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G20: PIC Perspectives

Accelerating Infrastructure Development in Africa: Strategies to Reduce Lead Times

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EXECUTIVE SUMMARY

Africa faces a significant challenge in closing its infrastructure funding gap. The continent requires between $130 billion and $170 billion every year to build the power, transport, water, and digital systems needed for growth and economic inclusion. Yet investment continues to fall short, leaving large parts of continental economies and society underserved.

The impacts are widespread. Energy systems remain underpowered, transport networks fragmented, water and sanitation infrastructure insufficient, and digital connectivity far from universal. These gaps suppress productivity, hinder regional integration, and prevent the emergence of competitive industries. They also affect people directly, especially in rural and low-income areas, where access to reliable services is often limited or entirely absent.

Delays in the ability of governments or development agencies to deliver infrastructure projects on time and within budget aggravates the situation on the continent. Regulatory hurdles, fragmented governance, and weak planning processes often slow down project execution, drive up costs, and erode investor confidence. Across the continent, around 80 percent of projects stall before moving beyond planning and feasibility (McKinsey, 2020). Each delay strains public budgets further and deepens inequality.

This report identifies four key pillars that can reduce lead times and accelerate progress in development:

- ✓ **Policy and Regulatory Reform:** Many projects are slowed by complex approval processes, unclear land rights, and weak inter-agency coordination. Simplifying regulations, digitising land registries, and introducing standardised contracts can reduce uncertainty and speed up delivery.
- ✓ **Innovative Financing Approaches:** Public resources alone cannot meet Africa's infrastructure needs. Tools like blended finance, public-private partnerships, and user-pay models are essential for attracting private capital, diversifying funding sources, and making projects bankable.
- ✓ **Technological and Digital Integration:** Digital solutions such as Building Information Modelling (BIM), drones, and advanced data analytics can improve project design, monitoring, and delivery. Yet adoption remains uneven, and the gap in digital infrastructure, especially in cloud computing and data centres, risks widening Africa's technological divide.
- ✓ **Capacity Building and Institutional Strengthening:** Successful infrastructure delivery relies on capable institutions and skilled professionals. Too many projects stall because government agencies lack the expertise and resources to plan, prepare, and manage complex initiatives. Strengthening institutions and developing local talent are critical for sustained progress.

Based on these pillars, the report sets out clear recommendations for action:

Governments should establish dedicated infrastructure acceleration units to coordinate agencies and fast-track approvals. Embedding key projects into legal frameworks and budgets can help ensure continuity across political cycles. Land governance reforms, including digitising land records and standardising compensation,

are crucial for smoother project execution. Greater transparency through open procurement processes and real-time project monitoring can improve accountability and build trust.

Investors need to incorporate comprehensive assessments of regulatory environments, community impacts, and institutional capacity into early project planning. Blended finance structures and digital tools like BIM can improve project bankability and efficiency. Supporting local supply chains and skills development will help to ensure that infrastructure investments deliver broad, sustainable benefits.

Development Finance Institutions (DFIs) should significantly expand funding for project preparation facilities to create a stronger pipeline of bankable projects. Providing technical support to governments in contract negotiation, PPP management, and regulatory reform is essential. DFIs also have a key role in promoting regional standards, facilitating cross-border projects, and developing financial instruments to manage risks such as currency volatility and sub-sovereign credit challenges.

Accelerating infrastructure development in Africa is not just an economic goal. It is essential for achieving inclusive growth, social equity, and long-term resilience. The evidence from across the continent shows that meaningful progress is possible through coordinated action built on sound policies, innovative financing, institutional capacity, and technology. By working together on these fronts, Africa can reduce project lead times, attract greater investment, and build the infrastructure needed for a more prosperous and connected future.

INTRODUCTION

Rationale for Accelerating Infrastructure Development

Accelerating infrastructure development in Africa is not only necessary, it is urgent. The continent's current economic trajectory, rapid population growth, and persistent gaps in access and service quality all point to the same conclusion: without a step change in the pace and scale of infrastructure delivery, Africa risks falling further behind in its pursuit of inclusive growth and structural transformation. The infrastructure landscape is marked by deep and overlapping deficits. According to the AfDB, Africa requires investment of $130bn to $170bn per annum to bridge this infrastructure gap. Energy systems remain underpowered, transport networks fragmented, water infrastructure insufficient, and digital connectivity far from universal. These gaps undermine productivity, limit regional integration, and constrain the emergence of globally competitive industries. In many cases, the absence of reliable electricity, modern logistics, and affordable data access prevents firms from scaling and workers from participating in the formal economy. The burden is especially heavy on rural and low-income communities, who face the greatest barriers to accessing essential infrastructure services (Calderón et al., 2018).

These constraints are not theoretical, they are visible in port backlogs, energy rationing, and unreliable public transport. In infrastructure intensive sectors, the cost of inefficiency is significant. African households and businesses consistently pay more for water, energy, and connectivity than their counterparts in other developing regions, placing a disproportionate strain on operating margins for business and household income. This undermines private sector investment, suppresses job creation, and slows economic diversification. Despite rapid gains in mobile connectivity, the region continues to lag in fixed broadband penetration, limiting the transformative potential of digital tools in education, commerce, and public administration.

Infrastructure is also fundamental to social equity. Access to electricity, clean water, and transport directly improves health outcomes, educational access, and social mobility. Infrastructure expansion has long been associated with poverty reduction, yet progress is uneven and too often undermined by weak planning systems, underfunded agencies, and fragmented implementation. The persistence of corruption, poor inter-agency coordination, and a lack of project-ready pipelines continues to stall delivery (Falaye, 2024). Regulatory bottlenecks and institutional capacity gaps, both at national and subnational levels, remain major obstacles. Inadequate project design, poor scheduling, and vulnerability to political or climate-related disruptions further compound delays. Studies by Lokeshwaran (2023) emphasize the need for improved procurement processes and project management frameworks to reduce cost overruns and completion delays.

Addressing these challenges demands a rethinking of how infrastructure is financed and delivered. Innovative financing mechanisms, including public, private partnerships, blended finance, and user-pays models, are increasingly seen as essential for closing the investment gap. When properly structured, they improve

bankability, diversify revenue streams, and crowd in private capital without undermining public value. The Emerging Africa Infrastructure Fund demonstrates a successful "blended finance" model. This approach of using grants to de-risk the initial preparation of a project before providing commercial loans helps them meet both economic and social development targets (Hagerman, 2012). Other approaches, such as unlocking idle public assets or allowing private operators to participate in utility sectors, have proven effective in attracting investment and improving service outcomes.

Capacity building must go hand in hand with financial innovation. Strengthening institutions responsible for project preparation, investment planning, and financial structuring is vital. Too many projects stall before reaching bankability. International experience, including lessons from Cities Development Initiative for Asia (CDIA), shows that linking well prepared infrastructure pipelines with appropriate financing instruments significantly improves delivery outcomes and bridges the gap between urban development plans and bankable infrastructure projects (Global Agenda, 2014). Governance improvements, stronger resource management, and stakeholder alignment remain core prerequisites for sustained progress (Falaye, 2024).

Technology is another pillar. The growing divide between Africa's digital infrastructure and global benchmarks, particularly in cloud computing and data centres, is becoming more pronounced. Without focused investment, the region risks long-term technological marginalization (AFC, 2024). Digital infrastructure is no longer a complementary asset, it is foundational to modern economic systems, efficient public service delivery, and cross border integration.

These trends make the case for urgency. Infrastructure development is not just a technical challenge or a budgetary line item. It is a central driver of inclusive growth, social cohesion, and structural transformation. Evidence from across the continent and globally shows that a coordinated strategy, combining policy reform, innovative finance, institutional capacity, and technology adoption, offers the clearest path to closing Africa's infrastructure gap at scale (Lokeshwaran & A., 2023).

Overview of Lead Times in African Infrastructure

Lead times for infrastructure projects in Africa, from planning to delivery, are persistently long, driven by institutional, financial, and technical bottlenecks. While delays are not unique to the region, they are intensified by fragmented governance, limited local capacity, and funding shortfalls. Regulatory hurdles, especially where institutions lack autonomy, consistently slow approvals. Evidence shows that independent oversight bodies can significantly reduce these delays (Ondiege et al., 2013).

Financing is another constraint. Large-scale projects often stall due to public budget limitations and weak frameworks for private capital. Blended finance and PPPs offer potential, but success depends on contract enforceability and fit with local institutional realities (Global Agenda, 2014). Capacity gaps are equally pressing.

Many governments lack the technical skills and project management experience to execute complex infrastructure efficiently (Falaye, 2024).

Technology can help. Digital tools and modern construction methods are beginning to improve coordination and reduce waste, but adoption is uneven (Umar et al., 2024). In Nigeria, projects across key sectors have suffered from poor coordination, contract disputes, and inflated costs. Cost overruns of 10–50% remain common (Gbahabo & Ajuwon, 2017). Still, reforms are making a difference. The AfDB's integrated platforms and targeted ICT investments show how streamlining decision-making can accelerate delivery (Ondiege et al., 2013).

Ultimately, reducing lead times requires a coordinated approach, combining regulatory reform, capacity building, financing innovation, and technological integration (Hagerman, 2012; Iqbal & Marzuki, 2024).

Socioeconomic Impacts of Delayed Infrastructure

Delays in infrastructure delivery have wide-ranging consequences. When basic services like water, power, or transport are delayed, quality of life suffers and economic growth stalls (Falaye, 2024; DBSA et al., 2023). Prolonged timelines inflate costs, burden public budgets, and deepen social inequality, especially in underserved communities. These failures often erode trust in public institutions and drive discontent (Falaye, 2024).

The economic fallout is equally stark. Delays deter investors, disrupt business operations, and create feedback loops where weak project performance further limits capital inflows (Hagerman, 2012). Job creation suffers, both in the construction and in downstream sectors that rely on infrastructure to operate. Education and health outcomes are also affected as access to clinics, schools, and clean water becomes more unreliable.

Governance challenges compound the problem. Weak oversight, poor planning, and limited technical capacity often feed into each other, leading to inefficiencies and wasted public resources (Lokeshwaran & A., 2023). Cross-border projects critical for trade and integration are frequently delayed, stalling regional connectivity. Environmental costs also rise when outdated interim solutions are used in place of timely, climate-resilient infrastructure (Hagerman, 2012).

Addressing delays is not just about efficiency, it is essential for unlocking inclusive growth, restoring public confidence, and ensuring that infrastructure investments translate into tangible development outcomes.

THE CURRENT LANDSCAPE

Current State of Infrastructure Across Sectors

Transport and Logistics Networks

Africa's transport and logistics sector has expanded in key areas, notably in port infrastructure, but remains constrained by fragmented road and rail systems. Poor road quality, uneven distribution, and underinvestment in railways that limit cross-border connectivity and increase trade costs. The absence of integrated, multimodal systems hampers regional integration and slows economic activity. It is estimated that

Major initiatives, like the Africa Finance Corporation led Zambia-Lobito corridor, signal a shift toward catalytic investments designed to boost mineral exports, tourism, and intra-African trade. Yet, infrastructure gains in ports often outpace road and rail development, creating logistical choke points. Intra-African trade remains low at 16%, though improved infrastructure and access to finance could raise it by over 70%.

Addressing these challenges requires coordinated action: aligning investment with regional equity goals, leveraging value-capture financing, and tailoring contracts to institutional realities (Global Agenda, 2014). Disparities in technology adoption and capacity further exacerbate logistics fragmentation. Integrated planning, supported by targeted technical training, is critical to ensuring infrastructure translates into inclusive growth and market access (Iqbal & Marzuki, 2024; APRI, 2022).

Energy and Power Systems

Despite adding over 66 GW in grid-connected power over the past decade, Africa's total generation capacity still mirrors that of Germany, a country with a fraction of its population. This stark gap underscores the continent's energy access deficit and the urgency for reform. Renewable potential is vast, yet underutilized due to regulatory delays, limited financing, and technical constraints (AFC, 2024).

Governments like Ghana are aligning energy policy with climate goals, emphasizing renewables and clean cooking solutions. Regional power pools and transmission corridors offer promise by reducing costs and balancing supply-demand mismatches (APRI, 2022). However, progress remains uneven.

