The State of AI in Africa Report

Prepared by
The Centre for Intellectual Property and Information Technology Law (CIPIT)

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Strathmore University
Centre for Intellectual Property and Information Technology Law

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The State of AI in Africa Report 2025 has been prepared for Artificial Intelligence (AI) practitioners, policymakers, researchers, academics, AI developers, and all relevant stakeholders in the African AI ecosystem.

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Acronyms & Abbreviations

ADC – African Digital Compact

AI – Artificial Intelligence

AU – African Union

CIPIT – The Centre for Intellectual Property and Information Technology Law

EMR – Electronic Medical Record

IDRC – International Development Research Centre

IoT – Internet of Things

LLM – Large Language Model

NLP – Natural Language Processing

SDGs – Sustainable Development Goals

STEAM – Science, Technology, Engineering, the Arts and Mathematics

UNESCO – United Nations Educational, Scientific and Cultural Organisation

4IR – Fourth Industrial Revolution

Glossary

Algorithm – Instructions or rules to be followed by a computer during problem-solving or data-processing.

Blockchain – A peer-to-peer computer network that keeps a record of transactions.

Chatbot – A computer application designed to simulate human text or speech during a conversation with a user, typically to provide answers to user queries.

Cloud Services – Software, infrastructure, platforms, storage, computing power and resources delivered over the internet.

Dataset – A collection of related data organised in a standardised format and stored together for analysis and processing.

EdTech – Education Technology used to facilitate learning.

Machine Learning – A branch of Artificial Intelligence that enables computers to autonomously improve by using large datasets.

Telemedicine – The use of technology to access healthcare services remotely.

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Executive Summary

Artificial Intelligence (AI) is fast becoming a defining feature of Africa's digital transformation. The State of AI in Africa Report 2025 offers a critical reflection on how AI ecosystems across the continent have evolved since 2023, highlighting advances in infrastructure, regulatory frameworks, capacity building, and sectoral innovation, while also surfacing enduring structural disparities.

This report reveals a continent that is no longer on the margins of AI development but actively reshaping how AI is conceived, deployed, and governed. Kenya, South Africa, Nigeria and Ghana have made notable strides in anchoring AI within national digital strategies, strengthening local innovation ecosystems, and investing in foundational infrastructure such as data centres and broadband connectivity. The growing presence of indigenous datasets, grassroots NLP initiatives, and AI models tailored to African realities reflects a broader shift from consumption to creation.

Yet this progress remains uneven. While pockets of excellence are emerging, many regions continue to grapple with limited access to reliable electricity, fragmented regulation, data governance challenges, and critical skill shortages. Central Africa, in particular, still faces infrastructural and institutional constraints that hinder meaningful participation in the continental AI space. This report also documents how AI is being embedded in key sectors; agriculture, health, law, and the creative economy to address uniquely African challenges – from crop failure and disease surveillance to language preservation and cultural expression. These use cases affirm the value of locally informed, context-sensitive AI innovation.

On the governance front, the adoption of the AU-AI Continental Strategy and the development of national AI policies signal a growing awareness of the need for harmonised, responsible and inclusive AI development. However, effective implementation remains a central concern, particularly around enforcement mechanisms, ethical guardrails, and regional coordination.

This report presents a nuanced picture of AI in Africa: one of ambitious experimentation, uneven capacity, and deep potential. Africa's future in AI depends not only on technological advancement but on the continent's ability to embed equity, local relevance, and sustainability at the heart of its AI agenda.

Introduction

Artificial Intelligence (AI) continues to redefine governance, industry, and society across Africa. In the years following CIPIT's State of AI in Africa Report 2023, the continent has experienced a shift in the sophistication, scope, and ambition of AI-related initiatives. Governments are formalising AI strategy and policy frameworks, local startups are expanding their solutions to regional markets, and significant investments are being channelled into infrastructure to support AI development.

However, despite this momentum, systemic challenges persist. This report provides an updated assessment of the state of AI in Africa as of 2025 by tracking cutting-edge AI projects across the continent, examining the ethical, regulatory and infrastructural challenges countries currently face, and proposing actionable recommendations that pave a path towards a transformational technological future.

Report Structure and Methodology

This report adopts a thematic and regional structure to examine the evolving landscape of Artificial Intelligence across Africa as of 2025. The analysis is organised into four main parts.

- Part 1: AI and data governance;
- Part 2: AI innovation and infrastructure;
- Part 3: The practical application of AI across key sectors
- Part 4: Responsible AI, focusing on policies, frameworks, and continental strategies.

Each part is anchored on the holistic mapping of AI in Africa and builds upon insights from prior studies while incorporating new developments, with country-specific examples used to highlight emerging trends, challenges, and innovations.

The methodology adopted in this report is primarily qualitative, relying on a combination of desktop research and the systematic review of secondary data sources. These include official government publications, national AI strategies, reports from international development organisations, academic literature, policy briefs, and news coverage of recent AI initiatives. Where possible, the report references updated statistics and empirical findings to contextualise developments and validate claims. A comparative approach is adopted with the report tracking progress since the 2023 State of AI in Africa Report, highlighting areas of continuity and transformation.

Mapping AI in Africa

Africa's AI ecosystem continues to evolve rapidly, with several countries taking proactive steps to create enabling environments for AI innovation, research, and adoption. Both organic startup growth and increased institutional investment in the sector indicate a continental shift toward the strategic prioritisation of AI as a developmental pillar.

Eastern Africa, and Kenya in particular, is quickly emerging as a continental AI hub. Widely applied in agriculture, which is the backbone of East African economies,[1] Kenya's smallholder farmers are increasingly using tools like Virtual Agronomist and PlantVillage, which employ AI to offer real-time advice on pest control, fertiliser usage, and crop disease detection.[2] Additionally, a key agricultural initiative to note by iLab Africa is the deployment of 19 AI- and IoT-powered mini weather stations and the Imarika application to support smallholder farmers in Busia County.[3] These tools deliver real time environmental data to boost productivity, enable climate adaptation, and strengthen food security. Collectively, the initiative was coupled with digital literacy training, addressing connectivity issues and building sustainable agricultural practices among the local community's smallholder farmers. Additionally, the Food and Nutrition Early Warning Mechanism, an AI-powered platform by the Local Development Research Institute (LDRI), helps smallholder farmers predict crop stress and estimate yields further utilising messaging platforms like WhatsApp to deliver precise and personalised recommendations to address risks and improve agricultural practices.[4]

Localisation through AI-powered platforms' support of Kiswahili language options continues to broaden accessibility across rural areas in Kenya.[5] Kencorpus, a Kenyan language corpus, has been instrumental in advancing Kenyan local languages. As a corpus of Swahili, Dholuo and Luhya, it includes a sizable collection of text and speech data, specifically 4,442 text documents totalling over 5.6 million words and 1,152 speech files amounting to approximately 177 hours of recordings.[6] Kencorpus aims to address the under-resourcing of indigenous African languages

1 Moses Blessing, A Case Study of East Africa's Agricultural Sector (ResearchGate, September 2024) <https://www.researchgate.net/publication/384062721> accessed 8 May 2025

2 Peter Muiruri, 'High Tech, High Yields: The Kenyan Farmers Deploying AI to Increase Productivity' (The Guardian, 30 September 2024) https://www.theguardian.com/world/2024/sep/30/high-tech-high-yields-the-kenyan-farmers-deploying-ai-to-increase-productivity accessed 16 April 2025.

