lower-carbon baseload power from regional neighbors (see Section 3.6.).
2. **Gas is expected to retain a stable role as a balancing and seasonal complement.** In addition to its role as a transition fuel, gas-fired generation is increasingly being deployed to address hydrological volatility and grid intermittency. In countries such as Angola, Sierra Leone, Mozambique, and Tanzania, gas plants can serve as backup during periods of drought and are essential to grid stability when integrating variable renewables.
3. **A growing pipeline of renewable energy projects is emerging across the continent.** Reflecting global investment trends, Africa's pipeline of proposed solar, wind, and hydro projects is the most dynamic segment of the market. Currently, around 85 GW of renewable capacity is at the planning or early development stage, though much of it remains unfunded. Unlocking these projects will require targeted financial support, policy clarity, and improved grid integration.

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4.

To Achieve a Cohesive Energy Transformation, Africa Must Narrow Financial and Access Gaps

Despite incremental growth in Africa's power generation capacity, significant disparities persist across countries and regions—reflecting a complex mix of financial constraints, institutional bottlenecks, and structural vulnerabilities. These gaps risk fragmenting the continent's energy transformation. But they also present clear areas for intervention, innovation, and coordinated investment

Financing: Mobilising Capital at Scale and Speed

Africa continues to face a chronic shortfall in clean energy finance. While global flows have recovered post-COVID, they remain highly uneven. Between 2021 and 2022, Latin America and North Africa saw clean energy finance rise by over 100% and 380%, respectively. In contrast, Sub-Saharan Africa saw an increase of just 2.5%.

When adjusted for the size of electricity access deficits, the disparities become starker. Over a ten-year period, countries in Eastern Europe and Latin America received thousands of dollars per capita in energy finance relative to their access gaps. In contrast, most Sub-Saharan African countries received less than $100 per capita—with many receiving less than $1.

Medium-term prospects for expanded financial flows to Sub-Saharan Africa remain uncertain. Instruments such as the Just Energy Transition Partnerships (JETPs), launched in 2021, have yet to yield material results. They remain underfunded and are currently limited to only two African countries—South Africa and Senegal. Broader geopolitical and fiscal shifts may further reduce available funding. In early 2025, the United States announced the termination of Power Africa and related USAID programs. In Europe, rising military expenditures may constrain foreign aid budgets, potentially limiting contributions from multilateral climate finance institutions.

This growing uncertainty comes at a time when concessional and non-debt financing instruments are most needed. In 2022, international clean energy grants reached a record $3.6 billion, making them the second most widely used financing instrument for the sector. However, a sustained high share of grants and guarantees is increasingly unlikely, given shifting policy priorities in donor countries.

The shortfall in international financing is compounded by structural challenges within African economies. Sovereign balance sheets remain highly leveraged, domestic capital markets are shallow or nonexistent in many countries, and utilities face chronic undercapitalization. As a result, large-scale energy investments increasingly depend on innovative financing mechanisms that can de-risk projects, attract private sector participation, and mobilize domestic and regional resources.

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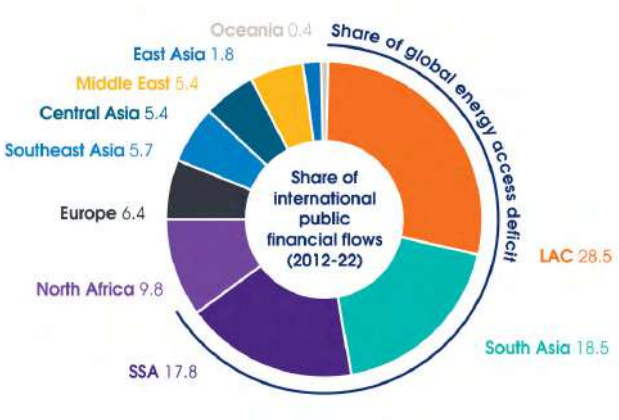
Figure 17:

Inequity in finance: as global investors shy away from combustible fuel projects, public support for renewable energy in Africa has also been insufficient

Sub-Saharan Africa's clean energy sector received less than 18% of international public financing flows allocated to developing countries between 2012 and 2022

shares of international public financial flows to developing countries in support of clean energy, 2012-2022

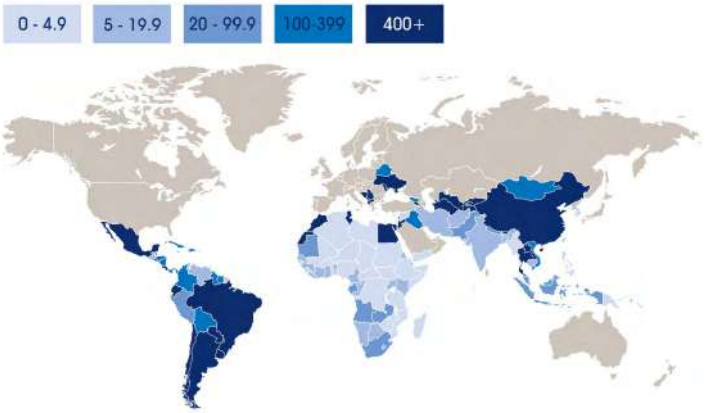


Source: IEA, IRENA, UNSD, World Bank, WHO. 2024. Tracking SDG 7: The Energy Progress Report. World Bank, Washington DC. © World Bank.

Note: Africa received some $3.8bn of international public funding for clean energy projects between 2012 and 2022. That amount is small compared with the scale of its energy deficit and energy financing needs. For instance, sub-Saharan Africa received less than 18% of international public funding over the period, while its share of the global energy access deficit grew to over 82%.

Sub-Saharan Africa receives exponentially less international public financing than other developing regions considering its access gap

map of the average international public financial flows for renewables over 2012-2022, divided by the average access gap over the period and expressed in USD per population without access to electricity



Source: AFC staff calculations based on IEA, IRENA, UNSD, World Bank, WHO. 2024. Tracking SDG 7: The Energy Progress Report. World Bank, Washington DC. © World Bank.

Note: The scale of the map is adjusted for visualization purposes with the maximum set at $400/capita. In fact, several non-African countries received much higher amount per capita including Eastern European countries (between $8,000/capita and $140,000/capita for Georgia, Ukraine, Albania, Montenegro, Bosnia and Herzegovina, Serbia, North Macedonia and Albania), and Latin American countries (between $1,300/capita and $19,000/capita in Chile, Uruguay, Costa Rica, Argentina and Paraguay).

Progress is possible if Africa was to pursue a new financing model—one built on de-risking instruments, domestic resource mobilization, and regional capital markets. Structures such as Just Energy Transition Partnerships (JETPs), although still nascent, have demonstrated the benefits of proposing platforms for tailored, blended finance packages. African institutional investors, including sovereign wealth funds, pension funds and Deposits and Consignments Funds (CDCs) have also shown growing interest in energy infrastructure as a long-term asset class. To capture this capital, African markets must accelerate reforms that enable project bankability—especially in generation, transmission and storage, where investment is most lagging

Project execution: six priorities to move away from fragmentation

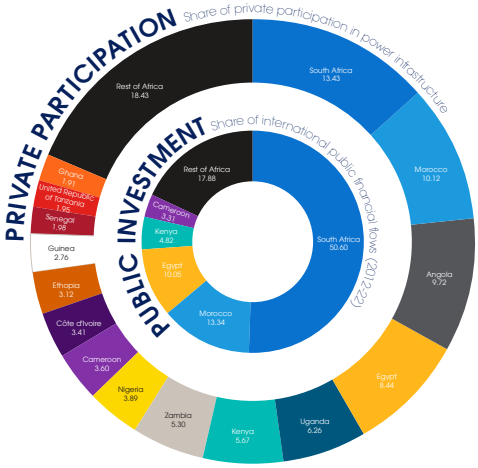
Access to international public funding and private sector participation in energy projects has been concentrated in a small number of countries. South Africa, Morocco, Egypt, and Kenya alone received more than one-third of all clean energy public financing directed to Africa between 2012 and 2022. These same countries accounted for over two-thirds of the continent's power generation public-private partnerships (PPPs) during that period.

Several enabling factors explain this concentration. These include long-term investments in transmission infrastructure, well-defined PPP frameworks, and robust pipelines of bankable projects. Notable examples include Morocco's Noor solar complexes, Egypt's Benban Solar Park, and South Africa's REIPPP program. The presence of a well-capitalized local banking sector is also a success factor. In South Africa, the local financial sector—particularly domestic banks—played a pivotal role in financing and refinancing project debt.

Figure 18:

The most developed African countries are attracting the most public and private capital flow for clean energy projects

share of international public and private financial flows to clean energy projects, 2012-2022



Source: AFC staff calculations. Private participation shares are based on the World Bank's Private Participation in Infrastructure (PPI) database capturing only clean energy power generation projects; while public investment shares are based on public financial flows to clean energy projects, calculated from IEA, IRENA, UNSD, World Bank, WHO. 2024. Tracking SDG 7: The Energy Progress Report. World Bank, Washington DC.

Replicating the success of Africa's leading energy markets will require targeted, replicable reforms that improve project bankability and crowd in private capital. Interviews with developers and investors point to six priority areas where progress can unlock large-scale investment and address persistent project pipeline bottlenecks:

1. **Establish clear route-to-market frameworks.**
   More than half of Sub-Saharan African countries still lack competitive tender processes for renewable energy. Without auctions, open access rules, or transparent procurement frameworks, developers face uncertainty around pricing, timelines, and offtake. Clear and competitive mechanisms—such as reverse auctions or feed-in tariffs—are essential to create visibility and attract early-stage investment.

2. **Align fiscal tools with least-cost energy outcomes.**
   Many African governments face fiscal constraints that limit their ability to offer guarantees or credit enhancements. But not all projects carry the same fiscal risk. Least-cost power generation projects—particularly renewables with low levelized costs—can reduce pressure on national budgets over time. Recognising this, governments and their development partners should consider prioritising these projects for selective risk-sharing instruments like guarantees, even within constrained IMF-supported reform environments.

3. **Prioritize transmission upgrades to unlock stranded capacity.**
   Grid limitations are among the most cited barriers to project viability. Without transmission capacity to evacuate power, otherwise viable projects are shelved. Even advanced markets are affected: in 2023, South Africa cancelled 4 GW of wind projects due to insufficient grid access. Investments in transmission and interconnection should be treated as enablers of generation investment, not as separate or downstream concerns.

4. **Balance tariff reform with long-term viability.**
   Subsidized electricity pricing continues to undermine cost recovery and project bankability across many African markets. While tariff reform must be carefully sequenced to avoid social hardship, utilities must be able to cover operational costs and service debt if they are to attract new investment. Reform strategies should aim for progressive tariff structures that ensure commercial viability while protecting low-income households.

5. **Aggregate and scale project pipelines.**
   Investors consistently report that Africa's project pipelines are too fragmented and too small to justify the cost of capital deployment. Regional coordination platforms, industrial energy zones, and multi-project procurement frameworks can help aggregate demand, standardize contracts, and reduce transaction costs. Development finance institutions can play a catalytic role in helping structure these pipelines and bring projects to market.

6. **Unbundle utilities and enhance financial autonomy.**
   Fully integrated state-owned utilities often suffer from weak governance, limited creditworthiness, and overdependence on government balance sheets (see Box 3.2: The State of African Power Utilities). By unbundling the electricity value chain and creating legally autonomous, fiscally independent local utilities, governments can improve transparency, ring-fence revenue streams, and enhance investor confidence—particularly in distribution and grid-based investments.

Access: Rethinking What Progress Looks Like

Africa's energy challenge cannot be reduced to electrification rates alone. This report continues to use the Modern Energy Minimum (MEM) as a benchmark for meaningful energy access: 1,000 kWh per capita annually—300 kWh for households and 700 kWh for productive uses. By this metric, many countries with improved access rates remain far below thresholds needed for industrial development, job creation, or digital participation.

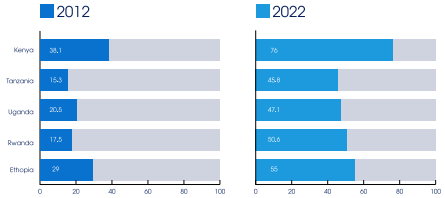
Off-grid and distributed solar solutions have helped expand access in underserved areas and will remain essential in fragile and rural settings. But they are not a substitute for grid-connected, reliable electricity systems that can power factories, agro-processing, or regional supply chains. The path to inclusive growth requires not just access—but adequacy, reliability, and productive use.

This is particularly evident in East Africa, whose economies have electrified at some of the fastest rates in the world over the past decade but have not bridged their energy gap

Figure 19:

East African countries have electrified at some of the highest rates in the world from 2010-22...

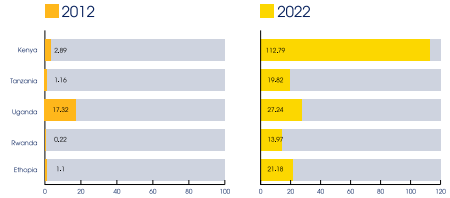
electrification rates, % of population



Source: IEA, IRENA, UNSD, World Bank, WHO. 2024. Tracking SDG 7: The Energy Progress Report. World Bank, Washington DC. © World Bank.

...with off-grid solar contributing significantly to rural electrification.

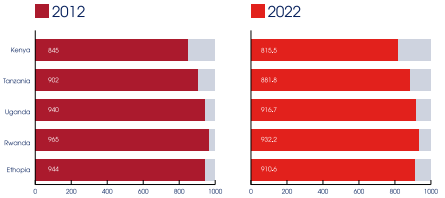
off-grid solar capacity, in MW



Source: IRENA

Yet, their modern energy gap has barely reduced over the period.

modern energy gap: electricity consumption gap to 1,000 kWh/capita



Source(s): AFC staff calculations based on UNStats, IEA

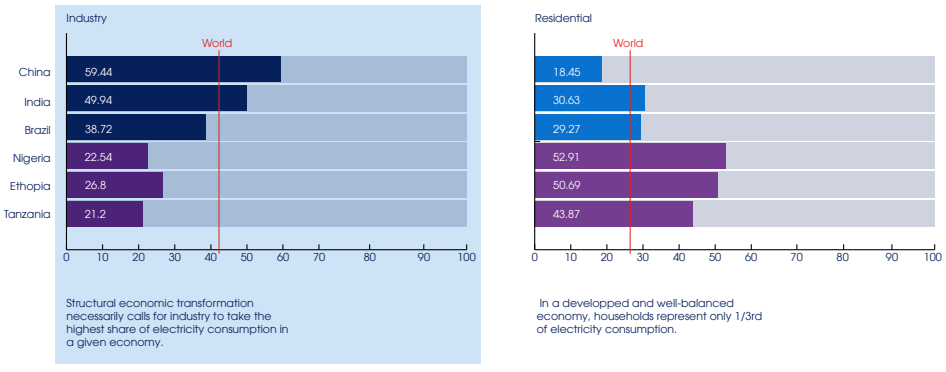
Using this lens, it is clear that Africa's energy deficit is not only wide but unequally distributed. Low-income, landlocked, and climate-vulnerable countries tend to perform worst against the MEM benchmark, often lacking sufficient electricity to power economic transformation. A country- and region-specific approach to closing the energy gap will be essential to achieving inclusive, resilient development outcomes

Figure 20:

Misplaced energy priorities?

Focusing solely on household electrification addresses only one-third of Africa's electricity demand and overlooks the substantial power requirements needed to drive structural economic transformation.

share of electricity consumption in %, 2022-23

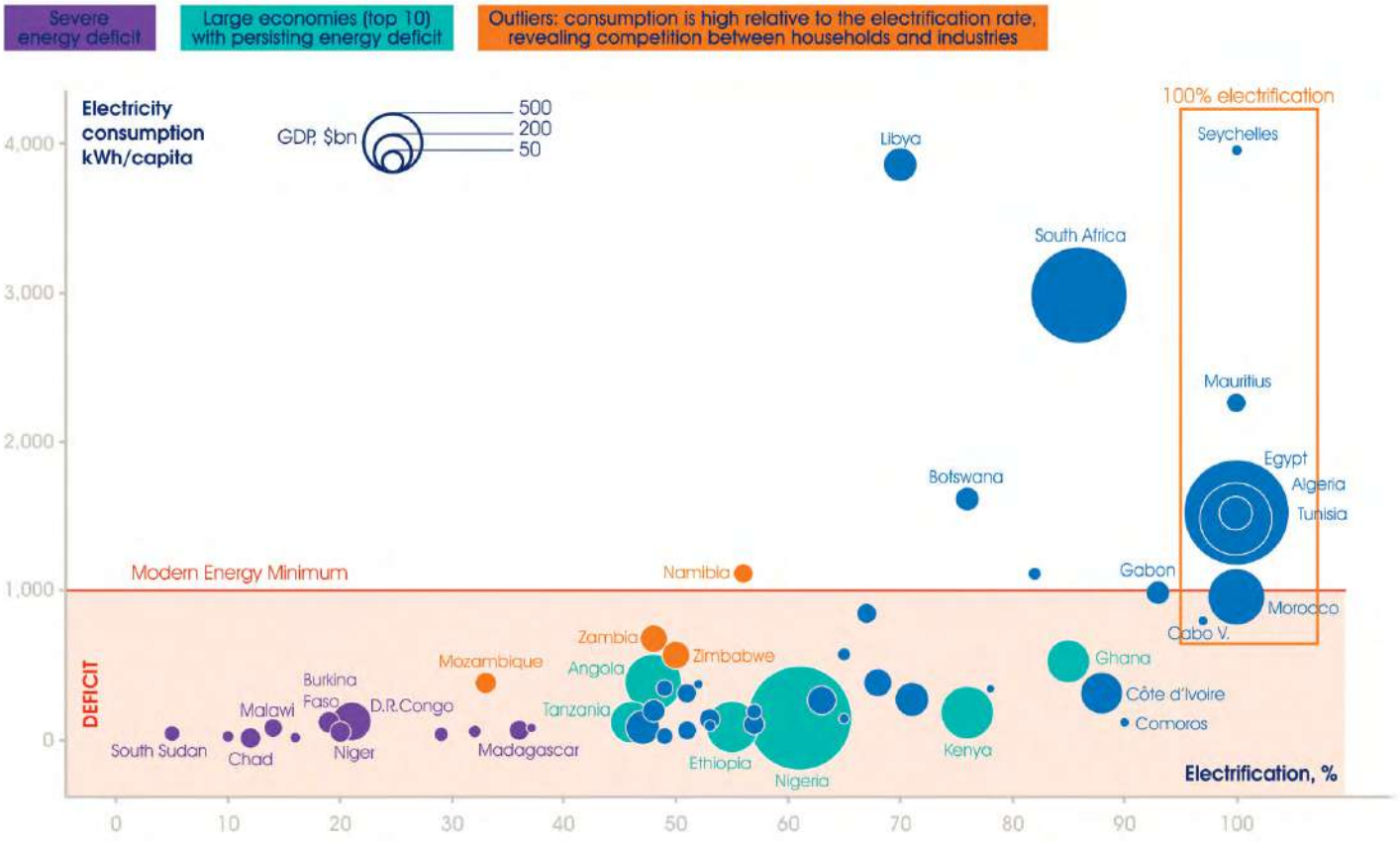


Source: AFC, International Energy Agency

To better understand Africa's diverse energy needs and policy priorities, this section compares electrification rates with per capita electricity consumption across countries. While not a perfect proxy, this approach provides a useful lens to assess both the extent of electricity access and the intensity of electricity use—offering a more nuanced view of the continent's energy deficit beyond headline access rates.

Figure 21 presents this relationship, with each country represented according to the size of its GDP in 2024. The analysis reveals several distinct clusters of countries, each with diverging challenges and intervention needs. While most African countries share common constraints around affordability, reliability, and investment gaps, these issues are often more acute in specific national contexts.

Figure 21:
Inequity in access: understanding electricity priorities across Africa
Africa's energy deficit is as diverse as its economies and must be contemplated against both electrification and consumption metrics.



Source(s): AFC staff calculations based on UNStats (electricity consumption data); Energy Progress Report (electrification data); IMF (GDP data)

1. Severe Power Deficits: Structural and Financial Barriers to Access

A group of 12 countries stands out for simultaneously registering low electrification rates and low electricity consumption—indicative of the continent's most severe energy shortfalls. This group includes predominantly landlocked and low-income nations, such as:

- Landlocked and Sahelian countries: Chad, Burkina Faso, Niger, and the Central African Republic
- Small and fragile states (including island states): Malawi, Burundi, South Sudan, Sierra Leone, Liberia, Guinea-Bissau and Madagascar
- The Democratic Republic of the Congo— whose energy deficit is especially notable given its GDP size.

These countries typically face a combination of geographic isolation, limited infrastructure, and high vulnerability to climate and credit shocks. Populations are largely rural, incomes are low, and the cost of energy infrastructure deployment is elevated. In these contexts, closing the power deficit will require comprehensive interventions across the electricity value chain—prioritizing concessional finance, non-debt instruments, and technical assistance to de-risk investment and improve institutional capacity.

2. Competing Demands: Industrial Use Versus Household Access

A second group of countries—including Mozambique, Zambia, Zimbabwe, and Namibia—displays high electricity consumption despite relatively low electrification rates. In these economies, energy demand is skewed toward heavy industry (notably mining and smelting), which accounts for a disproportionate share of total electricity use. This creates a structural tension between industrial demand and household access, particularly in the context of ongoing power deficits.

Zambia, for example, faced a 700 MW shortfall in 2024, forcing the utility to ration electricity between residential users and large industrial clients. In response, the government is pursuing a dual strategy: (i) implementing open access and power import mechanisms to secure supply for industries via the Southern African Power Pool, and (ii) expanding rural electrification through decentralized solutions for underserved households. These examples highlight the need for targeted interventions that preserve productive use of energy without further marginalizing household access.

3.Growth Constraints in Large Economies: Stranded Supply and Grid Bottlenecks

Among Africa's largest economies, a divide is evident. One group—including South Africa and the North African countries—has largely achieved the minimum threshold for modern energy access, with consumption levels varying according to the degree of industrialization. A second group—including Nigeria, Angola, Ethiopia, and Tanzania—continues to face acute or intermittent power shortages that constrain economic performance and industrial competitiveness.
In many of these economies, electricity supply has recently increased, but transmission and distribution infrastructure has not kept pace—leading to stranded or underutilized generation capacity. Prioritizing grid investments in these countries could unlock latent supply, improve reliability, and lower system-wide costs. In these cases, transmission and distribution represent the highest-return bottleneck to address in the near term.

BOX 4: The State of African Power Utilities

Unlocking the scale of investment required for Africa's energy transformation will be impossible without addressing the persistent weaknesses of its power utilities. Across much of the continent, utilities remain financially unsustainable due to chronic underpricing, high operational costs, and weak revenue collection. According to a 2021 World Bank study, only one in three utilities in sub-Saharan Africa was able to recover both operating and debt service costs. When excluding subsidies, this figure drops to one in four. Moreover, less than half of utilities are profitable, and roughly one-third report net losses exceeding 20%.

In the transmission segment for instance, system underperformance contributes to persistent technical and non-technical losses—estimated at 15–17 percent in Africa, compared to 8 percent globally. These losses erode utility revenues, limit cost recovery, and reinforce a cycle of underinvestment and poor service, which in turn pushes consumers and industries off-grid.
While utility performance varies significantly across countries, data from the World Bank's Utility Performance and Behavior in Africa Today (UPBEAT) database reveals several common structural challenges:

1. **High Operating Costs and Electrification-Driven Losses:** Utilities with aggressive rural electrification programmes—especially those targeting low-income, off-grid populations—face rising operating costs without commensurate revenue gains. Without adequate concessional financing or mechanisms to improve affordability, these efforts exacerbate financial underperformance.

2. **Weak Revenue Collection Due to Limited Metering and Tariff Misalignment:** Collection efficiency is closely tied to the extent of customer metering and the alignment of tariffs with cost structures. Improving financial sustainability will require scaled-up metering programmes and a gradual transition toward cost-reflective tariffs, while ensuring affordability protections for vulnerable consumers.

3. **Unbundled Systems with Fragmented Cost Recovery:** In countries with unbundled power sectors, such as Angola and Sierra Leone, individual entities (generation, transmission, distribution) may recover their costs even as the broader value chain fails to achieve full cost recovery. This points to systemic imbalances that require coordinated sector-level reforms.

4. **Liquidity Constraints:** Utilities in the Central African Power Pool (CAPP) and West African Power Pool (WAPP) face the highest levels of receivables and payables. Strengthening payment discipline and enforcing timely settlements will be essential to improve liquidity and reduce inter-utility arrears.

Utilities in East Africa have made the strongest operational improvements over the past decade, driven by the adoption of management information systems and performance-based oversight—particularly in Uganda and Rwanda. In Uganda, the 20-year concession of the utility Umeme proved very successful, and was bought out by the Government in 2025.

Only a few utilities consistently demonstrate strong financial and operational performance. Umeme (Uganda), ErongoRED (Namibia), and PUC (Seychelles) achieved sustained cost recovery and positive net profit margins between 2012 and 2018. Notably, under its 20-year concession (2005–2025), Umeme invested over $33 million, expanded its customer base to 2 million, and maintained revenue collection rates above 99%.

Addressing the continent's broader utility challenges will require structural reforms centered on cost-reflective tariffs, improved governance, targeted loss reduction, and the adoption of prepaid metering to enhance cash flow and reduce arrears. Without significant improvements in financial viability and operational efficiency, Africa's power sector will remain a high-risk destination for investment—limiting the continent's ability to meet rising energy demand and power inclusive growth.

5.

From potential to power: building Africa's energy future, at scale

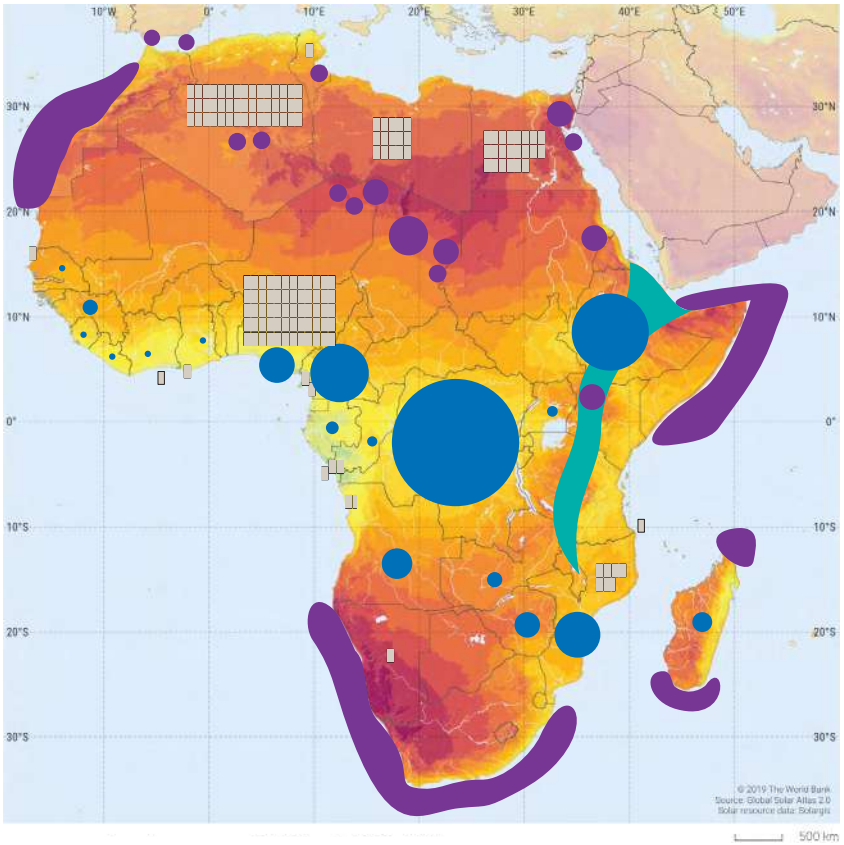
To address its generation capacity gap, Africa is exceptionally well-endowed with diverse energy resources—from world-leading solar and wind corridors to vast untapped hydropower, geothermal steam, and natural gas reserves. What is missing is not energy potential—but the infrastructure, systems integration, and policy coordination required to convert it into large-scale, reliable, and affordable power.