Improving project bankability through tailored contracts, new revenue streams, and innovative models, like land value capture, can attract private capital and accelerate project pipelines (Moszoro et al., 2015). Integrated energy planning and governance reform must work in tandem to ensure that infrastructure investments deliver both climate resilience and human development outcomes (Iqbal & Marzuki, 2024; Magwedere & Marozva, 2023).

Water and Sanitation Infrastructure

Water and sanitation services remain uneven across Africa, marked by large-scale deficits and reliance on small-scale or improvised solutions in underserved areas. Capacity limitations, weak governance, and chronic underfinancing hinder progress on delivery and sustainability (Falaye, 2024; Hagerman, 2012).

Multilateral mechanisms like the Emerging Africa Infrastructure Fund help bridge funding gaps, offering both grants and commercial loans for project development. Yet, large capital requirements and limited fiscal space demand blended finance and strong institutional capacity.

Cross-sectoral policy alignment, linking water infrastructure to urban development, public health, and climate strategy, is essential for scaling delivery (I.T. Forum, 2021; Iqbal & Marzuki, 2024). Digital tools for monitoring and leak detection are being adopted unevenly, correlating with national income levels and policy strength.

Ultimately, success requires sustained investment in human capital, participatory project design, and scalable public-private models to ensure equitable access to clean water and sanitation (Collier & Cust, 2015; APRI, 2022).

Telecommunications and ICT

ICT infrastructure is foundational to Africa's digital economy, yet many citizens remain excluded due to limited internet access, unaffordable devices, and low digital literacy. Policy incoherence and underinvestment, often linked to deeper governance deficits, worsen the digital divide (Hadzic, 2023).

Strategic planning is needed to integrate ICT across sectors such as education, transport, and health, while also supporting rural inclusion and job creation. Case studies from Nigeria and South Africa show that effective governance and interdepartmental coordination are critical to delivery (Falaye, 2024).

Funding remains a constraint. Public-private partnerships and value-capture financing are vital to scale digital infrastructure and reduce reliance on uncertain public budgets. Meanwhile, the AU and Presidential Infrastructure Coordinating Committee (PICC) in South Africa, play key roles in prioritizing projects, harmonizing regional investments, and closing connectivity gaps.

Inequalities in ICT access mirror broader socioeconomic divides. Infrastructure planning must align with labour needs and regional development goals to ensure the digital transition supports inclusive and sustainable growth (Iqbal & Marzuki, 2024; Development of Southern Africa et al., 2023).

Table 1. Selected Infrastructure Project Status

Project Name & Location(s)	Sector	Announcement	Stated Objectives	Current Progress	Causes for Delays
Transport & Logistics Networks					
Lobito Atlantic Railway (Angola, DRC, Zambia)	Transport (Rail)	Conception: Historic; Rehabilitation/Expansion: 2023	Transport critical minerals (copper, cobalt) from DRC/Zambia to Angola's Port of Lobito; foster regional trade and economic growth.	Under rehabilitation. Feasibility studies for new Zambia-Lobito spur are complete. Construction of spur targeted for early 2026.	Financing negotiations have been protracted (over 2 years). Significant cost ($1bn) and complexity for rehabilitating the DRC section. Concerns over potential U.S. funding cuts under a new administration.
Abidjan-Lagos Corridor Highway (Côte d'Ivoire, Ghana, Togo, Benin, Nigeria)	Transport (Road)	Conception: PIDA priority; Approved: 2016	Connect 5 major West African cities with a 6-lane highway to boost trade (corridor carries 75% of regional trade) and regional integration.	Feasibility and design studies complete. Stakeholder engagement ongoing. Construction now scheduled to begin in 2026, for completion by 2030.	Significant delays; original start date of Jan 2024 was missed. Primary cause is the complexity of coordinating 5 countries and securing the massive $15.6bn funding.
Energy & Power Systems					
Grand Ethiopian Renaissance Dam (GERD) (Ethiopia)	Energy (Hydropower)	Construction began: April 2011	Generate 5,150 MW of electricity to meet domestic energy shortages and for export, positioning Ethiopia as a regional power hub.	95% complete as of March 2024. Reservoir filling complete. Generating power since Feb 2022 with turbines being progressively commissioned.	Major hydro-geopolitical dispute with Egypt and Sudan over water flow rights on the Nile. Decade of negotiations failed to yield a binding operational agreement.
Grand Inga Dam (DRC)	Energy (Hydropower)	Conception: Long-standing	Develop the world's largest hydropower scheme (up to 40,000	Stalled for decades. World Bank approved a new $250M credit in June	Perennially delayed by political instability, corruption, lack of credibility, and inability

Project Name & Location(s)	Sector	Announcement	Stated Objectives	Current Progress	Causes for Delays
			MW) in phases to power Africa and potentially export to Europe.	2025 for the Inga 3 Development Program (a 10-year preparation phase).	to secure the massive funding. Key partners have withdrawn.
Water & Sanitation Infrastructure					
Thwake Multipurpose Dam (Kenya)	Water, Energy, Irrigation	Conception: Vision 2030; Construction started ~2018	Provide water for 1.3M people, generate 20 MW hydropower, and irrigate 40,000 ha in Kenya's Lower Eastern region.	Phase 1 (dam wall) is 94.2% complete as of June 2025. Water impounding scheduled for April-June 2026. 58	Missed multiple deadlines (original 2022, then 2024). Delays due to geological defects, design changes, and El-Nino rains.
Telecommunications & ICT					
2Africa Subsea Cable (Pan-African)	ICT (Subsea Cable)	Announced: May 2020	Build a 45,000 km subsea cable connecting 33 countries in Africa, Europe, and Asia to provide massive internet capacity and reliability.	Under construction, with segments progressively going live. Landings occurring across Africa. Full system expected to be live in 2024/2025.	Some segments, particularly in the Red Sea, have faced delays due to permitting and security issues.

Source: Africa Finance Corporation, 2023, African Development Bank Group, 2024, Heinisch, 2023, Bujakera & Reid, 2021, Power Technology, 2023, 2Africa, n.d

Trends in Urbanization and Population Growth

Africa's rapid urbanization, driven by demographic expansion and rural-urban migration is intensifying demand for infrastructure, stretching public services and accelerating the growth of informal settlements, especially in urban hubs like Gauteng (Iqbal & Marzuki, 2024). This dynamic is reshaping the continent's development trajectory, creating both pressure points and opportunities for inclusive transformation.

However, infrastructure delivery has struggled to keep pace. Fragmented planning across government levels, weak institutional capacity, and limited stakeholder engagement have undermined effective responses. The proliferation of informal housing and overstretched utilities signals the cost of this gap in coordination and capacity.

Integrated planning is now imperative. Tailoring infrastructure to regional and demographic contexts is essential to address inequalities, support employment, and improve living standards (Iqbal & Marzuki, 2024). Prioritizing sectors with strong multiplier effects, like water, electricity, and transport can yield broad economic and social gains.

Innovative governance and financing mechanisms, including Public-Private Partnerships and regulated asset base models, are increasingly relevant for managing the complexity and scale of urban infrastructure. These models must be adapted to local institutional realities and the sustainability challenges posed by rapid population growth.

Ultimately, addressing the infrastructure implications of urbanization requires coordinated governance, stronger resource management, and active engagement with communities. Without such reforms, cities risk becoming bottlenecks rather than engines of transformation (Falaye, 2024)

Regional and Continental Integration Initiatives

Africa's infrastructure agenda is increasingly shaped by regional and continental integration efforts, which aim to overcome historical fragmentation and unlock the continent's economic potential. Led by institutions like the African Union Commission, AfDB, and NEPAD, these initiatives focus on harmonizing standards and building interconnected systems across transport, energy, ICT, and water – crucial sectors for trade and development (Hagerman, 2012).

Regional integration enables countries to pool resources, scale investments, and coordinate infrastructure planning beyond national borders. Traditional financing models often fall short in meeting Africa's vast infrastructure needs, but regionally aligned strategies, such as power pools, digital corridors, and agricultural innovation platforms, are more effective in attracting capital and improving delivery (Ondiege et al., 2013).

The digital economy provides a clear example of integration's transformative potential. Investments in data centers, caches, and 4G/5G infrastructure are reducing latency, strengthening digital resilience, and enabling intra-African digital trade. Similarly, multimodal logistics corridors, linking ports, rail, road, and air, are vital to enhancing regional trade flows, lowering costs, and building competitive supply chains (AFC, 2024).

Yet integration is not just about connectivity; it must address regional disparities. Targeted investment in underserved areas ensures broader inclusion, job creation, and a more equitable distribution of benefits (Iqbal & Marzuki, 2024). Urban centers play a pivotal role, acting as nodes that connect human capital and commerce to regional networks (Global Agenda, 2014).

Implementation success depends on governance, stakeholder coordination, and capacity building. Lessons from Botswana's legal contracting for cross-border projects and improved civil society engagement illustrate the value of technical expertise and transparent negotiation (Hagerman, 2012). Scenario-based modelling tools like Energy-Environment-Economy Macro-Econometric Model (E3ME) further support policymakers in identifying high-impact, cross-sectoral projects.

In essence, regional integration is not a policy luxury, it is a necessity. It provides the structural foundation for competitive markets, deeper trade links, and sustainable infrastructure delivery across Africa (Ondiege et al., 2013; Iqbal & Marzuki, 2024).

Comparative Analysis with Global Benchmarks

A comparative assessment of Africa's infrastructure landscape against global benchmarks reveals a mix of unique challenges and emerging signs of progress. In advanced economies, there are strong enabling environments, characterized by clear regulatory frameworks, efficient project appraisal systems, and effective institutional reforms. These have been key to shortening lead times and improving delivery outcomes. In contrast, infrastructure projects across Africa often face regulatory delays, weak early-stage planning, and underdeveloped appraisal frameworks, all of which undermine timely execution and long-term sustainability (Facility, 2007).

Many African countries still lack comprehensive legislation and regulatory clarity, in sharp contrast to the mature frameworks in developed markets. Globally, infrastructure policy and planning are increasingly integrated across sectors to generate synergies and support sustainable growth. In Africa, however, sectoral silos and fragmented planning remain common, limiting the potential for cross-sectoral impact (IT Forum, 2021).

International best practices also stress the value of strategic project prioritization and the role of project champions. While some African governments are making progress in these areas, implementation remains inconsistent (Ibrahimi, n.d.).

Financing is another key area of divergence. Global standards emphasize diversified funding, innovative revenue models, and enforceable contracts aligned with local capacity. Africa, by contrast, faces limited access to long-term capital, an overreliance on public budgets, and shallow capital markets, more so private capital specifically geared towards infrastructure. Although public-private partnerships (PPPs) and user-pays models have gained global traction, adoption in Africa has been slow due to concerns over project bankability and weak risk mitigation frameworks (Global Agenda, 2014)

Still, there are signs of alignment. Regional investment platforms and collaborative working groups with development finance institutions are beginning to reflect global approaches and offer new pathways for reform (Ondiege et al., 2013; Ibrahimi, n.d.).

Capacity remains a major constraint. In developed countries, long-term investments in human capital and institutional systems have supported consistent use of advanced project management practices and the integration of new technologies. In Africa, while initiatives like regional PPP networks and focused training programs are growing, they require greater scale and coordination to meet global standards (Hagerman, 2012; Falaye, 2024). As Ramabodu (2024) notes, project management skills are directly linked to accurate duration estimates and the reducing delays, underscoring the importance of continuous professional development.

Technology adoption is another point of differentiation. Although Africa's digital coverage is expanding, uptake of advanced monitoring tools and data-driven infrastructure systems varies widely. This is largely due to disparities in affordability, infrastructure quality, and national policies (Author, 2024). In comparison, developed economies have achieved near-universal digital integration, enabling real-time project tracking and decision-making at scale. Umar et al. (2024) point out that while some African projects are beginning to adopt these tools, use remains inconsistent and limited in scope.

While public-private dialogue and consensus-building have helped drive improvements, these processes are not yet fully institutionalized, compared to more developed environments (Hagerman, 2012). Similarly, the use of creative funding tools, such as land value capture or infrastructure-linked taxation, remains nascent in Africa compared to global leaders.

