From Strategy to Implementation: A Conceptual Analysis of the African Union's AI Strategy and its Implications for Member States Towards Achieving Agenda 2063

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Abstract

The African Union adopted its Continental Artificial Intelligence Strategy in 2024 with the explicit aim of helping member states harness AI for the goals set out in Agenda 2063. Whether that strategy is actually taking root on the ground is a different question, and one this paper sets out to answer through a systematic review of the literature. We searched five databases and several grey-literature repositories, screened 546 unique records after removing duplicates, and carried 209 studies through to full synthesis. Working from a decolonial AI theory and stakeholder theory lens, we trace what the review shows about the gap between the AU's strategic intent and what member states have actually built: patchy policy formalisation, thin institutional capacity outside a handful of frontrunners such as Mauritius and Rwanda, a fragmented regulatory landscape, persistent ethics-dumping risk, and infrastructure shortfalls that no amount of policy language can paper over. The review also surfaces three adaptive mechanisms doing real work in the gap between strategy and outcome: iterative policy adjustment, regulatory sandboxing, and capacity-building programmes, all feeding into a continuous monitoring-and-evaluation loop rather than a one-off rollout. From this we build a Knowledge Contribution Framework that reframes AU AI governance as an adaptive rather than linear process, and we close with recommendations aimed at policymakers, AU institutions, and member states on closing the formalisation, capacity, and infrastructure gaps that currently stand between the strategy on paper and the Africa it imagines.

Keywords: African Union; Artificial Intelligence Strategy; Agenda 2063; AI governance; systematic literature review; adaptive governance; digital colonialism

1. Introduction

Artificial intelligence has moved from a peripheral concern to a stated continental priority for the African Union, which now treats it as a lever for the development goals set out in Agenda 2063 (Yilma & Wodajo, 2025). The question this paper asks is a practical one: what happens to a continental AI strategy once it leaves the page and meets fifty-five member states with wildly different capacities, politics, and infrastructure? We trace that journey from the AU's strategic articulation of AI principles through to the messier business of national implementation, and we use the gaps we find to interrogate what "implementation" can realistically mean in this setting (Njoroge, 2024b; Pabón & Ahmed, 2025).

Our point of departure is the African Union's Continental Artificial Intelligence Strategy, drafted in 2023 and endorsed the following year. We read it against global AI governance benchmarks to judge how comprehensive, formalised, and ethically grounded it actually is (Nibigira et al., 2024; Njoroge, 2024a), and we ask how a single continental document translates into national policies and regulatory instruments across countries with vastly different technological capacity and socio-economic priorities (Addo et al., 2026). That translation is uneven by design and by necessity. Some member states - Mauritius, Egypt, Rwanda - have spent years building national AI frameworks; others have barely started, and the result is a regulatory landscape that looks less like a continent moving together and more like a handful of early movers surrounded by a much larger group still finding their footing (Segun et al., 2025; Walter, 2024). That unevenness complicates any attempt to harmonise ethical guidelines or regulatory frameworks at the continental level, which is precisely where the AU strategy needs traction if it is to mean anything beyond Addis Ababa (Obia, 2026a; Ogoh et al., 2025).

It is worth being honest about how modest Africa's footprint in global AI policy discourse still is, despite some genuinely early moves by Mauritius and Egypt (Diallo et al., 2024). The continent's countries also tend to sit near the bottom of the major AI readiness indices on government, technology, and data infrastructure dimensions alike (Kiemde & Kora, 2021), which is another way of saying that the digital divide many of us assumed was a story about access to phones and bandwidth is now, just as sharply, a story about who gets to participate in building and governing AI systems (Malatji, 2026). Generic global indices do not capture this well; they are built for a different kind of economy. We need readiness assessments that take the ground-level reality of African AI initiatives seriously rather than scoring countries against benchmarks designed elsewhere (Diallo et al., 2025).

We organise the paper as a systematic literature review built around a strategy-to-implementation framework, which we set out below, and we work through it via a literature review, a methodology section detailing the review process, a findings section, a discussion that reads those findings against theory, a knowledge contribution and recommendations section, and a conclusion.

1.1 A Framework for Reading Strategy Against Implementation

Our reading of the literature converges on a simple claim: the distance between strategic intent and concrete outcomes is mediated by a specific, identifiable set of factors - how far policy gets formalised into binding instruments, how much institutional capacity exists to act on it, and how well regulatory frameworks travel across borders. Two further problems sit underneath all of this: the practice of "ethics-dumping," where companies relocate ethically fraught operations to jurisdictions with weaker oversight, and the basic shortfall in digital infrastructure that makes some of this discussion academic in the most literal sense (Aderibigbe et al., 2023; Ruttkamp, 2022). We also borrow from adaptive governance theory, which treats AI policy not as something you write once and enforce, but as something you adjust continuously as the technology, the politics, and the evidence change (Obia, 2026b). Indices such as the 2024 Government AI Readiness Index are useful here mainly because they show how unevenly that adaptive capacity is distributed across the continent (Malatji, 2026), which is itself an argument for looking country by country rather than only at the continental document.

There is also a harder argument underneath the technical one. A genuinely decolonised approach to AI governance would put Global South countries in the driver's seat of building their own solutions, rather than importing frameworks built to solve someone else's problems (Ayana et al., 2024). That matters practically as well as ethically: AI systems trained and governed elsewhere tend to import biases that simply do not map onto African realities, so getting governance right is partly about getting the values right (Ndaka et al., 2024). A serious attempt at this would mean building African AI infrastructure through academia-private sector partnerships rather than relying indefinitely on imported platforms (Mugurtay, 2025; Sinde et al., 2023), paired with governance models sensitive enough to the local political and technical terrain to actually hold (Ratsimbazantsoa et al., 2003).

1.2 What We Mean by an AI Strategy

An AI strategy, in the sense used throughout this paper, is a roadmap: it allocates resources, names priority sectors, and sets out governance structures meant to guide how AI gets developed and deployed. Done well, it states a country's vision for AI alongside concrete

policy goals, investment priorities, and ethical guardrails (Demaidi, 2023). It also has to do some less glamorous work - building a skilled workforce, funding research, protecting data privacy - and grapple with the social fallout of automation and algorithmic bias through regulation that actually involves the people affected by it (Babarinde et al., 2023; Ndiaye, 2025). Because a growing number of African states now have such strategies in some form (Townsend et al., 2023), the obvious next step is to read those documents closely: what they actually commit to, and how that lines up with Agenda 2063 on one hand and the unglamorous realities of digital colonialism and informational capitalism on the other (Roche et al., 2022). Read that way, national strategies start to look like balancing acts between wanting the technology and wanting to keep some control over how it shapes the country (Ochola, 2023).