Unlocking Africa's full energy promise will require a holistic strategy: one that connects remote high-yield generation zones to demand centres, balances intermittent renewables with flexible baseload, and coordinates regional planning to achieve economies of scale. If approached with this systemic lens, Africa can build an energy future that is not just green, but transformative.

Map 3:

To generate electricity at scale, Africa has vast untapped pools of energy resources

major proven resource centres for hydropower, natural gas, solar, wind and geothermal energy



Solar | Photovoltaic Power Potential

Long term average of PVOUT, period 1994-2018, kWh/kWp

Daily totals	3.2	3.6	4.0	4.4	4.8	5.2	5.6
Yearly totals	1168	1314	1461	1607	1753	1899	2045

Wind | Major wind spots

Main wind corridors based on mean power density

Geothermal | EGS technologies

East African Rift Valley

Hydropower | Hydroelectricity potential, GW

100GW 50GW 5GW

Natural Gas | Proven natural gas reserves, Bcm

Nigeria 5,979	Tunisia 64	Cote d'Ivoire 18
Algeria 4,504	Namibia 62	Madagascar 2
Egypt 2,209	Senegal 52	Somalia 6
Libya 1,505	Mauritania 50	Benin 1
Mozambique 650	Ghana 48	Chad 1
Congo 284	Tanzania 30	D.R. Congo 1
Cameroon 173	Gabon 26	Morocco 1
Angola 129	Ethiopia 25	South Africa 1
Equatorial Guinea 99	Sudan 25	

Source(s): Global Solar Atlas CC BY 4.0; Global Wind Atlas CC BY 4.0; OPEC ASB data, Eni World Energy Review
Note: Natural gas data includes only reserves classified as proven, and excludes large or recent discoveries offshore Senegal/Mauritania, Tanzania, Côte d'Ivoire or onshore Zimbabwe for instance.

Africa is home to 60% of the best solar resources globally, but high-potential solar sites are far away from demand centres. Global solar atlases consistently rank the Sahara Desert stretching from Mauritania to Sudan, and the Namib–Karoo–Kalahari basin in Southern Africa (Angola, Namibia, Botswana, South Africa) among the most irradiated regions in the world. These vast, sun-drenched zones offer ideal conditions for utility-scale solar production, with theoretical yields far exceeding global averages. However, much of this solar wealth is located far from major population and industrial centres, often in remote areas with limited infrastructure. Unlocking this potential will require significant investment in long-distance transmission networks, regional grid integration, and energy storage. Crucially, because solar is inherently intermittent, such investments must be anchored by a broader energy mix that includes baseload capacity located elsewhere —such as hydro, gas, or battery storage—to ensure grid stability and economic viability. Without this systemic approach, Africa risks stranding its world-class solar resources without the infrastructure to deliver them at scale.

Africa has the world's largest untapped hydropower potential, with 487 GW of available hydroelectric resources to be developed. 90% of the continent's hydropower potential remains unexploited and offers resource base for large-scale and affordable power capacity addition. The largest share of that potential is in Central Africa - D.R. Congo alone represents 100 GW of untapped potential - and Ethiopia (45 GW). But Cameroon, Nigeria, Mozambique and Angola are also high potential markets while medium-sized resource base have been proven in West Africa (Guinea, Liberia) and the broader Gulf of Guinea (Gabon, Congo, Rep).

However, fully harnessing Africa's hydropower potential will require careful management of project execution risks. Large hydro projects are often exposed to cost overruns and delays and ensuring successful delivery will depend on stronger project preparation, transparent procurement processes, independent oversight, and structured risk mitigation mechanisms.

Natural gas holds a critical, yet underutilized, role in unlocking Africa's renewable energy potential. While gas-to-power has been successfully deployed at scale in North Africa and parts of West Africa, much of the continent has yet to fully leverage its gas reserves to support a cleaner, more stable power mix. Most recent estimates suggest that up to 400 GW of gas-to-power capacity can be developed considering new discoveries in West Africa (Mauritania, Senegal), Southern Africa (Namibia, Mozambique), and East Africa (Tanzania). For now, the continent's gas-to-power capacity stands at less than 120 GW and is largely concentrated in Egypt and Algeria. Yet, its wider adoption can generate several benefits, including:

- Displacing high-cost and high-emission fuels such as diesel and coal, offering a more flexible and cleaner bridge toward decarbonization (South Africa, Senegal, Morocco).
- Complementing hydropower by providing a critical back-up during dry seasons, thereby mitigating the risks of climate-induced variability (Angola, Tanzania).
- Serving as dispatchable and fast-ramping generation capacity to stabilize grids and help integrate higher shares of intermittent wind and solar energy (Mozambique)

Realising this potential will require greater focus on gas infrastructure—terminals, pipelines, transmission, processing—and enabling regulatory frameworks that treat gas not as a competitor to renewables, but as a strategic enabler of a lower-carbon electricity mix.

Africa also has the world's largest untapped conventional geothermal potential. According to the IEA, developing less than 1% of this potential would be enough to meet the continent's electricity needs in 2050[9] . East Africa's Great Rift Valley that stretches over 6,000km from Eritrea to Mozambique offers some of the highest steam potential in the world. Resources are located at shallow depths of 2,000m, giving favorable geothermal conditions that make exploration and development of high-temperature heat cheaper. This is particularly the case on the eastern branch of the valley, from Eritrea to northern Tanzania, where high temperatures are ideal for power generation and could support up to 20 GW of capacity according to industry estimates[10]. With almost 1 GW of geothermal capacity, Kenya offers the ideal success story for the sector - which can be replicated in Eritrea, Ethiopia, Djibouti and Tanzania.

Wind energy presents vast untapped potential to develop power corridors along the continent's coastal and high-altitude regions. Countries like Morocco, Egypt, and South Africa have already demonstrated the viability of large-scale wind power, but the resource remains largely under-exploited across much of West (Mauritania), East (Sudan, Somalia, Djibouti, Eritrea, Ethiopia), Central (Chad), and Southern Africa (Madagascar, Namibia). High-quality wind corridors in the Horn of Africa or in West Africa offer ideal conditions for utility-scale development but, just like solar, will require investment in long-distance transmission lines, grid balancing mechanisms, and forecasting capabilities to manage variability. Wind can play a particularly strategic role in complementing solar energy, often generating power during evening and night-time hours when solar output drops. By diversifying Africa's renewable portfolio, wind energy also makes some markets very competitive for green industrialization strategies around hydrogen and steel (Mauritania, Egypt, Namibia, South Africa).

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[9] Africa Energy Outlook 2022
[10] https://energyforgrowth.org/article/whats-the-status-of-east-africas-geothermal-market/

Box 5: India's energy transformation offers valuable insights on scaling capacity through infrastructure and market reform

India has experienced one of the most ambitious energy transformations among emerging markets. Between 2007 and 2024, the country more than doubled its installed generation capacity—from around 150 GW to over 425 GW—while electricity consumption rose by over 70%. Data from the Central Electricity Authority reveals that the Modern Energy Minimum (1,000 kWh/capita) was reached in 2015[11]. This expansion has been central to powering India's industrial growth, digital economy, and rapidly urbanizing population.

A pivotal enabler was the creation of a single national power grid operating at one frequency (50 Hz)—completed in 2013 with the integration of India's five regional grids. This synchronous grid is now the largest of its kind in the world, allowing electricity to be transmitted seamlessly across the country. For investors, this means a power project located in any part of India has access to a unified consumer market of 1.4 billion people and a GDP of over $3.7 trillion—dramatically enhancing project viability and reducing offtake risk.

Grid unification also made it possible to balance electricity supply and demand across India's vast geography. For instance, surplus hydropower from the Northeast can be dispatched to industrial zones in the West, while solar power generated in Rajasthan is used to support peak demand in urban centres like Delhi or Mumbai. This ability to shift energy across regions reduces curtailment risk, improves grid stability, and enables a more efficient and diversified energy mix.

A key catalyst behind this capacity growth was India's deliberate effort to build large-scale, bankable power platforms. Through government-backed programs like the National Solar Mission and Ultra Mega Power Projects (UMPPs), India created structured pipelines of generation projects and offered them to investors via transparent, competitive auctions. These auctions helped drive down costs, secure long-term offtake, and attract private capital at scale. With a unified national grid and clear regulatory pathways, power producers had confidence that electricity could reach end-users across the country—making even remote projects financially viable.

Institutional and market reforms further strengthened the investment case. The Indian Energy Exchange (IEX), launched in 2008, introduced a transparent, automated platform for electricity trading. It enables real-time price discovery and allows generators to access a national pool of buyers, improving liquidity and competitiveness. Combined with liberalized regulations, improved transmission infrastructure, and targeted renewable energy policies, these reforms have helped India unlock substantial private investment in power generation.

India's journey demonstrates how grid integration, market mechanisms, and state-led project development can dramatically accelerate energy capacity growth—offering valuable lessons for African economies seeking to build robust, investment-ready power sectors at scale.

> "India's journey shows how grid integration, market mechanisms, and state-led project development can unlock massive energy investment—offering valuable lessons for African economies."

[11] We note diverging figures from the IEA which estimate that India only reached its Modern Energy Minimum in 2022.

6.

From National Grids to Continental Scale: the Case for a Unified African Power Market

Efficient grid networks serve multiple critical functions: they allow countries to optimize seasonal generation profiles, reduce the cost of electricity by accessing cheaper power, support renewable integration, and facilitate cross-border trade that generates foreign exchange earnings. Strong grids also de-risk generation investments by connecting producers to markets and enabling business models such as wheeling.

Conscious of these benefits, Africa's power systems have made steady progress toward regional integration, with most countries now linked to one of five regional power pools: SAPP in Southern Africa, WAPP in West Africa, EAPP in East Africa, PEAC in Central Africa, and COMELEC in North Africa. But while national grids are increasingly connected to their neighburs, Africa still lacks the large-scale, inter-regional transmission infrastructure needed to operate as a single, efficient electricity market. The continent's power systems remain largely confined within regional silos, limiting the ability to trade electricity at scale, diversify generation sources, or optimize supply and demand across borders.

To unlock the full potential of its energy transformation-and justify the billions needed to scale up generation capacity, integrate renewables, and serve a population of 2.5 billion by 2050, Africa needs integrated grids. Grids that link demand centres with high-potential generation zones, support cross-border trade, reduce system costs, and minimize losses. That vision is embodied in the African Single Electricity Market (AfSEM), launched in 2021 by the African Union as a roadmap to build the world's largest electricity market by area.

Realising this ambition requires urgent action across three dimensions:

- Intra-regional connections to ensure every country is fully integrated into its power pool;
- Inter-regional transmission corridors to physically link Africa's five power pools; and
- a continent-wide shift toward high-voltage, high-capacity infrastructure that can move power efficiently across long distances and borders.

Intra-connections: linking national grids to regional power pools

The path to a unified African electricity market begins with ensuring every country is physically connected to its regional power pool. Africa's five power pools—SAPP, WAPP, EAPP, PEAC, and COMELEC—are at varying stages of development, yet many member countries still operate in isolation, limiting the benefits of power trade and grid balancing.

- **Angola is one of the most strategic yet disconnected countries,** with several gigawatts of stranded hydropower capacity and membership in both the Central African Power Pool (PEAC) and Southern African Power Pool (SAPP). Fully integrating Angola through cross-border interconnectors to the DRC, Zambia, and Namibia could unlock a subregional transmission corridor with significant potential—especially for energy-deficient mining hubs in the DRC and Zambia.

- **The Central African Power Pool (PEAC) offers the greatest number of intra-connection opportunities.** Most member states still run isolated national grids with only partial bilateral links (e.g., DRC–Republic of Congo; Gabon–Equatorial Guinea). Priority projects include the Inga–Soyo Interconnector to connect Angola, the "Friendship Loop Line" (DRC–Republic of Congo–Angola), the Cameroon–Chad Interconnector, and a sub-regional loop linking Gabon, Cameroon, and Congo. These projects are vital to monetising the region's world-class hydropower potential—Africa's largest.

- **The Southern African Power Pool (SAPP) is nearing full integration.** By 2027, the Mozambique–Malawi and Tanzania–Zambia interconnectors should connect Malawi and Tanzania to the regional grid, closing two major gaps. The Tanzania–Zambia line is especially strategic, as it will also establish the first physical link

between SAPP and EAPP—creating the backbone of a future continental energy corridor from Cairo to Cape Town.

- **The West African Power Pool (WAPP) reached a major milestone in 2023 with the permanent synchronization of most member countries.** Only Nigeria and Niger remain outside the synchronized zone, but both are set to be integrated through the North Core Interconnection Project with Benin and Burkina Faso.
- **The East African Power Pool (EAPP) still requires key national links with South Sudan and Somalia to achieve regional cohesion.** Priority projects include the Uganda–South Sudan, Ethiopia–South Sudan, and Ethiopia–Somalia interconnectors.
- **The North African Power Pool (COMELEC) is progressing along two distinct corridors.** The Algeria–Tunisia–Libya axis has already been developed, creating a strong east–west transmission spine. The Morocco–Mauritania axis is now under study, following a bilateral agreement signed in early 2025. Full integration of these corridors will strengthen regional supply security and lay the groundwork for expanded electricity trade with West Africa and Europe.

Map 4:
Africa's isolated power grids

Source: AFC Maps

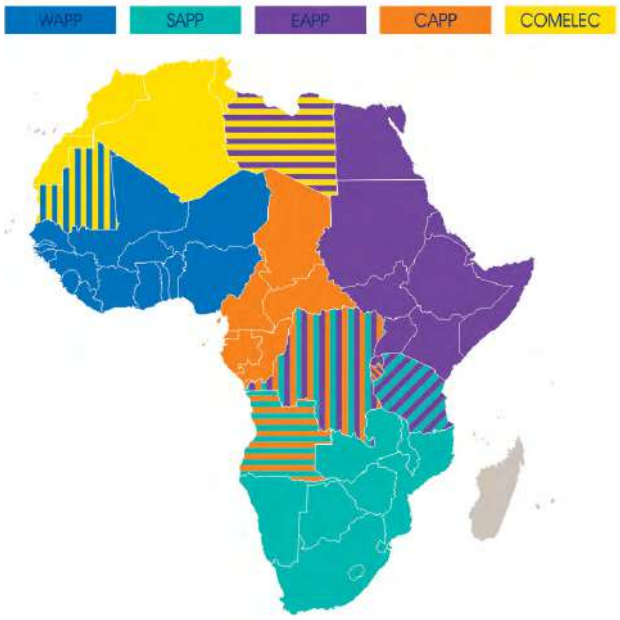
Inter-connections: building a continental transmission network

Once intra-regional links are in place, the next step is to connect Africa's five power pools into a single, continental grid. This process begins in 2027 with the commissioning of the Tanzania–Zambia Interconnector—the first true bridge between two power pools (SAPP and EAPP). This marks a critical turning point in the realisation of AfSEM.

As power pools begin to interlink, certain countries are emerging as strategic "transmission hubs" given their membership in multiple pools. These include Mauritania (WAPP/COMELEC), Libya (COMELEC/EAPP), Tanzania (EAPP/SAPP), Angola (PEAC/SAPP), and especially DRC (PEAC/EAPP/SAPP), which is uniquely positioned to serve as a geographic and power-trading bridge between Central, East, and Southern Africa.

Key interconnectors that will facilitate this process include links between Morocco-Mauritania (under study), Egypt-Libya-Tunisia-Algeria-Mali – or ELTAM (proposed), Tanzania-Zambia (under construction), Tanzania-D.R. Congo (under discussion), Tanzania-Uganda (under study), Tanzania-Malawi/Mozambique (under study), Angola-D.R. Congo/Zambia (proposed), Angola-Namibia (preparation), and Nigeria/Cameroon (proposed).

Map 5:
Africa's power pools membership



Disclaimer: The boundaries, colours, denominations and other information shown on this map are for illustrative purposes only and do not imply any judgment on the part of the African Finance Corporation concerning the legal status of any territory, the delimitation of international boundaries, or the endorsement or acceptance of such boundaries

Building the scale and reliability

Finally, to be future-ready, Africa's cross-border grid must be built for scale—meaning high-voltage (400 kV and above), high-capacity transmission lines that can move power across borders efficiently and reliably. Today, Africa's operational cross-border transmission capacity is just under 20 GW, and heavily concentrated in Egypt and Southern Africa. New interconnectors are expected to double this capacity, but that would still represent only 15–20% of Africa's installed generation capacity. By contrast, European grid operators are required to make 70% of transmission capacity available for cross-border trade.

Upgrading to ultra-high-voltage standards is especially important for renewable integration. Solar and wind generation zones are often located far from demand centres and require efficient, low-loss bulk transmission to be viable. Without this, renewables remain stranded, curtailment rises, and the economic case for large-scale energy development weakens.

To meet such transmission needs, Africa will require at least $3.2–4.3 billion annually through 2040[12]. This threshold cannot be met under a business as usual scenario and calls for new financing mechanisms along with private sector participation. With fiscal space limited and utility balance sheets weak, concessional finance will be critical to de-risk early transmission projects and demonstrate replicable PPP business models. In parallel, regulatory frameworks and power master plans must be harmonized to maximize economies of scale and leverage sub-regional and regional synergies.

The transmission sector should also seek to attract private sector participation. Transmission systems remain largely under public ownership, with the exception of Zambia where the Copperbelt Energy Corporation runs an integrated generation, transmission and distribution business. Elsewhere, the monopolistic structure of the sector, combined with weak revenue models, continues to deter private investors. As a result, private capital has historically been directed toward generation, leaving transmission underfunded and operationally stagnant.

Lessons from Latin America may offer a way forward. Since the 1990s, countries such as Brazil have opened transmission to the private sector through competitive auctions and independent power transmission (IPT) models. Brazil's grid has grown from 105,000 km in 2012 to 184,000 km in 2023, with 86,000 km of new lines auctioned over the past 16 years. In 2024 alone, Brazil's first transmission tender attracted $3.65 billion—equal to Africa's annual transmission investment need.

Brazil's experience demonstrates that creating a viable investment pipeline—anchored in regulatory reform, unbundled utilities, and long-term planning—is essential to crowd in private capital at scale. These lessons are now being applied to a few pathfinding independent power transmission (IPT) projects in Africa, including in Kenya (Africa50/Power Grid Corporation of India), Uganda, and Mozambique (Gridworks).

"Finally, to be future-ready, Africa's cross-border grid must be built for scale—meaning high-voltage (400 kV and above), high-capacity transmission lines that can move power across borders efficiently and reliably"

[12] World Bank. (2017). Linking Up: Public-Private Partnerships in Power Transmission in Africa.

State of Africa's Infrastructure Report 2025: Energy

Africa's energy story is not one of deficit, but of untapped potential. With one of the world's fastest-growing populations, vast renewable resources, and increasing regional cooperation, the continent stands at a critical inflection point. While structural challenges persist—underinvestment in grids, slow project execution, and limited access in underserved markets—these are precisely the gaps that define the next frontier of energy investment.

The path to closing Africa's energy gap is not incremental—it requires transformative capital flows across the full infrastructure value chain: from large-scale generation to modernized transmission, distributed energy systems, regional interconnectors, and energy storage. Investors have a unique opportunity to be early movers in markets that are poised for rapid demand growth and systemic change

The pipeline of clean energy projects is growing, regional power trade is gaining traction, and new models—such as embedded generation, wheeling, and cross-border transmission—are proving both technically viable and commercially attractive. Moreover, Africa's energy investment case is increasingly aligned with global imperatives: decarbonization, resilient supply chains, and inclusive growth

For long-term investors, Africa's energy sector offers more than infrastructure—it offers a stake in industrial transformation, regional integration, and climate leadership. With the right policy frameworks, risk-mitigation tools, and blended capital strategies, the sector is positioned to deliver stable returns while advancing sustainable development at scale
The moment is ripe. What Africa needs is not just more energy—but more investment ambition to match the scale of its opportunity.

Industry & Manufacturing

Unlocking Industrial Value: Case Studies in Infrastructure-Enabled Supply Chains

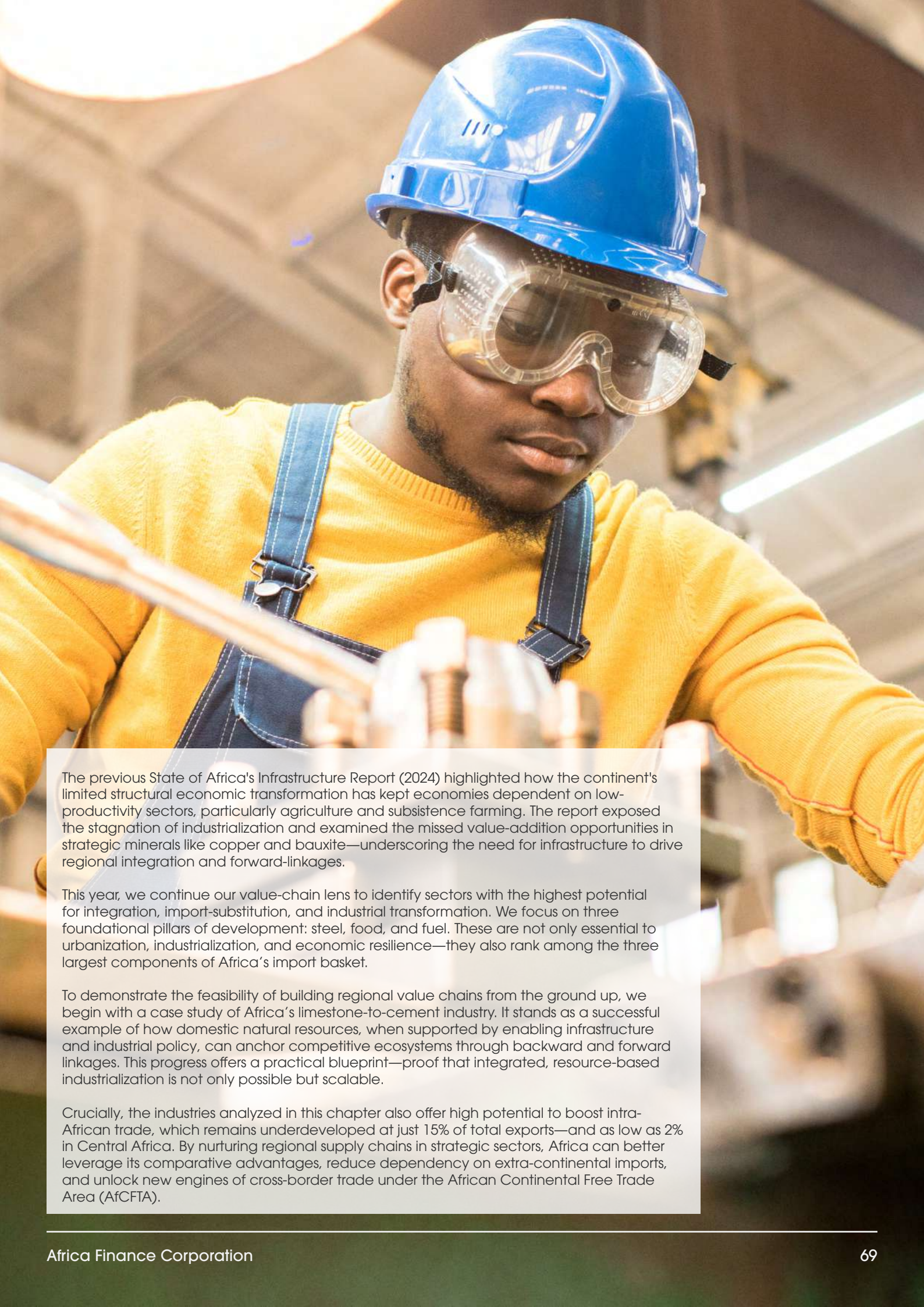
- **Steel must be treated as a strategic industrial commodity for Africa.** With a surge in iron ore supply expected from West and North Africa, the continent has a window of opportunity to localize value creation—by centralizing ore-to-steel processing in energy-rich hubs and connecting them to fabrication markets. But failure to act now could see African ore continue to feed global supply chains, while the continent imports finished steel at a premium.

- **Africa spends over $100 billion in scarce foreign exchange importing food each year.** But by investing in capital-intensive, climate-resilient agriculture, the continent can transform its food systems and build the productive capacity needed to feed 2.5 billion people by 2050. This transformation requires more than on-farm improvements—it demands a connected infrastructure ecosystem, including irrigation, rural roads, storage depots, rail corridors, and agro-processing zones.

- **Fertilizers represent Africa's most immediate industrialisation and import-substitution opportunity.** With abundant gas reserves for urea, world-class phosphate deposits, and untapped potash reserves, the continent has all the ingredients to meet its own fertilizer demand—if regional supply chains are developed and financed at scale. Strategic opportunities include: diversifying phosphate supply beyond Morocco by developing new hubs North and West Africa; building sub-regional urea production clusters in gas-rich markets like Senegal, Angola, Tanzania, and Mozambique; and unlocking Africa's first potash mines in Morocco, the Republic of Congo, and the Horn of Africa.

- **Africa's refinery network is an investable platform for energy security and regional supply.** If fully utilized, refining capacity could meet up to 90% of the continent's fuel demand—compared to just 45% last year. To unlock this potential, two complementary investment tracks are required. First, brownfield upgrades: over $16 billion is needed to modernize existing refineries, meet clean fuel standards, and reduce reliance on imports. Second, greenfield investment is key to meeting future demand, with Nigeria and Angola emerging as new continental hubs.

- **Fuel logistics must evolve into an integrated, cross-border system—linking pipelines, rail, and multimodal terminals.** Replacing fragmented trucking routes with modern corridors will lower distribution costs, decongest ports, and strengthen regional energy trade. West Africa, with its population density and fragmented fuel distribution, is a prime candidate for regional action around coastal storage, inland depots, and cross-border pipelines.