Overall, Africa continues to face substantial regulatory, financial, and institutional constraints. Yet there is growing alignment with global best practice, driven by reform efforts, new financing instruments, and the expanded use of technology and training. The pace of infrastructure acceleration will depend on how effectively these strategies are scaled, embedded, and adapted to local realities to close the gap with global performance benchmarks (IT Forum, 2021; Ibrahimi, n.d.).

IDENTIFYING BOTTLENECKS IN INFRASTRUCTURE PROJECT CYCLES

Regulatory and Policy Barriers

Infrastructure delivery in Africa remains constrained by fragmented approval processes and policy inconsistencies. Overlapping mandates, unclear regulations, and weak inter-agency coordination delay projects and inflate costs, especially where land rights, permits, and environmental clearances are involved (APRI, 2022; Lokeshwaran & A., 2023). Low regulatory incentives, such as inadequate off-grid energy tariffs, limit private participation. Technical capacity at sub-national levels is often insufficient to deploy climate finance tools, and siloed institutions frequently produce unbankable projects. These challenges are further compounded by the need for legal reforms before project development can begin. Regulatory delays create cascading effects, stalling procurement, material delivery, and labour mobilization. Coordinated, cross-sector strategies, such as independent infrastructure agencies, can reduce risks and improve institutional coherence (IT Forum, 2021; Latif et al., 2023).

Policy fragmentation continues to undermine infrastructure execution. Overlapping and inconsistent regulations raise transaction costs and delay project delivery, particularly for emerging technologies like digital infrastructure, which require harmonized cybersecurity and connectivity standards (WEF, 2019). Urban infrastructure faces similar setbacks due to disjointed governance. Ambiguous or frequently revised climate policies weaken investor confidence, while clear national strategies, such as Zambia's climate-aligned planning, offer a more reliable pathway to long-term finance (APRI, 2022). Stronger monitoring systems and legal harmonization across government tiers are critical to attract innovation and private capital (Umar et al., 2024; AFC, 2024). Legal and contractual uncertainties remain a cross-cutting risk throughout Africa's infrastructure lifecycle. This is generally due to mistrust between public sponsors, intermediaries, and regulators which is driven by misaligned roles and poor contract enforcement (Gbahabo & Ajuwon, 2017).

Rapid technological change often outpaces regulatory reform, while poor risk allocation and vague exit strategies discourage institutional investors (Hadzic, 2023; Collier & Cust, 2015). Moreover, cross-border inconsistencies limit regional integration under frameworks like the AfCFTA. At a domestic level, unclear legal frameworks constrain the growth of local capital markets and deter long-term investment (Bond, 2016). Legal harmonization and reliable contract enforcement are essential to unlock private financing at scale (Hadzic, 2023).

Financial Constraints and Investment Gaps

Limited Access to Long-Term Financing

Access to long-term capital remains an impediment. High public debt, weak capital markets, and limited fiscal space inhibit infrastructure investment across much of Africa (Calderón et al., 2018; OECD, 2012). Private investors are deterred by political and regulatory risks, particularly during leadership transitions (Osei-Kyei & Chan, 2017). While DFIs play a key role, their resources alone are insufficient (Hagerman, 2012). PPPs often suffer from underprepared projects, procurement delays, and poor contract execution. Public budgets are already stretched across social priorities, further constraining investment capacity. Infrastructure bonds, blended finance, and asset recycling do, however, offer promising alternatives.

Countries that pursue regulatory reforms, institutional strengthening, and technical capacity development are better positioned to attract long-term investment (Falaye, 2024). Regional cooperation and risk-sharing can improve project viability. Aligning regulatory frameworks with international standards is essential for mobilizing both domestic and foreign capital (Calderón et al., 2018).

Risks and Perceptions of Investors

Investor risk perceptions pertinently shape infrastructure financing in Africa. Limited data, weak project pipelines, and institutional capacity deficits lead to a shortage of bankable projects (Ibrahimi, n.d.). Poorly structured public investments can crowd out private capital if these are not supported by robust institutions and transparency (Calderón et al., 2018). Investors gravitate toward countries with strong procurement models, such as those under the Renewable Energy Independent Power Producer Procurement Programme in South Africa, but much of the continent remains underserved due to governance gaps and limited state capability.

Blended finance, PPPs, and impact investing help mitigate risk, but their effectiveness relies on aligned stakeholder incentives and transparent execution (Osei-Kyei & Chan, 2017; Ibrahimi, n.d.). Financial hubs can reduce information asymmetry and foster collaboration. Long project timelines and macroeconomic volatility heighten perceived risks, making regulatory stability and predictable returns key (IT Forum, 2021). National efforts to build Research and Development (R&D) capacity, institutional resilience, and innovation ecosystems can reshape investor sentiment and attract sustained capital flows (Naeem et al., 2023; Kennedy et al., 2024; APRI, 2022).

Public-Private Partnerships: Limitations and Potential

Public-Private Partnerships (PPPs) are a promising vehicle for infrastructure financing but remain underutilized due to institutional and regulatory weaknesses. Many African governments face capacity constraints in planning, designing, and executing PPPs, while investors navigate opaque processes and lack access to well-prepared project pipelines (Hagerman, 2012). These issues manifest as delays in project preparation and

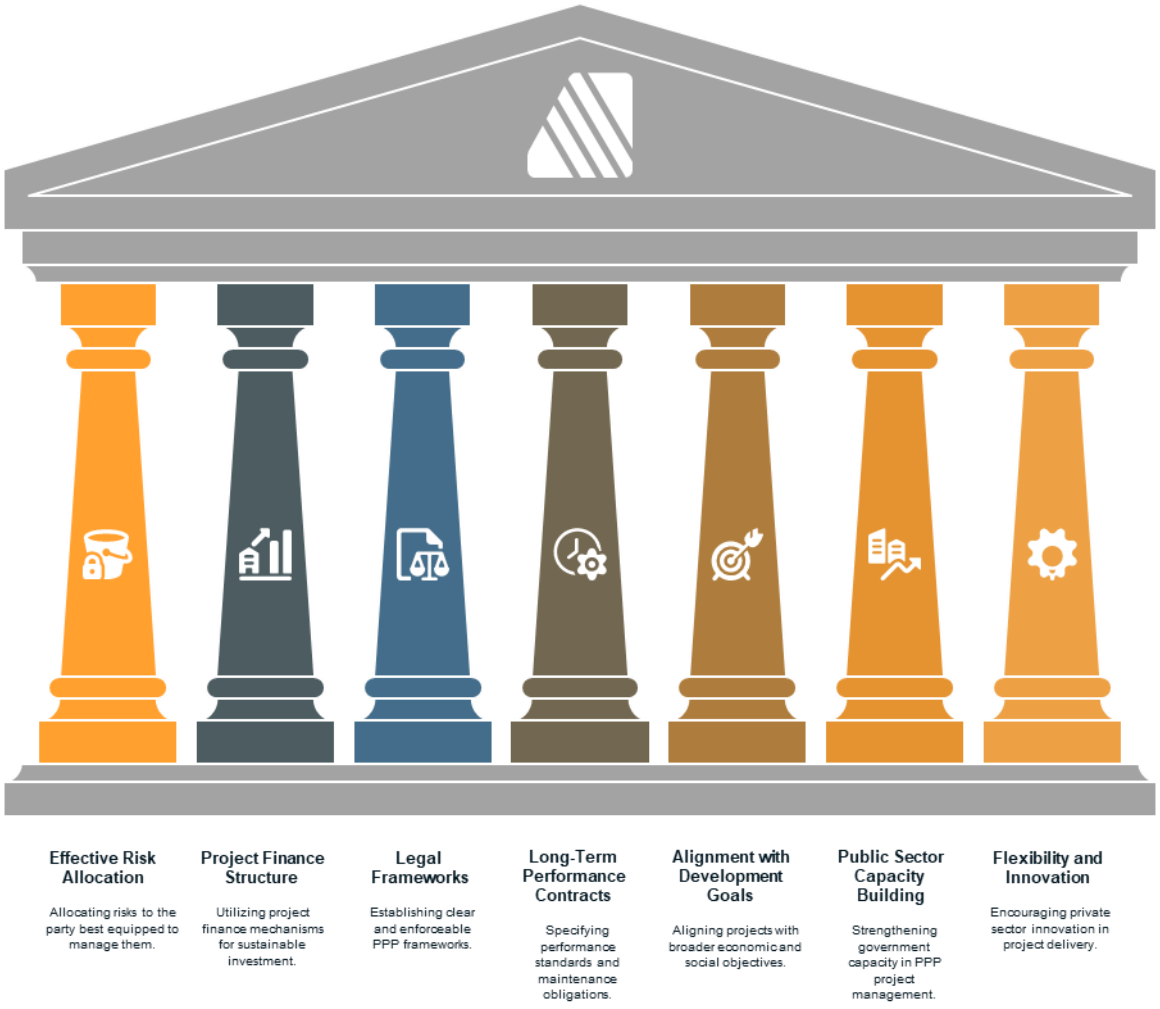
approval, undermining the bankability of projects and deterring private sector participation. Another critical limitation is the chronic difficulty of the public sector to establish a robust framework for long-term infrastructure planning and delivery. The lack of technical, contractual, and institutional competencies within government agencies often results in poorly structured PPP projects, which are unable to attract or sustain private investment (Global Agenda Accelerating Infrastructure Delivery New Evidence from International Financial Institutions, 2014) (Ondiege et al., 2013). Ambiguities around risk allocation and fragmented responsibilities weaken bankability and erode investor confidence (Nana-Addy et al., 2022).

PPPs have grown steadily across Africa, expanding from basic infrastructure into more complex projects in energy, transport, water, and housing. These partnerships have become an important way for governments to tap into private capital and expertise, helping deliver infrastructure sooner without putting too much strain on public budgets or increasing debt. Private partners often take on upfront costs and operational risks, while governments repay them over time, based on how well the projects perform. One of the biggest advantages of PPPs has been shifting financial and technical risks to private companies that are better equipped to manage them, which has led to more efficient projects, fewer cost overruns, and faster completion. PPPs have also brought in new technology and stronger management practices, raising the quality of infrastructure and services through contracts that set clear standards and hold partners accountable. Many African countries have made progress in creating modern legal and institutional frameworks for PPPs, though there are still challenges around transparent bidding, solid contracts, and good oversight. While PPPs have delivered many successes, results have sometimes been mixed, with issues like complicated contract management, higher costs for users, or uneven private-sector performance. Governments are increasingly aware that PPPs are a useful tool for development, but not a one-size-fits-all solution. (European University Institute, 2024, Bwanali & Rwelamila, 2016, South African Institute of International Affairs, n.d)

Private actors face difficulty in navigating regulatory procedures and identifying viable investment opportunities. As a result, few PPPs reach financial close. Just 14% of climate-related infrastructure finance in Africa currently comes from private sources (APRI, 2022). International experiences such as the Philippines and the country's use of dedicated PPP units and project development facilities, show that targeted institutional support can improve project quality and timelines (Global Agenda, 2014; Ondiege et al., 2013). Blended finance instruments, risk mitigation tools, and digital technologies present new avenues, but these must be embedded in clear legal frameworks and backed by political commitment (W.E. Forum, 2019). With appropriate reforms, PPPs can serve as a vital mechanism for closing Africa's infrastructure investment gap and improving delivery outcomes across sectors.

There are several factors that stands out to provide a foundation for a successful PPP model . These are outlined in the figure below.

Figure 1. Foundations of PPP Models in Africa



Source: Authors Analysis

Institutional Capacity

Skills Gaps in Project Management

Skills shortages in project management continue to undermine infrastructure delivery across Africa. The lack of expertise in planning, execution, and oversight leads to inefficiencies and costly delays. While DFIs can draw on external consultants, public institutions struggle to build sustained internal capacity (Hagerman, 2012). The shortage is especially acute in sectors like rail, where engineering and operations demand long-term investment in human capital (Bagwandeen, 2023).

Labour constraints remain a critical barrier to effective coordination across large infrastructure projects. Delays in procurement and poor decision-making often stem from weak capacity in planning, risk management, and

stakeholder engagement (Latif et al., 2023). Shortages in skilled professionals heighten the risk of mismanagement and increase vulnerability to unforeseen disruptions (Gashahun, 2020). Closing these gaps requires systematic investment in capacity development. Targeted training, mentorship, and early skills assessments are essential to create a pipeline of local project management talent (Hagerman, 2012). Moreover, technological tools like BIM and GIS, while enhancing efficiency, demand specialised knowledge, underscoring the urgency of digital skills development (Umar et al., 2024). Without competent professionals, institutions struggle to allocate resources, prioritize projects, or maintain assets. Effective delivery depends on managers who can adapt, mobilize, and engage diverse actors throughout the project lifecycle (Facility, 2007). Sustained investment in human capital will be pivotal to accelerate infrastructure outcomes across the continent (Magwedere & Marozva, 2023).