3 iLabAfrica Research & Innovation Centre, 'Empowering Smallholder Farmers Through IoT and AI' (Strathmore University, 2024) https://ilabafrica.strathmore.edu/empowering-smallholder-farmers-through-iot-and-ai / accessed 28 May 2025

4 Local Development Research Institute, 'Food & Nutrition Early Warning Mechanism.' (2023) https://www.developlocal.org/food-nutrition-early-warning-mechanism/ accessed 28 May 2025.

5 Epsilon Publishers, 'Unleashing Kiswahili's Potential in the Digital Era' https://epsilon.co.ke/unleashing-kiswahilis-potential-in-the-digital-era accessed 9 May 2025.

6 Wanjawa B, Wanzare L, Indede F, McOnyango O, Ombui E and Muchemi L, 'Kencorpus: A Kenyan Language Corpus of Swahili, Dholuo and Luhya for Natural Language Processing Tasks' (2023) JLCL 36(2) 1–27.https://jlcl.org/article/view/243/246 accessed 28 May 2025

in natural language processing (NLP) by providing high-quality, annotated datasets to facilitate data-driven applications.[7]

With notable growing momentum, Kenya has taken a strategic national approach with the launch of the Kenya National AI Strategy in March 2025. The Strategy aims to uniquely position Kenya as a regional leader in AI research and development, innovation and commercialisation. It is built upon three key pillars: AI digital infrastructure, data and AI research and innovation. These pillars are further supported by cross-cutting enablers which focus on governance, talent development, investment, ethics, equity and inclusion. The Strategy points to a clear roadmap on implementation, highlighting several flagship initiatives grounded in the principles of inclusivity and non-discrimination, cultural preservation and contextualisation, environmental sustainability, economic benefit and self-sufficiency, and a local first approach.[8]

To highlight, finally in Kenya, in 2024, Microsoft and G42, a UAE-based AI firm, launched a $1 billion initiative to develop a sustainable AI data centre in Kenya.[9] The geothermal-powered facility, designed to bolster cloud infrastructure across the region, represents one of the most significant AI-related investments in sub-Saharan Africa.[10] This move not only boosts the local digital economy but also lays the groundwork for Kenya's ambitions to become a leader in AI-driven services.

In Ethiopia, AI is personalising education. EdTech platforms like SkillBridge use NLP and predictive analytics to adapt learning content to students' individual needs.[11] This approach addresses learning gaps in a country where access to quality education remains uneven, demonstrating how AI can be used in mass public education systems.

Rwanda continues to be one of Africa's most strategically forward-looking countries in terms of digital and AI policy.[12] The country's National Artificial Intelligence Policy, adopted in 2022, outlines a vision to harness AI for inclusive economic growth, particularly in agriculture, health, and smart cities.[13] In partnership with the Centre for the Fourth Industrial Revolution (C4IR Rwanda), established by the World Economic Forum and Rwanda's Ministry of ICT and Innovation, the country has embarked on pilot programmes for AI governance and responsible data sharing frameworks.[14]

On the infrastructure front, Rwanda has made substantial investments under the Rwanda Information Society Authority (RISA), the government has launched collaborations with global organisations like GIZ to build local AI training capabilities and to create use-case specific datasets, particularly for climate monitoring and smart agriculture.[15] Despite these efforts,

7 Ibid.

8 Kenya AI Strategy, 'Kenya AI Strategy 2025–2030', (Ministry of ICT and Digital Economy,, 2025) https://ict.go.ke/sites/default/files/2025-03/Kenya%20AI%20Strategy%202025%20-%202030.pdf accessed 9 May 2025

9 Carol Odero, 'Microsoft, G42 Announce $1B Initiative for Kenya' (CIO Africa, 22 May 2024) http://cioafrica.co/microsoft-g42-announce-1b-initiative-for-kenya/ accessed 16 April 2025.

10 Duncan Miriri, 'Microsoft, G42 to Invest $1 Billion in Kenya to Build Data Center' (Reuters, 22 May 2024) https://www.reuters.com/technology/microsoft-g42-invest-1-billion-kenya-build-data-center-2024-05-22/ accessed 16 April 2025

11 Financial Times, 'AI in Africa: Ethiopia's EdTech Leap' (FT Africa Tech, 20 February 2024) https://www.ft.com/content/bdab80fe-e800-4c1c-926d-a6faa750cd57 accessed 16 April 2025

12 Oxford Insights, Government AI Readiness Index 2024, https://oxfordinsights.com/ai-readiness/ai-readiness-index/?#download-reports accessed 9 May 2025

13 Government of Rwanda, National Artificial Intelligence Policy (Ministry of ICT and Innovation 2022) https://www.minict.gov.rw/index.php?eID=dumpFile&t=f&f=67550&token=6195a53203e197efa47592f40ff4aaf24579640e accessed 5 May 2025.

14 World Economic Forum, 'Rwanda and the Centre for the Fourth Industrial Revolution: Building AI Governance in Africa' (WEF 2023) https://reports.weforum.org/docs/WEF_Centre_for_the_Fourth_Industrial_Revolution_Network_2023-2024.pdf accessed 5 May 2025.