The previous State of Africa's Infrastructure Report (2024) highlighted how the continent's limited structural economic transformation has kept economies dependent on low-productivity sectors, particularly agriculture and subsistence farming. The report exposed the stagnation of industrialization and examined the missed value-addition opportunities in strategic minerals like copper and bauxite—underscoring the need for infrastructure to drive regional integration and forward-linkages.

This year, we continue our value-chain lens to identify sectors with the highest potential for integration, import-substitution, and industrial transformation. We focus on three foundational pillars of development: steel, food, and fuel. These are not only essential to urbanization, industrialization, and economic resilience—they also rank among the three largest components of Africa's import basket.

To demonstrate the feasibility of building regional value chains from the ground up, we begin with a case study of Africa's limestone-to-cement industry. It stands as a successful example of how domestic natural resources, when supported by enabling infrastructure and industrial policy, can anchor competitive ecosystems through backward and forward linkages. This progress offers a practical blueprint—proof that integrated, resource-based industrialization is not only possible but scalable.

Crucially, the industries analyzed in this chapter also offer high potential to boost intra-African trade, which remains underdeveloped at just 15% of total exports—and as low as 2% in Central Africa. By nurturing regional supply chains in strategic sectors, Africa can better leverage its comparative advantages, reduce dependency on extra-continental imports, and unlock new engines of cross-border trade under the African Continental Free Trade Area (AfCFTA).

BOX 6: Lessons from cement: how Africa built a growing and integrated cement supply-chain by developing its limestone resources

The development of Africa's cement industry offers a compelling example of how integrated industrial ecosystems can emerge by monetising domestic resources and aligning infrastructure, policy, and private investment. While not as capital- and energy-intensive as metals, cement demonstrates that value chains can be built quickly and competitively, supporting both import-substitution and intra-African trade.

Africa's relative success in cement stems from the development of its limestone reserves, the strategic use of coal and gas for clinker production, and the rollout of infrastructure from quarrying to port distribution. Key production hubs—such as Egypt, Nigeria, Tanzania, South Africa, and Morocco—combine abundant raw material with affordable energy inputs to produce clinker, the intermediate product used to manufacture cement. These hubs now supply both their domestic markets and neighboring countries via regional grinding plants.

Crucially, Africa's cement trade is mostly a clinker trade. Countries without limestone deposits import clinker from regional producers and grind it locally into cement. Based on WITS data, over 75% of Africa's 2023 cement-related imports were clinker, not finished cement—highlighting the effectiveness of regional production models. The continent now has over 385 million tonnes of installed cement capacity, with production anchored in strategic hubs like Egypt and Nigeria. Large producers of clinker and cement typically hold quality deposits of limestone but also benefit from available energy input like coal and gas, and additional materials required for clinker production including clay, shale, sand or iron ore.

The energy component has been pivotal. The high temperatures (up to 1400°C) required for kiln firing mean that energy efficiency is critical to competitiveness. This has favored markets with access to gas or coal. In Tanzania, for example, Tanzania Portland Cement Co (TPCC) replaced imported fuel oil with domestic gas, cutting emissions and reducing energy costs by nearly six times[13].

Trade patterns also reveal the strength of intra-African industrial links. All of Nigeria's clinker exports are shipped to Ghana and Cameroon, while over 95% of Egypt's 2021 clinker exports were directed to African markets. With strong port infrastructure and cost-efficient production, Egypt serves key markets across East and West Africa, including Côte d'Ivoire, Kenya, Cameroon, and Burkina Faso.

In West Africa, the growth of Nigeria's cement industry illustrates how a combination of policy, private sector investment and infrastructure development can create a successful industrial ecosystem that benefits the domestic and regional economy.

Under a backward integration policy (BIP) adopted in 2002, the government decided to issue cement import licenses only to companies that committed to building local manufacturing plants. The policy led to significant domestic capacity expansion that allowed Nigeria to achieve self-sufficiency by the mid-2010s and turned the country from a net cement importer to a net clinker and cement exporter.

The success of Nigeria's cement industry is due to a series of factors, most notably the availability of raw material (limestone) and energy input sources (natural gas) that allowed the industry to thrive. Along with capacity growth, cement producers also invested in infrastructure development, including inland logistics (roads) and port infrastructure. Dangote for instance recently opened port terminals in Apapa (Lagos) and Port Harcourt to supply clinker to Ghana and Cameroon.

Figure 22:
Nigeria's backward integration policy successfully supported the development of cement capacity and turned the country into a net regional exporter
Nigeria's cement imports, production and export in tonnes

Source: World Integrated Trade Solution (WITS), USGS, AFC Research
Note: EXIM data is sourced from WITS and includes portland and white cement; production data are estimates of hydraulic cement production by USGS.

[13] Globeleq Tanzania Sustainability Report 2021.

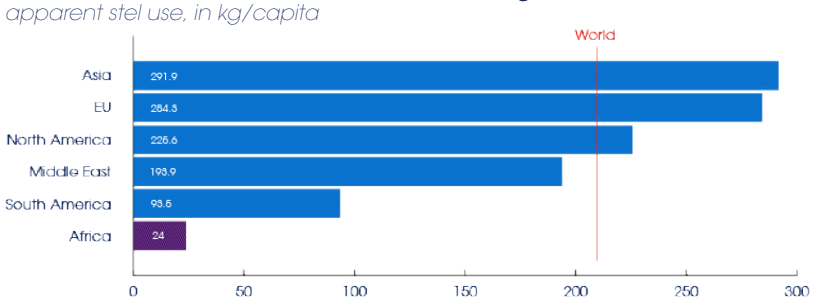
1.

Forging Africa's Steel Future: Capturing the Ore Boom by Building a Regional Industry

Industrial metals like steel, aluminium, and copper are essential to modern economies—powering everything from transport systems and digital infrastructure to industrial clusters and consumer goods. As demographic growth and urbanization accelerate—particularly in Asia and Africa—demand for these metals is expected to rise sharply to support energy transformations, infrastructure expansion, and industrial development.

Yet Africa remains largely a supplier of raw materials, exporting bauxite and iron ore for smelting abroad, only to reimport the finished products at a premium. After exploring copper and bauxite-to-aluminum last year, this section now looks at steel. It explores how Africa can break this export-oriented cycle—by localising value addition and building a globally competitive steel industry tailored to its development needs.

Figure 23:
Africa's steel consumption has strong upside given its industrialization, urbanization and infrastructure development agenda
apparent stel use, in kg/capita



Source: World Steel Association

Steel is the backbone of modern economies, with robust long-term demand fundamentals in Africa. Steel underpins everything from transport networks and power systems to industrial clusters and urban infrastructure. Yet Africa remains the continent with the lowest per capita steel consumption globally, a reflection of underdeveloped industrial capacity and lagging infrastructure investment.

This gap presents an extraordinary opportunity. With the continent's population set to reach 2.5 billion by 2050, accompanied by rapid urbanization and an urgent need for resilient, climate-smart infrastructure, steel demand in Africa is set to soar. In fact, the drivers of steel consumption—urban growth, housing, manufacturing, transport and power infrastructure—are all aligned with Africa's structural transformation agenda. Catching up with South America's per capita steel consumption – the second lowest in the world – would already translate into a fourfold jump in steel use on the continent.

Steel offers a significant opportunity for import-substitution and value capture. In 2022 alone, Sub-Saharan Africa imported over $26.8 billion of metals and $108 billion of machinery and transport equipment, more than 85% of which originated from outside the continent[1]. To recapture that value, steel must now follow the trajectory of Africa's cement industry, which demonstrated the viability of building natural resource-based value chains by leveraging domestic inputs, industrial policy, and regional demand.

[1] Understanding the final share of steel is challenging, but fundamentally these numbers comprise of most steel-heavy items such as automotives, trucks, pipes, processing equipment, planes, wagons, locomotives or railway tracks.

Box 7 : South Africa's Steel Paradox – A Cautionary Tale and a Regional Call to Action

South Africa, the continent's most industrialized economy and historically its primary steel producer, is now witnessing the slow erosion of its steel industry. Once the anchor of industrialisation and iron ore beneficiation, the country's integrated steel mills are being outcompeted by mini mills and low-cost imports—despite decades of policy support.

The roots of the crisis lie in two decades of economic stagnation, weak infrastructure investment, and persistent energy and logistics bottlenecks. Construction activity—traditionally responsible for some 60% of steel demand—has declined sharply, with the sector now contributing less than 3% to GDP. By contrast, in countries like India, Indonesia, and Tanzania, construction accounts for around 9% of GDP, supporting strong and sustained steel demand. In the absence of large infrastructure projects, primary raw steel producers in South Africa have been left without a market anchor.

Paradoxically, mini mills using scrap metal have thrived. Supported by favorable policies—such as export restrictions on scrap, subsidized pricing, and targeted funding—they now dominate domestic supply. These mills are better suited to a low-growth, price-sensitive market, and operate with lower energy needs and greater flexibility. The result is a fragmented industry with diverging interests: one focused on affordable, short-cycle production; the other advocating for long-term industrial self-sufficiency.

This experience underscores a critical insight: steel follows growth. Without sustained infrastructure investment and coordinated demand aggregation, even the most mature steel industries can collapse. South Africa's struggles reveal the limitations of isolated national strategies in a sector that requires scale, infrastructure, and policy alignment.

But this is not a story of irreversible decline—it is both a warning and a wake-up call. As Africa prepares for a surge in iron ore supply and renewed infrastructure demand, the continent needs a regional strategy for steel. In Kenya, a new steel factory in Kwale, outside of Mombasa, is already helping revive local iron ore production and capturing steel demand from East African markets. South Africa still has the industrial base, technical capacity, and skilled workforce to play a pivotal role—if connected to broader continental plans through AfCFTA corridors, regional infrastructure platforms, and trade integration.

The lesson is clear: Without coordinated action, Africa risks losing the steel it already has—before building the steel industry it needs.

A Fragmented Boom: Africa's Iron Ore Surge Needs a Unified Steel Agenda

Recent global trends—especially the push to regionalize strategic value chains—offer fresh incentives for Africa to reimagine its steel future. Across the world, countries are seeking to shorten supply chains, reduce reliance on external suppliers, and localize critical industries. Africa cannot afford to be left behind.

The timing is right: the continent is on the verge of a significant iron ore supply surge. Africa currently produces over 100 million tonnes of iron ore annually, a large majority of which comes from South Africa. This figure could double by 2030, driven by several short and long-term production trends that will create a new world-scale supply hub in West Africa.

In the short-term, additional brownfield expansions are coming to market from existing mines in Mauritania, Sierra Leone and Liberia – Africa's second, third and fourth largest producers. In Mauritania, state-owned SNIM aims at doubling its production by 2031, while transforming 31% of it locally. In Sierra Leone, the Leone Rock Metal Group – the country's biggest producer – has embarked on a 5-year strategic plan to double production to 20m tonnes by 2027. Finally, ArcelorMittal Liberia is currently executing its Phase II expansion to quadruple production capacity to 20 Mta, with a full 15 Mta concentrator expected online in 2025.

New mines will also enter the market over the coming years, including from Guinea's Simandou mountain range where high-grade iron ore deposits are being developed by a consortium led by Rio Tinto. Upstream developments will be supported by a new 622km railway line and initial production capacity could reach an annualized 60m tonnes per year by 2026 – almost as much as all of South Africa's production.

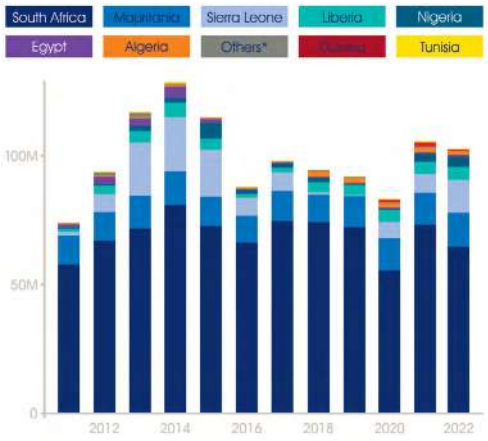
In the longer-term, additional mines currently in early development stage could also come to market in Central and Southern Africa Africa, especially in Gabon, Cameroon, Republic of Congo and Angola.

Most incremental growth in iron ore production will come from countries with limited infrastructure. Upcoming ore producers have little or no processing capacity, inadequate electricity infrastructure, and underdeveloped transport networks. This presents both a challenge and an opportunity.

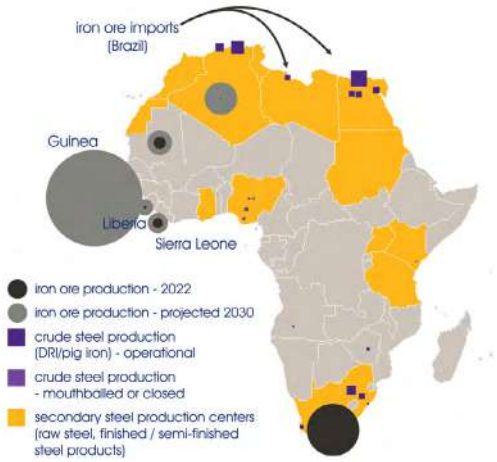
Figure 24:

Africa's iron ore production has recovered from the Ebola crisis and is back on the rise - but most supply will come from markets with limited infrastructure

iron ore production in Africa, in tonnes (2011-22)



Africa's fragmented ore-to-steel value-chain



Source(s): USGS, national sources, AFC Research

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An overview of Africa's ore-to-steel supply-chain reveals the following trends:

1. New iron ore supply is emerging across West Africa—notably in Guinea, Mauritania, Sierra Leone, and Liberia—alongside Algeria. However, with the exception of Algeria, these new hubs lack processing infrastructure and access to reliable energy, limiting in-country value addition opportunities.
2. Nigeria and South Africa—Africa's largest economies—remain disconnected from regional supply dynamics. South Africa's integrated steel industry needs a regional market to offset sluggish domestic demand, while Nigeria's decades-old steel mills in Ajaokuta and Warri remain offline.
3. The rest of the continent is fragmented, with primary producers like Egypt and Libya importing iron ore from Brazil, while secondary markets rely on scrap metal or crude steel imports to feed rolling mills and fabrication industries.
4. Secondary steel markets are supporting the development of new forward and backward linkages (AIG in Nigeria, Devki Steel in Kenya, DISCO Steel in Zimbabwe), albeit on a small scale.

If Africa is to benefit from its iron ore boom, it must re-orient its industrial geography and rethink how and where it processes its minerals. The reality is that not all countries can or should build steel plants. Ore-to-steel is a capital- and energy-intensive process—energy alone represents 20–40% of production costs—and requires robust infrastructure ecosystems. The continent must instead develop regional value-addition hubs leveraging access to logistics, power, and end-user markets.

Examples already exist: Egypt, Algeria and South Africa have developed integrated steel capacity based on the availability of coal or gas. Others like Mauritania and Namibia are exploring green steel production, leveraging solar, gas, and emerging hydrogen technologies. The Oshivela Green Iron Project in Namibia is an early sign of what a low-carbon African steel future could look like.

To facilitate the industry's growth and consoldiation, the following infrastructure gaps must be addressed:

- **Build railway lines to unlock stranded iron ore deposits** (Algeria, Gabon, Cameroon, Congo Rep.)[2]. Where possible or relevant, such lines should seek to establish rail corridors that are multi-users and can support cross-sector logistics.
- **Develop deep water port infrastructure that can accommodate growing trade of dry bulk.** Most iron ore produced in Africa relies on its own dedicated port infrastructure[3], but not all of them are deepwater. For instance, the Saldanha Bulk Terminal in South Africa already has an average draft of 18-20m, but vessels at Pepel in Sierra Leone can only load up to 8m at the jetty.
- **Accelerate investment in low-carbon, affordable power to anchor local steel production.** Ore-to-steel is one of the most energy-intensive industrial processes—whether through blast furnaces using coke or rotary kilns for direct-reduced iron (DRI). Energy accounts for 20–40% of production costs[4], making power availability and pricing a decisive factor in competitiveness. To attract midstream and downstream steel processing, Africa must develop reliable, cost-effective electricity at industrial scale—prioritising gas, hydropower, and renewables.

In Mauritania, SNIM's plans to transform 31% of its iron ore locally by 2031[5] illustrate the combined challenges and opportunities of value addition in the sector. To meet its growth targets, the state-owned company recently dredged the Port of Nouadhibou from 16.15m to 18.3m to accommodate ore carriers of up to 250,000 DWT. By providing regional and global logistics solutions, the port has also been chosen as the location for the development of a new steel processing and industrial hub. In parallel, SNIM is putting in place ambitious plans to produce electricity using solar and natural gas resources in order to cut railway transportation and processing costs while decarbonising its operations.

[2]In southern Algeria for instance, the world-class Gâra Djebilet mine has been producing since 2022 but its full exploitation can only be achieved once the national railway network is extended over 950km from Bechar to the country's southern border with Mauritania where the mine is located. The same constraints are observed in Central Africa, where known deposits of iron ore in the Mbalam-Nadeba mountains between Cameroon and the Republic of Congo can only be developed with the construction of a new 650km railway line to the deepwater port of Kribi.
[3]Nouadhibou in Mauritania, Pepel in Sierra Leone, Buchanan in Liberia, Sacomar in Angola, or Saldanha in South Africa
[4]World Steel Association
[5]SNIM's plans include the transformation of 31% of its iron ore locally by 2031, 40% by 2038 and 45% by 2045.

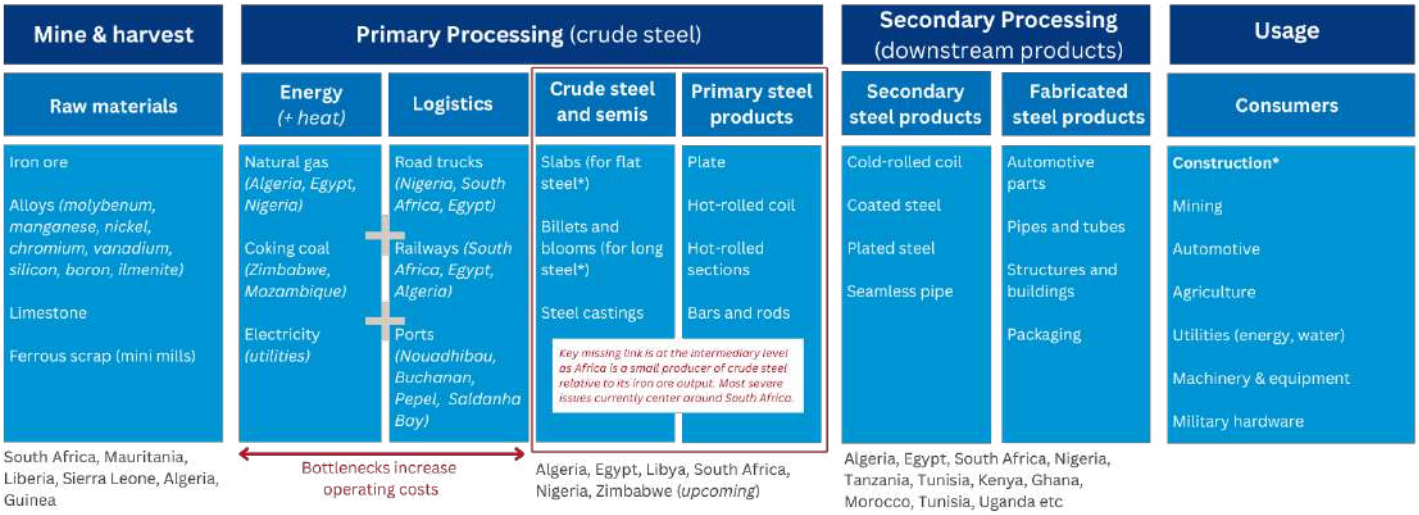
The case for a continental steel strategy

The capital intensity and infrastructure requirements of steel production mean that Africa cannot afford a fragmented approach. Today, the continent suffers from disjointed supply flows across the value chain—iron ore is extracted in one country, crude steel is processed in another, and secondary products like rebar, coils, and pipes are manufactured elsewhere, often relying on imported inputs. This fractured landscape leads to inefficiencies, lost value, and unnecessary dependence on global markets.

A continental steel strategy is urgently needed to re-orient sector flows—from ore to crude steel, to secondary processing, and ultimately to consumption. Such a strategy would coordinate upstream production with midstream transformation and downstream fabrication by leveraging existing strengths across countries. It would prioritize integration over duplication, enabling Africa to scale competitive value chains.

For example, while countries like Egypt, South Africa, and Algeria have established crude steel production, others like Ghana and Kenya possess robust downstream fabrication industries, producing steel pipes, coils, and finished products. Yet without domestic crude steel capacity, these countries must import billets or scrap, often from outside Africa, just to keep their plants running. Better regional coordination could channel semi-finished steel from production hubs to these fabrication centres—anchoring a regionally integrated steel economy.

Infographic 1: Ore-to-steel supply-chain



Fragmentation is the enemy. Africa cannot afford dozens of sub-scale, disconnected steel plants. Instead, the continent should focus on building industrial corridors and connecting infrastructure—rail, power, ports—that align with ore reserves, energy supply, and market demand. Crude steel production, which requires scale and energy input, should be concentrated in viable hubs, while secondary manufacturing and fabrication can be decentralized to serve regional markets.

This vision aligns with the African Continental Free Trade Area (AfCFTA) and the continent's broader industrialisation ambitions. By aggregating infrastructure demand, pooling resources, and linking upstream and downstream capacities, Africa can reduce import dependence, unlock job creation, and retain more value onshore. With massive infrastructure needs on the horizon—across housing, energy, transport, and industry—Africa's demand for steel is only going to rise. There is no justification for continuing to import what can be produced regionally with the right planning and political commitment. Steel must be treated as a strategic good. With a coordinated approach, Africa can build a globally competitive, low-carbon, and self-reliant steel sector that supports its long-term development.

2.

Beyond the Farm: Unlocking Africa's Agri-Food Potential

Africa is home to over 60% of the world's remaining uncultivated arable land and a fast-growing population projected to reach 2.5 billion by 2050. Yet the continent remains heavily food insecure. According to the Food and Agriculture Organisation (FAO), 282 million Africans are undernourished, and another 868 million face moderate to severe food insecurity. The paradox is stark: a continent rich in land, labor, and sunlight, but still reliant on food imports to meet basic needs.

Despite its central role in African economies—accounting for up to 17% of GDP in Sub-Saharan Africa and employing over 60% of the labor force—agriculture remains undercapitalized and inefficient. Low mechanization, limited irrigation, and insufficient fertilizer use continue to suppress yields and keep rural communities in poverty. These structural gaps, combined with increasing climate shocks, have widened Africa's food deficit and exposed the fragility of global supply chains.

But this is also where the opportunity lies. Africa's untapped land, youthful workforce, rising domestic demand, and strategic location give it the potential to become a global powerhouse in agri-food production and trade. From primary production to agro-processing, input manufacturing and logistics, Africa offers high-return, high-impact investment opportunities that can boost productivity, build resilience, and drive inclusive growth.

This section outlines how targeted investment and policy reform in agriculture, fertilizers, and agri-industrial infrastructure can help unlock this potential—transforming Africa from a net food importer into a competitive, resilient, and self-sustaining agri-food economy.

Tackling import dependency and food inflation: the case for urgent transformation

Africa's underperforming agricultural systems have driven a growing reliance on food imports. In 2021, the continent spent $100 billion on imported food—draining scarce foreign exchange reserves. Cereals account for the largest share of food imports – 36% of the import bill[6], giving Africa the highest cereal import dependency in the world. That dependency makes the continent highly vulnerable to external shocks and supply-chain disruptions, as experienced during the COVID-19 pandemic and during the Russia-Ukraine war.

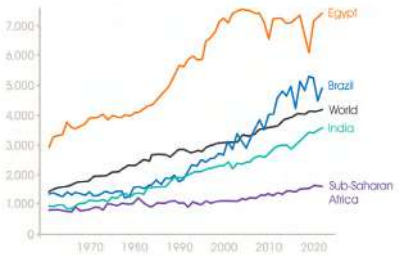
To grow domestic production, crop areas must be expanded and become productive. Currently, Africa faces low cereal yields and insufficient land under crop development[7]. Estimates from FAO show that the continent had an average of 0.21 hectares of cropland per capita in 2020, compared to 0.37ha and 0.39ha per capita in the Americas and Europe, respectively.

Boosting domestic agricultural production is one of the most effective ways to curb food inflation and strengthen economic resilience across Africa. In recent years, import reliance coupled with domestic supply disruptions (weather events, conflicts, costly logistics) and local currency depreciations have created persistent and high food inflation across several parts of Africa, aggravating food insecurity on the continent. Research by the IMF shows that food inflation is not only outpacing overall consumer price inflation but largely contributing to its pickup[8] .

[6] FAO Statistical Yearbook 2023.
[7] In addition to traditional cereals like wheat, rice and maize, Africa's import reliance is also strong for staple foods like palm oil.
[8] https://www.imf.org/en/Blogs/Articles/2021/12/06/food-inflation-in-sub-saharan-africa

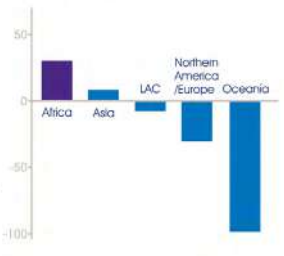
Figure 25:

Despite recent progress, African cerals production systems remain unproductive...
cereal yields, in kg/ha



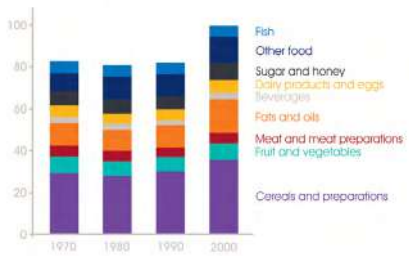
Source: World Bank

... leaving Africa with the highest cereal import dependency in the world...
cereal import dependency ratio, in %



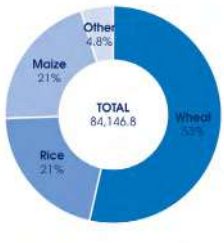
Source(s): FAO Statistical Yearbook, AFC Research

... and a growing food imports bill where cereals account for over 30% of imports.
Africa's food imports bill, in US$ bn



Source: FAO Statistical Yearbook

Africa's cereal imports are dominated by wheat, rice and maize.
cereal imports by Africa in 2021, '000 tonnes



Source: FAO Statistical Yearbook

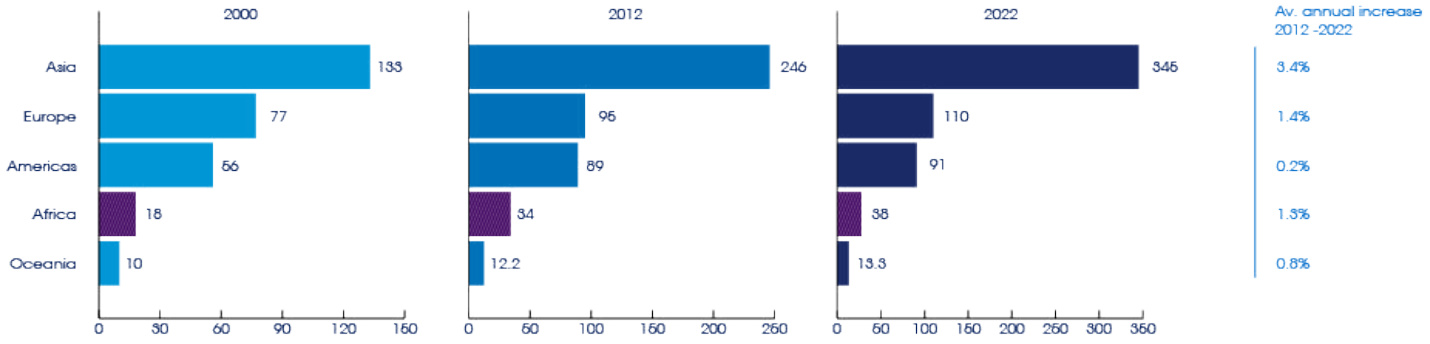
To enable the structural transformation of its agriculture, Africa must grow the sector's capital intensity and improve its climate resilience

In 2022, Africa attracted just 6% of global agricultural investment—despite being home to 18% of the world's population. Mechanization remains limited, irrigation infrastructure is underdeveloped, and modern farming practices are not widespread, leaving the continent overly dependent on subsistence methods and exposed to external shocks. Lack of capitalization and modern farming techniques makes the sector even more vulnerable to external shocks, in particular weather events like droughts and floods that are becoming more frequent.