Institutional capacity plays a decisive role in shaping infrastructure outcomes. Weaknesses in planning, procurement, and oversight functions result in poorly structured projects, inadequate feasibility assessments, and limited accountability — conditions that are inimical to infrastructure scale-up. The World Bank has repeatedly highlighted the link between institutional quality and private investment in infrastructure: improvements in regulatory quality, voice and accountability, and the rule of law are strongly correlated with higher levels of private participation (World Bank, 2017).

At the project level, poor contract management frequently leads to disputes and delays. Many government agencies lack the technical depth to execute complex infrastructure planning, resulting in high failure rates at the early stages of the project cycle (McKinsey & Company, 2020). The statistic that 80% of projects fail to move beyond the feasibility or planning stage underscores the depth of this institutional constraint. These challenges are compounded by broader skills shortages across the engineering, legal, and project management domains—further limiting implementation capacity (Akinshipe & Aigbavboa, 2019).

Governance and Leadership Limitations

Governance and leadership shortcomings remain central barriers to infrastructure execution. Weak coordination, limited institutional capacity, and political inertia result in fragmented decision-making and regulatory delays. Public authorities often lack the technical know-how and internal systems to manage complex projects effectively (Hagerman, 2012). Efforts to improve outcomes must go beyond administrative fixes. Capacity building should embed strategic leadership, not just technical training. Initiatives like the Millennium Challenge Corporation offer lessons in sustained skills transfer and institutional learning. Mistrust of market-led solutions has led to greater state intervention, but not always with coherent strategies. Leadership remains reactive, often prioritizing short-term interests over long-term planning (Nemoianu, 2015).

Robust governance requires clarity in project appraisal, financing, and delivery. Weak regulatory systems allow political agendas to skew infrastructure priorities, while inadequate financial planning hinders long-term sustainability (I.T. Forum, 2021). Effective leadership must also cultivate the ability to self-finance and continue delivery post-external support (Global Agenda, 2014).

Sustainable progress hinges on stronger internal leadership, cross-stakeholder coordination, and knowledge-sharing mechanisms. As projects grow in complexity, so too must the capabilities of those leading them (Osei-Kyei & Chan, 2017; Clements, 2011).

Procurement and Oversight Challenges

Procurement inefficiencies and oversight gaps persist as bottlenecks to project execution. Many public institutions lack the expertise and systems to structure and manage bankable infrastructure investments (Global Agenda, 2014). Regulatory delays, poorly defined project scopes, and fragmented approval processes extend timelines and escalate costs.

Institutional capacity varies widely. Models like the DBSA's Infrastructure Delivery Division demonstrate how integrated planning, risk mitigation, and strong governance can enhance delivery (Author, 2023). Yet across much of the continent, procurement remains under-resourced and overly bureaucratic.

Transparency and monitoring are critical. In their absence, cost overruns, stakeholder resistance, and project cancellations become common. Global examples, such as South Korea's digital oversight systems, offer blueprints for how data-driven approaches can rebuild trust and improve efficiency.

To modernize procurement, governments must invest in skilled personnel, adopt digital tools, and enforce clear accountability frameworks. Improved collaboration between agencies and private actors will be essential to streamline processes and improve outcomes (W.E. Forum, 2019; APRI, 2022).

Stakeholder Coordination and Collaboration

Interagency Communication Barriers

Effective infrastructure delivery depends on coordinated action, but fragmented communication among agencies often derails timelines. Disconnected information systems, unclear mandates, and low digital literacy lead to project misalignment and delays (Ramabodu, 2024).

Digital collaboration tools such as Procore and Revit show promise, enabling real-time updates and better alignment between stakeholders (Fabiyi, 2024). However, many agencies lack the infrastructure or training to fully adopt these solutions. Siloed decision-making persists due to weak data standards and overstretched staff (Ibrahimi, n.d.).

Communication failures are especially damaging in cross-sectoral and donor-funded projects, where coordination across ministries and financiers is crucial. Poor role definition, conflicting timelines and inconsistent reporting exacerbate bottlenecks (Gbahabo & Ajuwon, 2017).

A shift is needed toward shared data platforms, streamlined communication protocols, and capacity-building in stakeholder engagement. Aligning incentives and expectations early in the project cycle can reduce friction and improve delivery outcomes (Osei-Kyei & Chan, 2017; Lokeshwaran & A., 2023).

Community Engagement and Social Acceptance

Community resistance remains a leading cause of infrastructure delays. Projects that overlook social impacts, particularly around land use or environmental concerns often face backlash, especially when engagement is minimal or compensation is inadequate (Falaye, 2024).

Sustained, inclusive consultation across the project lifecycle is essential. Establishing dedicated coordination entities for stakeholder engagement can streamline decision-making and build local trust (Hagerman, 2012). Municipal-level involvement is also critical but often underdeveloped. Tailoring engagement to local contexts and integrating ESG safeguards can help secure community buy-in

Digital tools can enhance transparency and participation, particularly where literacy and access allow. Projects that incorporate these approaches, alongside environmental and social safeguards which are more likely to achieve durable acceptance and long-term impact (Fabiyi, 2024).

Cross-Border Project Coordination

Cross-border projects face complex institutional and regulatory hurdles. Differing national standards, compliance processes, and development priorities often delay implementation and raise costs (AFC, 2024; Latif et al., 2023).

Too many stakeholders with unclear roles can create inertia. Establishing lean governance structures such as a Project Development Special Purpose Entity can reduce bureaucracy and improve decision-making (Hagerman, 2012).

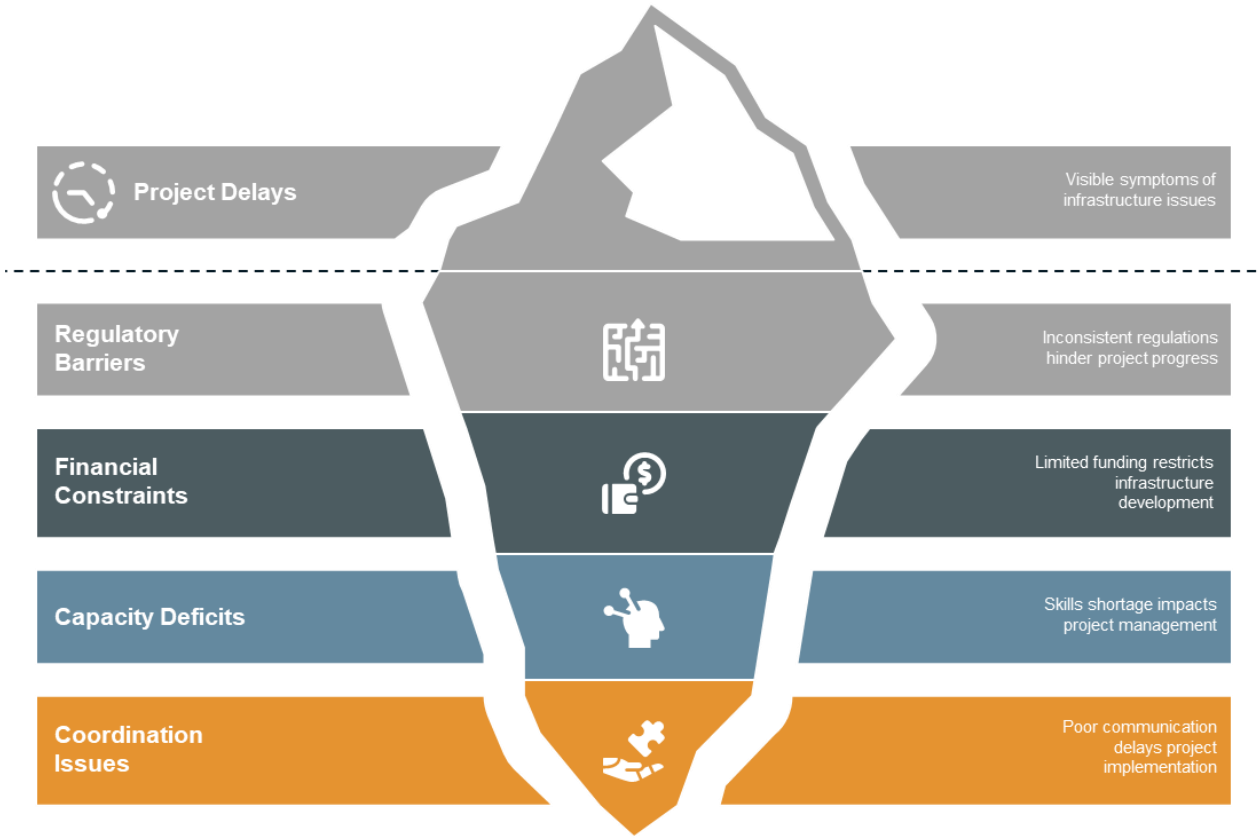
Integrated planning, harmonized regulation, and capacity building are essential. Separating asset ownership from management, embedding accountability, and creating feedback mechanisms like cost-benefit reviews will help align cross-border priorities (I.T. Forum, 2021).

Financing also remains a constraint. Private investment is limited by uncertainty and weak project pipelines. Blended finance and public-private partnerships offer solutions, but only if supported by transparent governance and capable local institutions (APRI, 2022).

Improved communication and data-sharing are vital. Regional planning models and joint financial centres can promote collaboration, reduce duplication, and accelerate delivery. Ultimately, coordination success depends on strong institutions, shared goals, and a commitment to long-term cooperation across borders.

The figure below summarizes the major challenges and bottlenecks from the research conducted:

Figure 2. Infrastructure Bottlenecks



STRATEGIES TO ACCELERATE INFRASTRUCTURE DEVELOPMENT

Pillar 1: Policy and Regulatory Reform

Simplifying and Streamline Approval and Permitting Processes

Simplifying Africa's fragmented and lengthy approval systems is critical to accelerate infrastructure delivery. Regulatory delays increase costs, deter investors, and prolong timelines, especially in markets with limited financial depth. Policymakers widely recognise that streamlined approvals can improve project execution and mobilise capital (Clements, 2011).

Infrastructure projects often face overlapping mandates, unclear responsibilities, and inconsistent permitting criteria. These inefficiencies create high regulatory risk, particularly in countries with underdeveloped capital markets, where policy unpredictability outweighs even attractive returns (Lu & Wilson, 2024). Reforms such as single-window clearance systems and standardised permitting frameworks reduce complexity and enhance transparency (Clements, 2011).

Reducing administrative burdens also limits corruption and political interference which are key deterrents to PPP growth (Osei-Kyei & Chan, 2017). Statutory infrastructure advisory bodies can ensure strategic alignment in project selection and build investor confidence (I.T. Forum, 2021).

Digital tools further accelerate and enhance permitting. Automation improves coordination, reduces lag, and offers real-time tracking and accountability (Nemoianu, 2015). However, digitalisation must be paired with better planning. Poorly prepared projects often stall due to weak financial viability or technical design. Initiatives like the Cities Development Initiative for Asia (CDIA) illustrate how aligning preparation with finance improves outcomes (Global Agenda, 2014).

Capacity retention is also critical. High public-sector turnover undermines reform efforts unless skills are incentivised to remain within institutions (Hagerman, 2012). In sum, simplifying approvals demands coordinated action across regulation, institutions, and technology to unlock reliable infrastructure delivery (Clements, 2011; Lu & Wilson, 2024; Osei-Kyei & Chan, 2017; Nemoianu, 2015; Hagerman, 2012; I.T. Forum, 2021).

There are few examples of successfully tackling regulatory barriers by establishing clear laws, streamlined processes, and predictable investment frameworks that enabled faster infrastructure delivery. Rwanda has consistently streamlined its business regulations, making it one of Africa's most attractive investment destinations, with simplified licensing, permitting, and customs processes that help reduce delays for infrastructure projects. South Africa has developed comprehensive PPP regulations and guidelines that minimize legal uncertainty and standardize procedures, accelerating project approvals and enhancing investor confidence. Morocco has enacted modern PPP laws that clearly define roles, responsibilities, and dispute resolution mechanisms, that enable faster infrastructure procurement, particularly in renewable energy and transport sectors (Pinsent Masons, n.d, World Bank Group, n.d.).