2. Literature Review

2.1 Frameworks for Analysing Strategy Implementation

Studying how AI strategies actually get implemented calls for frameworks robust enough to hold the messiness of technological integration and policy execution together, especially in economies still building the basic institutions that mature economies take for granted. A useful starting point is the idea of complementary assets - the organisational, managerial, and social scaffolding that determines whether an IT investment actually pays off (Dwivedi et al., 2019). Frameworks worth their name also need to track policy formulation through to implementation and ask, honestly, whether what was proposed actually happened (Djeffal et al., 2022), and they need a feedback mechanism that lets strategy adjust as the technology and the evidence move (Dennehy et al., 2022). That last point matters more than it sounds: a framework that cannot evolve will tell you whether a country built the infrastructure, capacity, governance, and incentives that AI adoption needs, but it will not tell you whether those things were the right call in the first place (Folorunso et al., 2024).

The economics cannot be an afterthought either. Any serious analytical framework has to account for the specific trade-offs individual nations face and offer something usable for resource planning (Kim et al., 2024), which matters enormously in Africa, where AI investment decisions carry real ethical, financial, and geopolitical weight and risk pulling money away from services that cannot wait (Frimpong, 2025). Future work would do well to look harder at which feedback loops actually catch a digital transformation strategy before it goes wrong (Correani et al., 2020), because the governance mechanisms on offer were mostly built for the legitimacy and efficiency problems of mature markets, not emerging ones (Zhou et al., 2022). Strategic management theory built for OECD economies does not transplant cleanly onto resource-constrained, fast-moving African contexts, and pretending otherwise is part of why so many strategies stall at the implementation stage (Oyewole et al., 2024).

What this points to is the need for models purpose-built for nascent innovation systems and the institutions around them (Alhosani& Alhashmi, 2024) - models that take seriously the informal economy, uneven regulatory capacity, and large gaps in digital literacy, all of which shape how AI adoption actually plays out on the ground (Okem et al., 2023; Rahmon, 2025). In practice, that means marrying developmental economics with a hard look at infrastructure, data availability, and skills gaps, rather than treating AI strategy as a stand-alone policy exercise (Mdladla et al., 2024).

2.2 Key Performance Indicators for AI Strategy Success

Knowing whether an AI strategy is working requires metrics that go beyond counting how many institutions adopted the technology. The literature points toward economic growth, better public service delivery, sharper social equity, and a stronger domestic AI ecosystem as the real tests (Anwansedo et al., 2024; Jejeniwa et al., 2024a). More specifically: AI's contribution to GDP, the number of homegrown AI patents and start-ups, measurable gains in health and education outcomes, and whether the governance frameworks wrapped around all of this are actually ethical in practice rather than on paper (Criado et al., 2024). Capacity-building, technology transfer, and policy harmonisation deserve their own metrics too, since they are what turn isolated national wins into a genuinely inclusive digital ecosystem across the continent (Jejeniwa et al., 2024a). Strategic alignment with national development goals and the ability to adapt as the technology shifts underneath you are, in the end, what separates a strategy with staying power from a press release (LIFÇAL, 2026; Perifanis& Kitsios, 2023). Picking the right indicators is as much an ethical exercise as a technical one - the goal is to capture socio-economic transformation, not just adoption counts (Adigwe et al., 2024; Khan et al., 2024). At a more granular level, things like reduced error rates in public service delivery or faster processing in government operations are exactly the kind of concrete, checkable metric this literature is short of (Olutimehin et al., 2024).

Citizen satisfaction with AI-driven services and the growth of local AI talent and research output round out a fuller picture of success. The trouble is that no standardised, Africa-specific AI readiness index exists, which makes comparing countries, or judging any one country's progress against itself, harder than it should be (Baguma et al., 2023) - a problem made worse by the fact that terms like "AI readiness" and "AI capacity" still lack settled, shared definitions (Tapo et al., 2024). Until the field builds metrics that fit African socio-economic realities rather than borrowing global indices wholesale, this measurement gap will keep undermining efforts to track progress honestly (Iuga & Socol, 2024; Sioumalas-Christodoulou &Tympas, 2025), particularly given how much of the labour behind today's AI systems - including labour performed in Africa - remains invisible in the indices that claim to measure national AI capability at all (Tubaro et al., 2025).

2.3 The African Union's AI Strategy: Genesis and Overview

The AU's Continental AI Strategy did not appear from nowhere; it answers a fairly direct question about how Agenda 2063's economic, social, and governance ambitions might be accelerated by AI rather than left behind by it (Ade-Ibijola& Okonkwo, 2023). It is also candid, at least on paper, about what stands in the way: weak infrastructure, a shortage of technical expertise, and regulatory frameworks too thin to guarantee that AI adoption benefits people evenly across the continent (Shafik, 2024). Behind that is a harder ambition - building AI solutions that actually fit Africa's socio-economic and cultural realities rather than retrofitting tools designed somewhere else (Wang'ang'a, 2024). The gap between potential and uptake remains wide: infrastructure, underinvestment in people, and weak policy all slow things down (Ughulu, 2025), and a more specific problem sits underneath that one - there simply is not enough good, locally generated data to train AI systems without importing bias along with the technology (Owoyemi et al., 2020). Add limited access to high-performance computing and volatile exchange rates, and the continent's room to participate in cutting-edge AI development narrows further still (Manouan et al., 2026), a constraint that sits on top of internet governance arrangements across the continent that remain just as fragmented as its AI policy landscape (Holden &Klyton, 2016).

The digital divide and patchy cloud access - often the product of payment systems that simply do not talk to international platforms - compound all of this, particularly in sectors like healthcare and agriculture where AI could do the most good (Manouan et al., 2026; Osasona et al., 2024). None of these problems are solved by writing a better strategy document; they need a strategy that treats local data generation, infrastructure, and computing access as the actual project, not the preconditions for it (Ballo & Diawara, 2025).