Yet there are signs of momentum. FAO data shows Africa's net agricultural capital stock grew by 3.6% annually between 2012 and 2022—outpacing the global average of 3%. But in absolute terms, it still represents just 7% of the world's total. That leaves much room for productive investment.

Figure 26:

Investments in African agriculture have doubled in 20 years but remain insufficient to address sector needs
gross fixed capital formation in agriculture, forestry, and fishing in $bn



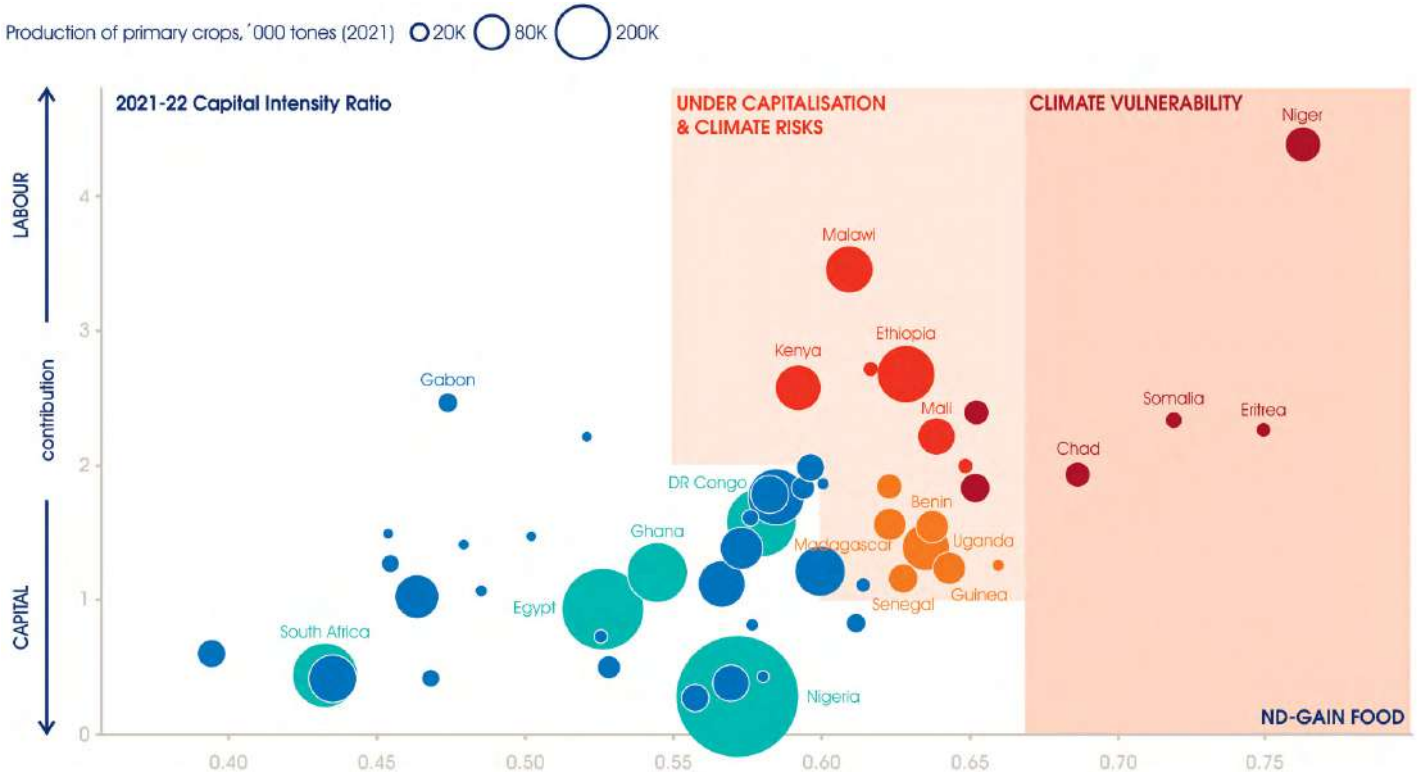
The GCF measures the annual flows of physical investments in the agriculture sector
Source: FAO

To prioritize interventions, we compare each country's capital intensity with its vulnerability to climate change. Using FAO and ND-GAIN indicators, our analysis identifies where investment in climate-smart agriculture can deliver the greatest returns.
To assess capital intensity, we use FAO's average ratio of the agriculture value added to net capital stock in 2021 and 2022. This metric measures the contribution of one unit of capital stock to generate value added in agriculture, forestry and fishing. The higher the ratio, the more labor intensive the sector is. A lower ratio indicates better use of capital and higher mechanisation.

On the other side, the food score of the University of Notre Dame Global Adaptation Initiative (ND-GAIN Country Index) captures the vulnerability of food production, food demand and rural populations to climate change, with a high score signalling severe climate vulnerability.

Figure 27 illustrates the results and represents countries according to the size of their primary crops production in 2021. Countries like Eritrea, Somalia, Niger, and Chad face acute climate risks and urgently require resilience-focused investment. Meanwhile, large crop producers like Malawi, Kenya, and Ethiopia show high potential for dual-impact interventions that build both capital and climate readiness.

Figure 27:
Transforming African agriculture requires increasing its capital-intensity and making it more resilient to climate change
capital intensity vs. climate vulnerability



Source(s): FAO, University of Notre Dame Global Adaptation Initiative

Note: Capital intensity is measured using the average ratio of the agriculture value added to net capital stock in 2021 and 2022. Climate vulnerability is measured using the food score of the University of Notre Dame Global Adaptation Initiative (ND-GAIN Country Index). The size of each bubble represents primary crops production in Kg/capita in 2021

Recent interventions by development partners prove that focused investments can yield significant benefits. In Ethiopia – sub-Saharan Africa's largest wheat producer – a recent intervention backed by the African Development Bank introduced heat-tolerant wheat varieties and expanded irrigated wheat fields from less than 5,000 hectares in 2018 to 650,000 hectares by 2021. This had the effect of doubling per-hectare yields to 4 tons – on a par with global producers like the US, Russia or Ukraine. This single initiative has transformed Ethiopia from a nation importing over a million tons of wheat each year for the past decade to near self-sufficiency by 2022, saving hundreds of millions of dollars in import costs.

From Farm to Market: Strengthening Africa's Food Infrastructure Ecosystem

African agricultural and food systems are already struggling to keep up with population growth and will need to expand fast in order to meet demand from 2.5 billion Africans by 2050. Selected interventions highlighted above, including capitalisation and climate resilience, can certainty help correct course in the short-term. But the growth and sustainability of the industry will also rely on addressing several constraints and infrastructure gaps across the value-chain.

Africa must start with better on-farm inputs and irrigation systems. Improving access to quality seeds, fertilizers, and mechanized equipment is essential to increase yields and reduce dependence on manual labor. At the same time, the adoption of modern agronomic practices and irrigation technologies can help build resilience to climate shocks and stabilize production over time.

Beyond the farm, it is critical to build modern storage, processing, and logistics infrastructure. Investments in silos, warehouses, cold chains, and agro-processing capacity are essential to reduce post-harvest losses, increase shelf life, and capture more value within the continent. Rural aggregation depots and storage hubs can serve as market anchors, enabling farmers to store produce and sell at favorable prices, while supporting the efficient movement of goods through national and regional supply chains.

Africa must also improve rural roads and railway links to connect farmers to markets. Efficient transport infrastructure is vital for moving inputs to farms and products to processing centres and urban consumption zones. Yet in many countries, rural road networks remain underdeveloped, creating one of the greatest barriers to market access for smallholders. Strategic investment in road rehabilitation, the expansion of feeder roads, and the upgrade of rail-linked depots can reduce transport costs, decongest cities, and unlock regional trade corridors.

To concentrate investment and services in high-potential areas, agro-industrial zones should be used as platforms for integrated growth. Special Agro-Industrial Processing Zones (SAPZs) can link rural production to processing and urban demand by concentrating infrastructure such as electricity, gas, water, roads, internet, telecoms, and social services like finance and healthcare. These zones can integrate smallholder farmers into formal supply chains and provide the scale and support required to attract private-sector investment into agro-processing and logistics.

To ensure their success, identifying the comparative advantages of different crops in each market is critical. In Benin and Togo for instance, the Arise IIP platforms are providing the ideal ecosystem for cotton-to-textile value-chains that processes locally grown cotton into finished products that are exported to regional as well as global markets, including the US, generating thousands of jobs and reducing import reliance.

Finally, governments and investors must target high-impact jobs and productivity in downstream segments of the agri-food economy. Jobs in processing, marketing, transport, and retail can be up to eight times more productive per worker than primary farming[9]. Strengthening the infrastructure that connects these segments is essential to transition Africa's food economy from a subsistence model to one driven by scale, efficiency, and value addition.

Blueprint to an African integrated supply-chain

While boosting productivity, resilience, and capital intensity in agriculture is critical, no transformation can be sustained without addressing input security. Among these, fertilizers are the most strategic—and most overlooked. As Africa seeks to build a modern, self-reliant food system, expanding local fertilizer production offers one of the most immediate and high-impact opportunities to reduce import dependence, lower costs for farmers, and industrialize upstream.

[9] https://www.oecd.org/en/publications/2022/05/africa-s-development-dynamics-2022_8e128a8d.html

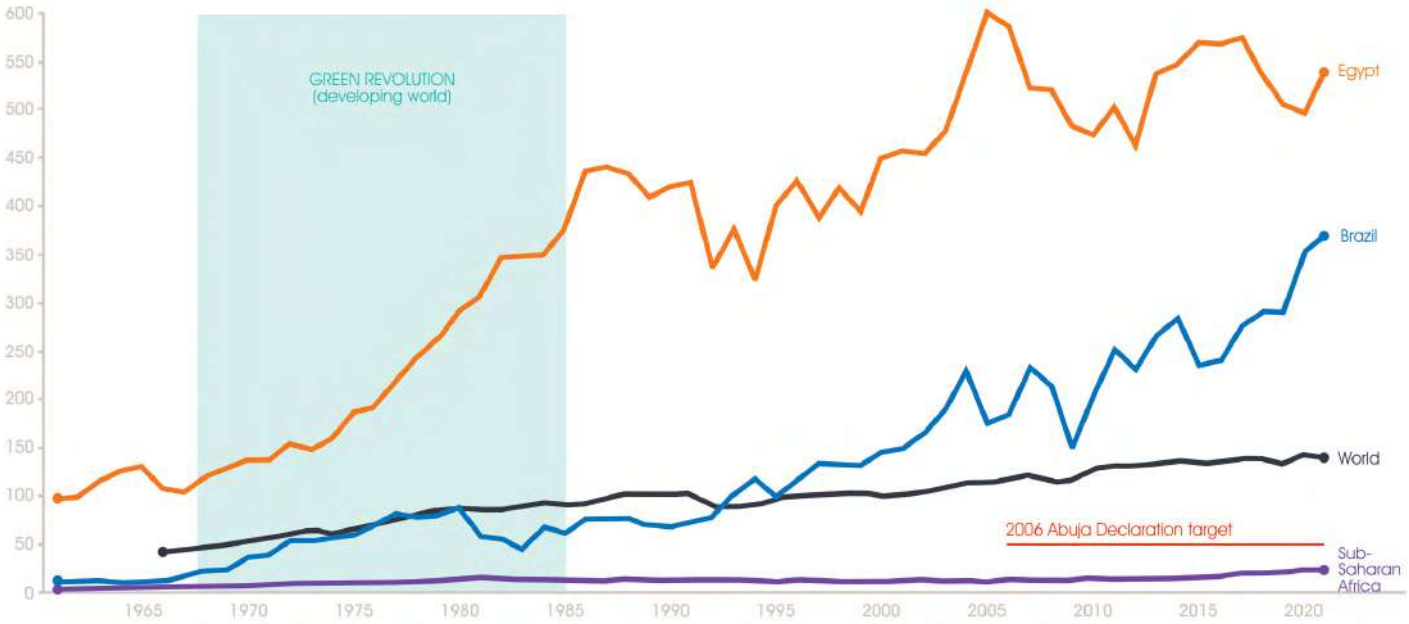
Fertilizer First: Africa's Low-Hanging Fruit for Industrialization and Regional Food Security

Fertilizers offer a triple-sector opportunity for regional value creation, import-substitution and industrialization. They are a cornerstone of modern agriculture - and Africa will need much more of them to achieve food security and agricultural competitiveness.
All three key nutrients—nitrogen (urea), phosphorus (phosphates), and potassium (potash)—are essential to raising yields, restoring soil health, and scaling production. While Africa has the geological reserves to produce all three, development is uneven, and value chains remain fragmented.

Transforming Africa's fertilizer ecosystem is not just about reducing vulnerability—it's a clear industrial opportunity. With the right investments, Africa can convert its raw material advantage into regional value chains that support agriculture productivity and food security by diversifying phosphate production, scaling urea manufacturing, and tapping into its potash deposits.

Africa has the lowest nutrient inputs in the world due to low fertilizer adoption that prevents its agricultural intensification. Except for Egypt which underwent a successful Green Revolution through the 1970s and 1980s, the rest of the continent is yet to go through a similar transformation. Most African farmers have little access to fertilizers or are priced out of the market, keeping the consumption of key nutrients and inputs at the lowest global levels. In 2006, Africa adopted the Abuja Declaration targeting fertilizer consumption of 50 kg/ha. Since then, consumption has only increased from an average of 10kg/ha to about 22kg/ha in 2022. It goes up to 45.2 kg/ha when including North Africa, which is still significantly lower than Brazil's 369.5 kg/ha and India's 193.3 kg/ha.

Figure 28:
Africa has the lowest nutrient inputs consumption in the world
fertilizer consumption, in kg/ha of arable land



Source: World Development Indicators, World Bankland

To meet its food security ambitions, Africa needs to grow access to, and consumption of, fertilizers. As a follow up to the Abuja Declaration, the Nairobi Declaration of 2024 committed to triple domestic production and distribution of certified quality organic and inorganic fertilizers by 2034 to improve access and affordability for smallholder farmers.

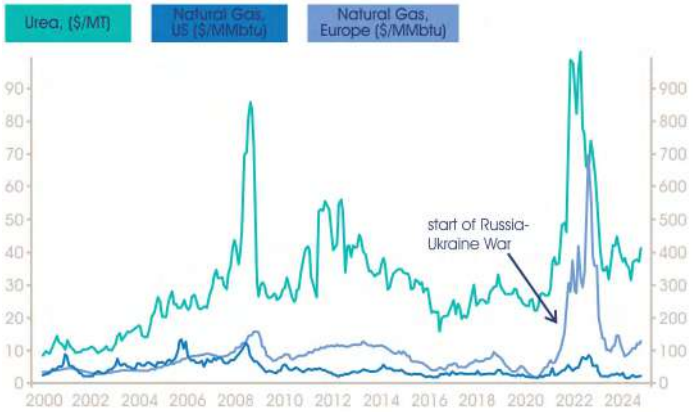
Consumption is rising—but remains overwhelmingly import-dependent. Recent FAO data shows that the use of inorganic fertilizers in Africa has doubled from 3.8m tonnes in 2000 to 7.6m tonnes in 2021 and keeps growing. The continent is largely a consumer of nitrogenous (N) fertilizers – or urea made from natural gas – which have consistently accounted for over 60% of its fertilizer uses, with phosphates (P) representing some 25% and potassium (K) 15%. For modern and efficient agriculture, all three types of nutrients are required to ensure maximum nutrient input and meet all crop nutritional needs. This explains why even large fertilizer producers like Nigeria – Africa's biggest urea producer – must still import other phosphorous and potash nutrients to meet the demand for compound and blended nutrients.

Africa is mostly reliant on imports of nitrogenous and potassium fertilizers. Import dependency comes with a high sensitivity to global prices, forcing African governments to subsidize fertilizers. Recent hikes in fertilizer prices for instance have been driven by the Russia-Ukraine war that has led to a surge in gas prices, and disruptions in the potash supply-chain (Belarus and Russia are some the world's largest potash exporters). Fertilizer prices reached multi-year highs in 2021-2022 and pushed global food prices upward, pricing out farmers from accessing inputs for their fields while contributing to high food inflation across the developing world – particularly in Africa.

Figure 29:

The rise in gas prices directly impacted the prices of urea, of which Africa is a growing importer

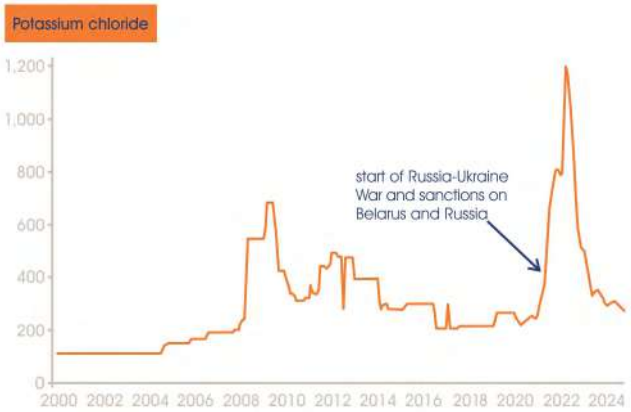
natural gas and urea prices



Source: World Bank

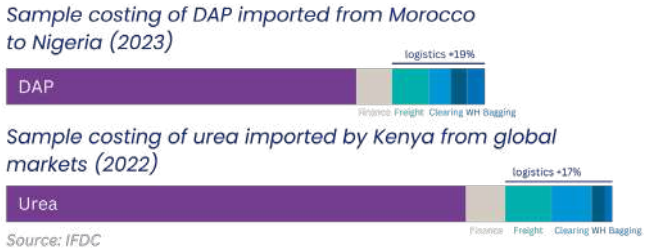
Supply-chain disruptions in potassium supported an equal rise in potash prices

potassium chloride prices, US$/MT



Source: World Bank

In addition to market prices, African farmers must also bear the costs of intra-African logistics that make access to inputs even more expensive. Based on comparative data from the International Fertilizer Development Centre (IFDC), on a phosphate shipment from Morocco to Nigeria and on a urea shipment imported into Kenya, we estimate logistics costs to represent between 17 to 19% of final landing costs for farmers



2.1. Urea: Africa's Scalable Play for Gas Monetization

Natural gas is not only a key energy source—it is also the foundation of modern fertilizer production. When processed with nitrogen from the air through the Haber-Bosch method, gas produces ammonia (NH_3)—a critical input for urea and other nitrogen-based fertilizers. Ammonia is also used in explosives, refrigeration, chemicals, and increasingly in clean energy applications such as green ammonia for shipping or hydrogen storage.

In fertilizer, ammonia is the essential first step: combined with carbon dioxide, it produces urea—the world's most widely used nitrogen fertilizer. This means that gas-rich African countries are uniquely positioned to monetize their reserves through ammonia and urea production, capturing value across multiple industries while addressing a critical agricultural input gap.

Africa already counts three global urea producers but intra-regional supply is limited. Egypt, Algeria, and Nigeria have all leveraged their domestic gas reserves to build integrated ammonia-to-urea complexes and become major exporters. However, both Egypt and Nigeria export only 9-11% of their production within Africa and intra-African trade is limited. Egypt's exports are concentrated in the Mediterranean and Europe while Nigerian urea mostly ends up in Brazil[11], leaving the rest of the continent to import urea from overseas.

This imbalance creates a compelling investment opportunity. With large gas discoveries over the past two decades, countries such as Senegal, Mauritania, Angola, Mozambique, Tanzania, Ethiopia, Côte d'Ivoire, and Ghana now have the natural resource base to replicate this success. They could emerge as regional ammonia and urea hubs, serving both domestic markets and neighboring countries under the AfCFTA framework. Projects are already in development in Angola (AMUFERT) or have have been proposed in Senegal, Tanzania and Mozambique.

Proximity to import-dependent neigbors reinforces the regional value proposition. These markets are growing consumers of fertilizers but are also neighbors to large urea consumption markets where demand is met exclusively by imports from overseas – especially from the Arabian Gulf. South Africa, Zambia, Ethiopia and Malawi for instance have become Africa's largest urea importers and could benefit from new intra-regional trade to secure these inputs.

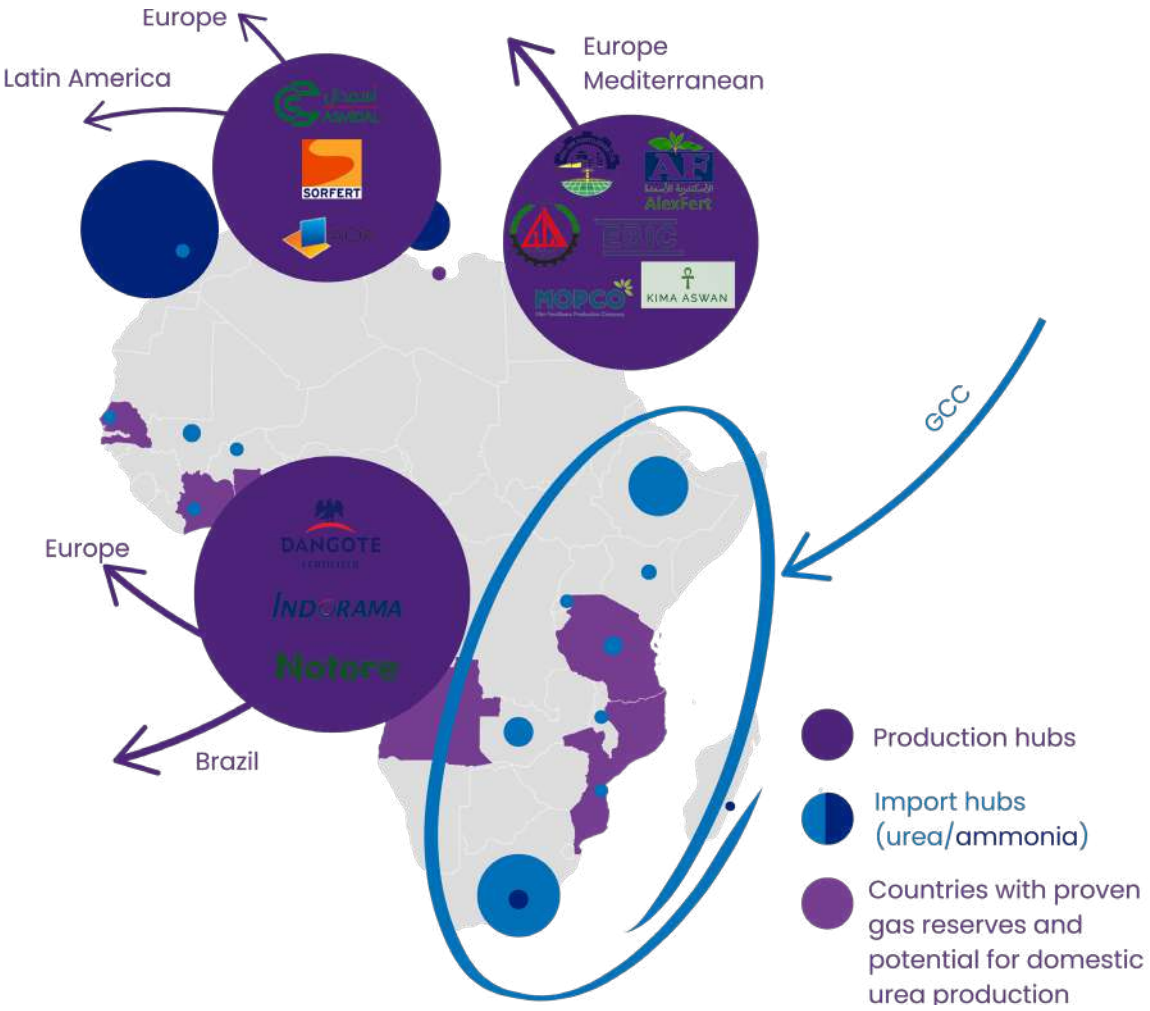
For investors, ammonia and urea production offer a high-impact industrialization pathway: monetize domestic gas, reduce fertilizer import bills, unlock regional trade, and position African economies within global nitrogen value chains.

[11] Lack of intra-regional urea trade in West Africa is explained by various factors including (a) low demand centres that make freight rates high, (b) higher demand for pilled urea over granular urea, (c) road transport bottlenecks, (d) more profitable export markets.

Map 6:

The self-sufficiency imperative: African gas markets have an opportunity to establish new urea supply-chains to meet growing continental demand

Urea consumption centers in East and Southern Africa are largely met by imports from Gulf countries despite established and proven gas reserves in Angola, Tanzania and Mozambique



Source: AFC Maps

Note: bubbles are presented in proportion to each country's production and imports.

Disclaimer: The boundaries, colours, denominations and other information shown on this map are for illustrative purposes only and do not imply any judgment on the part of the AFC concerning the legal status of any territory, the delimitation of international boundaries, or the endorsement or acceptance of such boundaries

2.2. Africa's selective opportunities to expand phosphate supply chains

Unlike nitrogen and potash, phosphates are already a strength story for Africa. The continent is broadly self-sufficient in phosphate rock and phosphoric acid, with only marginal imports. Morocco leads globally—home to over 70% of the world's known reserves—and supplies markets across Africa, Europe, and Asia. But other African producers are also emerging. Countries like Algeria, Tunisia, Egypt, Senegal, Togo, and South Africa have developed phosphate mining and processing capacity, forming the backbone of Africa's most successful intra-regional fertilizer value chain.

In North Africa, the sector is expanding fast. Algeria, for example, is developing the Integrated Phosphate Project (PPI) in Tebessa, near the Tunisian border—a multi-billion dollar complex that will mine, process, and export phosphate-based fertilizers through a new dedicated terminal at the Port of Annaba. Tunisia has set equally ambitious targets, hoping to raise production fivefold to 14m tonnes by 2030. These types of vertically integrated projects strengthen local value addition and export capacity while anchoring broader industrial development.