Making contracts work better in African infrastructure projects calls for a mix of practical changes. Instead of sticking to rigid, fixed-price contracts that often cause disputes, there's a push toward more collaborative models like alliance contracting, where risks and problem-solving are shared. Clear and fair procurement processes are also vital, especially for PPPs, to ensure everyone understands the rules and risks. Using standard contracts like FIDIC or NEC helps define responsibilities, but these contracts only work well if they're managed properly and enforced as intended. Strong laws and regulations give contracts real weight, while training people who oversee and manage contracts builds the skills needed to avoid or handle disputes. Accountability measures, transparency, and effective ways to resolve conflicts, like arbitration, makes enforcement faster and more reliable. Together, these steps help build trust, reduce delays, and make it easier to deliver infrastructure projects successfully.

Strengthening Transparency and Accountability

Transparency and accountability are central to regulatory reform and infrastructure performance. Opaque decision-making leads to inefficiencies, wasted resources, and weak trust among stakeholders. Countries that

improved governance frameworks have seen infrastructure investment increase by up to 0.5% of GDP (Chinzara et al., 2023; OECD, 2012).

Clear oversight structures reduce corruption and strengthen resource allocation. Collaboration between public and private sectors grounded in transparency, defined responsibilities, and strong monitoring enhances efficiency and unlocks value (Falaye, 2024).

Challenges persist in budgeting and financial reporting. Transparent disbursement tracking, open procurement, and independent audits ensure accountability. Grievance redress mechanisms allow stakeholders to flag irregularities and prevent delays.

Digital platforms can drive this agenda. E-procurement and real-time monitoring reduce discretion and improve traceability, though resistance and limited technical skills remain obstacles (Fabiyi, 2024).

Strong governance also depends on partnerships. Cross-sector collaboration with DFIs, civil society, and communities improves oversight and aligns accountability across the project lifecycle. Regulatory mandates for public disclosures of contracts, project data, and KPIs are essential for deterring malpractice (Chinzara et al., 2023).

Aligning domestic regulations with global standards boosts investor confidence. Transparent resource allocation, as promoted by the I.T. Forum, ensures projects with the greatest impact are prioritised (I.T. Forum, 2021). Ultimately, transparency and accountability require legal clarity, digital innovation, capacity building, and multi-stakeholder cooperation to achieve infrastructure delivery at scale (Chinzara et al., 2023; OECD, 2012; Fabiyi, 2024).

Promoting Policy Consistency and Stability

A stable policy environment is foundational for long-term infrastructure investment. Frequent policy shifts and unpredictable regulation erode investor confidence and disrupt planning. Consistent frameworks allow for strategic vision, efficient resource allocation, and risk mitigation throughout the project lifecycle (Calderon et al., 2018). Internationally, Singapore, widely recognized for its robust and transparent governance, consistently ranks at the top for infrastructure development. The city-state's long-term infrastructure plans, coupled with the strong rule of law and a clear regulatory framework, have been instrumental in attracting private capital for major projects.

Many African countries face fragmented, short-term policy frameworks. These result in delays, inconsistent standards, and disruptions across political cycles (Nana-Addy et al., 2022). Given the long gestation of infrastructure projects, policies must be durable and insulated from political volatility.

Forward-looking frameworks should outline clear criteria for project appraisal and risk allocation, particularly for PPPs. Transparent, enforceable PPP rules support procurement, contracting, and dispute resolution.

Broad-based stakeholder engagement strengthens stability. Inclusive policymaking reflects shared interests and ensures that regulatory changes remain resilient to political shocks and adaptive to emerging challenges (W.E. Forum, 2019).

Administrative clarity and institutional capacity also matter. Streamlined mandates, reduced duplication, and skilled personnel are vital for sustained implementation (Nana-Addy et al., 2022). Stable policies also underpin blended finance tools, which rely on predictable regulatory contexts (Calderón et al., 2018; Collier & Cust, 2015). Donor engagement and capital mobilisation hinge on these foundations. The cascade approach highlights the need for upstream policy reform to attract private investment. Linking policy with development goals, such as the SDGs, ensures long-term relevance and climate alignment.

Promoting policy consistency requires durable legal frameworks, inclusive governance, and adaptive but reliable regulations. These elements work together to create an enabling environment for sustained infrastructure investment and delivery (I.T. Forum, 2021; Nchofoung & Asongu, n.d.; W.E. Forum, 2019).

Pillar 2: Innovative Financing Approaches

Blended Finance and Risk Sharing Instruments

Blended finance and risk-sharing tools are increasingly critical in bridging Africa's infrastructure funding gap. Traditional public financing alone cannot meet the continent's growing infrastructure needs, prompting the need for innovative models that combine public, private, and philanthropic capital (Floyd et al., 2023; Development Bank of Southern Africa et al., 2023). Blended finance uses concessional capital, grants, guarantees, equity, or loans, to improve the risk-return profile of projects and attract private investment. Risk-sharing instruments such as guarantees and insurance mitigate regulatory, political, and demand-related risks that deter private sector participation (Floyd et al., 2023; Lakmeeharan et al., 2020). In Nigeria, the Lekki Deep Water Port highlights what a well-structured Public-Private Partnership can achieve. Built under a 45-year Build, Own, Operate, and Transfer model, the $1.34 billion port brought together the Nigerian Ports Authority, Lagos State Government, and private players like China Harbour Engineering Company and the Tolaram Group. It took over twenty years from idea to full operation, but its completion proves how PPPs can successfully mobilize both funding and expertise for complex, transformative projects.

The effectiveness of these tools depends on strong policy frameworks that safeguard investor interests while ensuring social equity. Mechanisms like targeted subsidies ensure affordability for poor households under user-pay systems and this supports financial sustainability without excluding vulnerable groups (Bond, 2016). Public resources should prioritise sectors with limited commercial viability, such as sanitation and rural transport, while crowding in private capital for higher-yielding assets (Lakmeeharan et al., 2020).

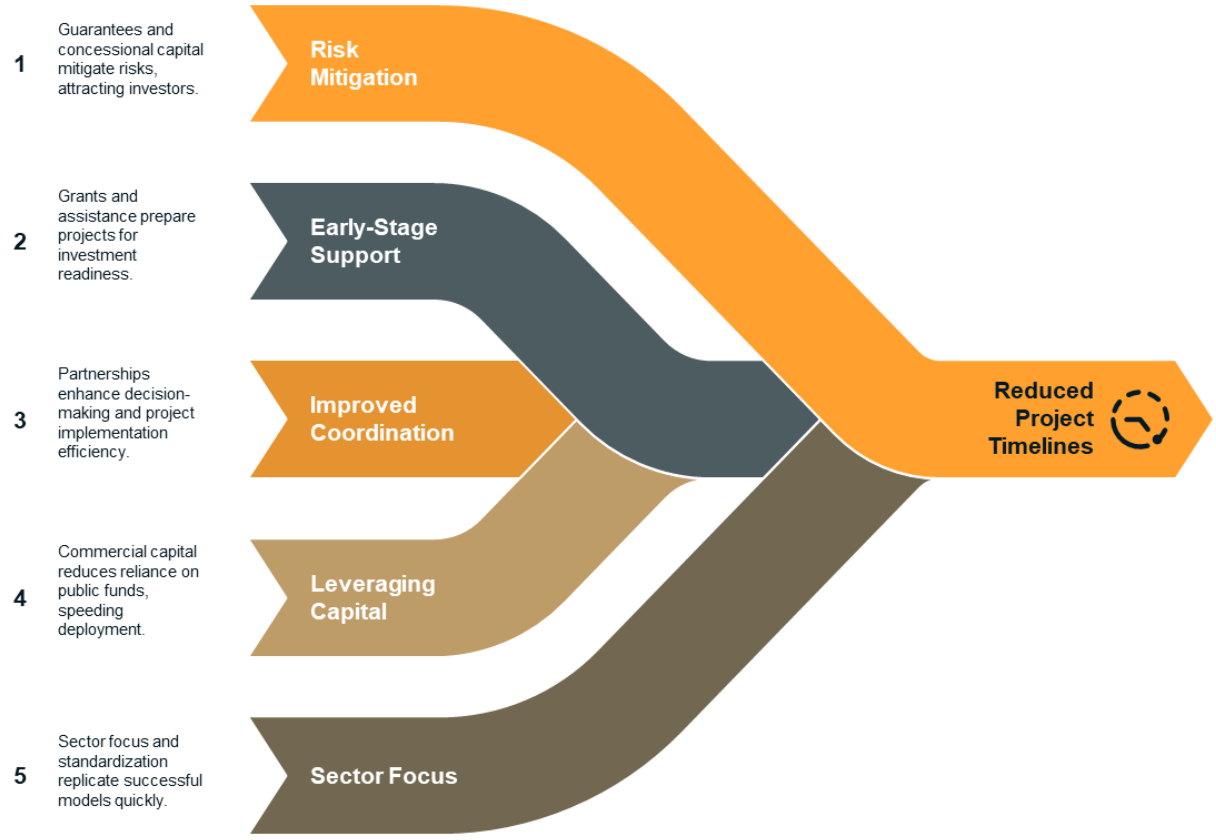
Blended finance models, especially when deployed through PPPs, have revitalised construction sectors and catalysed employment in various African economies (Floyd et al., 2023). However, unlocking private capital at scale requires creditworthy utilities and institutional reform, particularly in transitioning from state-owned

enterprises to sustainable, commercially oriented service providers (Bond, 2016). The Lake Turkana Wind Power Project in Kenya is an example of how blended finance can successfully fund big renewable energy projects. With private equity and support from development banks like the FMO, the EIB, and the AfDB, the €678 million wind farm became Africa's largest when it started operating in 2018. Although the team had to navigate land rights issues and community concerns, the project shows how creative financial models can bring private capital into essential infrastructure and help fill critical energy gaps.

Blended finance has become a powerful tool for reducing long lead times in infrastructure projects by tackling investment barriers, improving risk sharing, and improving project feasibility. Project finance structures remain the most common approach, treating each infrastructure asset as a single project to simplify management, effectively allocate risks among private contractors, governments, and financiers, and shorten timelines. Concessional capital and guarantees, like first-loss capital and risk-sharing products, help lower risks that often deter private investors, while instruments such as Partial Credit Guarantees and Partial Risk Guarantees make projects more bankable and accelerate financing decisions. Grants and technical assistance play a critical role in covering early costs like feasibility studies and capacity building, improving project quality and reducing preparation time. Facility and fund structures, which pool multiple projects, offer scale and efficiency, attracting larger commercial investments and accelerating project pipelines. Innovative mechanisms such as price guarantees, advance market commitments, and impact bonds further encourage private investment by reducing revenue uncertainties and aligning public and private sector goals, helping infrastructure projects move from concept to reality more quickly. (Global Infrastructure Hub, & Convergence, 2024, Government Technical Advisory Centre (GTAC), 2024, Global Investors for Sustainable Development Alliance, n.d.)

The diagram below shows the practical ways through which blended finance models can reduce infrastructure delays. These models help shorten long lead times in infrastructure projects by bringing together concessional and commercial capital, which reduces risks and attracts private investors. They also provide crucial early-stage support, like funding for feasibility studies and technical assistance, which helps projects get off the ground more quickly.

Figure 3. Blended Finance factors reducing project delays



Source: Authors Analysis

Coordinated governance is vital. Dedicated committees linking finance, planning, and sector ministries can prioritise projects and streamline decisions. Transparency in project development and implementation phases strengthens trust and levels the playing field for all stakeholders (Hagerman, 2012).