15 GIZ, 'Digital4Rwanda: Digital Transformation in

Rwanda continues to grapple with data availability, internet penetration in rural areas, and the retention of AI talent.[16] To mitigate this, the Rwanda Coding Academy and other technical institutes are focusing on capacity-building in machine learning and data science.[17]

Uganda's engagement with AI is growing, albeit more gradually, and is largely driven by academia and non-state actors.[18] Makerere University is now a key centre for AI research, particularly in applying machine learning to agriculture and health. The University's Artificial Intelligence and Data Science Research Lab has developed AI models for diagnosing crop diseases and tracking public health trends, including epidemic forecasting.[19]

The Ugandan government has recognised the potential of AI through its National 4IR Strategy launched in 2023, which prioritises AI as a foundational technology in transforming sectors such as education, financial services, and service delivery.[20] However, Uganda has yet to develop a dedicated AI policy, and regulatory frameworks around data protection and ethical use of AI remain limited.[21]

Tanzania is increasingly investing in digital transformation, with new AI applications in health, agriculture, and financial inclusion. The government has included AI in its National ICT Policy and has launched initiatives to integrate AI into key service sectors in collaboration with local universities and development partners.[22]

A noteworthy development is the AI-powered telemedicine and diagnostics programme led by the Tanzania Data Lab (dLab) and partners such as UNICEF and PATH.[23] This initiative is exploring using AI for triage, diagnostics, and remote consultations in rural health settings.[24] Infrastructure-wise, the country is building capacity through public-private investments in data centres, most notably in Dar es Salaam, which now hosts several regional hubs for data storage and processing.[25]

Northern Africa continues to demonstrate a structured and state-supported approach to AI integration, particularly in the public health and disaster response sectors. Egypt has advanced its healthcare capabilities by deploying AI-driven electronic health record (EHR) systems. These systems incorporate large biomedical language models like Llama3-OpenBioLLM-70B to assist in medical recordkeeping, diagnostics, and treatment planning.[26] Egypt's integration of AI into healthcare underscores the role of machine learning in enhancing efficiency

Rwanda' (2025) https://www.giz.de/rwanda accessed 5 May 2025.

16 Rwanda Coding Academy, 'Our Programs' (RCA 2025) https://www.rca.ac.rw/ accessed 5 May 2025

17 Ibid.

18 An Artificial Intelligence Eco-System for Uganda: Policy Alternatives for Civil Society Organisations (Policy Brief, CIPESA, International Center for Not-for-Profit Law, ICAEL Institute, and East-West Management Institute, November 2024) <https://cipesa.org/wp-content/files/briefs/An_Artificial_Intelligence_Eco-System_for_Uganda__Policy_Brief.pdf> accessed 8 May 2025

19 Makerere University, 'AI and Data Science Research Lab' (Makerere University 2024) https://air.ug accessed 5 May 2025.

20 Government of Uganda, National Fourth Industrial Revolution Strategy (Ministry of Science, Technology and Innovation 2023) https://ict.go.ug/site/documents/Executive-Summary-Ugandas-National-4IR-Strategy.pdf accessed 5 May 2025.

21 Uganda Data Protection and Privacy Act 2019 https://ulii.org/akn/ug/act/2019/9/eng@2019-05-03 accessed 5 May 2025.

22 Ministry of ICT and Innovation Tanzania, 'National ICT Policy 2016' (MITI Tanzania) https://www.ega.go.tz/uploads/publications/sw-1574848612-SERA%202016.pdf accessed 5 May 2025.

23 PATH Tanzania, 'AI for Health Access in Remote Areas' (PATH 2024) <https://www.path.org/programs/digital-health/> accessed 5 May 2025.

24 Ibid.

25 Data Centre Map, Data Centre Map – Dar es Salaam, Tanzania (2025) https://www.datacentermap.com/tanzania/dar-es-salaam/ accessed 5 May 2025.

26 Ahmed Mohamed et al, 'Llama3-OpenBioLLM-70B: An Open Biomedical Generative Language Model' (arXiv, 6 April 2024) https://arxiv.org/abs/2502.05603 accessed 15 April 2025

and patient outcomes in public hospitals.

In Morocco, AI has proven instrumental in disaster management and resilience-building. In the aftermath of the 2023 Al Haouz earthquake, Morocco used AI in both the emergency response phase and in developing predictive models for future seismic events.[27] These systems facilitated the analysis of satellite imagery, the coordination of relief logistics, and improved resource allocation during the recovery phase.[28] Morocco's adoption of such tools points to a growing emphasis on the utility of AI in environmental monitoring and disaster preparedness.

In Southern Africa, South Africa is leading through its combination of academic research, corporate adoption, and government-backed initiatives.[29] In late 2024, MTN South Africa partnered with China Telecom and Huawei to enhance its capacity in AI, 5G, and cloud services.[30] This tripartite collaboration aims to power regional innovation in smart cities, e-commerce logistics, and AI-driven customer services, demonstrating the private sector's crucial role in scaling AI infrastructure.

Complementing these efforts is a significant investment in AI training and capacity-building. In early 2025, Microsoft announced its intention to train one million South Africans in AI and cybersecurity skills by 2026.[31] This initiative is designed to bridge the digital divide and ensure South Africa's workforce is adequately prepared for the AI-driven future by targeting young people and underserved communities, and aligns with broader continental goals to democratise access to emerging technologies.[32]

West and Central Africa are experiencing a complex but dynamic trajectory in artificial intelligence development.[33] While Nigeria, Ghana, and Senegal lead with innovation hubs, policy advances, and a growing start-up ecosystem, the application of AI by some countries in Central Africa remains comparatively nascent because of infrastructural, political, and digital literacy constraints.[34] Nonetheless, the entire sub-region shows an upward trend in interest and investment in AI, particularly in language models, fintech, health, and agricultural innovations.[35]

With over 400 AI-related start-ups, Nigeria stands out as the largest and most active AI ecosystem in West Africa.[36] The country hosts leading innovation centres such as Data Science Nigeria (DSN), AI Saturdays, and the Centre for Artificial Intelligence and Robotics (CFAIR) under the National Information Technology Development Agency (NITDA).[37] These institutions are

27 Ilyass El Alaoui et al, 'Artificial Intelligence for Natural Disaster Management and Resilience: Lessons from the Al Haouz Earthquake in Morocco' (arXiv, 14 November 2023) https://arxiv.org/abs/2311.08999 accessed 15 April 2025

28 Ibid.

29 UNESCO, 'Global AI Ethics and Governance Observatory - South Africa.<'https://www.unesco.org/ethics-ai/en/southafrica> accessed 9 May 2025

30 Reuters, 'South Africa's MTN Teams up with China Telecom and Huawei on 5G, AI' (26 November 2024) https://www.reuters.com/business/media-telecom/safricas-mtn-teams-up-with-china-telecom-huawei-5g-ai-2024-11-26/ accessed 5 May 2025.

31 Reuters, 'Microsoft to Train 1 Million South Africans in AI Skills by 2026' (23 January 2025) https://www.reuters.com/technology/artificial-intelligence/microsoft-train-1-million-south-africans-ai-skills-2025-01-23/ accessed 5 May 2025.