But the success of North Africa's phosphate industry is not due to geology alone. Infrastructure has made the difference. Functioning railways in Morocco, Algeria, Tunisia

and Egypt allow millions of tonnes of rock to move efficiently between mines, processing plants, and ports—an essential feature for cost-effective fertilizer supply chains.

In contrast, most phosphate deposits in Sub-Saharan Africa remain stranded. Countries like Senegal or Togo lack the transport infrastructure—especially rail—to make them viable. This presents a clear opportunity: with the right logistics investment, West and Central Africa could become the next frontier for phosphate development, supporting local fertilizer production and reducing reliance on imports from North Africa and beyond.

For investors, the phosphate segment offers a relatively mature, lower-risk entry point into Africa's fertilizer value chain—with growth potential through logistics, processing, and regional trade integration. The model is proven. The opportunity now lies in scaling it beyond its current geographic footprint.

2.3. From Discovery to Delivery: Building Africa's Potash Industry

While Africa has made progress in phosphates and holds enormous potential to produce more nitrogen-based fertilizers, potash remains the continent's most underdeveloped fertilizer input. Despite confirmed reserves in Morocco, the Republic of Congo, Eritrea, and Ethiopia, Africa currently has no active potash mines, leaving the continent fully reliant on imports to meet its potassium needs.

Africa's import dependence in potash comes with real vulnerabilities. Potash prices are highly exposed to global market volatility, and recent disruptions—such as the Russia-Ukraine war and sanctions on Belarus (see Figure 29), two of the world's top potash exporters—have sent prices soaring. The result: African farmers face volatile input costs, and governments are forced to absorb the shock through expensive fertilizer subsidies.

Given known deposits, the opportunity to change this trajectory is real and growing. Several projects have matured in recent years. The Republic of Congo's Kola Potash Project for instance aims at tapping into sizable reserves. In November 2024, an EPC contract with PowerChina was signed for the Kola project, setting the stage for Congo-Brazzaville to potentially become Africa's first potash producer by the end of the decade.

Bringing these projects online would not only lower Africa's exposure to external shocks, but also unlock the final pillar of a continent-wide fertilizer supply chain. In doing so, Africa could achieve strategic autonomy across all three essential nutrients—urea (N), phosphates (P), and potash (K). For forward-looking investors, potash represents a high-impact, first-mover opportunity. Backed by growing demand, favorable geology, and a clear policy case, Africa's emerging potash industry could fill a long-standing supply gap and secure the continent's agricultural future.

By transforming its agri-food systems and developing productive agricultural ecosystems, Africa has the opportunity not only to address today's food insecurity but also to prepare for a population surge of 1 billion by 2050. Moving away from subsistence farming towards a more productive and efficient agri-food ecosystem is critical to achieving the continent's growth potential. But transforming Africa's agricultural sector hinges on integrating food systems and fostering agro-industrial development. It requires significant investment and reform to improve access to finance, high-quality seed stocks, insecticides, fertilizers, and irrigation systems. Additionally, a mix of fiscal, monetary, and structural reforms is needed to lower food inflation and create an enabling environment for agribusinesses.

> "Potash is Africa's missing link in fertilizer self-sufficiency—a first-mover opportunity to secure agricultural resilience and strategic autonomy"

3.

Africa is edging towards self-sufficiency in petroleum products, but transportation, storage and distribution infrastructure must be upgraded to ensure fuel security

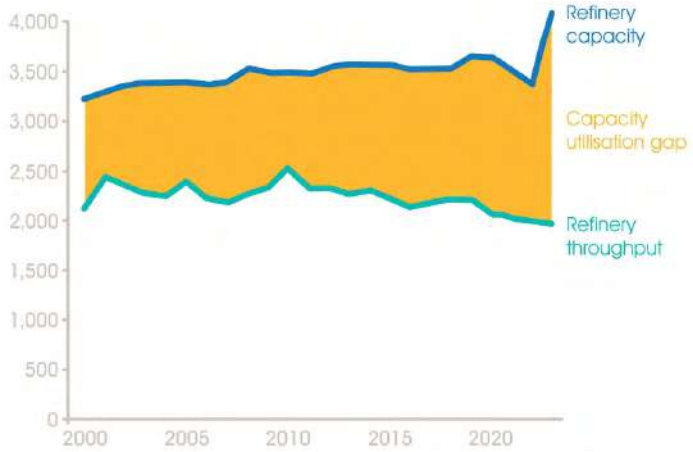
Over the past decades, African refineries have failed to meet the continent's growing demand for petroleum products. Before the commissioning of the 650,000 bpd Dangote Refinery in Nigeria in 2024 – which represents the single largest refinery capacity addition in Africa's history – the continent's refining capacity had nearly stagnated for 20 years. In addition to a lack of capacity addition, Africa also faced decreasing output from existing facilities on the back of refinery closures in Libya, Nigeria and South Africa.

Africa has the refining capacity to meet most of its current fuel demand. The state of the continent's refining industry has left it heavily dependent on imports of petroleum products, which are still subsidized in several countries. In 2023, 55% of Africa's demand for petroleum products was met by imports. However, if refining capacity was fully utilized, this number could drop to only 10%. In that regard, the commissioning of the Dangote Refinery, along with the gradual re-opening of the Port Harcourt and Warri Refineries in Nigeria (2024-2026), could significantly transform the continent's fuel security landscape in the short-term

Figure 30:

For two decades, Africa's refining capacity has stagnated while throughput decreased...

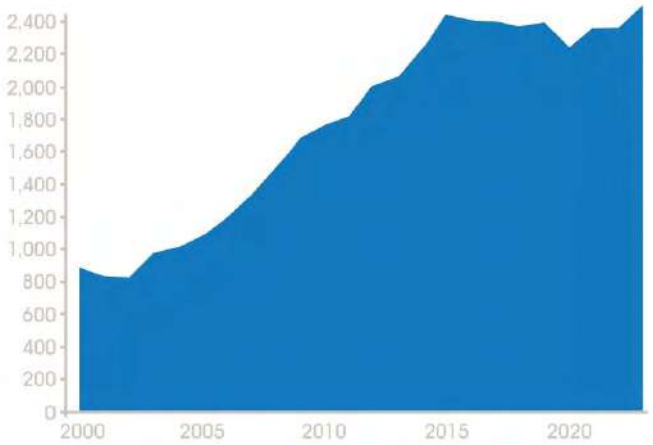
refinery capacity vs. throughput, in kbpd



Source: OPEC

... leading to a surge of imports that crossed the 2m bdp threshold in 2013.

imports of petroleum products, in kbpd



Source: OPEC

More capacity addition is needed to meet projected demand for gasoline and diesel. The Dangote Refinery alone will not suffice for Africa to reach self-sufficiency in petroleum products. In the short-term, sustained closures in Libya and South Africa, and frequent disruptions in Egypt will continue to affect throughput. In the medium-term, continued demographic and economic growth will keep driving demand for fuel and will require new capacity additions across regions.

In this context, the ability of Africa's refining industry to deliver import-substitution products and meet future demand depends on two things. First, the rehabilitation and upgrade of existing facilities to produce more and cleaner fuels. Second, the development of new refineries that must overcome feedstock and financing challenges.

Ageing African refineries must be rehabilitated and upgraded to remain competitive.

Core refining hubs in Algeria, Egypt, Nigeria, and South Africa anchor the continent's capacity, but many of the remaining facilities—from Senegal's SAR to Côte d'Ivoire's SIR, Gabon's SOGARA, and Congo's CORAF—operate below their potential. These state-owned refineries, though modest in size, play a crucial role in meeting domestic fuel needs and stabilizing regional supply through their storage and import infrastructure.

With targeted upgrades, these facilities can be repositioned to produce cleaner fuels, meet AFRI-5 standards, and expand their reach. The African Refiners and Distributors Association (ARDA) estimates that $16 billion in investment across the continent could modernize these assets with advanced processing units such as Naphtha Hydrotreaters (NHdT), Diesel Hydrodesulphurization (DHDS), and Sulphur and Hydrogen recovery units. These upgrades are not just regulatory compliance[12] —they are enablers of competitiveness in a fast-evolving global fuel market.

This presents a significant opening for strategic capital—particularly from development financiers and energy investors seeking infrastructure-linked, regionally impactful projects. The recent €577 million debt financing facility led by AFC for SIR in Côte d'Ivoire is a prime example of how structured investment can support long-term restructuring and capacity optimization.

Across West and Southern Africa in particular, a new wave of refinery investment can unlock efficiency, reduce fuel import bills, and enable countries to meet growing demand through cleaner, domestic production. With the right policy frameworks and blended finance models, Africa's refinery network can be transformed into a critical foundation of the continent's future energy resilience.

The development of new refineries must overcome feedstock and financing challenges

Projections of sustained fuel demand growth along with strong will for energy independence are pushing several African countries to set up new facilities. In 2024, several new modular refinery licenses were granted in Nigeria while new large refinery projects were announced or are in discussions in Ghana, Gabon, Senegal, Liberia and Niger.

To materialize, the expansion of Africa's refining capacity must overcome two key challenges: financing and feedstock procurement. Access to finance is the single largest constraint to new projects, including strategic ventures that would have a positive local and regional impact on energy security. Key refinery projects in Uganda and Angola for instance have been delayed due to lack of funding. In 2024, Uganda announced that its $4bn Albertine Graben Oil Refinery would have to be wholly financed through equity.

Access to crude oil feedstock is another challenge that must be overcome, both for producing and non-producing oil markets. Oil producing companies mostly sell crude oil on the export market via long-term contracts and allocations with traders or financiers, leaving little space to domestic supply. Nigeria – Africa's largest oil producer – is a good example given that it supplies crude oil to Côte d'Ivoire and Senegal's refineries yet does not have enough oil to feed its own facilities.

Leveraging intra-regional trade can help support the value-chain given new supply sources coming to market. The Dangote Refinery for example is reportedly looking at procuring crude from oilfields in Senegal, Angola and Libya where production is increasing.

[12]Albeit slowly, Africa is implementing clean fuel regulations that call for refinery upgrades. East Africa was the first region to take action in 2015 with the joint adoption of national standards adopting 50 ppm in diesel and gasoline as a standard. It was followed in 2019 by Southern Africa who agreed that by 2025 no fuels with a higher sulfur content than 50ppm should be imported, before raising the bar to 10ppm by 2030. West Africa finally adopted its own standards in 2020, requiring imported fuels to comply with the 50ppm threshold from January 2021.

Midstream and downstream infrastructure must be developed to support Africa's growing demand for petroleum products

Whether Africa secures more fuel supply from domestic refineries or from imports, growing consumption will lead to additional infrastructure bottlenecks across transportation and distribution networks. To keep up, Africa's energy infrastructure must accommodate several challenges, from the points of production or import to the transportation and distribution of petroleum products.

Diversifying and expanding port and terminal infrastructure can address bottlenecks and congestion within capital and port cities. First, capital cities that double as ports are expected to face more congestion and capacity constraints, especially for tankage and storage. New ports and terminals must be built near urban and consumption centres or next to transit routes to decongest cities and address logistics bottlenecks at entry points. Where land is available, new port infrastructure can be developed (Sendou-Bargny Mineral Port, Senegal; Lekki Storage Terminal, Nigeria) or set up offshore within existing port areas (Kipevu Oil Terminal, Kenya).

Diversifying import and storage infrastructure is also key to minimize risk of single points of failure – particularly in cases where a country is reliant on only one refinery or import and storage terminal. Fires that have destroyed the Kaloum storage terminal in Conakry in 2023 or the SONARA Refinery in Cameroon in 2021 highlighted the vulnerability of a few markets in that regard. Making more optionality available, whether at the entry points (ports, terminals) or along transit routes (pipelines, roads, depots) can help minimize supply chain risks and prevent sudden supply outage.

To be efficient and cheaper, fuel logistics must also move away from roads. A recent assessment by CITAC and Puma Energy found that 83% of oil products distributed in Africa are transported by trucks,[13] leading to congestion and capacity constraints given additional roads, loading and evacuation requirements. This overreliance on trucking can be addressed with more efficient solutions like railways or pipelines, where feasible.

Rail can play a greater role in fuel logistics by upgrading existing infrastructure and integrating it into national and regional supply chains. Despite its cost-effectiveness and suitability for bulk liquid transport, the use of rail for petroleum products remains limited across Africa. Several markets—including Cameroon, Angola, the DRC, and South Africa—already have fuel depots and storage tanks connected to railway lines. However, several of these are state-owned assets in need of rehabilitation, asset integrity upgrades, and operational modernization. In many cases, deteriorated rail infrastructure is the limiting factor. Yet, fuel transport volumes could serve as a reliable anchor to justify broader railway investments and revitalize national rail systems that support multi-sector logistics.

Pipelines offer the most scalable and efficient solution for meeting rising fuel demand, but new routes must be carefully assessed for feasibility and investment viability. For both large domestic markets and cross-border sub-regions, pipelines represent the long-term backbone of fuel logistics. However, bankable pipeline development depends on securing guaranteed offtake, competitive tariffs, and alignment with existing energy strategies. With energy demand growing across inland cities and transit corridors, countries now have an opportunity to map and prioritize high-impact pipeline routes that can decongest roads, lower distribution costs, and enhance energy security at scale.

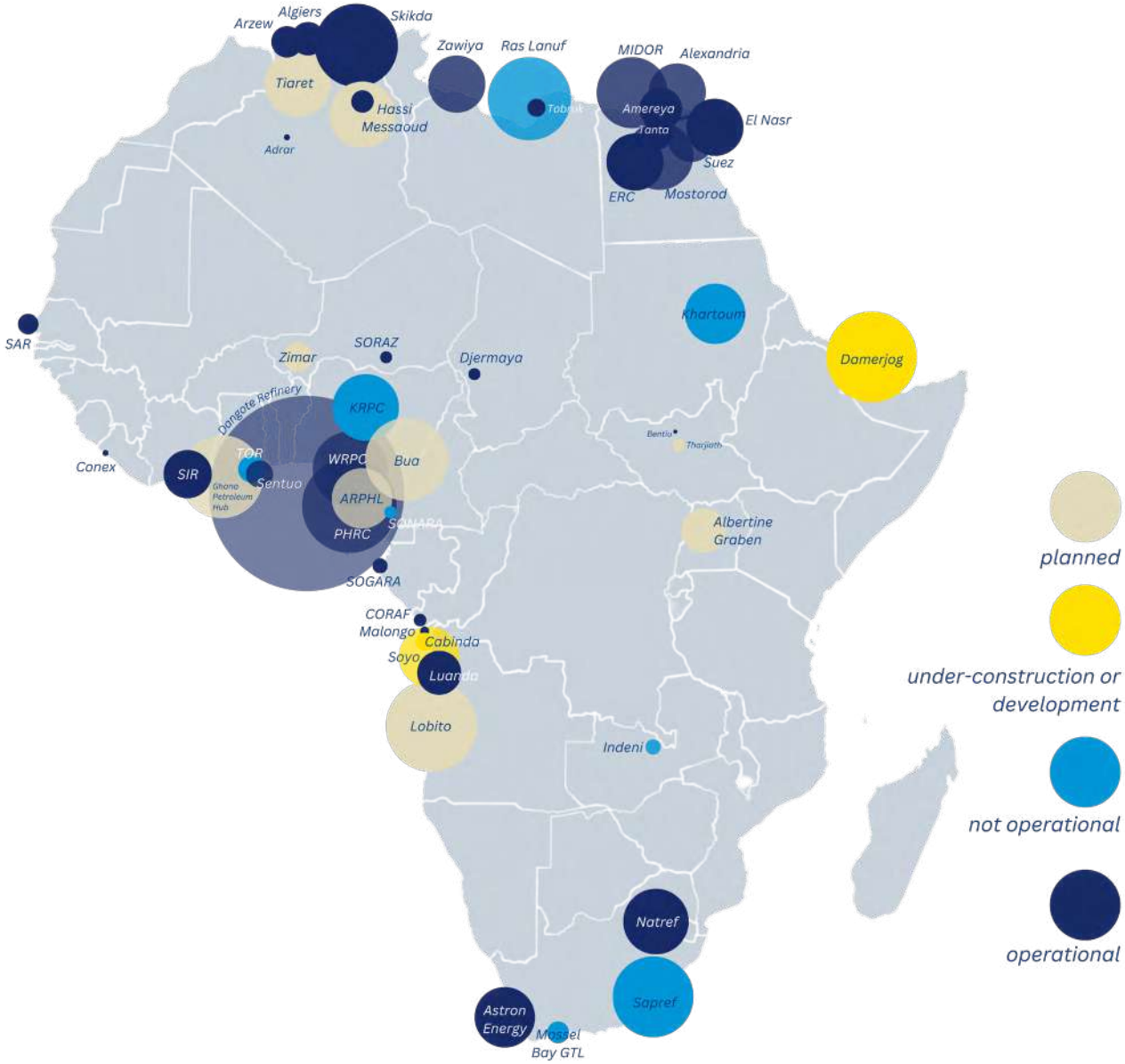
Until now, product transport by pipeline has been limited domestically to South Africa, Côte d'Ivoire and Kenya, and regionally to Mozambique/Zimbabwe (Beira-Feruka pipeline) and Tanzania/Zambia (TAZAMA pipeline). Both cross-border pipelines face increased demand, with CPMZ commissioning two new pumping stations in 2024 to increase its capacity by 50%; while TAZAMA is launching a feasibility study towards its own expansion. However, they were commissioned in the 1960s and maintaining their operations will require several upgrades and brownfield investments.

> "Africa's energy infrastructure must accommodate several challenges, from the points of production or import to the transportation and distribution of petroleum products"

[13] https://pumaenergy.com/wp-content/uploads/2024/05/Fuelling-Africas-Potential-CITAC-Puma-Energy-Report.pdf

Map 7:

Africa's refining sector is expanding along the Mediterranean and Atlantic coastlines



Source: AFC Map

Note: bubbles are proportional to each refinery's capacity.

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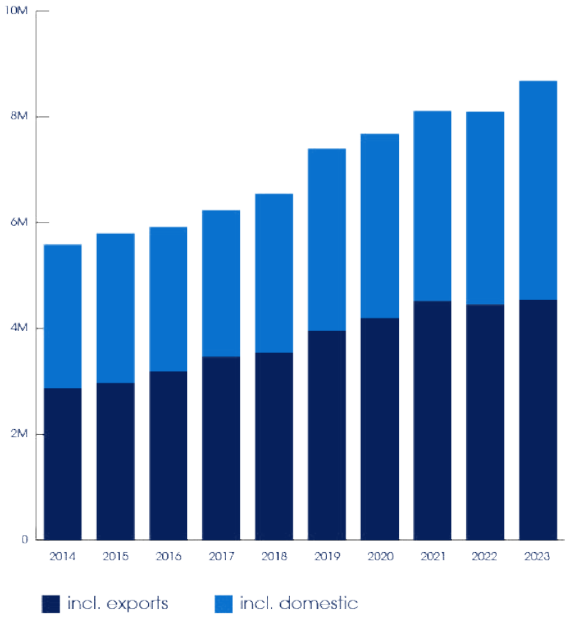
Figure 31:
The Kenya Pipeline Co. is handling growing volumes of domestic and transit traffic to East African countries
Kenya Pipeline Company's throughput, in million m3



Source(s): KPRL; Northern Corridor Transit and Transport Coordination Authority

Several new pipeline ventures have been proposed across Africa in recent years, demonstrating appetite for more efficient and scalable petroleum product transportation infrastructure. These include new domestic routes serving the hinterland (Republic of Congo) or new cross-border pipelines (Angola-Zambia; Kenya-Ethiopia; Ghana-Burkina Faso).
In West Africa, a region of almost 450m people, Côte d'Ivoire is the only country with a functioning petroleum product pipeline network (Abidjan-Yamoussoukro). Moving forward, the region's demographic growth and expected refinery capacity additions call for a fresh assessment of potential domestic and regional pipeline routes.

As Africa develops new pipeline infrastructure, ensure multi-modality and future-proofing supply-chain can also help improve the business case for each project. In Kenya for instance, a $95m investment by the AFC in Mahathi Infra Uganda delivered a multimodal solution to carry petroleum products from Kenya Pipeline's terminal at Kisumu on Lake Victoria to Kampala in Uganda. Similarly, pipeline projects should be conceptualized by considering future reconversion opportunities to transport transitional fuels like sustainable aviation fuels, liquefied petroleum gas (LPG) and hydrogen. [14] By designing pipelines with multi-fuel adaptability and integration into broader logistics networks, developers can enhance project viability, attract long-term capital, and safeguard infrastructure against future market shifts.

> "Designing pipelines with multi-fuel adaptability and logistics integration can future-proof Africa's energy infrastructure and attract long-term capital"

[14] In Côte d'Ivoire for instance, plans are in motion to convert the Abidjan-Yamoussoukro pipeline to a cooking gas line supporting cleaner fuels availability within households.

Africa's refining and downstream fuel industry is making important strides toward self-sufficiency, with significant refinery capacity additions like the Dangote Refinery. However, the sector's growth is closely tied to the modernization of existing refineries in West and Central Africa, overcoming feedstock and financing challenges for new projects, and addressing critical infrastructure bottlenecks in transportation and distribution networks.

To achieve fuel security and meet the continent's increasing demand, Africa must prioritize investment in refinery upgrades, develop efficient distribution systems—including pipelines, railways, and diversified port infrastructure. As new energy infrastrucutre is built, it must also be resilient and capable of supporting future energy transitions. The successful integration of these elements will be crucial for achieving long-term fuel security and energy independence across the continent.

Digital Infrastructure

Laying the Foundation for a Connected and Competitive Africa

- **Africa's digital transformation is accelerating—but access remains unequal.** While mobile internet coverage now reaches over 90% of the population, digital adoption still lags. Only 4 in 10 Africans are online, with gaps driven by affordability constraints, limited device access, and uneven broadband quality. Fixed broadband and 5G coverage remain minimal across most of the continent.

- **Affordability is the gateway—but not the solution alone.** Reducing data costs is essential, but meaningful digital inclusion also requires market liberalization, digital literacy, and the growth of inclusive digital ecosystems that enable productive use of technology and services.

- **Africa's usage gap is a rural opportunity waiting to be unlocked.** With most internet traffic concentrated in urban centres, rural areas remain underserved—yet they represent the next frontier for digital growth. Targeted interventions in rural connectivity, device affordability, and last-mile infrastructure offer a powerful opportunity to expand usage, tap into new consumer markets, and drive inclusive digital transformation.

- **Subsea cables are laying the foundation for the next wave of digital investment.** New high-capacity cable landings across Africa present a strategic opportunity to anchor middle-mile infrastructure—including terrestrial fibre, IXPs, and data centres. If scaled effectively, this backbone can connect underserved markets and unlock inclusive digital growth. Nigeria, Egypt, and Kenya are emerging as hubs—but an estimated $7 billion in annual investment is needed to close the data infrastructure gap continent-wide.

- **Digital public infrastructure and shared infrastructure models are unlocking new investment pathways.** Public-private collaboration around DPI (e.g., digital ID, e-payments) and infrastructure sharing (e.g., fibre on power lines or railways) offers high-impact, scalable opportunities. These models reduce costs, expand service reach, and are gaining traction across the continent.

- **Energy is the invisible backbone of Africa's digital future.** Data centres, towers, and cloud platforms require stable, clean, and low-cost power. Africa's current power deficit—and dependence on diesel—raises costs and limits expansion. But with the ICT sector now the largest buyer of renewables globally, Africa's clean energy potential is a competitive advantage. Investments in wind, solar, and geothermal are already powering digital infrastructure in Kenya, South Africa, and beyond.

- **Cross-sector infrastructure synergies must be fully leveraged.** Every infrastructure project—whether in power, transport, or telecom—should maximize its digital potential. Laying fibre alongside transmission lines, pipelines, or railway corridors is critical to reducing deployment costs and accelerating last-mile connectivity.

Africa presents the most compelling value proposition for digital infrastructure growth globally, driven by its unmatched demographic expansion, rapid urbanization, and rising demand for data-driven services. With the world's youngest and fastest-growing population, the continent stands on the cusp of a digital revolution that could unlock unprecedented economic opportunities. As cities expand and mobile penetration deepens, demand for reliable internet access, digital platforms, and cloud-based services is surging.

More importantly, embracing the digital economy is critical to accelerating Africa's structural economic transformation, building competitiveness, developing a productive workforce and lifting millions out of poverty. A 2023 study by the World Bank[1] demonstrated that when fast internet becomes available, individuals have 13% more chances of getting a job, total employment per firm grows by up to 22%, and firm exports nearly quadruple.

In the 2024 edition of the State of Africa's Infrastructure Report, we argued that Africa's digital transformation hinges not only on expanding access but also on unlocking meaningful connectivity through affordability, quality, and usage. We highlighted the continent's impressive strides in mobile coverage but also the persistent gaps in penetration and affordability. Though mobile internet coverage has expanded to nearly 90% of the population, over 60% of Africans remain offline, highlighting the disconnect between coverage and meaningful usage.

This year, we build on that foundation by exploring the next phase of digital infrastructure: the systems, institutions, and investments that will transform coverage into inclusive and productive access. We focus on the growing role of middle-mile infrastructure, data centre development, and digital public infrastructure (DPI) as critical enablers of scale. This chapter presents an updated map of investment trends and regional frontrunners while identifying structural constraints that must be addressed to bridge the digital divide and accelerate Africa's digital economy.