Beyond traditional PPPs, several innovative models are reshaping how infrastructure projects are developed and financed. Market-Led Proposals allow private companies the scope to directly propose project ideas, though many face challenges to advance beyond proposals. Public–Private–Community Partnerships bring community groups into the mix for greater local impact, especially in developing contexts. Social Impact Bonds tie investor returns to social outcomes and align financial incentives with measurable benefits. Value capture strategies generate revenue from rising property values or creative uses of project spaces and reduce the reliance on direct government subsidies. Alternative procurement models, like Design-Build and DBOM contracts, help speed up delivery and cut costs. Tools like land readjustment unlock fragmented plots for development, and new collaborative PPP models focus on building trust and sharing knowledge to drive innovation. Together, these approaches offer flexible ways to tackle complex infrastructure needs. (Bwanali & Rwelamila, 2016, Sage Journals, 2023, Asia-Pacific Economic Cooperation, 2014, Urban Maestro, 2020)

Mobilising Capital Markets

Domestic capital mobilisation is a cornerstone of sustainable infrastructure finance in Africa. With public budgets under strain, local capital markets, particularly pension funds, insurers, and sovereign wealth funds, offer long-term funding aligned with infrastructure timelines. Blended finance can play a catalytic role here, using concessional capital to reduce risk and enhance project bankability.

Value capture mechanisms, such as land value taxes and betterment levies, allow governments to finance infrastructure by harnessing rising land values generated by public investments. These instruments generate revenue but require robust legal frameworks to ensure equity and transparency.

Strategic partnerships with the private sector can help pool financial and technical resources while easing public capacity constraints. Effective mobilisation also hinges on governance quality, regulatory clarity, consistent policy signals, and institutional innovation, such as dedicated PPP units (Lu & Wilson, 2024; Ibrahimi, n.d.).

South Africa's infrastructure investment track record illustrates how public-private collaboration can boost growth and employment while ensuring inclusivity. User-pay models such as fuel levies or tolls must be balanced with social protection mechanisms like subsidies or free basic services to maintain equity (Hagerman, 2012; Collier & Cust, 2015). Success depends on adaptive regulatory environments, continuous innovation in financing mechanisms, and the integration of global best practices.

However, having the right financial instruments is critical to unlock private capital for infrastructure because public funding alone often falls short, especially during times of economic strain. The Public Investment Corporation has produced a paper that is focused on financial instruments within infrastructure (PIC, 2025). Tools like blended finance, guarantees, and risk mitigation help spread risks to those best equipped to handle them, making projects less daunting for private investors. These instruments improve returns and help turn infrastructure into more liquid, transparent, and investable assets, attracting long-term players like pension funds. They're also key to meeting sustainable development goals, as many climate and social projects demand large upfront costs and long payback periods. Strong financial frameworks underpin successful PPPs by ensuring stable cash flows and fair terms, giving private investors the confidence to get involved. Without these tools, private capital stays on the sidelines, leaving critical infrastructure gaps unfilled(Securities and Exchange Commission Nigeria, n.d., Eurazeo Wealth, n.d., Invest Europe, n.d.).

Leveraging International Development Finance

International development finance institutions (DFIs) are playing a growing role in addressing Africa's infrastructure deficit amid limited fiscal space. With rising debt and constrained public budgets, DFIs offer essential funding and expertise to de-risk projects and strengthen implementation (Calderón et al., 2018).

Multilateral and bilateral partners enhance creditworthiness through concessional loans, guarantees, and technical assistance, enabling African governments to access commercial capital. However, one of the most

pressing limitations lies in the enabling environment required for successful implementation. Many African countries face bureaucratic bottlenecks, regulatory uncertainty, and limited institutional capacity, all of which complicate the structuring, negotiation, and execution of PPP agreements (Hagerman, 2012).

Technical assistance is essential for getting infrastructure projects off the ground faster, especially in regions where government institutions are still developing the required skills and resources. When governments have stronger capabilities in planning projects, preparing investments, and structuring finances, projects are more likely to move forward and reach financial close without long delays.

Support from development finance institutions often comes through dedicated project preparation funds. These funds pay for critical early steps like feasibility studies, environmental and social assessments, and legal work, all of which help clear obstacles that often slow projects down.

Technical assistance also means developing standard contracts and clear guidelines for regulatory processes, so negotiations and approvals are not stymied. Placing experienced advisors inside government agencies gives teams hands-on support to solve technical challenges as they arise. Training public officials in financial modelling, procurement, and risk management builds lasting knowledge that benefits project implementation.

Digital tools and platforms for sharing data bring even more transparency and better coordination among respective participants. Together, these efforts create the kind of environment where infrastructure projects can move from an idea to reality much more quickly.

Well-structured international finance raises a country's infrastructure development index and improves access to commercial debt (Lu & Wilson, 2024). Initiatives like AUDA-NEPAD's 5% Agenda highlight how local savings can be matched with international finance for regional priorities such as PIDA.

Success stories like the Mombasa-Nairobi SGR and Doraleh Port show the economic benefits of such financing, in the form of improved trade, employment, and regional integration (Floyd et al., 2023; Ibrahimi, n.d.). A holistic approach that combines capital with policy advice, capacity building, and stakeholder inclusion, ensures sustainability and social impact (Magwedere & Marozva, 2023).

Incentivising Private Sector and Commercial Participation

Private sector participation remains underutilised in African infrastructure financing, despite a growing need for investment. Reducing perceived risks through regulatory clarity and capacity building is essential to unlock private capital.

One of the biggest hurdles for private investment in African infrastructure is the perception of high risk. A variety of tools does, however, exist to help manage these risks, from political risk guarantees and derivatives that hedge interest rates, foreign exchange, and commodity prices, to construction and liquidity guarantees, counterparty guarantees, credit default swaps, and political risk insurance. Agencies like the Multilateral

Investment Guarantee Agency (MIGA), the African Development Bank (AfDB), GuarantCo, and national institutions such as Nigeria's InfraCredit are offering solutions, and use of these options should be scaled up. At the same time, fair risk-sharing in public-private partnerships (PPPs) is critical for bringing private players to the table.

Furthermore, frameworks like PIDA's PAP2 are designed to de-risk investments and align institutional investors with long-term infrastructure assets. Building a compelling investment case, especially for climate-resilient infrastructure, requires structured engagement and targeted awareness campaigns (APRI, 2022).

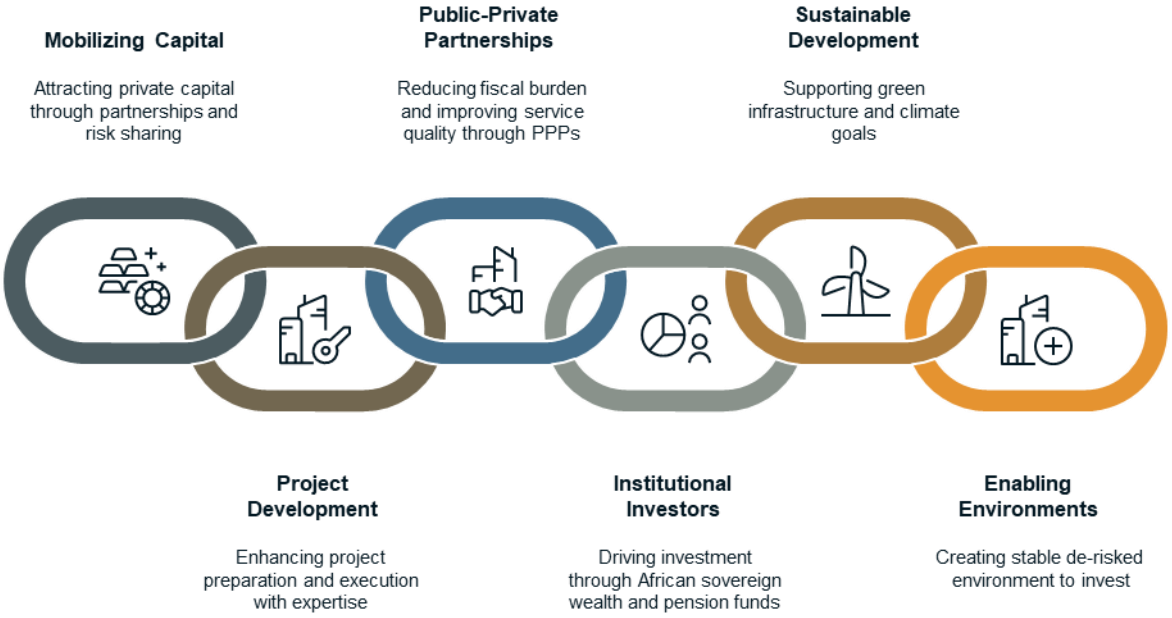
Innovative tools like intellectual property rights (IPRs) can protect infrastructure innovations and enable scaling. Improved access to public-sector data, combined with safeguards, can further stimulate innovation and private investment (W.E. Forum, 2019; Umar et al., 2024).

Ongoing training by institutions such as the AfDB and the GCF strengthens the technical readiness of both public and private actors to prepare and appraise bankable projects (APRI, 2022). More realistic project assessments, incorporating demand risk and cost contingencies, help rebuild investor confidence (Facility, 2007).

To avoid imbalances, incentives should cover entire value chains, not just ports, but also road, rail, and storage, to ensure broader economic benefits. Special economic zones in countries like Rwanda have proven effective in attracting foreign investment and building local capability (Djeghar, 2023).

Incentivising private participation requires a systemic approach: regulatory reform, de-risking, innovation, skills development, and inclusive value chain engagement (APRI, 2022; Author, 2024; W.E. Forum, 2019). Commercial investors are an important cog in accelerating infrastructure development on the continent. The below diagram illustrates how they are able to assist in project delivery and acceleration.

Figure 4. Role of the Commercial Investor in African Infrastructure



Source: Authors Analysis

Pillar 3: Technological and Digital Integration

Digital Project Monitoring Tools

Digital project monitoring tools are reshaping infrastructure delivery across Africa. Integrating Building Information Modelling (BIM) with drones, photogrammetry, and AI has improved project visualization, real-time tracking, and coordination among stakeholders. BIM's ability to manage large datasets supports better monitoring in complex, multi-stakeholder projects.

However, interoperability issues among independently developed platforms remain a key challenge. Establishing dedicated monitoring units and adopting web-based systems can enable real-time data sharing and seamless communication (Umar et al., 2024). These advances reduce delays and improve decision-making.

AI and digital communication platforms offer transparency and secure data exchange (Ajirotutu et al., 2024), but adoption is hindered by economic constraints, cybersecurity concerns, and regulatory gaps. The sector's slow uptake stems from limited understanding and capacity to integrate new tools.

Case studies like the Mall of Africa demonstrate how BIM supported sustainable design and improved performance (Fabiyi, 2024). Yet, digital innovation must account for the different lifecycles of infrastructure and technology.

As Africa's urbanisation accelerates, digital monitoring becomes vital to achieving sustainable, efficient infrastructure delivery. Overcoming interoperability issues, investing in skills, and enabling regulation will be critical to leverage these tools (Umar et al., 2024; Ajirotutu et al., 2024).

An example of innovation on the continent points towards The Noor Ouarzazate Solar Complex in Morrocco in renewable energy sector. Thanks to an inventive financing structure that blended concessional loans, public funding, and private investment through a Public-Private Partnership model. This approach created a risk-adjusted environment that helped manage the high technological risks of concentrated solar power (CSP). It enabled Morocco to secure significant international funding from partners like the African Development Bank, the World Bank, and the Clean Technology Fund, overcoming the typical challenges of financing large-scale CSP projects in a high-risk emerging market.

Data Analytics for Project Planning and Delivery

Data analytics is transforming project planning and execution across African infrastructure. The use of BIM, the Internet of Things (IoT), and AI enable better forecasting, resource optimisation, and real-time decision-making (Fabiyi, 2024). Automated monitoring tools, using drones and sensors, streamline data collection and reduce reliance on manual processes, enhancing project responsiveness (Umar et al., 2024).

These tools promote data sharing and coordination but face barriers: limited technical capacity, weak data collection at inception, and poor stakeholder communication (Gashahun, 2020; Gbåhabo & Ajuwon, 2017). Inadequate baseline data can lead to delays and cost overruns.

Targeted capacity-building and policy incentives are needed to accelerate adoption (Fabiyi, 2024). Standardised data protocols can reduce fragmentation and promote collaboration. Analytics also supports sustainability goals, helping identify efficient design options and monitor long-term asset performance.

Successful adopters show that digital integration can shorten lead times, cut costs, and improve outcomes. Scaling these benefits requires investment in skills, technologies, and enabling regulation (W.E. Forum, 2019; Umar et al., 2024).