32 Ibid.

33 Oxford Insights, Government AI Readiness Index 2024 (December 2024) https://oxfordinsights.com/wp-content/uploads/2024/12/2024-Government-AI-Readiness-Index-2.pdf accessed 9 May 2025.

34 Ibid.

35 Ibid.

36 GSMA, AI for Africa: Use cases delivering impact – Nigeria deep dive (August 2024) <https://www.gsma.com/solutions-and-impact/connectivity-for-good/mobile-for-development/wp-content/uploads/2024/07/NIGERIA_AIforAfrica.pdf> accessed 6 May 2025

37 Data Science Nigeria, 'Our Programs' (2024) https://

pioneering capacity building efforts, especially in NLP, with notable success in building African language corpora for local dialects like Yoruba, Hausa, and Igbo.[38]

In 2024, Nigeria launched its National Artificial Intelligence Strategy, outlining a vision to leverage AI for economic diversification, job creation, and public sector efficiency while committing to principles of responsible AI use.[39] This strategy prioritises education, agriculture, health, and fintech, where machine learning is already being applied for crop disease diagnosis, early disease detection, and digital credit scoring.[40]

Ghana is positioning itself as a regional leader in responsible and inclusive AI development. The Ministry of Communications and Digitalisation, in collaboration with the Ghana-India Kofi Annan Centre of Excellence in ICT, launched an AI strategy roadmap in 2023, targeting the use of AI in education, health, and climate resilience.[41]

Of particular note is Ghana's proactive involvement in open data and indigenous knowledge integration.[42] The Ghana Statistical Service (GSS) has been collaborating with international partners to structure national datasets for machine learning applications, focusing on preserving local dialects and traditional knowledge systems.[43] Additionally, Ghana has become a regional hub for NLP in African languages through initiatives such as Ghana NLP.[44]

Senegal is emerging as a Francophone leader in AI, with Dakar hosting several digital innovation labs, including the GAINDE 2000 Digital Campus and the AI4D Francophone hub supported by IDRC and UNESCO.[45] Senegal's strengths lie in its AI applications in agriculture and education. AI tools are being used to monitor crop yields, assess soil health, and improve literacy through AI-enabled language learning tools for Wolof and Pulaar.[46] The government has also partnered with research institutions to promote AI-powered climate adaptation models to support farmers battling erratic weather patterns.[47]

Central Africa is still in the early stages of AI development,[48] with notable progress primarily in Cameroon. In Cameroon, the University of Yaoundé I, played a pivotal role in national AI-focused events. Notably, during the second edition of the Cameroon Days of Artificial Intelligence held in Yaoundé from 22-24 April 2025, the University of Yaoundé I, hosted several key

www.datasciencenigeria.org accessed 5 May 2025.

38 Masakhane, 'Building African NLP' (2024) https://www.masakhane.io accessed 5 May 2025.

39 Federal Ministry of Communications and Digital Economy Nigeria, National Artificial Intelligence Strategy (2024)https://ncair.nitda.gov.ng/wp-content/uploads/2024/08/National-AI-Strategy_01082024-copy.pdf accessed 5 May 2025.

40 Ibid.

41 Ghana Ministry of Communications, AI Strategy Roadmap (2023) https://moc.gov.gh accessed 5 May 2025.

42 Ghana Statistical Service, 'Machine Learning Data Collaboration' (2024) https://statsghana.gov.gh accessed 5 May 2025.

43 Ibid.

44 Ghana NLP is an Open Source Initiative focused on Natural Language Processing (NLP) of Ghanaian Languages, & its Applications to Local Problems; GhanaNLP, GhanaNLP Translation API Platform (GhanaNLP, 2025) https://translation.ghananlp.org/ accessed 5 May 2025

45 IDRC, 'AI for Development: Francophone Hub in Senegal' (2023)https://idrc-crdi.ca/en/what-we-do/projects-we-support/project/initiative-development-artificial-intelligence-idia accessed 5 May 2025.

46 Agence Française de Développement, 'Using AI to improve language learning in Senegal' (AFD, March 2025) https://www.afd.fr/en/AI-for-language-learning-in-senegal accessed 5 May 2025

47 UNESCO, 'AI for Climate in West Africa' (2023) https://en.unesco.org/news/ai-climate-resilience accessed 5 May 2025.

48 Talent Index, AI Talent Readiness Index for Africa (2024) https://talentindex.ai/AI%20Talent%20Readiness%20Index%20for%20Africa%20(3).pdf accessed 5 May 2025

activities.[49] These included AI exhibitions, conferences, and masterclasses aimed at fostering collaboration between academia, industry, and government stakeholders, with the event serving as a platform to showcase AI projects and discuss strategies to integrate AI into Cameroon's economic development plans.[50]

The mapping offers a critical overview of the current AI landscape across the continent, characterised by a rapidly evolving ecosystem showing significant strides in certain regions and sectors, yet underscored by persistent systemic challenges. The African AI landscape has experienced a notable shift in AI technologies, use cases, policy priorities and investment and infrastructural initiatives since the 2023 report. Proactive steps are observed in several countries to create enabling environments for AI innovation, research, and adoption, as evidenced by the growth of local startups, increased institutional and private sector investment, and the formulation of national strategies. Notably, this progress remains uneven. While Eastern and Southern Africa show comparatively mature ecosystems, Central Africa continues to lag, constrained by infrastructural deficits, political instability, and limited digital literacy. Cross-cutting barriers such as unreliable electricity, poor connectivity, fragmented regulation, inconsistent data access, and challenges in talent retention are evident throughout the continent.

Africa's positioning and uptake of AI is not linear; it constitutes a diverse and complex landscape shaped by varying national priorities, investment and infrastructure initiatives, and governance capacities. The mapping illustrates where momentum is building and continued steps towards advancing the use of AI technologies in key priority areas.

The mapping provides a collective outlook of the African AI landscape. Distinctively, the thematic analysis below introduces a more integrated approach, critically analysing the conditions shaping the AI ecosystem. By examining nuanced views of thematic areas, data and knowledge systems, innovation capacity and infrastructure, real-world applications across key sectors, and the evolving governance landscape, observations are made on both the progress and gaps that characterise the African AI trajectory.

49 Macwalter Njapteh Refor, 'Yaounde: Second Cameroon Days of Artificial Intelligence to be held April 22 to 24' (The Guardian Post, 9 April 2025) https://theguardianpostcameroon.com/post/6324/fr/yaounde-second-cameroon-days-of-artificial-intelligence-held-april-22 accessed 5 May 2025.