[1] World Bank. 2024. Digital Progress and Trends Report 2023. Washington, DC: World Bank. doi:10.1596/978-1-4648-2049-6. License: Creative Commons Attribution CC BY 3.0 IGO

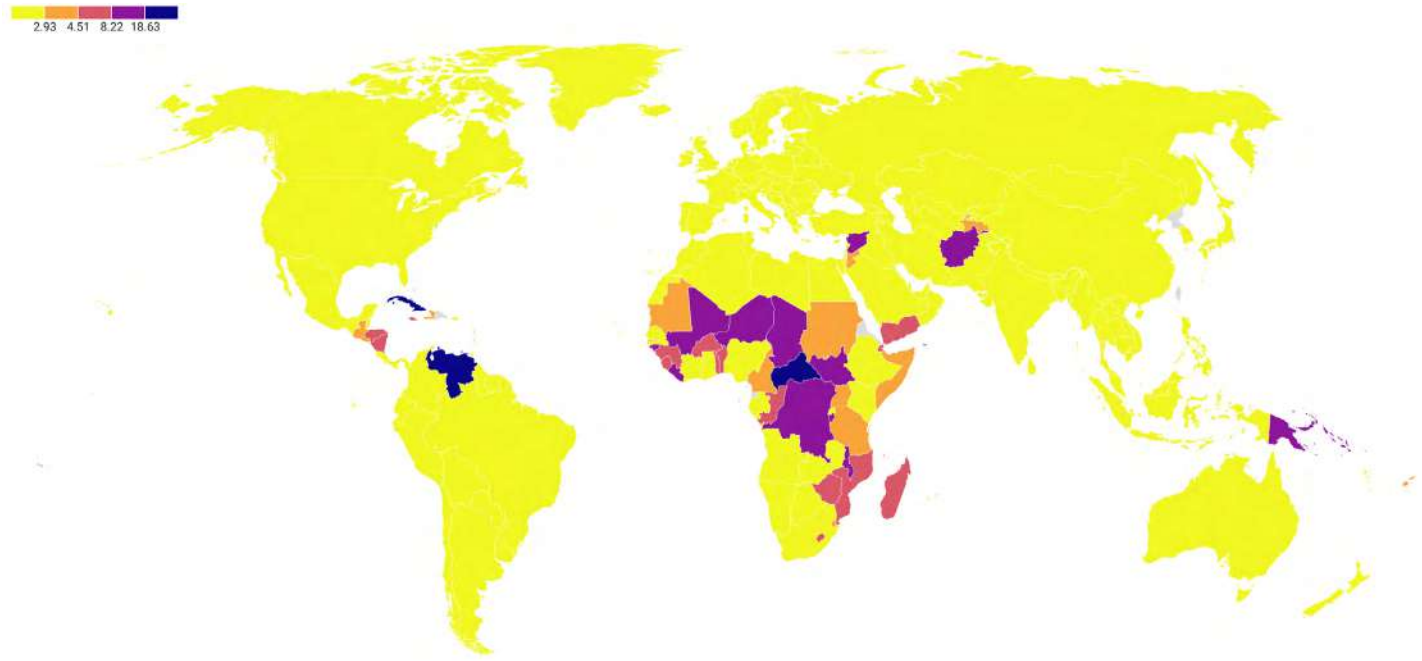
1.

Narrowing critical divides in data affordability, device ownership and traffic quality

Over the past ten years, Africa has successfully bridged its mobile internet coverage gap, bringing mobile internet connectivity to hundreds of millions of people. In 2023, the continent's coverage gap had decreased to 11% - down from 41% in 2015. Yet, despite significant progress made in bringing Africa's booming and young population into the digital economy, growth in digital adoption is not fast enough to bridge the continent's connectivity deficit.

In 2024, over 60% of Africans still had no access to the internet. This digital divide with the rest of the world can be explained via three key drivers: divide in data affordability, divide in devices ownership, and divide in connection quality[2].
The affordability constraint is the main barrier to broadband penetration, as most sub-Saharan African countries are yet to reach the ITU/UNESCO Broadband's entry-level target of 2% of monthly GNI per capita for broadband services (see State of Africa's Infrastructure Report 2024).

Map 8:
The persisiting affordabily divide
Due to lower income levels, sub-Saharan Africa is the most expensive data market globally
data-only mobile broadband basket, % of monthly GNI per capita



Source: ITU Data Hub
Note: 32 African countries are yet to reach the affordability target set by the Broadband Commissiion, fixing entry-level broadband services at 2% of monthly GNI per capita

[2] World Bank. 2024. Digital Progress and Trends Report 2023. © World Bank. http://hdl.handle.net/10986/40970 License: CC BY 3.0 IGO.

Affordability issues also impact the type of devices consumers can access and utilize, thereby impacting broadband penetration and uses across Africa. Smartphone penetration in Africa is the lowest in the world as even the cheapest smartphones are too expensive for low-income groups living on less than $2 per day. While the ownership of low-cost mobile phones has been on the rise, such devices typically lack advanced capabilities and are limited to 3G technology or lower. The World Bank estimates that basic or feature phones represent 46% of mobile phone ownership in sub-Saharan Africa, compared with only 8% in high-income countries[3] .
Data on computer ownership is scarce but points to even larger gaps. Recent surveys by Afrobarometer across 34 African countries suggest that households' computer ownership could be as low as 11%. Such number echoes the lack of fixed broadband penetration, given that computers often rely on the type of speed and latency offered by fixed broadband.

The type of broadband and technology available on the continent marks the third and final component of its digital divide. Fixed broadband subscriptions, which allow for high-speed internet to homes and businesses, remain largely absent in African countries while they experience significant growth in the rest of the world. In Africa, they have remained below 1% while they have tripled in the Middle East and Asia over the past decade.

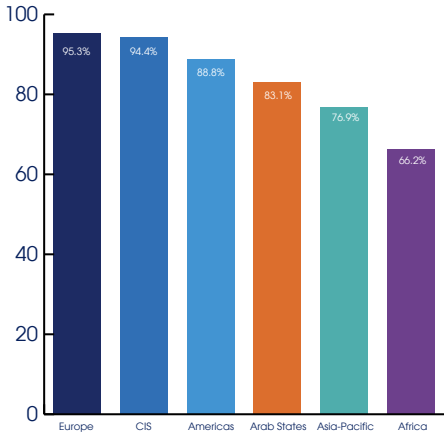
The same trend can be observed with technology coverage and the transition from 3G to 4G and 5G. While most the world has achieved its transition to 4G and is seeing an acceleration of 5G coverage, only 60% of Africans are covered by 4G, and 11% by 5G. The ongoing 5G revolution has remained largely concentrated in high-income countries and the Asia Pacific, with the latter registering booming 5G mobile network coverage since 2020. The rest of the world – Africa in particular – is still excluded from 5G connectivity and its potential to unlock economic opportunities in artificial intelligence (AI) and the Internet of Things (IoT).

Figure 32:

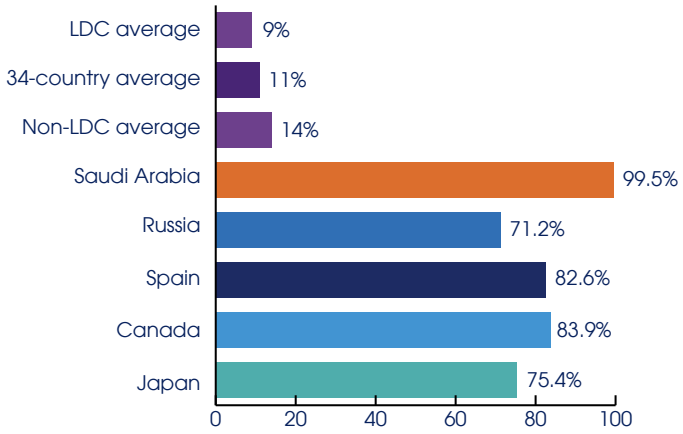
The devices ownership divide

Digital divides in mobile phone and computer ownership impact the level and quality of digital services available across countries

individuals owning a mobile phone, in %



households computer ownership, %

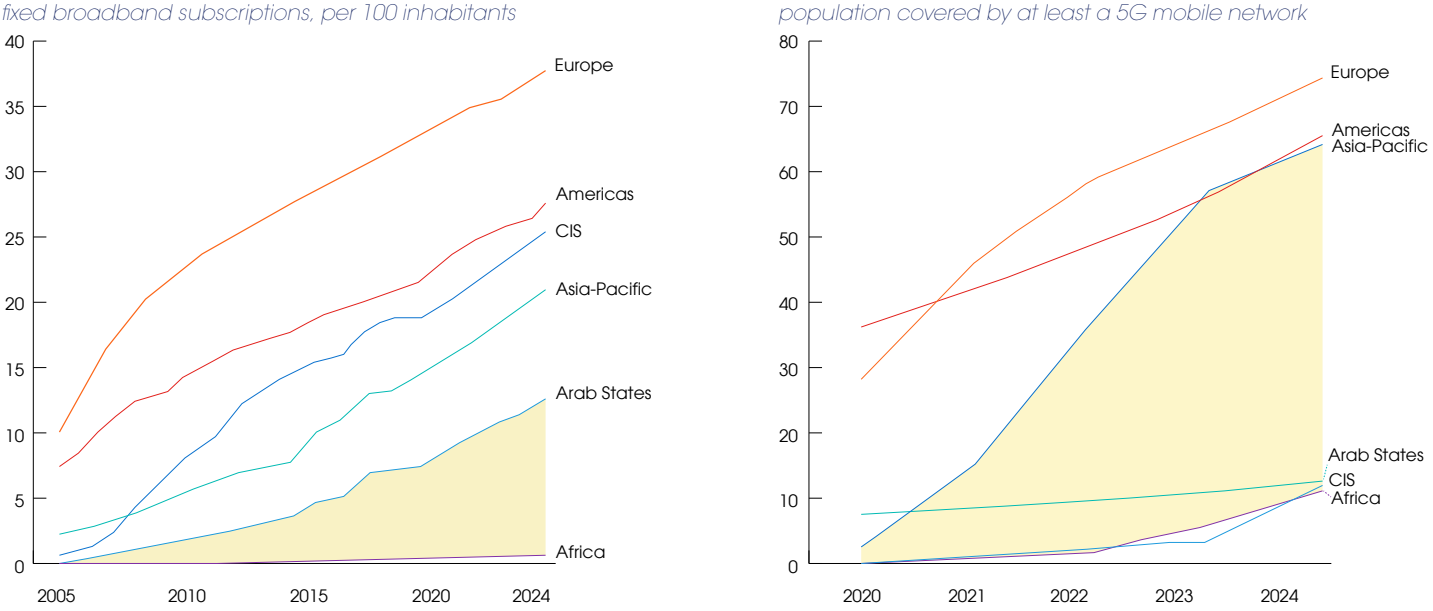


Source: AFC, International Energy Agency

Note: computer ownership data not available for regions. African data relies on Afrobarometer surveys across 34 countries between 2019/2021, split between "least developed countries" (LDCs) and non-LDCs.

[3] World Bank. 2024. Digital Progress and Trends Report 2023. © World Bank. http://hdl.handle.net/10986/40970 License: CC BY 3.0 IGO.

Figure 33:
The growing quality divide
Fixed broadband subscriptions are largely absent of African countries, while 5G coverage is yet to pick up



Source: ITU Data Hub
Note: highlighted sections illustrate growing gaps between Africa and seledted other regions that were the closest to African levels at the start of the period.

Addressing affordability constraints is only a first step in enabling Africa's digital transformation

The State of Africa's Infrastructure Report 2024 demonstrated how the affordability divide is the major barrier to Africa's digitalization as hundreds of millions cannot afford data, let alone devices to consume it. We seek here to identify some of the secondary barriers that also play a role in slowing down internet adoption on the continent.

Using the cases of Africa's ten countries with the largest internet access deficits, we demonstrate how efforts towards providing affordable digital services must be accompanied with policy, educational and infrastructure interventions to be truly successful.

African markets with the largest internet access gaps show visible progress in affordability and connectivity. We look at African economies with the biggest absolute internet access gap in 2023, affecting half a billion people: Madagascar, Mozambique, Egypt, Sudan, Kenya, Uganda, Tanzania, D.R. Congo, Ethiopia, and Nigeria. By comparing their affordability threshold and internet access deficit between 2016 and 2023, we observe very visible progress in affordability and connectivity: as data gets cheaper and closer to the 2% of monthly GNI per capita threshold, their internet access rates grow.

Nigeria and Egypt are the two countries with the most notable progress. Egypt reduced its access deficit by over 28m people over the period, while Nigeria brought close to 10m people online. Both countries have the highest access rates of the group and reached their affordability target ahead of the others: Egypt for over a decade and Nigeria since 2020, according to ITU data. In other countries, data became affordable only more recently (2023 in Kenya; 2024 in Ethiopia), or remains over the 2% of monthly GNI per capita.

However, despite visible progress achieved in making mobile broadband cheaper over the past years, all these economies except Egypt still have internet penetration below 50%. Nigeria's progress in bringing people online is notable, but affordability is yet to trigger significant growth in internet access numbers. Ethiopia is another interesting case because as data costs dropped sharply from 16% of GNI per capita in 2016 to less than 2% in 2024, its internet access gap widened to include 11m more people.

These observations suggest that more structural constraints could be behind some levels of stubborn internet access deficit. More research is certainly needed to understand connectivity drivers across the continent, but preliminary observations suggest that:

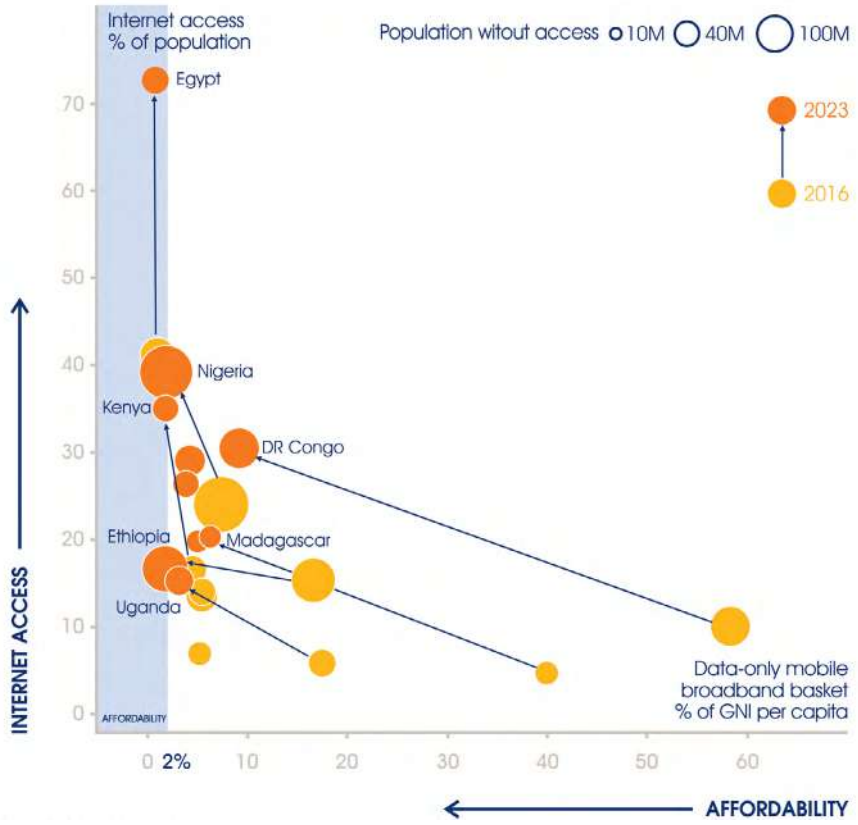
a) Narrowing the rural-urban gap is key to addressing Africa's internet access deficit. Recent studies on connectivity gaps between urban-rural areas, male-female and youth-adult have demonstrated that the urban-rural gap is the widest of the three[4] . Large disparities in income levels and infrastructure availability make urban residents easier to connect than rural ones who live beyond broadband coverage, have income levels exponentially lower than urban residents and often work within the informal economy. Incidentally, African markets with the largest internet access deficits also have some of the largest shares of rural population on the continent, at 70-75% in Ethiopia, Uganda, and Kenya; and over 60% in Sudan, Tanzania and Mozambique[5]. In comparison, the share of rural population in sub-Saharan Africa is about 57%, and drops to 34% in the MENA region[6].

b) Infrastructure gaps persist across the continent, keeping the cost of broadband and digital services too high – leaving hundreds of millions outside of network coverage. Nigeria for instance estimates that it needs to triple its backbone fibre network to deliver quality broadband to its population and industries. Bridging such infrastructure gap requires scaling public and private sector investments in middle- and last-mile infrastructure, while promoting infrastructure sharing (see Section 4.2).

c) As markets mature, they must also be structured to allow for private sector investment and targeted liberalization. Removing monopolies and restrictions on foreign investments in digital infrastructure and telecom services can improve sector growth. Since Ethiopia ended the monopoly of Ethio Telecom in 2021, the number of people covered by 3G networks has increased by 50% while 4G network coverage has increased eight-fold.

d) Policy frameworks have a critical role to play in unlocking Africa's digital economy potential. Reforms to harmonize legislation on data sovereignty, data security and data protection can incentivize private sector investment while creating regional economies of scale to attract larger pools of capital targeting scattered demand centres.

Figure 34:
Bridging the internet access deficit
African economies with the largest absolute internet access deficits are all converging towards the 2% affordability threshold, but internet access levels remain low



Source(s): ITU Data Hub, World Bank

e) Equipping population with basic digital skills can help boost the utilization of digital technologies. In Kenya for instance, mobile phone ownership is at 53.7% yet internet access is only at 35%. As broadband becomes cheaper, promoting internet and digital literacy can ensure better penetration within societies and promote digitally enabled services, productivity growth, and jobs creation. For instance, it is estimated that 230m digital jobs could be created in sub-Saharan Africa by 2030[7]. The establishment and growth of digital public infrastructure (DPI) that supports digital payments, digital identify and data sharing, can play a key role in this regard (see Section 4.3).

While Africa has made remarkable strides in expanding mobile internet coverage, the continent's digital divide remains a pressing challenge. Addressing affordability, connection quality, and device accessibility is crucial, but these issues are deeply tied to broader gaps in digital infrastructure. Limited data centers, insufficient fiber networks, and power constraints continue to slow progress, preventing seamless connectivity and wider digital adoption. To bridge this divide, Africa must tackle these foundational infrastructure gaps head-on—laying the groundwork for a more inclusive, resilient, and competitive digital economy.

[4]World Bank. 2024. Digital Progress and Trends Report 2023. © World Bank. http://hdl.handle.net/10986/40970 License: CC BY 3.0 IGO.
[5]World Bank Development Indicators
[6]World Bank Development Indicators
[7]https://www.ifc.org/content/dam/ifc/doc/mgrt/digital-skills-final-web-5-7-19.pdf

2.

Bridging Africa's digital infrastructure gap calls for scaling up middle- and last-mile infrastructure

Globally, broadband investments are shifting from network expansion to network consolidation, with growing concentration on upgrading existing networks to higher speeds to support fibre optic, wireless technologies and 5G. That leaves little priority to bridge coverage gaps, especially in Africa. Most telecom investments on the continent are private-sector driven, with a few large multinationals accounting for some 75% of sector investment. Naturally, the private sector is more inclined to inject capital into high-growth areas were consumers have higher income levels rather than focus on bridging white spots and expanding coverage to the under-served. On the ground, these priorities translate into a consolidation of middle-mile infrastructure around key regional hubs and urban centres.

Africa's evolving digital landscape presents four major opportunities for investment and intervention:
a. the arrival of new subsea cables offers a unique chance to anchor middle-mile infrastructure and expand regional connectivity;
b. the concentration of fibre optic networks in existing coverage areas highlights the untapped potential for network expansion into underserved zones;
c. the ongoing data centre boom is enabling the emergence of sub-regional hubs and diversifying Africa's digital capacity beyond South Africa; and
d. satellite connectivity offers a scalable pathway to reach excluded populations—especially where affordability solutions can be effectively deployed.

a. New international bandwidth capacity provides incentives for anchoring middle-mile infrastructure

Repeated subsea cable outage in 2023 and 2024 have exposed the vulnerability of Africa's bandwidth infrastructure to single-path connectivity solutions (see State of Africa's Infrastructure Report 2024). To prevent such disruptions, industry practice typically recommends two or more independent submarine cable landings for reliability and competitive pricing.

In addition to reliability and competitivity, more subsea cable infrastructure also reduces latency and promotes redundancy. The landing of submarine cable has a direct impact on data costs, and provides higher bandwidth capacity, thereby improving internet speeds. Currently, several countries in West Africa have only on cable landing, including Liberia, Sierra Leone, Guinea, Mauritania, The Gambia, and Guinea-Bissau, while Eritrea is yet to land any cable at all. In addition, half of the cables passing through the Atlantic and Indian Ocean coastline were laid in the 2000s and early 2010s and offer less capacity, scalability and speed than more modern subsea links. Submarine cables typically have a lifespan of 25 years, so several cables laid in the early 2000s are set for decommissioning or replacement[8].

New subsea cables are also required to adapt to new technologies and access the kind of capacity required for the digital era. For instance, Google's Equinao cable that landed in Africa in 2023 has a design capacity that is 400x faster than previous cables commissioned 20 years ago and uses fibre-level switching that makes it flexible for future upgrades. The latest submarine cables also come with the latest technology (SDM, ROADMs) and can support 5G, Artificial Intelligence (AI), Internet of Things (IoT) and cloud computing.

Subsea cable landing points also offer strategic locations where to set up data centres or anchor middle-mile infrastructure serving the hinterland and landlocked countries. In that regard, African economies have benefited from significant capacity growth in recent years, especially with the landing of modern and high-capacity cables like Equinao and 2Africa over 2023 and 2024.

Over the coming two years, capacity growth will shift back to Northern and Eastern Africa on the back of several cables laid on the Asia-Europe axis that will land on the coast, from Kenya to Egypt. Djibouti will receive the biggest number of new submarine cable landing points over the next couple of years, strengthening its position as a strategic data hub for the Horn of Africa. It will be followed by Egypt, which already has the highest number of landing points in Africa, and Berbera

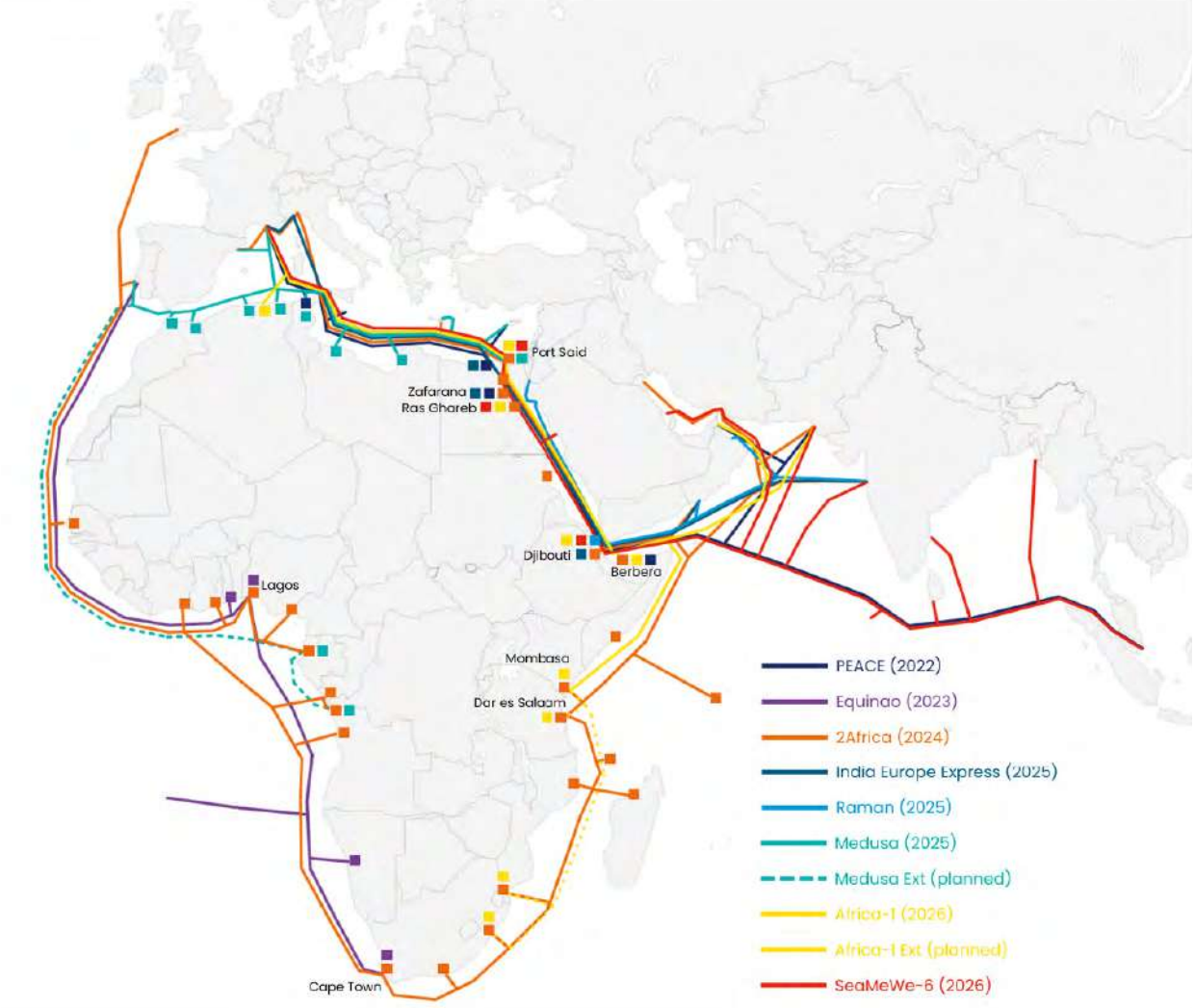
[8]Mauritius Telecom for instance is planning the new T4 cable between Asia and Africa to replace the SAFE cable that will reach its 25th year in 2027.

Map 9:

Increased bandwidth capacity from new ultra-modern subsea cables provides fresh opportunities to anchor middle-mile infrastructure

The 2025/2026 period will be marked by capacity growth with 5 new cables landing in places like Djibouti, Egypt and Berbera.

Submarine cables landing in Africa (2023 – 2026)



Source: TeleGeography, AFC Research

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b. The concentration of fibre optic networks in existing coverage areas highlights the untapped potential for network expansion into underserved zones

In 2024, Africa's backbone transmission network passed the 1m kilometres threshold despite a slowdown in the pace of fibre expansion. Recent data for 2024 indicates that metropolitan fibre rings and FTTH/B (fibre-to-the-home/ building) networks have continued growing at a faster pace than fibre transmission networks, following a multi-year trend. This confirms investors' appetite for fibre investment in highly-densely populated centres where average revenue per user is higher and technology adoption is faster. As a result, the number of people within a 10-km radius of operational fibre optic networks has grown much faster than those located within a 25-km or 50-km radius, according to Hamilton Research[9].

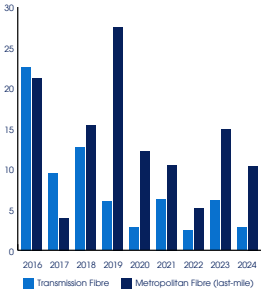
While current fibre rollout has largely focused on coastal and urban areas, the continent's untapped potential lies in extending this infrastructure towards secondary cities, the hinterland, and landlocked economies—many of which are poised to become the continent's next digital growth centres. Targeted investment in terrestrial fibre can address several high-impact needs:

1. **Closing the cross-border connectivity gap:** Many fibre connections between African countries still rely on single-path routes. Expanding cross-border terrestrial networks – especially in regions with many landlocked states – offers not only improved reliability and lower latency but also an opportunity to strengthen regional digital trade and integration;
2. **Bridging the last-mile from the coast:** While subsea cables continue to land in strategic coastal hubs, fibre is the critical bridge needed to carry that capacity inland. Building fibre corridors from ports to production centres and secondary cities ensures that the benefits of international bandwidth reach rural and industrial users—not just urban elites.
3. **Driving down data costs through redundancy:** Redundant terrestrial fibre routes provide a resilient and competitive alternative to submarine cables, reducing dependence on single points of failure and supporting lower wholesale and retail data prices.