2.4 Core Pillars and Strategic Priorities

The strategy's core pillars read like a fairly conventional governance wish list - an enabling regulatory environment, ethical AI development, a skilled workforce - aimed at keeping Africa competitive rather than dependent in the global AI landscape (Otaigbe, 2022; Shao, n.d.), and squarely on the kind of ethical groundwork - examining what AI development and use actually owe the people affected by it - that the strategy needs to hold together (Huriye, 2023; Dossouéli et al., 2013). Underneath that, the pillars are meant to address the infrastructure and skills gaps directly, by giving member states a template for localised strategies that do not sacrifice ethics for speed (Effoduh, 2025; Mweha, 2026). Data governance sits close to the centre of this, given how scarce high-quality data still is and how exposed personal information remains in many African countries without it (Asiedu et al., 2024; S.N. et al., 2024). There is also a clear push toward Africa-centric AI tools, which will not build themselves without real investment in local research and development tuned to the continent's range of contexts (O'Neill et al., 2024), and toward open-source AI as a route to technological sovereignty that does not depend on proprietary platforms controlled elsewhere (Adan, 2026) - though that, too, depends on sustained collaboration between governments, universities, and civil society to get past the unglamorous problem of expensive, scarce data preparation (Mengesha et al., 2024; Ochasi et al., 2024).

Education does a lot of the heavy lifting here as well: closing the technological gap means investing in higher education's capacity to teach AI fluently, not just AI ethics as an add-on module (Aryee et al., 2026; Chibebe et al., 2024), and grounding that teaching in real African case studies rather than imported ones (Chisom et al., 2024). Handled well, this reduces the risk of algorithmic bias and job displacement by keeping AI development tethered to African values and development priorities rather than letting it drift (Eke &Ogoh, 2022).

None of this works without regulation that can move at the speed of the technology without losing its ethical footing (Shao et al., 2023) - flexible enough to keep pace with rapid change, but firm enough to hold the line on data privacy, transparency, and accountability for AI-driven decisions (Hambulo et al., 2025; Laframm&Bahji, 2024; Effoduh et al., 2024). The countries that have made real progress on this, Canada among them, tend to share one thing: a research community and a political leadership pulling in the same direction (Cisse, 2018), which is itself a useful diagnostic for where AU member states currently stand (Tarisayi, 2023; Tjondronegoro, 2024), set against a wider global picture in which generative AI's pace has outrun most governments' capacity to regulate it at all (Leslie & Perini, 2024).

2.5 Alignment with Agenda 2063 Aspirations

The strategy is explicitly written to serve Agenda 2063's goals around inclusive growth, sustainable development, and good governance, with AI cast as one of the accelerants (Wairegi et al., 2021). Its emphasis on local innovation and ethical deployment is meant to support Agenda 2063's vision of a knowledge-based African society built on its own

intellectual capital rather than imported expertise, which only works if AI interventions are treated as part of the continent's development roadmap rather than bolt-on technology projects. That requires AI governance that is genuinely human-centric and trustworthy, not merely described that way in a preamble (Nibigira et al., 2024), and it matters because the alternative - AI development that drifts away from that standard - tends to deepen exactly the inequalities the strategy claims to be solving (Wakunuma et al., 2022).

Much of the strategy's eventual success rests on harmonising AI governance across member states and pulling a currently fragmented set of national approaches into something coherent (Njoroge, 2024a, 2024b). That matters because AI regulatory maturity varies enormously across the continent, from countries with little more than a foundational data protection law to others with comprehensive national AI policies already in force (Segun et al., 2025), and closing that gap calls for mechanisms that actually transfer knowledge and harmonise implementation rather than just gesturing at the need for both (Pabón & Ahmed, 2025; Walter, 2024). There is a genuine opportunity buried in this unevenness, too: member states with less-developed AI governance can borrow lessons on algorithms, automation, and data regulation from sectors and countries that got there first, rather than starting from zero (Plantinga et al., 2024) - much as the European Union's own AI Act process has had to negotiate trade-offs between innovation and protection that Africa's regulators will face in their own form (Minssen et al., 2025). Practical groundwork is already underway in places: research and education networks have been floated as one concrete channel for rolling the AU strategy out at institutional level rather than leaving it as a continental abstraction (Madara, 2025), which is, in the end, what turns continental aspiration into something that actually accelerates sustainable development on the ground (Wakunuma et al., 2022).

3. Methodology

3.1 Design and Theoretical Lens

This paper combines a systematic literature review with a conceptual analysis of the AU AI Strategy itself, reading the strategy's tenets, assumptions, and practical implications for member states against what the wider literature says about strategy implementation in low-resource, multi-jurisdictional settings. We read the strategy through two theoretical lenses held together: decolonial AI theory and stakeholder theory (Nyabuti & Mburu, 2025). The first keeps the analysis honest about digital colonialism, algorithmic bias, and the risk of foreign values getting imported wholesale into African AI governance; the second keeps it grounded in who actually gets a seat at the table when these systems are designed and deployed (Munetsi, 2025; Sule, 2026). Together they let us ask not just whether the strategy is technically sound, but whether it engages local communities, civil society, and universities as genuine co-authors of AI policy rather than as consultees brought in after the fact (Adanma & Ogunbiyi, 2024; Mohamed et al., 2020; Plantinga et al., 2024). They also sharpened our attention on a specific risk the strategy has to guard against: "ethics-dumping," where transnational technology firms relocate ethically fraught work to jurisdictions with weaker oversight, and what the strategy's data governance, algorithmic fairness, and accountability provisions actually do to prevent it (Ruttkamp, 2022; Obia, 2026a, 2026b).

3.2 Systematic Literature Review Process

We followed a PRISMA-style review process across five stages: identification, deduplication, title/abstract screening, full-text eligibility assessment, and inclusion. The

search covered Scopus, Web of Science, Google Scholar, AfricArXiv, and SSRN, supplemented by arXiv preprints and grey literature - AU and AUC policy documents, national AI strategy texts, and reports from bodies such as the African Capacity Building Foundation - because a meaningful share of African AI policy writing has not yet made it into indexed journals. Search terms combined "artificial intelligence" or "AI" with "Africa," "African Union," "Agenda 2063," "AI strategy," "AI governance," "AI policy," and "AI readiness," restricted to material published between 2018 and 2026 to capture the period since AI governance became a serious continental policy conversation.

The search returned 642 candidate records. Removing duplicates across databases brought this to 546 unique records. Title and abstract screening against our inclusion criteria - direct relevance to AI policy, strategy, or governance in an African or AU context, and either an empirical, conceptual, or policy-analytic contribution to that question - excluded 271 records as off-topic (general AI/ML technical papers with no African or governance dimension, for instance), leaving 275 for full-text review. At full-text stage we excluded a further 66 records: some were inaccessible in full, some turned out on closer reading to be tangential rather than substantively about AI strategy or governance, and a handful were earlier preprint versions of studies already captured through their published counterpart. That left 209 studies carried through to data extraction and synthesis, the same 209 that anchor the literature review and findings below and appear in the reference list. Table 1 summarises this process.