50 Ibid.

Part 1: AI and Data – Governance, Infrastructure, and Indigenous Knowledge

Image Source: vecteezy.com

As AI systems in Africa continue to evolve, the management and governance of the data on which these systems are trained and deployed have become increasingly central. When compared to the findings of the 2023 report, the current discourse has expanded from concerns around privacy and data protection to encompass broader themes such as surveillance, open data initiatives, data infrastructure, and the inclusion of indigenous knowledge in dataset development. These interconnected issues are shaping how AI is adopted and regulated across the continent.

1.1 Data Protection and Surveillance: Emerging Regulatory Frameworks

Several African nations have made notable progress in enacting data protection laws, although enforcement and institutional capacity remain uneven. As of February 2025, 40 African countries have passed data protection legislations, with Kenya, Nigeria, Ghana, and South Africa taking the lead in enforcement.[51] However, gaps persist in safeguarding citizens from AI-enabled surveillance and profiling, particularly by state actors. For example, digital rights watchdogs have raised concerns about the use of facial recognition systems by security forces in Uganda and Zimbabwe, often without judicial oversight.[52]

In response, civil society and regional organisations have been advocating for a Pan-African framework on AI and data governance. The African Union (AU) is currently revising its Convention on Cyber Security and Personal Data Protection (Malabo Convention) to reflect new risks posed by generative AI and predictive analytics.[53] Yet the slow pace of ratification, with only 16 out of 55 AU members having ratified it, highlights the challenge of harmonising data governance at the continental level.[54]

1.2 Open Data and Data Sovereignty

Africa has accelerated its push toward open data, driven by the need for transparency, innovation, and citizen participation in governance. Rwanda, Kenya, and Ghana have launched national open data portals that make government datasets available to developers, journalists, and researchers.[55] These platforms support health, agriculture, and urban planning applications, which rely heavily on real-time data streams. Notably, the Kenya Open Data Initiative (KODI), one of the earliest programs on the continent, expanded to include spatial and environmental datasets critical for climate-related AI tools.[56] Whereas initiatives like KODI are especially instrumental in advancing open data principles and reinforcing data sovereignty, it has faced various challenges since its inception in 2011, including limited resources, inadequate institutional support and lack of a comprehensive data governance framework leading to its inactive status.[57]

51 United Nations Economic Commission for Africa, Status of Data Protection Laws in Africa: 2024 Update (UNECA 2024) https://www.uneca.org/publications accessed 5 May 2025.

52 Collaboration on International ICT Policy for East and Southern Africa (CIPESA), State of Internet Freedom in Africa 2022 (CIPESA, September 2022) https://cipesa.org/wp-content/files/reports/State_of_Internet_Freedom_in_Africa_2022.pdf accessed 5 May 2025.

53 African Union Commission, Revised Draft of the Malabo Convention on Cybersecurity and Personal Data Protection (AUC 2025) https://au.int/en/documents accessed 5 May 2025.

54 African Union, Convention on Cyber Security and Personal Data Protection (Maputo, 27 June 2014) https://au.int/sites/default/files/treaties/29560-sl-AFRICAN_UNION_CONVENTION_ON_CYBER_SECURITY_AND_PERSONAL_DATA_PROTECTION.pdf accessed 5 May 2025.

55 Open Data for Development Network, Open Data in Africa: Progress and Pitfalls (OD4D 2024) https://www.od4d.net/publications accessed 5 May 2025.

56 Government of Kenya, 'Kenya Open Data Initiative' (Kenya ICT Authority, 2025) https://www.opendata.go.ke accessed 5 May 2025.

57 Mungai PW and Van Belle J-P, 'Understanding the Kenya Open Data Initiative Trajectory based on Callon's Moments of Translation' (2018) 10(4) The African Journal of Information Systems (Special Issue: Information Technology and the African Networked

However strategic developments from the ICT Authority of Kenya point to a change in this inactive status. The ICT Authority, through its strategic plan 2024-2027, prioritises in its implementation matrix the review and operationalisation of KODI to streamline data access policies, committing to build a more robust national data ecosystem.[58]

The proliferation of open data initiatives has reignited debates around data sovereignty. Critics argue that African datasets, often stored or processed in foreign-owned cloud infrastructure, are vulnerable to extraction and exploitation by external actors.[59] This concern has spurred calls to develop localised AI training models based on African contexts and values and ensure that data generated in Africa remains under African control.

1.3 Data Centres: Infrastructure for Sovereign AI

This past year has seen substantial investments in physical data infrastructure, underscoring Africa's ambition to build sovereign and resilient AI ecosystems. According to the Africa Data Centres Association, over 140 colocation and hyperscale data centres are now operational across the continent, with Nigeria, South Africa, Egypt, and Kenya hosting the majority.[60] The 2024 Microsoft–G42 initiative in Kenya, which includes the construction of a geothermal-powered data centre campus, reflects a significant shift toward sustainable and decentralised AI infrastructure.[61] Similarly, Morocco's N+ONE[62] and South Africa's Teraco[63] continue to expand their footprints, offering cloud-neutral platforms for AI developers across sectors.

Despite these gains, regional imbalances remain pronounced. Central African nations continue to face connectivity deficits and power shortages, which hinder their ability to participate fully in the digital economy.[64] To address these disparities, the AU has a continent-wide Digital Transformation Strategy for Africa,[65] aimed at coordinating investments and improving cross-border data integration.

1.4 African Datasets and Indigenous Knowledge Systems

The conversation on data in Africa is not just about quantity but also quality, ownership, and cultural relevance. As highlighted above, a critical gap in AI development is the underrepresentation of African languages, epistemologies, and indigenous knowledge systems in training datasets.[66]

Society) https://digitalcommons.kennesaw.edu/ajis/vol10/iss4/5 accessed 28 May 2025.

58 ICT Authority, 'ICT Authority Strategic Plan 2024–2027' (ICT Authority, 2024) 63.https://cms.icta.go.ke/sites/default/files/2024-09/SP_2024_-_2027_0912.pdf accessed 28 May 2025

59 Salami AO, 'Artificial Intelligence, Digital Colonialism, and the Implications for Africa's Future Development' (2024) 6 Data & Policy e67 https://www.cambridge.org/core/journals/data-and-policy/article/artificial-intelligence-digital-colonialism-and-the-implications-for-africas-future-development/4BD73E9129A9CD9E9301C61CB2401450 accessed 5 May 2025.

60 Africa Data Centres Association, Annual State of the Industry Report 2024 (ADCA 2024) https://www.africadca.org accessed 5 May 2025.

61 Carol Odero, 'Microsoft, G42 Announce $1B Initiative for Kenya' (CIO Africa, 22 May 2024) http://cioafrica.co/microsoft-g42-announce-1b-initiative-for-kenya/ accessed 16 April 2025.