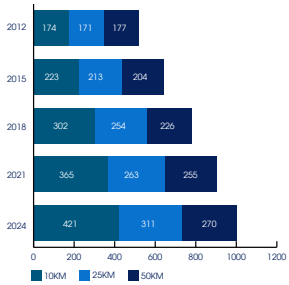
4. **Enabling broadband at scale:** Expanding terrestrial fibre is essential for delivering reliable 4G and 5G networks—especially in high-growth consumer markets and underserved areas. Fibre-fed towers offer faster speeds and higher capacity compared to microwave or satellite backhaul, making fibre a necessary component of even mobile broadband.

Figure 35:

YoY growth of operational fibre in Africa, in %



population within reach of operational fibre optic network, in million people



Source: AFC staff calculations based on Hamilton Research

Lack of updated geospatial data on African fibre networks has made the identification and assessment of gaps a complicated exercise. Available estimates from Hamilton Research suggests that 2/3rd of Africa's population is further than 10km from fibre network infrastructure, the highest percentage of any other continent. The latest data from the Network Startup Resource Centre suggests that several gaps are currently being addressed, notably with the expansion of backbone networks in Central and West Africa. Cote d'Ivoire for instance made significant progress over the past ten years with its 7,000 km terrestrial fibre backbone network. But more research must be done to understand where the remaining gaps are considering available capacity from existing networks and highlight key growth and demand centres. Nigeria for instance already relies on a backbone network of 35,000km but is rolling out an ambitious plan for an additional 90,000km of fibre under a PPP model to deliver a more modern and efficient backbone, able to support the latest technologies and bandwidth.

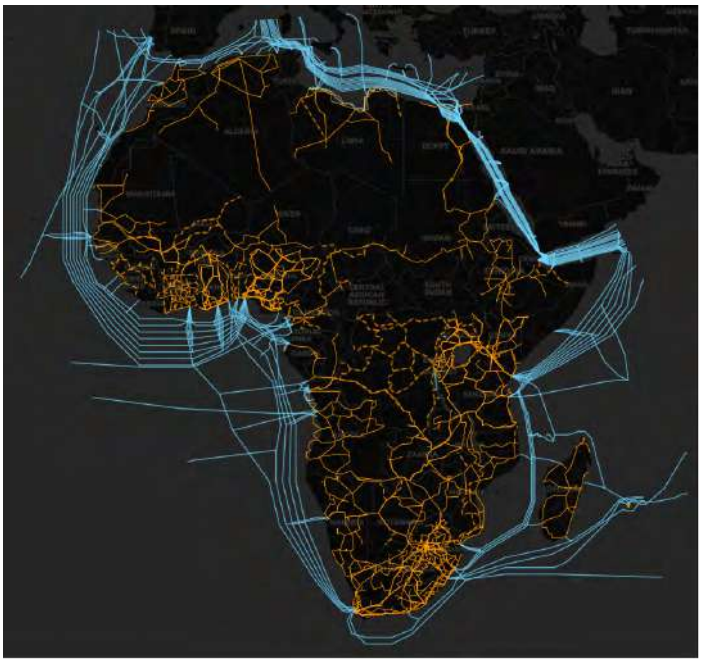
c. Africa's data centres boom is creating regional and sub-regional data hubs

In line with global industry trends, Africa's middle-mile infrastructure expansion is focused on transmission, storage and exchange infrastructure by setting up internet exchange points (IXPs), connected data centres and cloud computing. However, Africa has just entered the race to data traffic, storage and sovereignty, albeit significantly below other regions. Last year, its installed data centre capacity of roughly 250 MW was equal that of the UAE. India, which has a similar population, boasts a data centre capacity of 1,255 MW, five times that of Africa.

Similarly, despite the growth of IXPs in recent years, most African exchange points lack membership numbers and traffic to truly lower costs. According to the World Bank, sub-Saharan Africa generates just 78 GB per IXP compared to the world average of 198 GB. Excluding South Africa, the sub-region's average falls to 16 GB per IXP. To truly lower costs and improve quality, more content providers and cloud service companies must become IXP members. For instance, in 2022 the retail monthly price for 1 GB in countries with IXPs that have leading content providers was less than one-fifth of that in countries with no IXP[10].

Map 10:

Fibre infrastructure gaps must be addressed in Central and West Africa



Source: Network Startup Resource Centre - https://afterfibre.opentelecomdata.org/

Moving forward, we observe two key trends in the growth of data centres in Africa. First, the development of more modern (Tier-III and -IV) and carrier-neutral facilities beyond South Africa, and second the emergence of regional hub seeking to establish hyperscalers.

1. Recent data centres opening and announcements demonstrate a mushrooming of small and mid-sized facilities across all regions, marking a diversification of IT capacity beyond South Africa.

Until now, most data centre capacity has been concentrated in South Africa, which has become not only a regional but continental hub for African data storage and exchange[11]. To reach South Africa's level of data centre capacity, the continent would need four times its current installed capacity. Meeting its digital economy ambitions would require even more, as even South Africa's capacity is below that of high-income countries (6.69 MW per million capita in 2023 against 31.8MW in Germany).

Recent project trends point to a growing number of Tier-III and IV facilities, especially in emerging regional hubs in East Africa (Kenya), West Africa (Nigeria), and North Africa (Egypt, Morocco)[12]. Classifications of Tier-III or higher offer the highest uptime and are designed to meet growing demand from cloud and fintech industries. Carrier-neutral facilities are also on the rise as they allow for the hosting of IXPs that can attract a wider range of members. Kenya has been very successful in this regard by hosting its IXPs within carrier-neutral multitenant data centres that now count major content providers (AWS, Microsoft Azure, Meta, Alphabet) along with government agencies, utilities, financial institutions and several local internet services providers (ISPs).

[9]Africa Bandwidth Maps 2025
[10]World Bank. 2024. Digital Progress and Trends Report 2023. © World Bank. http://hdl.handle.net/10986/40970 License: CC BY 3.0 IGO.
[11]For instance, Teraco's Isando Campus alone will reach 110 MW of critical power load in Johannesburg by 2026.
[12]A comprehensive dataset for the continent is challenging to maintain given the diversify of data centres' classification (Tiers I, II, III, IV), ownership (enterprise/private, colocation, hyperscalers) and connectivity (carrier-neutral or carrier-specific).

To keep growing its data centre capacity, Africa is estimated to require $4-7bn of annual investment. To bridge the sector's funding gaps, it will need to address some of the financial and operating constraints within its lower-income or more digitally immature economies. Because data centre investments are largely driven by the private sector, they tend to focus within markets that have available digital infrastructure, reliable and cheap power (*see Box 8: Africa must address its electricity deficit to unlock its digital economy potential*), and an enabling policy environment. Attractive environments include jurisdictions with available cloud-related skills, clear data sovereignty regulations, open markets and the existence of multiple national, regional and international connections to provide redundancy in case of cable cuts.

Leveraging regional economies of scale can also help further encourage private investment in emerging frontiers. South Africa for instance has established itself as a hub for the SADC region and currently serves a lot of the smaller neighboring economies in Southern Africa. Aggregating demand at the regional level can help achieve similar economies of scale in other parts of the continent, especially in Central or West Africa. Support from development funding has a role to play in diversifying IT capacity across these new regions. Financing from development finance institutions like the African Development Bank, Africa50 or the U.S. International Development Finance Corporation, has notably helped address some of these constraints in recent years.

Last but not least, fiscal incentives can play a catalytic role in accelerating data centre development. A growing number of African countries are establishing dedicated ICT parks and special economic zones (SEZs)—as seen in South Africa, Kenya, Ethiopia, and Cabo Verde—to attract both domestic and international investors. When coupled with supportive digital policy environments and reliable energy access, such incentives can significantly reduce entry barriers, de-risk capital investments, and position countries as competitive destinations for data centre infrastructure, colocation, and hyperscale data services.

2. More digitally mature market are prime destinations to set up hyperscalers and establish regional cloud hubs

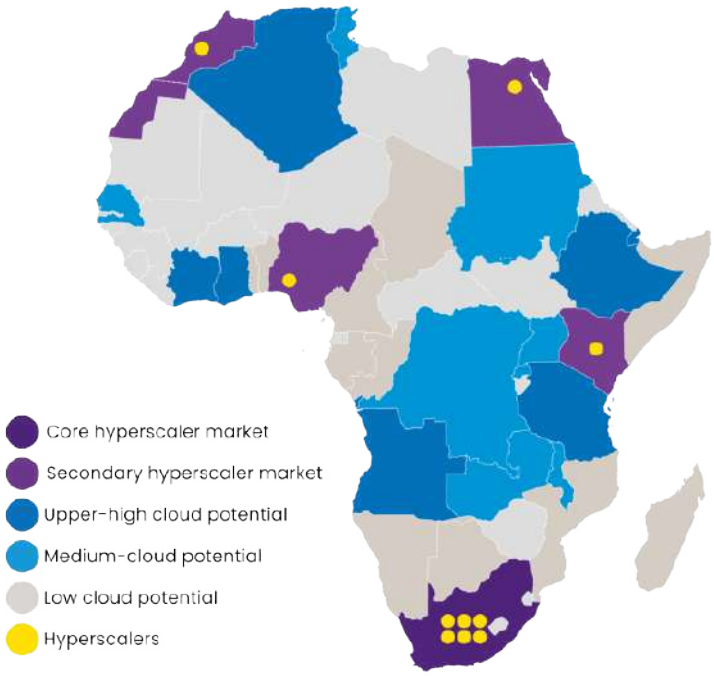
The acceleration of digitalization trends in high-income countries also means that keeping up with the digital world calls for the opening of hyperscalers – the latest and ultra-efficient data centres that support cloud computing and are equipped with the type of power capacity required for AI, 5G, IoT and streaming services. Their development is facilitated by the landing and new and ultra-modern subsea cables and the growing presence of data centres that can house the infrastructure to power cloud computing.

Hyperscalers have so far been located in South Africa, which houses all cloud operator present on the continent (AWS, Microsoft Azure, Google Cloud, Alibaba Cloud, Oracle Cloud, IBM Cloud). Other regional hubs have only attracted one hyperscale data centre each, although plans are in motion to add more facilities soon. In Morocco, Oracle is working on being the first hyperscaler to open public cloud in North Africa, while Huawei launched Nigeria's first hyperscale local cloud at the end of 2024.

Map 11:

Africa's upcoming cloud regions

Regional cloud computing hubs are forming across the continent, driven by new high-speed submarine cables capacity and growing data centre investments



Source(s): Xalam Analytics, DCByte, ADCA

BOX 8: Unlocking the potential of Africa's digital economy requires addressing the electricity deficit

Significant amounts of reliable electricity are critical for data centres, mobile networks (tower sites), cloud computing and broadband services. As the demand for digital services explodes, so does the demand for reliable energy. Artificial Intelligence for instance requires increasingly powerful chips and cooling systems that are driving an exponential growth in energy demand within developed markets. In the United States, data centres consumed over 4% of the country's electricity in 2023[13]. To put it in perspective, US data centres consume as much electricity as Egypt's entire economy (Africa's biggest power market by generation capacity). The US could require an additional 50 GW of power generation capacity by 2030 to meet incremental demand from data centres[14], equivalent to three times the capacity of all East Africa.

In light of the scale of energy supply required to power modern digital infrastructure, Africa's high energy costs, grid instability and repeated loadshedding create major operating challenges for digital infrastructure growth. Djibouti for instance is a prime location for data centre development given its growing number of subsea cables landing points but had until recently an electricity grid powered largely by expensive and imported oil derivatives. Because most telecom investments are driven by global multinationals with decarbonisation targets, providing reliable grid infrastructure with clean energy has become a key factor in what makes a country an ideal data centre investment destination. In this regard, Djibouti's prospects are likely to improve significantly since the commissioning of the AFC-led 60 MW Ghoubet Wind Farm, and the possibility of increasing imports of cheap hydroelectricity from Ethiopia.

In fact, explosion of data traffic and digitalization offers Africa a unique opportunity to position its renewable energy potential and turn it into a competitive advantage. Recent research suggests that the ICT sector has become the biggest purchaser of renewable energy in the world, making some African markets prime investment spots. In South Africa for instance, the country's first wheeling project was a 10 MW solar plant set up to supply clean energy to Amazon Web Services. The industry is now scaling up, with Teraco currently building a 120 MW utility-scale solar PV plant that will wheel power to its data centres via the ESKOM grid. In Kenya, Microsoft's EcoCloud and the UAE's G42 are working on a $1bn investment plan for a geothermal-powered mega data centre with an initial capacity of 100 MW, scalable to 1,000 MW.

Energy solutions must also be found for mobile broadband penetration, especially for telecom tower sites. In 2021, an IFC study found that sub-Saharan Africa had almost a 1/3rd of the world's tower sites located in bad-grid and off-grid environments. It also forecasted that the region would witness the world's largest increase of bad-grid and off-grid sites from 115,000 in 2019 to 205,000 in 2030[15]. Such increase is likely to be concentrated in markets with low rates of grid access and erratic electricity supply. A 2020 GSMA study for instance estimates that 75% of mobile towers located in off-grid and bad-grid areas in the D.R. Congo are powered by generators fuelled with imported diesel[16].

A growing number of tower sites going off-grid or relying on diesel generators is a cause of concern for several reasons. First, it increases CAPEX and OPEX costs for operators, making investments into rural and remote areas even more prohibitive. In fact, GSMA Intelligence estimates that the energy cost of a mobile base station in rural areas could be 37% more than in urban areas. In Nigeria for instance, telecom operators consume over 40 million litres of diesel per month, representing a yearly spending of over $350m.

Mobile broadband costs are further exacerbated by the higher amount of energy required to power data traffic in Africa (0.24 kWh/GB compared to a global average of 0.17 kWh/GB), where lower traffic volumes and use of older technologies like 3G are energy-inefficient[17]. Second, tower sites that rely on generators and batteries report frequent theft of battery equipment and diesel.

To support the expansion of mobile broadband infrastructure, new energy solutions must be found and deployed. Industry challenges have already given birth to Telecom Energy Services Companies (TESCOs), also known as ESCOs, a new wave of turnkey contractors handling the investment, operations and delivery of energy systems to tower sites. By outsourcing energy systems to a dedicated services industry, telecom operators have already been able to save costs and maximize their operational footprint. Until now, most investments have been focused on upgrading diesel-power telecom networks with solar energy, using diesel only as a backup. Additional innovation is currently being tested, especially by switching diesel with liquefied petroleum gas (LPG), which is cheaper, cleaner and harder to steal in its gaseous form.

[13] https://www.energy.gov/articles/doe-releases-new-report-evaluating-increase-electricity-demand-data-centers
[14] https://www.spglobal.com/ratings/en/research/articles/241022-data-centers-surging-demand-will-benefit-and-test-the-u-s-power-sector-13280625
[15] https://www.ifc.org/content/dam/ifc/doc/mgrt/tesco-study-web-9-29-21-final.pdf
[16] https://www.gsma.com/solutions-and-impact/connectivity-for-good/mobile-for-development/wp-content/uploads/2014/11/Africa-Market-Report-GPM-final.pdf
[17] https://www.gsma.com/about-us/regions/sub-saharan-africa/wp-content/uploads/2024/11/111125-Rural-Renewal.pdf

d. Satellite connectivity is extending the digital frontier

Satellite internet technology is emerging as a strategic complement to terrestrial infrastructure, particularly in Africa's most remote and hard-to-reach regions. While fibre optic networks and mobile broadband towers have expanded rapidly in urban and peri-urban areas, vast rural communities remain beyond reach due to the high capital and operational costs associated with traditional infrastructure deployment. Here, satellite solutions—particularly low-Earth orbit (LEO) constellations—offer a compelling path forward.

Modern LEO satellite systems can provide high-speed, low-latency internet to areas that lack terrestrial connectivity. With new players such as Starlink and OneWeb entering African markets, the continent has an opportunity to leapfrog traditional infrastructure gaps. Satellite services can deliver reliable broadband to schools, health centres, agricultural cooperatives, and small businesses in underserved locations—helping unlock productivity gains and social development.

However, affordability remains a critical barrier. Even when satellite internet becomes technically available, many rural households and institutions cannot afford the cost of devices and subscriptions. To address this, a growing number of initiatives are turning to crowdfunding and community-based financing mechanisms. These approaches allow communities to pool resources to collectively fund satellite terminals, share connectivity, or access subsidized packages through partnerships with NGOs, cooperatives, or development finance institutions.

In Kenya and Nigeria, early pilot projects have demonstrated that crowdfunding models can enable schools and farmer groups to access satellite internet, especially when bundled with solar-powered systems and managed as a shared service. Development partners can play a catalytic role by de-risking such initiatives, offering matching funds or guarantees, and helping design inclusive business models that extend beyond donor dependence. As Africa continues to pursue universal digital access, satellite internet and innovative financing models will be crucial to reaching the last frontier—ensuring no community is left offline in the continent's digital transformation.

Africa's digital infrastructure is at a pivotal moment, with rapid advancements in data centers, cloud computing, and connectivity reshaping the continent's technological landscape. While challenges such as power reliability and infrastructure gaps persist, investments in subsea cables, hyperscale data centers, and IXPs are unlocking new opportunities for economic growth and digital transformation. The next phase of development will hinge on sustainable energy solutions, policy support, and strategic partnerships to ensure Africa's digital ecosystem is both resilient and globally competitive.

3.

Infrastructure sharing and the roll out of digital public infrastructure (DPI) offer new avenues for public-private cooperation in Africa

To address Africa's digital infrastructure gaps and narrow its digital divide, innovative approaches to public-private sector cooperation are required. These new partnerships must combine the private sector's continued appetite for telecom investments with government's digital inclusion agenda and promote a more inclusive digitalization of the continent's economies. Two modes of cooperation are proving particularly efficient and are on the rise on the continent, including infrastructure sharing and the roll out of digital public infrastructure (DPI).

Infrastructure sharing provides opportunities to maximize digital infrastructure investments while lowering data costs

Infrastructure sharing is becoming an increasingly attractive proposition for Africa to address high data costs – especially for new technologies like 5G – and maximize digital infrastructure investments within underserved areas.

Sharing models are characterized by active and passive infrastructure sharing. Under the former, telecom operators typically lease excess capacity from their peers, covering various components like wireless base station towers, cable ducts and optic fibre. Under the latter, a telecom operator leases space along other infrastructure assets (power transmission lines, railways, pipelines) to deploy its own fibre cables, making use of an existing transport channel.

Infrastructure sharing offers several benefits, including:
• Investment efficiency by sharing CAPEX and OPEX (deployment and maintenance costs), thereby optimising resources. Some estimates demonstrate that by using excess capacity or the right of way for existing network infrastructure, shared infrastructure projects can minimize their capital investment by as much as 80%[18].

• Reducing upfront investment costs and improving projects economics, thereby facilitating network expansion to underserved or rural areas. In Nigeria for instance, tower sharing agreements between IHS Towers and American Tower Corp have enabled operators to co-locate their equipment, deploy thousands of towers and expand mobile network coverage. This tower sharing model has been efficient in improving network coverage and service quality in rural and underserved areas[19].

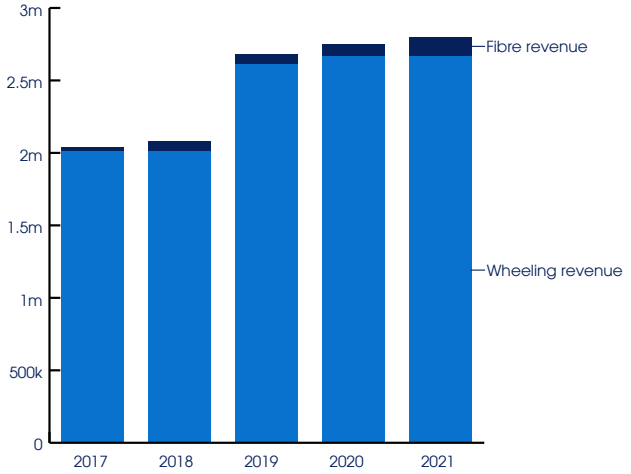
• Offering state utilities additional revenue streams by monetizing excess capacity. Solid synergies notably exist with transmission companies because electricity grids largely use fibre optic cables to supervize, ground, control and monitor their system. Transmission companies usually require about 10% of these cables[20], leaving the rest under-utilized and available for monetization. While this is still a nascent business in Africa, successful case studies already exist. The Kenya Electricity Transmission Company (KETRACO) for instance is witnessing growing revenue diversification since it launched its fibre optic leasing business, whose revenues have grown from KES 30,784 in 2017 to over KES 130,000 in 2021. West Africa's new CLSG regional transmission network (see Energy section) was also structured to allow for the marketing of excess optical fiber capacity, thereby increasing penetration in under-served West African countries.

• Reducing energy consumption and greenhouse gas emissions (GHG), thereby improving the environmental footprint of digital infrastructure.

Figure 36:

Infrastructure sharing creates new revenue stream for state utilities

KETRACO's revenue from contracts with customers



Source: Kenya Electricity Transmission Company Ltd (KETRACO)

Despite limited resources, governments have a key role to play in setting up digital public infrastructure (DPI)

The emergence of the digital public infrastructure (DPI) concept, framed and promoted by India during its G20 Presidency, is increasingly demonstrating the impact that government policy and regulation can have on the growth of a country's digital economy.

DPI encompasses the various digital platforms required for identity, payments and data sharing and reflects a new cross-cutting horizontal approach to the digital economy. It encompasses the intermediate layer between physical infrastructure (fibre, towers, data centres) and the actual applications of broadband traffic (e-commerce, financial inclusion, social protection).

Early adopters of the DPI concept, have demonstrated the impact it has on meeting a country's identification, payments and data exchange needs. In 2009, India launched a digital identity system called Aadhaar, which provided Indians with their unique 12-digit identity number and established a new electronic KYC service. This architecture enabled banks and telecom companies to authenticate identities and led to a significant boost of financial inclusion: formal banking inclusion in India jumped from 25% in 2008

[18] European Commission. "Measures to reduce cost of high-speed broadband roll-out." Available at: https://ec.europa.eu/digital-agenda/en/measures-reduce-cost-high-speed-broadband-rollout-0
[19] https://www.telecomreviewafrica.com/articles/reports-and-coverage/4187-bridging-the-connectivity-divide-leveraging-infrastructure-sharing-for-inclusive-access-in-africa/
[20] https://blogs.worldbank.org/en/ppps/infrastructure-sharing-energy-and-digital-development-takeaways-cross-sectoral-cooperation

to 80% in 2023. After providing the infrastructure for digital identity and digital payments, India set up a data exchange mechanism called Data Empowerment and Protection Architecture (DEPA) to facilitate data sharing.

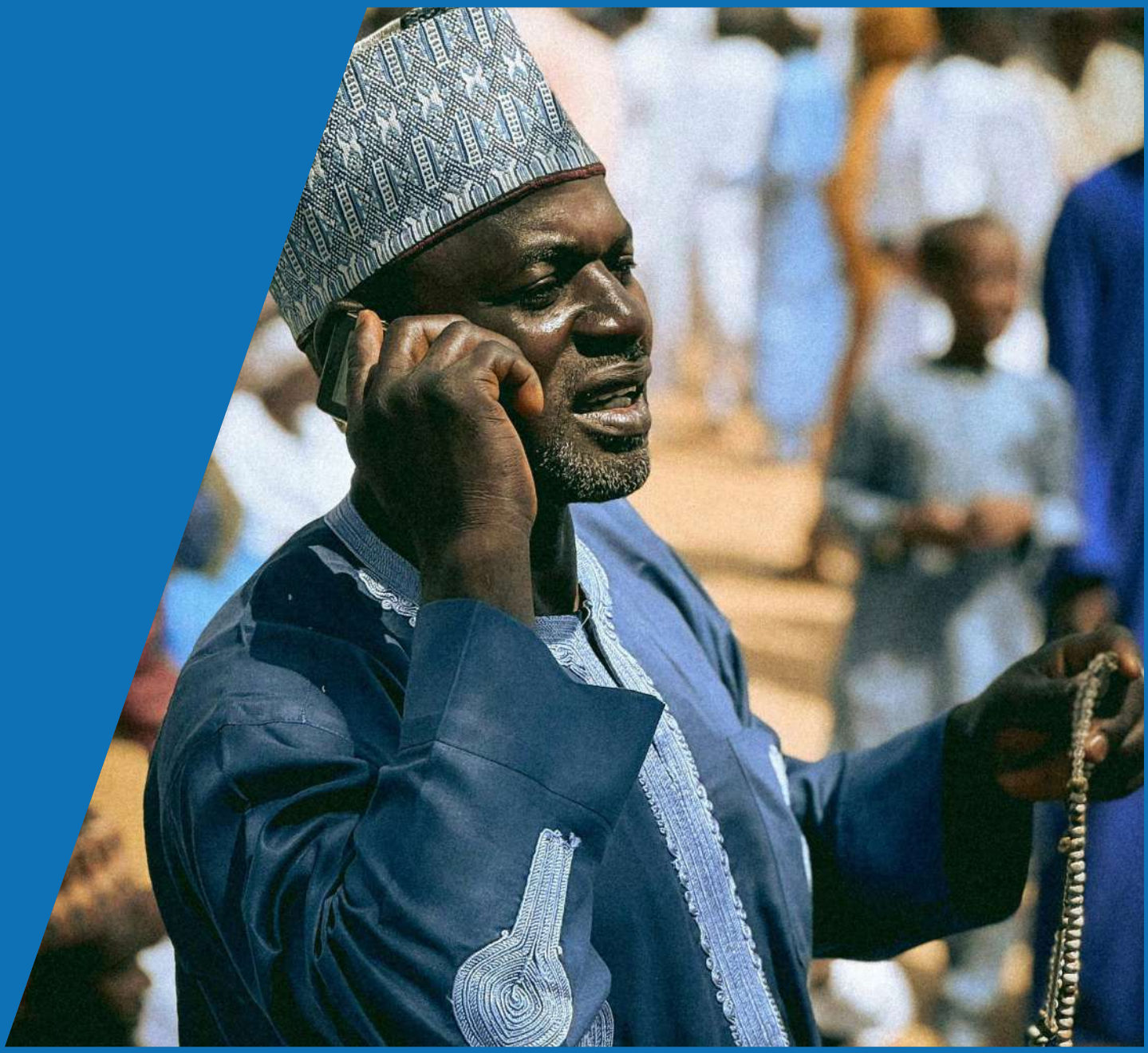
Benefits from integrated DPI infrastructure abound and are particularly useful to support public policy interventions. During the COVID-19 pandemic for instance, India could set up an efficient and transparent cash transfer scheme because it had the architecture to do so. In other countries like Thailand, DPI is used to provide farmers with targeted fertilizer subsidies. By promoting modern DPI, governments can support their financial inclusion strategies, maximize the success of social policy interventions, and help formalize their economic structures.
In Africa, DPI is at various levels of development and must be scaled up to promote technology adoption and financial inclusion. Weak digital infrastructure is marginalizing entire populations, especially women, youth and low-income individuals. In 2024, half a billion Africans had no foundational ID. For instance, the D.R. Congo does not have a population register nor ID cards, in a country of over 100m people. In Nigeria – Africa's most populated nation – the launch of the National Identification Number (NIN) has registered solid success but almost half the population is still believed to be without identification.