Table 1: Systematic Review Process

Stage	Records	Notes
Identification (database + grey literature search)	642	Scopus, Web of Science, Google Scholar, AfricArXiv, SSRN, arXiv, AU/AUC documents
After duplicates removed	546	Cross-database duplicate records removed
Title/abstract screening	275	271 excluded as not substantively about African/AU AI policy, strategy, or governance
Full-text eligibility assessment	209	66 excluded: inaccessible full text, tangential relevance, or superseded preprint
Included in synthesis	209	Carried through to data extraction, thematic coding, and reference list

3.3 Data Extraction and Synthesis

For each included study we extracted the country or regional focus, the AI policy domain addressed (governance, infrastructure, ethics, sector-specific application, and so on), the theoretical or methodological approach used, and the headline finding relevant to the strategy-implementation question. We then thematically coded these extractions by hand against the mediating factors set out in our conceptual framework - policy formalisation, institutional capacity, regulatory harmonisation, ethics-dumping exposure, and digital infrastructure - and against the three adaptive mechanisms (policy adjustment, regulatory sandboxing, capacity building) that the later sections of this paper build into a Knowledge Contribution Framework. Where studies addressed a specific country case (Mauritius, Rwanda, Kenya, Nigeria, Ghana, Egypt, South Africa, Zambia, Uganda, Botswana, and others recur most often in the corpus), we treated that as a mini case study and cross-checked it against the AU strategy's own stated objectives, in the spirit of the case-based comparative

work already done in this space (Stahl et al., 2020; Ayinla et al., 2024; Oriji et al., 2023; Alaoui et al., 2023; Diallo et al., 2024).

3.4 Scope and Limitations

This is a conceptual and literature-based analysis, not a primary empirical study, and that has consequences worth stating plainly. AI policy in Africa is moving fast enough that some of what we report here will date quickly, and the findings are best read as a snapshot rather than a settled verdict (Saheb & Saheb, 2024). National AI policy documentation is also unevenly available - some governments publish detailed strategies, others rely on regional declarations or informal statements that are harder to pin down - so our national-level claims lean more heavily on secondary sources for some countries than others (Berkel et al., 2020). Where our included studies drew on interview or qualitative data, we relied on their own reported coding and inter-rater reliability checks rather than re-analysing raw data ourselves (Opesemowo&Adekomaya, 2024).

We have also deliberately avoided drilling down into single-country deep dives, since a continent as socially, culturally, and politically varied as Africa resists tidy generalisation from any one case (Kiemde & Kora, 2021). Future work should test the patterns we identify here against the lived experience of citizens and AI users beyond the policy and research community (Sinde et al., 2023; Sobiesuo et al., 2025), ideally through trans-disciplinary methods that go beyond the conceptual frameworks available today (Alsheibani et al., 2020). The pace of change in both the technology and the surrounding policy landscape means some of our conclusions have a shorter shelf life than we would like (Singh et al., 2025), and the absence of long observational time series for AI adoption on the continent limits how confidently anyone can draw statistical inferences about it just yet (Badea et al., 2024).

4. Findings

4.1 The Strategy-Implementation Gap

The clearest pattern across the 209 studies is also the most predictable one: a wide gap between what the AU strategy says and what member states can currently do about it. Disparate technological infrastructure, uneven regulatory capacity, and plain socio-economic complexity all stand between a conceptual policy and anything resembling practical application (Aderibigbe et al., 2023). Two organisational problems recur inside that gap - data dependency and the basic inscrutability of advanced machine learning systems, which make it hard for under-resourced regulators to even audit what they are supposed to be governing (Weber et al., 2022). Whether a country has the organisational, managerial, and social assets to extract real value from AI investment turns out to matter more than the investment figure itself (Dwivedi et al., 2019), a problem public-sector administrations across the continent are still working through in real time (FCIMN, 2026), compounded by the technological, economic, and regulatory barriers that smart-industry adoption studies keep flagging well beyond Africa too (Rane et al., 2024), and that, in turn, depends heavily on digital literacy, computing access, and the strength of the data governance frameworks already in place (Jöhnk et al., 2020).

Public trust complicates this further. Privacy concerns and surveillance anxieties show up repeatedly as a drag on adoption, particularly where trust in government institutions is already shaky (Folorunso et al., 2024), and the financial side is no easier: AI infrastructure,

skilled staff, and ongoing development all cost real money against a backdrop of resource constraint that most African economies cannot wish away (Babarinde et al., 2023). High upfront costs paired with benefits that are genuinely hard to quantify make for an unforgiving investment case, especially for public manufacturing and service organisations trying to make the numbers work (Sharma et al., 2021; Farayola et al., 2023; Mikalef et al., 2021; Uddin et al., 2025). Layer economic imbalance, weak infrastructure, and corruption on top of that, and it becomes clear why so many AI ecosystems struggle to get past the pilot stage (Kuzmina et al., 2024; Mdladla et al., 2024; Mulongo, 2024).

A second cluster of barriers sits at the level of basic connectivity: limited internet penetration, scarce computing resources, and legal hurdles that, together, keep AI confined to a narrow set of well-resourced sectors and regions (Jejeniwa et al., 2024b; Okem et al., 2023). Thin, poorly structured data and large workforce skills gaps compound the problem, making it hard to train or deploy models with any confidence in real-world conditions (Gode et al., 2025; Olawale et al., 2023), and the absence of standardised cross-border regulation does not help. None of this is unique to AI as a technology - it is what happens to any technically demanding agenda layered onto thin ICT infrastructure, a nascent policy environment, and skills shortages all at once (Oladipo et al., 2024; Balogun et al., 2023; Lottu et al., 2023). In healthcare specifically, the absence of reliable connectivity and electronic health records does most of the damage, regardless of how promising the underlying diagnostic tools might be (Kondo et al., 2023).