62 Dan Swinhoe, 'N+One to build data center in Casablanca, Morocco' (DatacenterDynamics, 3 January 2024) https://www.datacenterdynamics.com/en/news/none-to-build-data-center-in-casablanca-morocco/ accessed 5 May 2025

63 Teraco, Teraco – Africa's Leading Carrier- and Cloud-Neutral Data Center Platform (2025) https://www.teraco.co.za/ accessed 5 May 2025

64 Jean Marie Takouleu, 'Electrification: Central Africa Remains the Continent's Soft Spot' (Africa Energy Portal28 May 2024) <https://africa-energy-portal.org/blogs/electrification-central-africa-remains-continents-soft-spot> .

65 African Union, Digital Transformation Strategy for Africa (2020–2030) (May 2020) https://au.int/sites/default/files/documents/38507-doc-dts-english.pdf accessed 5 May 2025

66 Adeleke, Fola, 'Bridging the AI Divide: Advancing Language Equity and Data Governance for Generative

Most large language models (LLMs) are trained predominantly on Euro-American corpora, which results in systemic biases and cultural erasure.[67]

There are now several initiatives aiming to create African-owned datasets that reflect local realities. Masakhane, a pan-African grassroots organisation supporting NLP research communities in Africa, continues to lead efforts in building open, inclusive corpora for low-resource African languages through initiatives like the Masakhane MT: Decolonise Science project.[68] Similarly, the Lelapa AI lab in South Africa is working to develop local LLMs that integrate indigenous ontologies and Afrocentric values.[69]

Digital Umuganda, in Rwanda, focuses on developing innovative solutions, building open data infrastructure, and fostering collaboration with governments, NGOs, and the private sector to create scalable, practical tools that serve the diverse needs of Africans. Notable projects by Digital Umuganda include the Open Data for All (OD4A), an initiative that aims to develop high-quality, culturally relevant datasets for African languages by collaborating closely with local communities. These datasets, including voice recordings, text samples, and translations, enable the creation of speech recognition, translation, and language technology solutions tailored to African contexts.[70] Additionally, Mbaza, Digital Umuganda's innovation hub, focuses on developing scalable AI solutions to address critical communication challenges across Africa. It leverages advanced natural language processing and multilingual datasets to create customised tools that make information and services more accessible in local African languages. Notable implementations include a COVID-19 USSD chatbot that provided pandemic information to millions and a GBV USSD chatbot ensuring confidential support for survivors.[71]

Other initiatives, such as Kencorpus in Kenya,[72] GhanaNLP in Ghana,[73] and NaijaVoices in Nigeria,[74] are advancing natural language processing (NLP) and speech technologies for underrepresented African languages. These efforts democratise access to AI and challenge epistemic colonialism by embedding African ways of knowing into technological systems.

The continued influx of open-source African language datasets presents challenges in advancing equitable development, preserving cultural integrity, and ensuring that African communities benefit from their contributions.[75] The standard licensing

AI in Africa', in Philipp Hacker (ed.), Oxford Intersections: AI in Society (Oxford, online edn, Oxford Academic, 20 Mar. 2025 -), <https://doi.org/10.1093/9780198945215.003.0047> accessed 9 May 2025.

67 Abeba Birhane, 'Algorithmic Colonisation of Africa' (2020) 4(2) Scripted 1 https://script-ed.org/article/algorithmic-colonization-of-africa/ accessed 5 May 2025.

68 Masakhane, 'Masakhane MT – Decolonise Science' (Masakhane, 2025) https://www.masakhane.io/ongoing-projects/masakhane-mt-decolonise-science accessed 5 May 2025.

69 Lelapa AI, 'Building Culturally Relevant AI Models' (Lelapa AI, 2025) https://www.lelapa.ai accessed 5 May 2025.

70 Digital Umuganda, 'Digital Umuganda open data' (Digital Umuganda, 2023) https://digitalumuganda.com/projects/od4a accessed 29 May 2025.

71 Digital Umuganda, 'Mbaza' (2023) https://digitalumuganda.com/projects/mbaza accessed 29 May 2025.

72 Barack Wanjawa and others, 'Kencorpus: A Kenyan Language Corpus of Swahili, Dholuo and Luhya for Natural Language Processing Tasks' (2023) 36(2) Journal for Language Technology and Computational Linguistics 1 https://arxiv.org/pdf/2208.12081 accessed 9 May 2025

73 Ghana NLP is an Open Source Initiative focused on Natural Language Processing (NLP) of Ghanaian Languages, & its Applications to Local Problems; GhanaNLP, GhanaNLP Translation API Platform (GhanaNLP, 2025) https://translation.ghananlp.org/ accessed 9 May 2025

74 NaijaVoices is a community-driven initiative dedicated to compiling extensive audio datasets in African languages, particularly Igbo, Hausa, and Yoruba.; NaijaVoices, NaijaVoices (2025) https://naijavoices.com/ accessed 9 May 2025.

75 Okorie, Omino et al 'Licensing African Datasets,

parameters do not sufficiently address the nuances of these concerns. The Noodl License,[76] developed as part of the Licensing African Datasets initiative, provides a critical solution to these issues. This licensing model ensures that data derived from African communities is used in ways that respect both cultural and intellectual property rights.[77] By enabling African nations and communities to maintain ownership over their data, the Noodl License empowers local stakeholders to control how their datasets are accessed, shared, and used, particularly in the context of AI and machine learning.[78] It promotes the integration of African languages, epistemologies, and indigenous knowledge systems into global technological frameworks, challenging the dominance of Eurocentric perspectives and fostering the recognition and value of African knowledge.[79]

'Influx of Open-Source African Language Datasets and Their Challenges' https://licensingafricandatasets.com/ accessed 9 May 2025

76 Noodl, End-User License Agreement https://www.noodl.net/policies/eula accessed 9 May 2025.

77 Licensing African Datasets, 'Open Data License' https://licensingafricandatasets.com/open-data-license accessed 9 May 2025.

78 Ibid.

79 Ibid.

Part 2: Artificial Intelligence and Innovation: Infrastructure and Capacity

Image Source: vecteezy.com

Local innovation, infrastructure and investment are defining features of AI in Africa. The continuous use of AI also signifies a growing capacity of the people as well as the institutions. With countries across the continent prioritising AI as the cornerstone for digital transformation, a growing trend of leaning towards not only being consumers but also creators is noted by the clear influx of development opportunities, research and entrepreneurs designing solutions that reflect the continent's unique social, economic, and environmental contexts. Grounded in the sentiments, observations are made examining how innovation ecosystems are emerging and expanding, driven by increased startup activity, improved digital infrastructure, targeted capacity-building initiatives, and both public and private investment while identifying structural gaps in access, affordability, and institutional support that must be addressed to ensure inclusive, sustainable, and scalable AI innovation across Africa.