DPI interventions have proven very beneficial in bringing vulnerable groups to the formal economy. This is particularly the case of Government-to-Person (G2P) payments that create an incentive for financial inclusion. The Global Findex 2021 for instance found that 865 million bank account owners opened their first account within a financial institution to received money from their government.

Expanding and rolling out DPI in Africa must comprise both private sector participation in the form of technology investments into broadband networks and digital platforms, but also government interventions to promote identity systems and implement sound financial inclusion strategies. When properly set up, DPI can be a foundation for digital transactions between people, businesses and governments across all groups of society, regardless of income levels. In more ways than one, it forms the prerequisite condition for wide-spread digital transformation and growth in data usage.

Africa's digital transformation is at a pivotal moment. While the continent continues to grapple with a stark digital divide—marked by gaps in broadband penetration, infrastructure capacity, and technology availability—significant progress is being made. Investment in undersea cables, fibre networks, data centres, and mobile infrastructure is accelerating, driven by both public and private sector initiatives. Governments are increasingly recognizing the strategic importance of digitalization, and its potential to support nationwide financial inclusion and the formalisation of African economies.

The next phase of Africa's digitalization will require scaling resilient fibre networks, accelerating data centre investment, and addressing foundational challenges in energy, regulation, and digital public infrastructure.
Collaboration between governments, businesses, and multilateral institutions will be essential in expanding affordable internet access, supporting local content development, and equipping populations with the digital skills needed for the future economy. With Africa's young and tech-savvy population, rising adoption of digital services, and growing interest from global investors, the potential for digital transformation is immense.



Statistical Annexes

Table 1: Domestic Capital Pools

	Pension 2024, or latest year available	Insurance 2024, or latest year available	Sovereign Wealth Funds 2023, or latest year available	Public Development Banks 2023, or latest year available	Foreign Currency Dec-2024	Gold Dec-2024	Remittances 2024e
	assets in $US bn				reserves in $US bn		
Africa	**455.8**	**321**	**150**	**248.5**	**434.2**	**38.2**	**95.3**
Africa, excl. South	*140*	*63*	*150*	*230.9*	*379.3*	*27.7*	*94.5*
Algeria	nd	3.17	13.3	15.9**	68.4	0.009	1.9
Angola	1.6	0.33	2.2	0.6	14.2	1.6	0
Benin	CIPRES*	CIMA*	n/a	1.6	WAEMU*	WAEMU*	0.2
Botswana	9.5	1.56	3.8	0.683	4.1	0.3	0.1
Burkina Faso	CIPRES*	CIMA*	n/a	nd	WAEMU*	WAEMU*	0.6
Burundi	nd	nd	n/a	0.143	0.1	0.002	0
Cabo Verde	0.035	nd	nd	n/a	0.8	nd	0.3
Cameroon	1.1	1	n/a	nd	5	0.06	0.6
Central African Rep.	0.09	0.01	n/a	n/a	0.4	0.02	nd
Chad	0.33	0.04	n/a	n/a	1	0.02	nd
Comoros	nd	nd	n/a	n/a		0.001	0.3
Congo DR	CIPRES*	nd	n/a	n/a	5.8	nd	1.4
Congo Rep	0.69	0.12	n/a	n/a	0.4	0.02	0
Côte d'Ivoire	2.5	CIMA*	n/a	2.6**	WAEMU*	WAEMU*	1
Djibouti	nd	nd	terminated[c]	nd	0.3	nd	0.1
Egypt	4.5[a]	4.8	2	3.8**	34.3	10.6	22.7
Equatorial Guinea	CIPRES*	0.03	0.2	nd	1.1	nd	nd
Eritrea	nd	nd	n/a	nd		nd	nd
Eswatini	2.7	nd	0.5	nd	0.4	nd	0.1
Ethiopia	nd	0.48	46.3	2.9	3.8	0.004	0.6
Gabon	0.6	0.29	1.9	0.84	1.2	nd	0
Gambia, The	nd	nd	n/a	n/a	0.6	nd	0.6
Ghana	6	1.4	2.4	0.557**	6.4	2.9	4.6
Guinea	CIPRES*	nd	0.7	nd	1.1	0.3	0.5
Guinea Bissau	CIPRES*	CIMA*	n/a	n/a	WAEMU*	WAEMU*	0.2
Kenya	17.4	8.5	n/a	0.306**	10.1	0.001	4.8
Lesotho	0.93	nd	n/a	0.166	1	nd	0.5
Liberia	0.14	nd	n/a	n/a	0.6	nd	0.8
Libya	nd	nd	68.4	n/a	80.6	2.1	nd
Madagascar	CIPRES*	nd	n/a	n/a	2.8	nd	0.4
Malawi	1.6	nd	n/a	0.057	0.5	nd	0.3
Mali	CIPRES*	CIMA*	n/a	1.6	WAEMU*	WAEMU*	1.2
Mauritania	0.08	0.1	n/a	0.233	2	nd	0.1
Mauritius	3.7	3.1	1.2	0.263	7.5	1.04	0.4
Morocco	34.2	23.47	1.8	55.9	35.3	1.96	12
Mozambique	0.24	nd	n/a	n/a	3.5	0.33	0.7
Namibia	14.1	4.9	n/a	0.645	3.4	nd	0
Niger	CIPRES*	CIMA*	n/a	n/a	WAEMU*	WAEMU*	0.7
Nigeria	14.4	1.7	2.5	5.6**	38.6	1.8	19.8
Rwanda	0.87	nd	0.3	0.507	2.4	nd	0.5
São Tomé and Príncipe	nd	nd	n/a	n/a		nd	0
Senegal	CIPRES*	0.9	1.2	1.2**	WAEMU*	WAEMU*	3
Seychelles	0.28	nd	n/a	0.12	0.8	nd	0
Sierra Leone	0.05	nd	n/a	n/a	0.5	nd	0.3
Somalia	nd	nd	n/a	nd		nd	1.7
South Africa	315.9	258	n/a	17.6	54.9	10.5	0.8
South Sudan	nd	nd	0.2	n/a	0.1	nd	1.1
Sudan	nd	nd	n/a	nd	1.2	0.02	1
Tanzania	6.9[b]	0.69	n/a	0.411	5.5	0.03	0.8
Togo	CIPRES*	CIMA*	n/a	n/a	WAEMU*	WAEMU*	0.7
Tunisia	1.2	3.1	n/a	3.80	8.8	0.35	2.8
Uganda	6.9	0.23	n/a	0.441	3.3	nd	1.5
Zambia	3.5	0.05	n/a	2.27**	3.9	0.02	0.2
Zimbabwe	1.9	nd	1.1	0.4**	0.3	0.22	3.1

nd = no data; n/a = not applicable

Pensions. Source(s): World Bank, ARSEG, NBFIRA, ASEL, CNPS, OECD, CBE, NRPA, INS, RBA, FSD, NASSCORP, RBM, MoF, IFC, ASEL, Bank of Namibia, Bank of Tanzania, PENCOM, NBR, SPF, FSCA, CNSS, URBRA, NPSA, IPEC
Latest years available: 2024 (Kenya, Nigeria, Namibia, South Africa); 2023 (Algeria, Angola, Cameroon, Egypt, Ghana, Morocco, Tanzania, Uganda); 2022 (Senegal, Zambia); 2021 (Cape Verde, Mauritania); 2020 (CIPRES*); 2019 (Liberia); 2018 (Tunisia).
*Conférence Interafricaine de la Prévoyance Sociale (CIPRES) includes Benin, Burkina Faso, Cameroon, Central African Republic, Togo, Congo Rep, Côte d'Ivoire, Gabon, Guinea, Comoros, Guinea Bissau, Equatorial Guinea, Madagascar, Mali, Niger, D.R. Congo, Senegal and Chad. A Technical Note by the World Bank (May 2022) established CFA 3,581 bn of assets under management at the end of 2020 (eq. $6.2 bn). Country-specific numbers are provided when available from individual social security funds or from regional central banks.
[a]In Egypt, the bulk of savings are concentrated in insurance funds and in the Egypt Post, which totalled EGP 242.3 bn ($4.8bn) and EGP 322.9 bn ($6.5bn) at the end of the FY2022/23 financial year, respectively. The number reported here is sourced from the OECD database of assets in asset-backed pension arrangements.
[b]Bank of Tanzania reports assets for both the social security and insurance sectors. The figure cited here for pension assets corresponds to the social security category.

Insurance. Source(s): NAICOM, ARSEG, CBE, TanzaniaInvest, IRA, DGT, NICGH, RBSA, ACAPS, UAR, FTUSA, Bank of Namibia, MoF, DGIFN, CNC, IAZ, CIMA, NBFIRA, FSC, BEAC, NBE.
Latest years available: 2024 (Kenya, Namibia, Nigeria, South Africa); 2023 (Algeria, Angola, Cameroon, Congo Rep, Egypt, Ghana, Mauritius, Tanzania, Tunisia, Uganda); 2022 (CIMA, Senegal, Zambia); 2021 (Mauritania); 2020 (Botswana, Côte d'Ivoire)
*Conférence Interafricaine des Marchés d'Assurances (CIMA) includes Benin, Burkina Faso, Cameroun, CAR, Congo Rep, Côte d'Ivoire, Gabon, Guinea Bissau, Equatorial Guinea, Mali, Niger, Senegal, Chad, and Togo. To calculate our total number, we use CIMA's aggregate database at the end of 2022 with assets under management of FCFA 3.2bn (eq. $5.6 bn). Country-specific numbers are provided when available from regional central banks.

SWF. Source: Global SWF (2023)
[c]The Djibouti Sovereign Fund (FSD) was terminated by Presidential Decree N° 2025-098/PRE in 2025.

PDBs. Source(s): Xu, Jiajun, Régis Marodon, Xinshun Ru, Xiaomeng Ren, and Xinyue Wu. 2021. "What are Public Development Banks and Development Financing Institutions?—— Qualification Criteria, Stylized Facts and Development Trends."China Economic Quarterly International, volume 1, issue 4: 271-294. DOI: https://doi.org/10.1016/j.ceqi.2021.10.001; updated by AFC Research when possible.
**data on at least one or more PDB in the country is not available; total Africa number includes regional institutions.

Remittances. Source: 2024 estimates of World Bank-KNOMAD

Reserves. Source: IMF International Liquidity Database/Dataset
*West African Economic and Monetary Union (WAEMU): $4.010bn of gold reserves and $17.4bn of foreign reserves

Note(s): This dataset is published as part of the State of Africa's Infrastructure Report 2025 and reflects AFC's commitment to fostering greater transparency and knowledge-sharing around the continent's domestic capital markets.
The data is made publicly available to encourage stakeholder engagement in refining, expanding, and updating the underlying datasets. We welcome feedback, corrections, and contributions from regulators, market participants, researchers, and other stakeholders to improve the accuracy and completeness of this important resource. Any changes to the dataset will be restated into next year's State of Africa's Infrastrucutre Report 2026.
While every effort has been made to ensure the quality and reliability of the data presented, Africa Finance Corporation (AFC) does not guarantee its accuracy, completeness, or fitness for any particular purpose. AFC shall not be held liable for any decisions made or actions taken based on this dataset. Use of the data is at the user's own risk.
For feedback, corrections, or data contributions, please contact: research@africafc.org.

Table 2: Transport & Logistics Infrastructure

	Roads				Railways			Ports	Airports
	Paved Network 2024, or latest year available	Density		IMF Road Mean Speed score	Operating lines© 2024	Density		Containers Throughput 2023, or latest year available	Air Freight 2024, or latest year available
	'000 km	km/100km2	km/'000 people		km	km/'000 km2	km/mn people	TEUs	tonnes
Africa	**818**	**2.8**	**0.55**	**n/a**	**78,783**	**2.6**	**52.8**	**40,400,000**	**2,586,000**
Algeria	117	4.9	2.53	88	4,286	1.8	92.8	1,550,000	42,400
Angola	13.7	1.1	0.37	78	2,752	2.2	74.9	677,326	nd
Benin	3.3	2.9	0.23	63	438	3.9	31.0	650,000	nd
Botswana	10.5	1.9	4.25	91	886	1.6	357.2	n/a	1,496
Burkina Faso	4	1.5	0.18	63	517	1.9	22.5	n/a	28,185.50
Burundi	1.7	8.1	0.15	51	n/a	n/a	n/a	n/a	nd
Cabo Verde	0.9	23.1	1.78	nd	n/a	n/a	n/a	85,000	nd
Cameroon	10.2	2.2	0.36	56	983	2.1	34.6	680,000	nd
Central African Rep.	0.7	0.1	0.14	61	n/a	n/a	n/a	n/a	nd
Chad	1.2	0.1	0.06	63	n/a	n/a	n/a	n/a	nd
Comoros	0.5	29.7	0.65	nd	n/a	n/a	n/a	no data	nd
Congo DR	3.3	0.1	0.03	62	4,007	1.8	37.9	50,000	nd
Congo Rep	2.7	0.8	0.44	63	795	2.3	128.6	1,003,734	nd
Côte d'Ivoire	8.5	2.7	0.27	78	639	2.0	20.5	1,466,000	31,998
Djibouti	0.8	3.4	0.68	69	97	4.2	84.1	1,200,000	4,492
Egypt	124.9	12.5	1.09	83	9,570	9.6	83.6	8,360,875	338,600
Equatorial Guinea	2.5	9.0	1.37	74	n/a	n/a	n/a	6,000	nd
Eritrea	1.6	1.3	0.46	62	115	1.0	33.1	no data	nd
Eswatini	1.5	8.7	1.22	69	301	17.5	244.6	n/a	nd
Ethiopia	17.7	1.6	0.14	61	659	0.6	5.1	n/a	713,875
Gabon	2	0.8	0.82	60	648	2.5	260.8	175,000	nd
Gambia, The	1.2	12.2	0.46	53	n/a	n/a	n/a	no data	nd
Ghana	25.5	11.2	0.75	56	262	1.2	7.8	1,226,000	40,774
Guinea	2.8	0.9	0.16	50	541	2.2	37.6	306,000	nd
Guinea Bissau	1	3.4	0.45	60	n/a	n/a	n/a	no data	nd
Kenya	25.4	4.5	0.46	57	2,475	4.3	44.7	1,623,080	379,500.60
Lesotho	1.8	5.9	0.78	60	n/a	n/a	n/a	n/a	nd
Liberia	1.1	1.2	0.21	66	245	2.5	44.6	no data	nd
Libya	34	1.9	4.65	90	n/a	n/a	n/a	465,168	nd
Madagascar	5	0.9	0.16	51	673	1.2	21.6	220,700	nd
Malawi	4.4	4.7	0.21	75	920	9.8	43.6	n/a	4,876
Mali	6.5	0.5	0.27	72	0	0.0	0.0	n/a	nd
Mauritania	2.8	0.3	0.55	77	728	0.7	144.9	185,290	nd
Mauritius	2.4	119.1	1.89	nd	n/a	n/a	n/a	469,585	nd
Morocco	45.2	10.1	1.20	95	2,309	5.2	61.2	9,964,410	77,900
Mozambique	8.3	1.1	0.25	78	2,584	3.3	76.8	557,000	13,748.30
Namibia	8.2	1.0	2.79	99	2,687	3.3	906.8	171,000	3,936
Niger	5	0.4	0.19	69	n/a	n/a	n/a	n/a	9,500
Nigeria	60	6.6	0.26	55	3,800	4.2	16.7	1,466,109	195,700
Rwanda	1.6	6.5	0.11	47	n/a	n/a	n/a	n/a	16,101.53
São Tomé and Príncipe	0.3	26.0	1.08	nd	n/a	n/a	n/a	no data	nd
Senegal	6.7	3.4	0.36	71	657	3.4	36.3	800,000	38,624
Seychelles	0.5	111.7	4.29	nd	n/a	n/a	n/a	no data	11,554
Sierra Leone	1	1.5	0.12	64	192	2.7	22.7	no data	nd
Somalia	2.8	0.5	0.16	58	n/a	n/a	n/a	no data	nd
South Africa	159.4	13.1	2.52	100	20,953	17.3	331.5	4,114,000	490,200
South Sudan	0.3	0.0	0.03	59	0	0.0	0.0	n/a	nd
Sudan	8	0.4	0.16	72	600	0.3	12.0	268,315	nd
Tanzania	14	1.6	0.21	57	4,319	4.9	64.8	993,900	29,800
Togo	2.1	3.9	0.23	63	94	1.7	10.1	1,907,439	14,517.60
Tunisia	17.5	11.3	1.44	78	1,797	11.6	147.3	444,714	nd
Uganda	5.8	2.9	0.12	64	258	1.7	7.2	n/a	64,254
Zambia	10	1.4	0.49	73	2,109	2.8	101.8	n/a	18,054
Zimbabwe	18.5	4.8	1.13	83	3,145	8.1	192.5	n/a	15,887

nd = no data; n/a = not applicable

Source(s): national sources including governments, ministries and road development agencies, and airport authorities, using the latest year available. IMF Road Mean Speed Scores are extracted from the IMF's Road Quality and Mean Speed Score Working Paper (May 2022); Containers Throughput data is compiled from national ports authorities and the UNCTAD Data Hub.

Note: This dataset is published as part of the State of Africa's Infrastructure Report 2025 and reflects AFC's commitment to fostering greater transparency and knowledge-sharing around the continent's logistics infrastructure.
The data is made publicly available to encourage stakeholder engagement in refining, expanding, and updating the underlying datasets. We welcome feedback, corrections, and contributions from regulators, market participants, researchers, and other stakeholders to improve the accuracy and completeness of this important resource.
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Table 3: Energy

	Installed Power Generation Capacity 2024, or latest year available	Installed Power Generation Capacity	Electricity Consumption 2022	Electrification Rate 2022	Clean Cooking Access Rate 2024
	GW	MW/'000 capita	kWh/capita	percent	
Africa	**249**	**0.17**	514.2		
North Africa	***113.2***	***0.52***	***1,270***		
Algeria	*25.3*	*0.5*	*1,484.4*	*99.8*	*100*
Egypt	*59.4*	*0.5*	*1,530.4*	*100*	*100*
Libya	*11*	*1.5*	*3,855.6*	*70*	*nd*
Morocco	*11.4*	*0.3*	*964.9*	*100*	*98*
Tunisia	*6*	*0.5*	*1,524.6*	*100*	*100*
Southern Africa	***80.1***	***0.34***			
Angola	*6.2*	*0.2*	*387.8*	*48.5*	*50*
Botswana	*0.9*	*0.4*	*1,617.8*	*75.9*	*66*
Comoros	*0.04*	*0.1*	*123.5*	*89.9*	*10*
Eswatini	*0.2*	*0.2*	*1,116.9*	*82.3*	*49*
Lesotho	*0.1*	*0.0*	*373.7*	*51.9*	*42*
Madagascar	*0.8*	*0.0*	*69.3*	*36.2*	*2*
Malawi	*0.5*	*0.0*	*83.4*	*14*	*1*
Mauritius	*0.9*	*0.7*	*2,262.3*	*100*	*99*
Mozambique	*3*	*0.1*	*384.0*	*33.2*	*6*
Namibia	*0.7*	*0.2*	*1,119.5*	*56.2*	*47*
Seychelles	*0.1*	*1.1*	*3,957.0*	*100*	*100*
*South Africa**	*59.7*	*0.9*	*2,985.9*	*86.5*	*89*
Zambia	*3.8*	*0.2*	*683.7*	*47.8*	*9*
Zimbabwe	*2.9*	*0.2*	*573.7*	*50.3*	*31*
West Africa	***29***	***0.07***			
Benin	*0.2*	*0.0*	*107.6*	*56.5*	*6*
Burkina Faso	*0.6*	*0.0*	*119.7*	*19*	*17*
Cabo Verde	*0.2*	*0.4*	*801.6*	*97.1*	*83*
Côte d'Ivoire	*2.9*	*0.1*	*316.2*	*70.4*	*43*
Gambia, The	*0.1*	*0.0*	*145.8*	*65.4*	*2*
Ghana	*5.6*	*0.2*	*528.4*	*85.1*	*31*
Guinea	*1.2*	*0.1*	*196.0*	*47.7*	*1*
Guinea Bissau	*0.04*	*0.0*	*82.5*	*36.9*	*1*
Liberia	*0.1*	*0.0*	*59.2*	*31.8*	*1*
Mali	*0.8*	*0.0*	*140.0*	*53*	*1*
Mauritania	*0.7*	*0.1*	*345.0*	*49*	*49*
Niger	*0.3*	*0.0*	*55.1*	*19.5*	*6*
*Nigeria***	*13.8*	*0.1*	*144.5*	*60.5*	*26*
Senegal	*1.8*	*0.1*	*384.6*	*68*	*32*
Togo	*0.3*	*0.0*	*190.0*	*57.2*	*12*
Sierra Leone	*0.2*	*0.0*	*41.3*	*29.4*	*1*
Eastern Africa	***19***	***0.05***			
Burundi	*0.1*	*0.0*	*24.8*	*10.3*	*0*
Djibouti	*0.2*	*0.2*	*574.7*	*65.2*	*10*
Eritrea	*0.2*	*0.1*	*96.4*	*53.4*	*10*
Ethiopia	*6*	*0.0*	*89.4*	*55.4*	*9*
Kenya	*3.2*	*0.1*	*184.5*	*76*	*30*
Rwanda	*0.3*	*0.0*	*67.8*	*50.6*	*8*
Somalia	*0.3*	*0.0*	*27.9*	*48.9*	*5*
South Sudan	*0.1*	*0.0*	*46.6*	*5.4*	*0*
Sudan	*4.0*	*0.1*	*268.5*	*63.2*	*66*
Tanzania	*2.3*	*0.0*	*118.2*	*45.8*	*9*
Uganda	*2*	*0.0*	*83.3*	*47.1*	*1*
Central Africa	***7.4***	***0.04***			
Cameroon	*1.7*	*0.1*	*276.1*	*71*	*29*
Central African Republic	*0.04*	*0.0*	*19.6*	*15.7*	*1*
Chad	*0.2*	*0.0*	*14.2*	*11.7*	*10*
Congo, D.R.	*3.2*	*0.0*	*126.4*	*21.5*	*4*
Congo, Rep.	*0.8*	*0.1*	*316.8*	*50.6*	*40*
Equatorial Guinea	*0.5*	*0.3*	*852.0*	*67*	*22*
Gabon	*0.8*	*0.3*	*986.6*	*93.5*	*91*
São Tomé and Príncipe	*0.04*	*0.2*	*343.3*	*78.4*	*4*

Source(s): AFC Research; UNSTATS (2022 electricity consumption data); IEA, IRENA, UNSD, World Bank, WHO. 2024. Tracking SDG 7: The Energy Progress Report. World Bank, Washington DC. © World Bank. License: Creative Commons Attribution—NonCommercial 3.0 IGO (CC BY-NC 3.0 IGO).

Note(s): power generation capacity includes grid-connected capacity only.
* South Africa is currently experiencing significant growth of decentralised capacity - in particular embedded generation - which is not captured here. In 2023 alone, 4.5 GW of planned embedded generation projects were registered with the regulator.
**Nigeria's off-grid and captive generation capacity is significant and estimated anywhere between 20 and 100 GW. It is not reflected here.

Table 4: Digital Infrastructure

	Infrastructure		Access		Technology	
	Subsea Cable Connections*	Internet Exchange Points (IXPs)	Internet Access	Data Affordability as a share of monthly GNI**	Mobile Broadband Subscriptions	Fixed Broadband Subscriptions
	total		percent		percent of population	
Algeria	8	nd	76.9	0.5	104	12
Angola	4	2	45	1.6	30.3	0.37
Benin	3	1	32.2	4.6	50.1	0.17
Botswana	n/a	1	81.4	0.9	112	3.41
Burkina Faso	n/a	2	17	5.0	85.4	0.07
Burundi	n/a	2	11.1	10.4	10.3	0.02
Cabo Verde	3	1	73.5	1.9	101	7.23
Cameroon	5	3	41.9	3.4	24.5	2.13
Central African Rep.	n/a	nd	nd	26.7	5.3	0.02
Chad	n/a	1	13.2	8.4	5.83	-
Comoros	2	nd	35.7	5.8	82.2	0.39
Congo DR	2	4	30.5	9.1	28.3	0.02
Congo Rep	2	2	38.4	5.7	57.5	1.27
Côte d'Ivoire	7	1	40.7	1.9	93.6	1.36
Djibouti	12	1	65.0	5.8	34.9	1.47
Egypt	10	3	72.7	0.7	69.1	10.9
Equatorial Guinea	1	nd	60.4	nd	1.01	0.1
Eritrea	0	nd	20.0	nd	31.5	nd
Eswatini	n/a	1	57.6	3.5	120	2.76
Ethiopia	n/a	1	17	1.8	32.2	0.45
Gabon	4	1	72	1.5	89.3	3.97
Gambia, The	1	1	45.9	4.3	70.1	0.22
Ghana	6	2	69.9	1.5	56.5	0.56
Guinea	1	2	26.5	4.6	23.1	0.01
Guinea Bissau	1	1	33	8.5	73.5	0.31
Kenya	6	7	35.0	1.8	66	2.39
Lesotho	n/a	nd	48.0	5.1	61	0.38
Liberia	1	1	23.5	8.2	41.5	0.28
Libya	4	nd	89	0.3	123	4.52
Madagascar	3	1	20	6.3	26.1	0.12
Malawi	n/a	2	18.0	8.8	40.2	0.08
Mali	n/a	1	35.1	9.2	59.1	0.77
Mauritania	1	nd	37.4	3.1	59.7	0.59
Mauritius	3	1	79.5	0.6	125	26.90
Morocco	9	2	91.0	0.7	94.6	7.02
Mozambique	3	1	19.8	5.1	27.8	0.20
Namibia	2	1	64.4	1.0	58.5	3.52
Niger	n/a	nd	23	8.3	32.4	0.11
Nigeria	8	6	39	1.8	41.6	0.05
Rwanda	n/a	1	34.2	2.1	66.5	0.45
São Tomé and Príncipe	1	nd	61.5	3.0	42	2.50
Senegal	4	1	60.6	2.3	108	1.97
Seychelles	2	1	87.4	0.8	80.3	30.8
Sierra Leone	1	nd	21	4.5	27.3	0.002
Somalia	5	nd	27.6	3.9	8.97	0.72
South Africa	9	11	75.7	1.6	131	3.41
South Sudan	n/a	nd	nd	13.2	6.62	0.00
Sudan	5	1	nd	3.8	51.9	0.06
Tanzania	4	6	29	4.2	32.3	2.50
Togo	3	1	37.0	5.8	43	1.23
Tunisia	6	1	72.4	0.8	95.1	14.10
Uganda	n/a	1	15.3	3.2	32.8	0.09
Zambia	n/a	2	33	2.2	60	0.68
Zimbabwe	n/a	2	38.4	4.8	67.1	1.57

nd = no data; n/a = not applicable

Source(s): AFC Research; ITU Data Hubg; TeleGeography; World Bank Development Indicators/World Bank; Internet Society Pulse

*international subsea cables only

**the data affordability basket refers of the cheapest mobile broadband plan providing at least 2 GB of monthly data using at least 3G technology.

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