4.2 Policy on Paper Versus Policy in Practice

A related but distinct finding is that the gap between AI policy ambition and AI policy execution in Africa often comes down to a basic translation problem: global best practice does not drop neatly into local context (Ohalete et al., 2024). The result is familiar - thin resource allocation, regulatory gaps, and national development agendas that treat AI as an add-on rather than something integrated into the plan from the start (Townsend et al., 2023; Ade-Ibijola& Okonkwo, 2023). In agriculture specifically, weak infrastructure, patchy data access, and workforce skills gaps form a fairly hard ceiling on what AI can realistically do, no matter how promising the pilot projects look (Elufioye et al., 2024), and nascent regulatory and ethical frameworks across sectors do not inspire the stakeholder trust that responsible deployment depends on (Leo et al., 2025).

Cost shows up again here in a different form: building anything from a basic chatbot to a sophisticated healthcare AI tool is expensive enough to price out a lot of potential adopters outright (Owoyemi et al., 2020), and the ongoing costs of maintaining and updating these systems add a second, less visible financial burden (Adigwe et al., 2024). Interface complexity is its own quiet barrier too - frontline workers in resource-constrained settings will not use a tool they cannot operate, however accurate its underlying model (Ciecierski-Holmes et al., 2022) - and the shortage of machine intelligence training programmes across much of the continent means the skills market and the academic pipeline are simply not talking to each other (Sidhu et al., 2024).

4.3 Resource Mobilisation and Infrastructure Constraints

Funding AI research and development, and then keeping the people who do it, is consistently named as one of the harder problems African institutions face (Akintuyi, 2024), and resource allocation for AI projects that are meant to be trustworthy rather than merely functional raises

the stakes further still (Azeez et al., 2025) - a constraint that lands hardest on small and medium enterprises trying to adopt AI without the balance sheets larger firms have (Nwagbala et al., 2025). Hardware and software costs alone are enough to shut small-scale actors out without real subsidy support (Ali et al., 2024; López et al., 2022), and that is before factoring in the connectivity and computing infrastructure that rural areas in particular often lack outright. Maintenance costs and organisational inertia add a second drag, especially in agriculture, where new methodologies tend to meet the most institutional resistance (Babakhouya et al., 2023; Gul & Banday, 2024). Specialised hardware, high-performance computing, and the unglamorous business of ongoing maintenance push AI integration out of reach for a great many African institutions, public and private alike (Asiedu et al., 2024; Attah et al., 2024; Banatwala et al., 2024), and a persistently weak maintenance culture for the equipment that does get bought only compounds the problem (Antwi et al., 2021). Where electricity, internet, and data storage themselves are scarce, AI-driven platforms struggle to get off the ground at all, education and agriculture included (Mallik & Gangopadhyay, 2023). None of this resolves without financing models, partnerships, and policy that actually reward both public and private investment in infrastructure and people, together rather than separately (Eyeregba et al., 2024; Shafik, 2024).

4.4 Disparities in Member State Readiness and Capacity

If there is one finding that cuts across nearly every study in this review, it is how unevenly AI readiness is distributed across AU member states. Mauritius and South Africa sit well ahead of countries such as Zambia and Uganda on most readiness measures, and that spread is wide enough to make "continental strategy" something of a misnomer in practice (Malatji, 2026; Walter, 2024). Egypt has built genuinely advanced policy maturity while others, Morocco and Sudan among them, still lack a formal national AI strategy altogether (Ogoh et al., 2025), a pattern that recent computer science and intelligence systems research on the continent has begun to map in more granular detail (“Proceedings of the 20th Conference on Computer Science and Intelligence Systems (FedCSIS),” 2025), and one Botswana's own AI readiness landscape illustrates rather well (Shonhe&Kolobe, 2023), which is less a criticism of any one government than a description of how differently positioned member states are to act on the same continental document. The AU has appointed an advisory group on AI, but whether the continental strategy succeeds still rests on individual member states turning principle into enforceable regulation, and most have not yet done so (Njoroge, 2024b; Segun et al., 2025). Regulatory capacity gaps of this kind call for targeted, country-specific interventions rather than continent-wide fixes that assume a baseline most member states have not reached (Pabón & Ahmed, 2025).

There is, alongside the disparity, a genuine opening: because so many national AI strategies are still being written, there is a real chance to build African values and ethical commitments into the foundations rather than retrofitting them later, the way countries that adopted frameworks built elsewhere have often had to (Ndaka et al., 2024; Liebig et al., 2022). That said, weak governance and economic capacity, plus inconsistent data protection regimes, blunt a lot of that opportunity in practice (Diallo et al., 2024), and the absence of shared principles or best practice for AI regulation leaves national approaches to diverge along whatever legal, cultural, and political lines already existed before AI arrived (Igbinenikaro& Adewusi, 2024). Closing that gap calls for harmonised frameworks built around Africa's own developmental priorities (Nwokolo et al., 2023; Oriji et al., 2023), backed by legal infrastructure and public education robust enough to earn the trust AI adoption depends on (El-Sharif, 2004). This is precisely the gap the AU's Continental AI Strategy is positioned to

close, by consolidating fragmented national efforts into something resembling a shared vision (Mugurtay, 2025).

4.5 National AI Strategies: Progress and Gaps

Despite the unevenness, national AI strategies are doing real work where they exist: stimulating growth, sharpening public administration, and improving how governments deliver services and account for themselves (Demaidi, 2023; Bansal & Jain, 2023; Damar et al., 2024; Chisika& Yeom, 2025). Mauritius, Egypt, and South Africa stand out for having built strategies thorough enough to move them up global readiness rankings (Kiemde & Kora, 2021), and these strategies matter less as documents than as signals to investors and local talent about where a government intends to put its weight (Obia, 2026a). Ghana, Kenya, and Nigeria, meanwhile, are actively legislating AI rather than simply describing intentions for it, which marks a genuine shift from aspiration to enforceable rule-making (Ibeneme et al., 2021; Yilma & Wodajo, 2025; Preko& Boateng, 2025). None of this happens in a vacuum: these national efforts are meant to feed into, and draw legitimacy from, the Sustainable Development Goals and the AU's own continental framework (Abungu et al., 2023; Effoduh, 2023; Wakunuma, Akintoye, et al., 2022; Wakunuma, Ogoh, et al., 2022; Socol & Iuga, 2024).

Strategy formulation works best when civil society, universities, and the private sector are written into the process rather than consulted after the draft is finished (Plantinga et al., 2024; Effoduh, 2023; Obia, 2026b), and Nigeria's own sector-by-sector approach to AI policy across health, agriculture, and finance is a reasonable template for what that can look like in practice (Shittu et al., 2024; Folorunso et al., 2024). Still, the overall picture remains nascent: only a limited number of countries have anything resembling a comprehensive strategy (Durokifa&Durokifa, 2024), and most African nations have yet to build the bespoke strategies their own contexts actually require (Mambo & Wamuyu, 2025). Globally, 43 of 68 surveyed countries have a national AI strategy, but only 18 tried to involve citizens in writing it, and a mere 13 opened the process to public comment at all (Aaronson & Zable, 2023) - a finding that should worry anyone hoping AI governance in Africa avoids becoming another top-down policy import (Roche et al., 2022; Khowaja et al., 2024).