Building Information Modelling (BIM) and Smart Infrastructure

BIM and smart infrastructure technologies are modernising Africa's infrastructure delivery. BIM provides a digital twin of infrastructure assets, supporting coordination, maintenance, and real-time decision-making (Fabiyi, 2024). Combined with GIS, UAVs, and sensors, BIM enhances transparency and lifecycle asset management. These tools reduce manual errors, enable predictive maintenance, and extend infrastructure life. By addressing delays, skill shortages, and monitoring inefficiencies, they improve project efficiency and delivery (Umar et al., 2024). Digitalisation, including the IoT, AI, and cloud platforms, is increasingly recognised as essential to competitiveness. 4D BIM models enhance energy performance and sustainability outcomes, aligning with global best practices.

Wider adoption can reduce infrastructure bottlenecks, shorten delivery timelines, and support resilience. The shift to digital isn't just technological, it's a strategic necessity for long-term infrastructure transformation (Fabiyi, 2024; Umar et al., 2024)

Pillar 4: Capacity Building and Institutional Strengthening

Professional Training and Knowledge Transfer

Strengthening Africa's infrastructure delivery depends on building local professional capacity and reducing reliance on foreign contractors. Investing in long-term training strategies, not just short courses, helps embed institutional knowledge and promotes sustainable infrastructure management (Falaye, 2024). Mentorship models, where experienced professionals guide public officials, are particularly effective for transferring practical skills. Practically, there are several examples on the continent. Mentorship in infrastructure development takes shape through structured programs where experienced professionals guide public officials and newcomers, blending technical and soft skills. Groups like the NAFBI partner with agencies such as SANRAL and Rand Water to mentor small businesses directly on construction sites, building skills in roadworks and sustainable infrastructure for youth, women, and people with disabilities. Initiatives like the Africa Infrastructure Fellowship Program and the Miundo Misingi Hub, mix formal training with practical experience to prepare future leaders. Models like TAMDEV focus on coaching civil servants to professionalize infrastructure management. Together, these efforts nurture local talent, strengthen public services, and support economic growth across the continent.

Governments can enhance this impact by negotiating explicit skills-transfer clauses in contracts, ensuring local professionals gain hands-on experience (Hagerman, 2012; Falaye, 2024). Incorporating such provisions into procurement supports long-term local ownership. Patience and a long-term commitment are required since institutional strengthening is a gradual process that needs consistent engagement (Hagerman, 2012; APRI, 2022).

Aligning training with national infrastructure priorities ensures relevance and helps address sector-specific needs in energy, transport, and digital connectivity (Ondiege et al., 2013). International frameworks like the SDGs have long emphasized human capital as a pillar of growth. But to be effective, these models must be adapted to local contexts. In summary, capacity building must be embedded in broader institutional strategies, with collaborative networks, clear transfer mandates, and sustained commitment driving long-term outcomes (Falaye, 2024; Hagerman, 2012; APRI, 2022).

Modernizing Public Sector Management

Modernizing public sector institutions is essential to improve infrastructure outcomes and reduce delays, cost overruns, and inefficiencies (Nemoianu, 2015; Lokeshwaran & A., 2023). This requires a dual focus on institutional capacity and reforming outdated management practices. One priority is developing long-term strategic planning mechanisms insulated from political cycles. Independent infrastructure bodies with 5 to 30

year mandates can help maintain continuity and ensure project selection is evidence-based, not politically driven (I.T. Forum, 2021).

Project management within the public sector also needs strengthening. Adopting tools like design-build contracts and partnering models can streamline workflows and reduce conflict (Lokeshwaran & A., 2023). These reforms support agile, responsive institutions capable of managing complex projects.

Institutional coordination is equally important. Infrastructure delivery involves multiple actors and sectors, making shared decision-making and cross-agency collaboration essential (Author, 2023). Improving communication, joint planning, and resource sharing strengthens resilience and adaptability.

Human capital development underpins these reforms. Poor project outcomes often stem from unclear objectives and weak managerial skills (Nana-Addy et al., 2022). Targeted training, mentoring, and modern management tools can address this gap. Financial management reforms, such as structured implementation frameworks like the PIDA, also enhance institutional capacity and funding coordination (Hagerman, 2012).

Innovative financing, such as blended finance and asset recycling, adds flexibility and helps mobilize additional resources (Ibrahimi, n.d.). Partnerships with private sector players, DFIs, and civil society provide access to new funding and skills. Strategic planning tools, promoted by international institutions, ensure infrastructure investments deliver high-impact results.

Overall, effective public sector modernization integrates long-term vision, professional skills, institutional coordination, and financing innovation. These combined efforts can significantly improve project outcomes and accelerate Africa's infrastructure transformation (Nemoianu, 2015; I.T. Forum, 2021; Author, 2023; Nana-Addy et al., 2022; Hagerman, 2012; Ibrahimi, n.d.)

Enhancing Procurement Practices

Reforming procurement practices is key to unlocking faster, more efficient infrastructure delivery. Regulatory delays and institutional ambiguity often undermine outcomes. Aligning procurement with investor expectations, through early engagement and tailored bidding strategies, can attract higher-quality developers and improve project quality (Hagerman, 2012).

Clear service-level agreements among all stakeholders, national, provincial, and municipal, are critical to avoid confusion, disputes, and inefficiencies. Strong institutional arrangements and transparent project preparation, including feasibility studies and stakeholder consultations, lay the groundwork for competitive procurement.

Joint development agreements can also reduce risk and promote shared responsibility (Ibrahimi, n.d.). Building procurement capacity, particularly in least developed countries, is essential. This includes ICT tools to automate procurement, targeted training, and alignment with global best practices.

Weak financial planning often leads to delayed payments and stalled projects (Lokeshwaran & A., 2023). Strengthening financial management and integrating procurement into comprehensive infrastructure investment plans can help municipalities overcome backlogs and funding gaps.

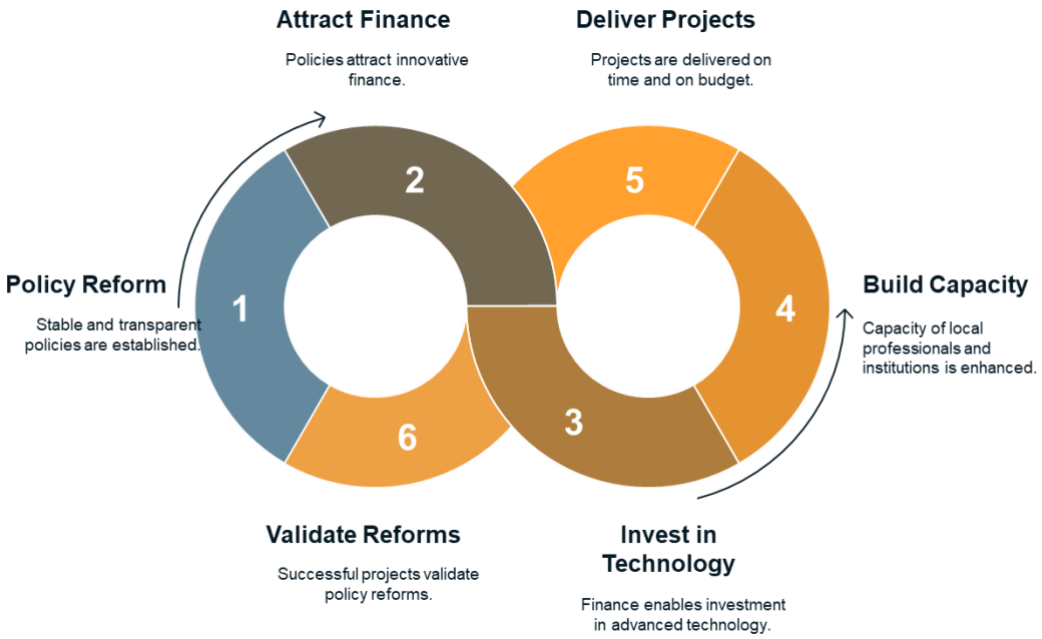
Stakeholder coordination, among ministries, local governments, and external partners, further improves procurement efficiency. APRI highlights that better coordination supports alignment of goals and smoother resource mobilization (APRI, 2022).

Finally, strategic procurement must prioritize long-term regional integration and sustainability, not just short-term outputs. Past project failures underline the need for smarter, more forward-looking procurement processes (Collier & Cust, 2015). By combining strong institutional roles, thorough preparation, skilled personnel, financial planning, and coordination, Africa can modernize procurement and deliver infrastructure that meets its development goals (Hagerman, 2012; Lokeshwaran & A., 2023; APRI, 2022; Ibrahimi, n.d.; Collier & Cust, 2015).

There are lessons to be learnt from countries that have adopted these agencies to successfully strengthen institutional capacity. For example, Chile established the Concessions Directorate within the Ministry of Public Works, staffed with technical experts who independently oversee PPP projects, ensuring thorough preparation and professional management that are protected from political cycles. Rwanda created the Rwanda Development Board by merging multiple government agencies to enhance efficiency, offering a single, professional point of contact for investors in order to reduce capacity gaps and to provide consistent project support. South Africa formed the National Treasury PPP Unit, which supplies guidelines, standardized contracts, and training for public officials, building expertise in financial structuring and risk allocation to ensure infrastructure projects are bankable and effectively managed. Morocco has invested significantly in institutional expertise for renewable energy and infrastructure planning, with agencies like MASEN (Moroccan Agency for Sustainable Energy) leading complex projects backed by strong technical capacity.

Overall, the figure below depicts how these cross cutting themes may interact with each other and provide a feedback loop.

Figure 5. Interaction & Feedback Loop



Source: Authors Analysis

ACTIONABLE RECOMMENDATIONS

1. For Policymakers / Government

To create a stable, efficient, and attractive environment for infrastructure investment and to drastically reduce project lead times, national and regional policymakers and governments should create and enabling conditions through:

1. **Establishing National/Regional Infrastructure Acceleration Units.** Create dedicated, high-level units with the mandate and authority to streamline inter-agency coordination, fast-track permits, and resolve project bottlenecks swiftly. These units must have clear performance targets directly linked to reducing project delivery timelines. This will alleviate regulatory bottlenecks and institutional capacity gaps. These typically include shortages in technical skills within government, the need to create independent infrastructure agencies, streamlining regulatory frameworks, enacting long-term legislative commitments, and leveraging support from DFIs to reduce project delays.

2. **Developing independent infrastructure agencies.** Legislated long-term strategies, and binding multi-year investment frameworks are effective solutions to insulate infrastructure planning from political cycles and ensure sustained progress on strategic national priorities.

3. **Embed Infrastructure as a National Priority in Law and Budgets.** Formally integrate key infrastructure projects into national development plans and legal frameworks. Ensure consistent and protected funding through annual budgets to guarantee project continuity across political cycles and enhance credibility with investors.

4. **Execute Comprehensive Land Governance and Contractual Reforms.**

    - **Digitize Land Registries:** Implement digital land-titling systems to improve transparency and efficiency in land acquisition.

    - **Standardize Compensation Frameworks:** Establish and consistently apply clear and fair compensation frameworks and create accessible dispute-resolution mechanisms to handle grievances promptly.

    - **Mandate Standardized Contracts:** For major public works initiatives, mandate the use of internationally recognized contracts (e.g., FIDIC, NEC) and require Early Contractor Involvement (ECI) to improve project design, reduce disputes, and control costs.

5. **Strengthen Public Financial Management and Anti-Corruption Frameworks.** Develop and rigorously enforce robust anti-corruption and prudent financial management systems tailored for the infrastructure sector. Launch public transparency portals providing real-time information on project budgets, procurement, expenditures, and physical progress to enhance accountability.

6. **Cultivate a Supportive Regulatory Environment for Innovative Finance.** Streamline regulations to facilitate private investment. This includes creating clear rules for domestic institutional investors (pension funds, insurance companies), promoting the development of local currency bond markets, and establishing unambiguous legal frameworks for Public-Private Partnerships (PPPs) and blended finance.

7. **Prioritize Human Capital Development.** Implement short- and long-term policies to upskill the local workforce in critical fields like engineering, technology, and project management through targeted training programs and partnerships with educational institutions to reduce dependency on foreign expertise.