2.1 Innovation in AI

The State of AI in Africa Report 2023 noted an increasing number of local actors involved in AI knowledge creation and innovation, driven by enhanced computational capacity and startup funding. It highlighted the growth of AI applications in sectors like health, agriculture, fintech, and education, with over 2,400 AI organisations operating across the continent. However, the report pointed out challenges such as limited venues to acquire innovation skills and a reliance on foreign-developed algorithms, which were stymying African-led innovation in AI. In the years since, African startups have continued to drive AI innovation, focusing on context-specific solutions. For instance, agritech platforms like Kenya's Apollo Agriculture have expanded their AI-driven tools for credit scoring and crop monitoring, tailoring solutions to local farming practices.[80] Apollo's AI-powered credit assessment engine uses diverse data points, including farm size, crop types, satellite imagery, and validated farmer data collected by field officers, to evaluate creditworthiness without relying on traditional collateral.[81] This has enabled smallholder farmers in Kenya and Zambia to access loans for high-quality inputs, boosting yields about 2.5 times higher than Kenya's national average.[82] The company also employs machine learning to combat lending fraud by analysing behavioural patterns and discrepancies, ensuring loans reach legitimate farmers.[83]

New startups continue to emerge in areas like climate technology by using AI for drought prediction and renewable energy optimisation, addressing Africa's unique environmental challenges. An Early Warning System (EWS) created by the Local Development Research Institute (LDRI) operates in Kenya's Kiambu and Embu counties to provide tailored recommendations to maize and beans farmers.[84] Through a mobile app, 1,500 smallholder farmers upload crop photos and cultivation details, which are integrated with hyperlocal geo-referenced data and high-resolution satellite imagery to monitor agricultural conditions.[85] The

80 Lisa Chassin, 'AI-Driven Smallholder Farmer Lending in Africa: Insights from Apollo Agriculture' (GSMA 8 April 2025) <https://www.gsma.com/solutions-and-impact/connectivity-for-good/mobile-for-development/blog/ai-driven-smallholder-farmer-lending-in-africa-insights-from-apollo-agriculture/> accessed 17 April 2025.

81 Ibid.

82 Ibid.

83 Ibid.

84 'Food & Nutrition Early Warning Mechanism' (Local Development Research Institute) <https://www.developlocal.org/food-nutrition-early-warning-mechanism/> .

85 GIZ, 'Harnessing the Power of AI to Improve Harvests' (www.giz.de 28 May 2025) <https://www.giz.de/en/mediacenter/better-harvest-with-AI.html> accessed 29 May 2025.

system employs machine learning to identify plant diseases and nutrient deficiencies, providing tailored recommendations to enhance crop yields. Additionally, a predictive EWS developed by researchers at Strathmore University's ILab identified Artificial Neural Networks (ANN) and Isolation Forests models as effective forecast tools to predict drought and flood events in Turkana and Wajir.[86] Kenya's SunCulture uses AI-driven models to optimise solar-powered irrigation systems, enhancing water efficiency for smallholder farmers facing drought.[87] Similarly, South Africa's Aerobotics employs AI and satellite imagery for early detection of crop stress and drought prediction, helping farmers adapt to climate variability.[88] These solutions integrate local weather data and machine learning to provide actionable insights, promoting sustainable agriculture and renewable energy adoption across the continent.

AI advancements in Sub-Saharan Africa in healthcare have significantly transformed service delivery, driven by local innovation and international collaboration. Nigerian startup Intron Health has enhanced its service by using NLP tools tailored for African accents, enabling efficient voice-to-text transcription in clinical environments.[89] Across the region, AI applications have expanded in areas like telemedicine, diagnostics, and data-driven surveillance, with Kenya, South Africa, Uganda, Nigeria, and Ghana emerging as hotspots for AI healthcare innovation.[90] For instance, Ghana's minoHealth AI Labs, a locally founded innovation hub, has developed AI systems for automated diagnostics of conditions like breast cancer and pneumonia using chest X-rays and mammograms to democratise access to quality diagnostics.[91] In Tanzania, Saratani AI, built by local health experts, leverages AI for rapid, affordable cervical cancer screening, digitalising diagnostic services to enhance access in hospitals.[92] Additionally, initiatives like Malawi's IntelSurv, developed by Kuyesera AI Lab at the Malawi University of Business and Applied Sciences in collaboration with the Public Health Institute of Malawi, which uses LLMs to provide real-time training for health professionals in disease surveillance, strengthening pandemic preparedness through the Early Warning, Alert and Response System. This initiative is funded by the Gates Foundation.[93] Finally, in Kenya, Jacaranda Health's PROMPTS platform is an AI-enabled digital health service that empowers new and expecting mothers across Kenya by delivering personalised SMS messages tailored to their pregnancy stage and triaging risks through a two-way SMS helpdesk.[94] The platform uses generative AI and large language models to enhance maternal and newborn health outcomes,

86 Alvin M Igobwa, Jeremy Gachanja, Betsy Muriithi, John Olukuru, Angeline Rehema Wairegi, and Isaac Rutenberg, 'Enhancing Food Security in Africa with a Predictive Early Warning System on Extreme Weather Phenomena' [2022] Research Square (Research Square)<https://repository.nrf.go.ke/server/api/core/bitstreams/107c86fb-76ca-4cb3-b62b-51e95ce972d3/content>.

87 Peter Odhiambo, 'Leveraging AI for Sustainable Development in Africa: Responsible AI Frameworks in Agriculture' (2024) <https://cipit.org/wp-content/uploads/2024/09/Leveraging-AI-for-Sustainable-Development-in-Africa-Responsible-AI.pdf>.

88 Ibid.

89 Care Code Digital Health Hub, 'How Intron Health, a Nigerian AI Startup, Is Transforming Healthcare in Africa Using Speech-To-Text Technology - Carecode Digital Health Hub' (Carecode Digital Health Hub August 2024) <https://www.carecodedigital.com/how-intron-health-a-nigerian-ai-startup-is-transforming-healthcare-in-africa-using-speech-to-text-technology/> accessed 17 April 2025.

90 Thomas Hervé Mboa Nkoudou, 'State of AI in Healthcare in Sub-Saharan Africa' (International Centre of Expertise in Montreal on Artificial Intelligence (CEIMIA) 2024) <https://ceimia.org/wp-content/uploads/2024/07/state-of-ai-in-healthcare-sub-saharan-africa.pdf>

91 Ibid.

92 Ibid.

93 Ibid.

94 'PROMPTS' (Jacaranda Health 22 September 2023) <http://jacarandahealth.org/prompts/> accessed 29 May 2025.

improving care-seeking behaviour when risks are identified, and addressing Kenya's high maternal mortality rate.