4.6 Socio-Economic and Ethical Considerations

Across the corpus, the ethical case for AI strategy keeps returning to the same triad: data privacy, algorithmic bias, and job displacement, all of which need guidelines tuned to Africa's own socio-cultural realities rather than borrowed wholesale (Tapo et al., 2024; Babarinde et al., 2023). Strong regulation of AI technology, infrastructure, and skills acquisition is what determines whether economies can actually convert AI into growth rather than dependency (Trabelsi, 2024), and that conversion runs partly through financial inclusion. AI-enabled financial services have a real, demonstrated capacity to dent poverty where they reach (Jejeniwa et al., 2024b; Mdladla et al., 2024). The scale of the imbalance is worth sitting with: Africa holds roughly 2.5% of the global AI market, a function of constrained resources, immature data ecosystems, and infrastructure shortfalls that compound each other (Thiga, 2025; de-Lima-Santos et al., 2024).

Human capital is the other side of this coin. Persistent gaps in AI expertise keep African institutions dependent on outside knowledge, which slows the kind of indigenous innovation that would actually fit local problems (de-Lima-Santos et al., 2024), and the obvious response

- investing hard in STEM education and home-grown AI expertise rooted in African ethical traditions - keeps appearing across the literature as the unglamorous but necessary fix (Eke &Ogoh, 2022; Tshimula et al., 2024). None of that works without a regulatory framework flexible enough to keep up with the technology while still protecting individual rights and algorithmic transparency (Shao et al., 2023), and uneven progress on AI readiness across the continent makes the case for shared learning between member states rather than each one solving the same problem alone (Mandon, 2025; Tsyba&Gudkova, 2024). Culturally attuned AI - models and applications that actually reflect local values rather than importing someone else's - remains more aspiration than practice across most of the corpus (Balogun et al., 2023; Aderibigbe et al., 2023).

4.7 AI's Potential Contribution to Agenda 2063, and What Still Stands in the Way

The optimistic case running through this literature is fairly compelling: AI-driven tools could sharpen resource allocation in agriculture, improve diagnostics in healthcare, and personalise learning in education, each one mapping onto a specific Agenda 2063 aspiration (Kohnert, 2022). Realising any of that, though, means working through real ethical terrain - data privacy, bias, job displacement - that hits harder in places with deep socio-economic and cultural complexity than it does in the contexts AI ethics frameworks were originally written for (Gikunda, 2023; Sule, 2026; Daramola et al., 2023; Kondo et al., 2023). That means policy frameworks genuinely built for explainability and privacy protection, not just AI policy in name (C.M et al., 2023b), alongside the unglamorous infrastructure work of extending connectivity far enough to make digital participation a realistic option rather than a slogan (Oladipo et al., 2024; Opesemowo&Adekomaya, 2024). Healthcare again stands out as the sector where the stakes and the obstacles are both highest, echoing the broader pattern of biomedical AI struggling to translate from pilot to system-wide use across emerging economies generally (Silva, 2024): electricity, connectivity, and electronic medical records all need fixing before AI's diagnostic promise becomes anything more than promise (Owoyemi et al., 2020; Alaran et al., 2025; Ansah et al., 2024).

The upside extends well beyond health. AI has genuine potential against the Sustainable Development Goals more broadly - food security through precision agriculture, climate adaptation through better predictive modelling, and a route toward the kind of industrial diversification several African countries have set as a 2030 target (Bockarie et al., 2024; Wickramasinghe, 2026; Okem et al., 2023; Sinde et al., 2023). None of it arrives without investment in energy, connectivity, and a workforce capable of building and maintaining these systems long after the initial pilot funding runs out (Aderibigbe et al., 2023; Chikwelu et al., 2024), and none of it is ethically sound unless the benefits reach the people most likely to be left out otherwise - which in African healthcare AI specifically means language accessibility and a workforce of trained bioinformaticians that does not yet exist at the scale required (Asiedu et al., 2024; Erasmus & Ondoa, 2023). Precision agriculture and personalised education both carry the same conditions attached: data privacy, bias mitigation, and algorithmic transparency, built in rather than bolted on (Chisom et al., 2024; Ezugwu et al., 2023; S.N. et al., 2024; Jennifer, 2024; Turyasingura et al., 2024).

The honest summary is that none of this works as a copy-paste of frameworks built elsewhere. What is needed is an AI approach grown from African conditions, calibrated against the continent's own history of technology-transfer projects that promised more than they delivered (Kohnert, 2022), and sequenced so that AI investment in resource-constrained economies adds to existing services rather than quietly cannibalising them (Frimpong, 2025).

The barriers standing in the way are not exotic - the digital divide, thin infrastructure, scarce skilled personnel, and regulatory frameworks still being written - but they are stubborn, and they show up in study after study across this review regardless of sector or country (Osasona et al., 2024; Adigwe et al., 2024; Kuzmina et al., 2024; Shao, n.d.; Khan et al., 2024).

5. Discussion

Read together, these findings say something more specific than "Africa is not ready for AI." They say that readiness itself is the wrong unit of analysis, because the gap between the AU's strategic intent and what is actually happening on the ground is mediated by a fairly small set of structural variables - and those variables, not raw technological capability, are what is doing most of the explanatory work. Policy formalisation is the clearest of these. A continental strategy endorsed by member states but lacking direct enforcement mechanisms behaves less like binding law and more like a strong suggestion, and the literature bears this out: the countries furthest along, Mauritius and Rwanda especially, are also the ones that converted continental consensus into domestic legislation and dedicated institutions rather than leaving it as aspiration (Njoroge, 2024a, 2024b; Segun et al., 2025). Institutional capacity behaves the same way. It is not simply about whether a country has an AI strategy on paper, but whether it has an agency, trained staff, and a budget that can act on it - and most member states still do not (Mtuze&Morige, 2024).