8. **Unlock Cross Sectorial Synergies.** To address the persistent challenge of sectoral silos and fragmented planning, solutions such as national infrastructure plans, inter-ministerial coordination bodies, regional planning institutions, and digital data-sharing platforms can foster integrated strategies that unlock cross-sectoral synergies and maximize socio-economic impact.

9. **Engage in transparent data-sharing practices.** Supported by digital platforms and standardized protocols, data-sharing is essential for breaking down sectoral silos, enhancing collaboration across government agencies, and fostering integrated, efficient infrastructure development.

2. For Investors

To improve project bankability, accelerate financial close, and ensure long-term success, public and private investors should:

1. **Integrate Comprehensive "Soft Infrastructure" Due Diligence.** Incorporate thorough assessments of the policy environment, regulatory stability, social context, and institutional capacity into the earliest stages of feasibility studies. Upfront and detailed due diligence on land acquisition and potential community impacts is critical.

2. **Actively Pursue Blended Finance and Risk Mitigation.** Proactively seek opportunities to co-invest alongside DFIs and public entities in blended finance structures to de-risk projects. Make active use of available risk mitigation instruments, such as political risk insurance and credit guarantees, to enhance project bankability and shorten financing timelines.

3. **Champion the Adoption of Advanced Technologies.** Lead the integration of modern technologies to boost efficiency. This includes utilizing Building Information Modelling (BIM) for collaborative design, drones for surveying and progress monitoring, and data analytics for improved project planning, execution, and maintenance.

4. **Invest in Local Capacity and Supply Chains.** As a core part of project development, integrate tangible components for local skills transfer and capacity building. Invest in and prioritize the use of local supply chains and service providers to enhance the project's economic footprint and build a sustainable local ecosystem.

5. **Blended Proactive Infrastructure Strategy.** Success in infrastructure isn’t about choosing purely high or low risk assets but building a portfolio that fits specific risk, return and impact goals. A smart strategy blends a core of stable, income-generating assets (later in the funding value chain) with selective investments in higher-risk opportunities like early-stage projects, project preparation or emerging technologies (earlier in the funding chain). Crucially, effective de-risking through tools like guarantees, blended finance, investment partnerships with all stakeholders and strong due diligence, help manage uncertainties and protect returns. Investors who stay agile, monitor markets closely, and actively mitigate risks are best positioned for long-term gains in this vital asset class.

3. For Development Finance Institutions (DFIs) and Development Partners

To catalyze a pipeline of viable projects and foster a more dynamic market, DFIs and development partners should:

1. **Significantly Scale Up Support for Project Preparation Facilities (PPFs**). Dramatically increase funding and technical support for PPFs to create a deep pipeline of bankable projects. The focus must be on ensuring projects have completed rigorous feasibility studies, comprehensive risk assessments, and detailed engineering designs before they are brought to market.

2. **Enhance Capacity Building for Public Sector Institutions**. Expand technical assistance programs for governments and public institutions. Focus on strengthening capabilities in complex contract negotiation, PPP management and oversight, regulatory design, and long-term asset management. Development finance institutions often provide funding for early steps like feasibility studies and legal work and help to clear obstacles that can slow down project implementation. Creating standard contracts and clear regulatory guidelines can streamline contract negotiations. Having experienced advisors working alongside government teams helps to resolve challenges that arise. Training staff and using digital tools also build expertise and effective coordination. All these efforts work together to turn infrastructure plans into realistic, more reliable projects, faster.
3. **Champion Regional Standards and Cross-Border Projects.** Actively support the development, adoption, and harmonization of regional technical and regulatory standards for infrastructure. Promote and co-finance initiatives that facilitate cross-border infrastructure, aligning with continental goals to create larger, more integrated, and more attractive markets.

4. **Expand and Innovate** Tailored Risk Mitigation and Blended Finance Solutions. Continuously innovate and broaden the range of financial products offered, ensuring they are tailored to the specific contexts of African infrastructure markets. This includes developing new instruments to address local currency financing gaps and sub-sovereign risks.

5. **Promote Data-Driven Accountability.** Support and utilize robust monitoring and evaluation mechanisms like the Africa Infrastructure Development Index (AIDI) to track progress continent-wide. Advocate for legislative and institutional reforms that mandate transparency and create clear lines of accountability for all project stakeholders.

Figure 6. Collaborative Infrastructure Development

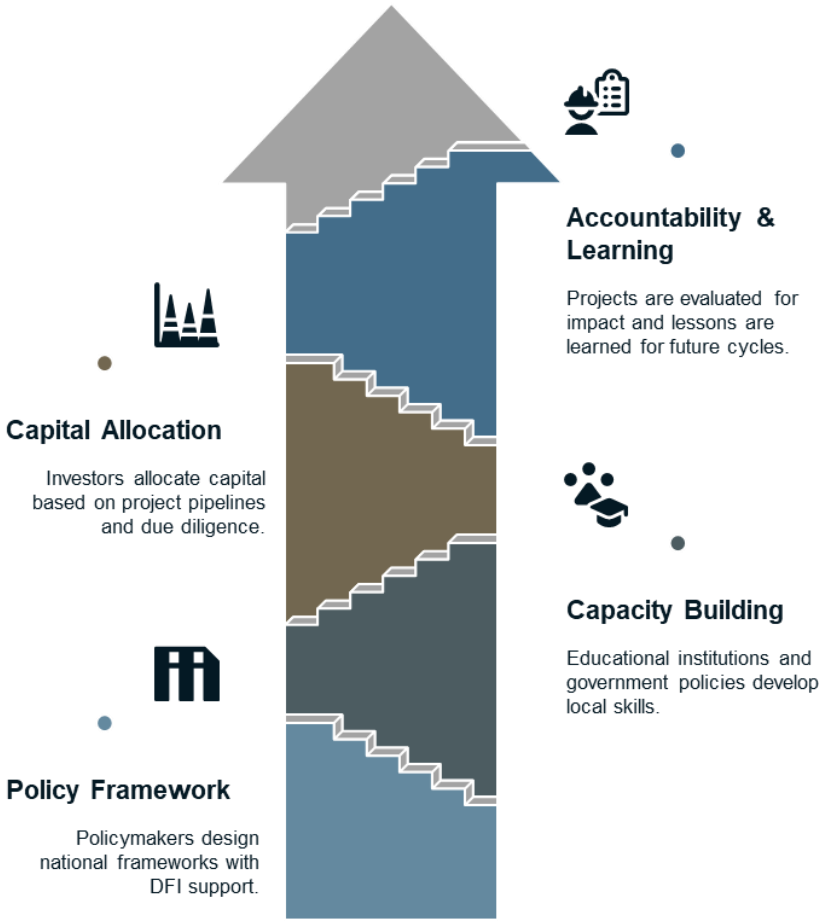
Source: Authors Analysis

Further to this, while policymakers, investors, and DFIs provide the strategic direction and capital, the successful and sustainable delivery of infrastructure in Africa fundamentally depends on the active collaboration and engagement of this wider ecosystem of stakeholders (Civil Society and Advocacy Organisations, Education and Training Centres, regional and national authorities).

Attracting foreign DFIs into Africa and engaging commercial investors earlier in infrastructure development depend on creating an enabling environment. This includes ensuring policy stability, building strong institutional capacity for project preparation and financial structuring, and promoting integrated, multi-sector planning. Equally important are transparent data-sharing practices, clear project pipelines, and collaborative platforms that allow stakeholders to align project designs with investor expectations. Long-term investment frameworks

further provide the certainty and confidence needed for sustained private-sector engagement. These stakeholders would be required to develop a strong foundation of contract enforceability in infrastructure projects. Practically, strengthening contracts in African infrastructure projects means rethinking how deals are made and managed. Traditional fixed-price contracts often create tension and disputes because they push too much risk onto contractors. More collaborative approaches, like alliance contracts, encourage teamwork and shared problem-solving, which helps projects run more smoothly. It's also crucial to keep procurement open and fair so everyone knows the rules and risks from the start, especially in public-private partnerships. Standard contract templates like FIDIC or NEC bring clarity, but they need proper management and follow-through to be effective. Strong legal systems give contracts credibility, while training people to effectively manage contracts and resolve conflicts builds confidence and keeps projects moving. Adding clear accountability rules, regular reporting, and practical dispute resolution options, like arbitration, makes it easier to enforce agreements and avoid long court battles. All these efforts work together to build trust, reduce risks, and help infrastructure projects succeed. The diagram below proposes a framework for stakeholders to work together in a sustainable ecosystem.

Figure 7. Infrastructure Sustainable Stakeholder Ecosystem



Source: Authors Analysis

Time-Framed Recommendations for Accelerating African Infrastructure

Timeframe	Key Recommendations & Objectives
Short-Term Action Steps (Immediate priorities to remove bottlenecks and build momentum)	• **Elevate Infrastructure as a National Priority:** Embed projects in annual budgets and legal frameworks to ensure political and financial continuity. • **Streamline Approval Processes:** Implement efficient, transparent project appraisal and approval mechanisms to reduce delays and waste during project inception. • **Address Urgent Human Resource Gaps:** Launch targeted training programs to rapidly upskill the local workforce in critical technical and management fields. • **Fast-Track Enabling Financial Legislation:** Finalize laws for PPPs, climate finance, and green growth to quickly unlock new funding sources. • **Deploy Available Technology:** Rapidly implement existing digital tools for project management, monitoring, and communication to boost efficiency. • **Enhance Stakeholder Coordination:** Establish regular consultations and action plans to align all parties and share best practices immediately. • **Stimulate Private Investment:** Reduce regulatory barriers and clarify risk-sharing to incentivize and expedite private sector participation in ready projects.
Medium- & Long-Term Strategies (Foundational actions for systemic and sustainable change)	• **Integrate Sustainability and Resilience:** Fully embed climate and sustainability goals into all national infrastructure planning, financing, and policy. • **Scale Innovative Financing Models:** Develop and popularise the use of complex PPPs and blended finance structures for large-scale network infrastructure (e.g., energy transmission). • **Drive Deep Regional Integration:** Focus on eliminating non-tariff barriers and using regional cooperation as a tool to improve infrastructure and institutional quality across borders. • **Lead a Sector-Wide Digital Transformation:** Invest in overcoming systemic barriers to technology adoption, such

	as digital literacy gaps, to revolutionize the construction and management sectors. • **Implement Comprehensive Governance Reforms:** Establish robust, integrated systems for planning, monitoring, and control, while creating stable and transparent regulatory regimes. • **Address Infrastructure Disparities:** Implement targeted, long-term investment strategies to close the quality gap between countries and between urban and rural areas, ensuring equitable development.

CALL TO ACTION

Africa's infrastructure delays stymie growth among African economies, are costing jobs and denude resilience. Delayed approval processes, policy uncertainty, financial gaps, and weak institutional capacity have slowed projects for far too long, leaving communities waiting for the roads, power, and digital connections that fuel opportunity. Yet this is not an insurmountable reality. The evidence and examples referred to in this paper show that Africa can dramatically cut lead times and unlock its potential, if all role players move decisively.

Governments must simplify regulations, stabilize policies, and create clear rules that give investors greater confidence. Public financial management needs tightening, and land governance reforms are vital to clear the path for projects.

Innovative finance has to step up. Blended finance, risk-sharing tools, and stronger domestic capital markets can fill funding gaps. Public funds should be used strategically to crowd in private capital, while value-capture methods and regional partnerships unlock new revenue streams.

Institutions and people matter. Training local professionals, modernizing public sector management, and improving procurement practices will build the capacity to manage complex projects from start to finish. Digital tools like BIM, drones, and data analytics aren't optional extras, they're critical to introduce speed, quality, efficiency and transparency.

Accelerating infrastructure is more than an economic goal. It's the backbone for Africa to harness its demographic dividend, protect itself from global shocks, and deliver on the promise of Agenda 2063 and the United Nations SDGs. Countries that succeed in reducing lead times will stand out as competitive, stable destinations for investment that can drive industrialization, innovation, and inclusive growth. This is a moment for bold action. Governments must show political will. Investors need to bring capital, innovation, and long-term commitment. Development partners have to strengthen their commitment to and involvement in project

preparation, capacity support, and risk mitigation. If African economies tackle these challenges head-on, it can transform its infrastructure landscape, close the gap between ambition and delivery, and secure a more prosperous, resilient, and integrated future for its people.

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