The ethics-dumping pattern that recurs across this corpus deserves to be taken more seriously than it usually is in continental policy discourse. When companies can relocate ethically fraught work - content moderation, data labelling, algorithmic testing - from a jurisdiction with active regulatory pressure to one without it, weaker AI governance becomes a competitive advantage for the jurisdiction rather than a problem to be fixed, which is precisely backwards from what good governance should reward (Ruttkamp, 2022; Segun et al., 2025). Regulatory harmonisation is the AU's main lever against this, but harmonisation only works if it means interoperability and mutual recognition between member states' regulatory standards, not uniformity imposed from Addis Ababa - the diversity in member states' starting positions makes uniformity both unrealistic and, arguably, undesirable (Ormond, 2020; Townsend et al., 2023).

Digital infrastructure is the quietest variable in this list but possibly the most binding one. None of the other mediating factors - formalisation, capacity, harmonisation, ethics safeguards - matter much in a country without reliable electricity, connectivity, or computing access, which is why infrastructure investment keeps surfacing as a precondition rather than a complement to AI governance reform (Manouan et al., 2026; Azaroual, n.d.). This is also where the decolonial reading of our findings bites hardest: a strategy that asks African states to "catch up" on infrastructure built elsewhere, on someone else's timeline, risks reproducing the very dependency it claims to be solving (Birhane, 2020; Muldoon &Wú, 2023; Salami, 2024; Hssaini, 2025), and African ethical traditions such as ubuntu offer a genuinely different starting point for that work rather than a decorative addition to frameworks built elsewhere (Mokoena, 2024). The alternative the literature points toward - African-owned data, African-trained models, African infrastructure financed through African and diaspora capital where possible - is harder and slower than importing a platform, but it is also the only version of "AI readiness" that does not quietly recreate the colonial pattern it is meant to break (Mohamed et al., 2020; Ofosu-Asare, 2024; Kakraba et al., 2026).

What our review adds to this picture is the case for thinking about AU AI governance as adaptive rather than linear. The strategies that show genuine traction - Mauritius's regulatory sandbox in public procurement, Rwanda's dedicated digital innovation units, the various capacity-building workshops the AUC and the African Capacity Building Foundation have run - share a common feature: they treat policy as something to be tested, observed, and revised, not legislated once and left alone (Plantinga et al., 2024; Shao et al., 2023). A linear model of implementation, write the strategy, pass the law, expect compliance, simply does not fit a technology that is still changing shape faster than any legislature can track it. That argument is the basis for the framework we set out below.

6. Knowledge Contribution and Recommendations

6.1 A Knowledge Contribution Framework: From Strategy to Implementation

The contribution we want to make to this literature is a reframing of how AU AI governance should be understood: not as a single strategic document awaiting compliance, but as an adaptive governance system built around seven interlocking components. AU Strategic Intent sits at the foundation - the diversity-aware, society-centred, beneficial-AI principles set out in the 2024 Continental AI Strategy, the 2021 "AI for Africa" report, and the Sharm El Sheikh Declaration of 2019. This is the normative "why" of the system: without it, implementation has no compass and is vulnerable to capture by whichever actor, external or domestic, gets there first.

Sitting above that foundation are five Mediating Factors that determine whether intent survives contact with implementation. Policy formalisation converts continental consensus into binding domestic law rather than voluntary good practice. Institutional capacity is the presence of agencies, trained staff, and budget lines actually capable of acting on that law - present in Mauritius and Rwanda, largely absent elsewhere. Regulatory harmonisation is about interoperability rather than uniformity, preventing the kind of regulatory arbitrage our review documented, including reports of technology firms relocating content-moderation work from jurisdictions with active legal exposure to ones with weaker protection. Ethics-dumping prevention is the safeguard against exactly that pattern. Digital infrastructure is the material floor beneath all of it: no amount of regulatory sophistication compensates for the absence of reliable power, connectivity, or computing capacity.

Three Adaptive Loops keep the system from calcifying into another static policy document. Policy adjustment treats regulation as a living text, revised through regular review cycles as the technology and the evidence move, in line with the AU strategy's own commitment to continuous research and evaluation. Regulatory sandboxing - already running in some form in Mauritius, Ghana, Nigeria, South Africa, Zimbabwe, and Rwanda, and under consultation in Kenya - lets innovators test AI applications under supervision before full compliance burdens apply, generating real evidence rather than theoretical risk assessments. Capacity building is the human-capital loop: training workshops of the kind the African Development Bank and the African Capacity Building Foundation have run, aimed at civil servants, researchers, and - pointedly underserved so far - women, girls, and children, closing the skills gap that nearly every study in our review identifies as binding.

A Continuous Feedback loop, built around mechanisms such as the UNESCO Ethical Impact Assessment and independent review processes, feeds evidence back into the policy adjustment loop and surfaces emergent risks - the psychological toll on content moderators

being one documented example - before they become entrenched. The whole system is judged, finally, by Implementation Outcomes measured against Agenda 2063 targets, sectoral priorities, and equity metrics: not just how many strategies got adopted, but who benefited, who was exploited, and whether AI shifted existing power asymmetries or simply reinforced them. Table 2 sets out the full framework; Figure 1 (described in the table's final column) depicts it as a continuous loop rather than a one-way arrow from strategy to outcome.

Table 2: Knowledge Contribution Framework - From AU AI Strategy to Implementation

Component	What It Is	Function in Implementation	Link to Agenda 2063
AU Strategic Intent	Diversity-aware, society-centred, beneficial-AI principles (2024 Continental AI Strategy; 2021 "AI for Africa"; Sharm El Sheikh Declaration)	Normative foundation guiding all later policy choices	Aspirations 1 (Prosperity), 3 (Peace & Security), 20 (Human Rights)
Policy Formalisation	Degree to which principles become binding law	Converts voluntary guidelines into enforceable domestic rules	Aspiration 3 (rule of law)
Institutional Capacity	Dedicated agencies, trained staff, budget	Enables monitoring, enforcement, adaptation	Aspiration 21 (digital economy)
Regulatory Harmonisation	Interoperable (not uniform) standards across states	Prevents regulatory arbitrage	Aspiration 2 (continental integration), AfCFTA digital trade
Ethics-Dumping Prevention	Safeguards against relocation of high-risk AI work to weak-oversight jurisdictions	Protects citizens from becoming unregulated test subjects	Aspiration 3 (human dignity)
Digital Infrastructure	Connectivity, cloud, data centres, compute	Material precondition for any of the above to function	Aspiration 1 (modern infrastructure)
Adaptive Loop: Policy Adjustment	Iterative revision as evidence and technology evolve	Keeps regulation from becoming obsolete	Fit-for-purpose governance across Agenda 2063's implementation cycles
Adaptive Loop: Regulatory Sandboxing	Supervised testing environments (active in Mauritius, Ghana, Nigeria, South Africa, Zimbabwe, Rwanda; under consultation	Generates evidence for regulation rather than guesswork	Responsible innovation in agriculture, health, education, climate

Component	What It Is	Function in Implementation	Link to Agenda 2063
	in Kenya)		
Adaptive Loop: Capacity Building	Training for civil servants, researchers, women, girls, children	Closes the skills gap identified across the review	Aspirations 1 and 21 (educated, digitally skilled citizens)
Continuous Feedback (M&E)	UNESCO Ethical Impact Assessment, independent review, emergent-risk surveillance	Feeds evidence back into adjustment; surfaces harms early	Results-based management of Agenda 2063 flagship projects
Implementation Outcomes	Results measured against targets, sectoral priorities, equity metrics	The ultimate test: who benefited, who was exploited	All seven Agenda 2063 aspirations

Figure 1 as the Knowledge Contribution Framework and the Adaptive Governance Framework for the African Union, from Strategy to Implementation, below:

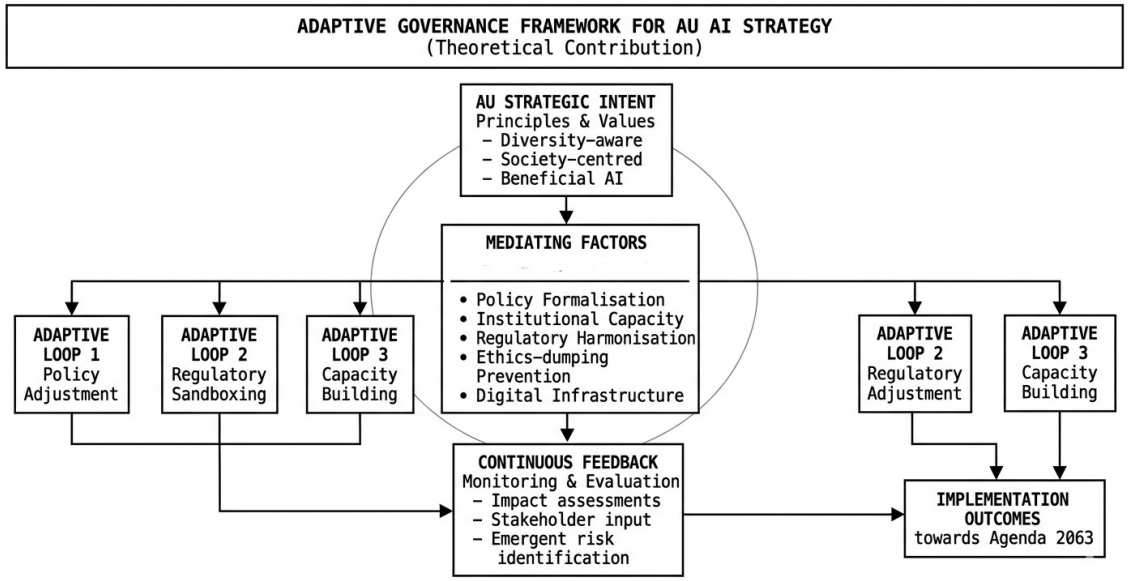


Fig 1: The Knowledge Contribution iterative, flexible adjustments rather than a fixed linear implementation framework for the African Union from Strategy to implementation (Source: Researchers' Own construction, 2026)

6.2 Recommendations

For AU institutions, the priority is converting the Continental AI Strategy from a normative reference point into an instrument with teeth: building the regulatory-harmonisation machinery that lets member states recognise each other's standards, channelling investment toward a pan-African AI fund and research institutes, and treating ethics-dumping as a named, monitored risk rather than an occasional embarrassment (Cisse, 2018; Ruttkamp, 2022; Njoroge, 2024a).

For member states still building national strategies, the evidence here argues for writing African values into the foundations now rather than retrofitting them later: data sovereignty, community co-design, and culturally grounded ethical frameworks belong in the first draft, not an amendment (Mohamed et al., 2020; Ofosu-Asare, 2024; Ketere, 2025; Chiyangwa et al., 2013). Afrocentric AI training and renewal platforms built and held on the continent are one concrete way to operationalise this rather than leave it as a principle (Nsarkoh et al., 2025), and the broader project of epistemic decolonisation that this implies deserves a more prominent place in African AI scholarship than it currently has (Ghajiga et al., 2026). Regulatory sandboxes are a comparatively low-cost way to start generating real evidence rather than importing someone else's, and they do not require the institutional capacity that full-scale enforcement does.

For policymakers and development partners, the infrastructure case made throughout this review should be read as a precondition, not a parallel track: connectivity and compute investment has to happen alongside governance reform, not after it, and financing models that combine public, private, and diaspora capital deserve more attention than they currently get (Manouan et al., 2026; Lainjo, 2024; Adeleke, 2025). Cognitive sovereignty - control not just over data but over the epistemic logic and algorithmic reasoning built on top of it - is the more ambitious version of this same argument, and it is where African nations have the most room to define what "algorithmic sovereignty" actually means in practice rather than inheriting someone else's definition (Henriques, 2025; Salami, 2024; Nyabuti & Mburu, 2025).

7. Conclusion

The central finding of this review is that Africa's AI governance challenge is less a strategy problem than an implementation problem, and the distance between the two is explained by a fairly small, identifiable set of variables: how far policy gets formalised, how much institutional capacity exists to enforce it, how well regulation travels across borders, how seriously ethics-dumping is taken, and whether the basic infrastructure exists to make any of the rest matter. The AU's Continental AI Strategy gets the normative framing largely right - diversity-aware, society-centred, genuinely African in its stated values - but normative framing alone does not build a data centre or staff a regulator.

What we have offered here is a way of thinking about that gap as something to be managed adaptively rather than legislated once and forgotten: through policy adjustment, regulatory sandboxing, and capacity building, all feeding back through continuous monitoring into a system that keeps learning. That is a harder, slower, less satisfying story than "the AU adopted a strategy," but it is the one the evidence supports, and one that recent scholarship on responsible AI in Africa has increasingly converged on as the realistic path forward (Risam, 2024). If Agenda 2063's promise of a prosperous, integrated, self-determined Africa is to mean anything in an AI-shaped future, it will be because member states treated implementation as the real work, not a formality that follows automatically once the strategy is signed.

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