In South Africa, Lelapa AI, an African founded AI research hub recently developed, InkubaLM, a multilingual small language model, supports low-resource languages like Kiswahili, Yoruba, and isiZulu, fostering inclusive digital applications.[95] Further, open-source platforms like Masakhane, a grassroots organisation whose mission is to strengthen and spur NLP research in African languages, for Africans, by Africans. has scaled significantly, releasing over 400 models and 20 datasets for African languages,[96] empowering Africans to develop locally relevant solutions.

2.2 Developments in Infrastructure

The 2023 Report highlights poor internet connectivity, high data costs, and low smartphone penetration – 45% in Sub-Saharan Africa in 2018 – as barriers to AI adoption. It notes insufficient computing infrastructure and a lack of scalable platforms for AI deployment, with many organisations lacking the data-management protocols to create robust datasets.

While some of these challenges still persist, there have been improvements and notable developments in the intervening years. Internet connectivity sources have increased, with initiatives like Starlink's expansion and local fibre-optic projects improving internet access in urban and semi-urban areas across countries like Ghana, Kenya, Nigeria and Zambia.[97] Furthermore, investments in cloud infrastructure and computing have accelerated, with Microsoft Azure and Amazon Web Services expanding data centres in South Africa and Nigeria.[98] These developments have enhanced access to the computational resources used for training AI models.

Data centre development in Africa has progressed remarkably over the past few years. Initially, South Africa dominated the data centre landscape due to its advanced telecoms infrastructure and strategic location connected to multiple subsea cables.[99] However, other countries have rapidly caught up. Kenya, for instance, has emerged as a key player with the establishment of IXAfrica in Nairobi, which is touted as East Africa's largest data hub campus.[100] This facility is designed to assemble hypercloud and internet customers on a vast campus, enhancing connectivity and colocation services. Nigeria has also made significant strides, with multiple facilities under construction by the West Indian Ocean Cable Company (WIOCC) - owned Open Access Data Centres (OADC), Kasi, and Rack Centre.[101] Major investors in African data centres include global giants like investment firm

95 Lillian Barnard, 'AI in South Africa: Empowering Innovation, Transforming Industries, and Unlocking Potential | the Microsoft Cloud Blog' (The Microsoft Cloud Blog 3 March 2025) <https://www.microsoft.com/en-us/microsoft-cloud/blog/2025/03/03/ai-in-south-africa-empowering-innovation-transforming-industries-and-unlocking-potential/>

96 Abdullahi Tsanni, 'What Africa Needs to Do to Become a Major AI Player' [2024] MIT Technology Review <https://www.technologyreview.com/2024/11/11/1106762/africa-ai-barriers/#:~:text=And%20Masakhane%2C%20a%20cousin%20organization,it%20was%20founded%20in%202018.>

97 GSMA, 'The Mobile Economy Sub-Saharan Africa 2024' (2024) <https://event-assets.gsma.com/pdf/GSMA_ME_SSA_2024_Web.pdf>.

98 CIO, 'Microsoft Invests Additional $296M in South Africa' (CIO Africa10 March 2025) <https://cioafrica.co/microsoft-invests-additional-296m-in-south-africa/> accessed 16 April 2025.

99 Africa Data Centres Association, 'Creating a Thriving World Class African Data Centre & Cloud Infrastructure Ecosystem as a Catalyst for Economic Transformation' (2024) <http://africadca.org/wp-content/uploads/2024/05/ADCA-Report-2024_with-PPT.pdf?succes=1744869793> accessed 17 April 2025.

100 Ibid.

101 Ibid.

Actis,[102] Digital Realty, Equinix, and regional players such as Raxio, and PAIX [103]

Building on this foundation, Africa is now advancing towards AI-enabled data centres to meet the growing demand for advanced computing capabilities. Cassava Technologies has partnered with Nvidia to launch Africa's first AI factory in South Africa, powered by Nvidia's GPU-based supercomputers.[104] This initiative, set to expand to Egypt, Kenya, Morocco, and Nigeria,[105] will leverage Cassava's pan-African, high-speed fibre-optic network to provide AI as a Service (AIaaS), enabling businesses, governments, and researchers to train and deploy AI models efficiently while keeping data within Africa's borders.[106]

Morocco's adoption of clean energy to power data centres sets a precedent for sustainable development, with facilities like the 1200-ha, 580-MW Noor Ouarzazate Solar Complex, one of the world's largest solar farms, developed and owned by Morocco's MASEN (Moroccan Agency for Sustainable Energy), is leading the way. This project was developed through a Public-Private Partnership (PPP) between the Moroccan government via MASEN and private investors under a Build-Operate-Transfer model demonstrating government involvement in renewable energy infrastructure.[107] Senegal's initiative to transfer all government data to a national data centre maintained by Huawei underscores the importance of digital sovereignty.[108] Additionally, Main One, a West African connectivity and data centre provider now owned by US-based Equinix, data centres in Nigeria, Ghana, and Côte d'Ivoire have expanded their combined capacity to 5 MW in key markets, with facilities like the Tier-3 data centre in Appolonia, Accra, and the ABJ-1 data centre in Abidjan boosting regional connectivity.[109] Despite these advancements, challenges remain, including unreliable power supply, limited connectivity, and regulatory complexities.[110] The impact of these data centres on AI is significant, as they provide the necessary infrastructure for AI applications, driving demand for data processing capacity and enabling the development of AI-driven solutions across various sectors.

These developments highlight a shift towards a more distributed data centre ecosystem across the continent, reducing reliance on a single country and fostering regional growth. The expansion of data centres in Africa is not only a testament to the continent's growing digital economy but also a reflection of strategic investments in an enabling environment for AI development.

102 'Actis Partners with Jagal and Acquires a Majority Stake in Rack Centre a Leading Nigerian Data Centre' (Rack Centre4 March 2020) <https://rack-centre.com/actis-partners-with-jagal-and-acquires-a-majority-stake-in-rack-centre-a-leading-nigerian-data-centre-2/> accessed 16 June 2025.

103 Ibid.

104 David Thomas, 'Cassava and Nvidia to Launch Africa's "First AI Factory"' (African Business24 March 2025) <https://african.business/2025/03/technology-information/cassava-and-nvidia-to-launch-africas-first-ai-factory> accessed 29 May 2025.

105 Andy Higgins, 'Cassava to Upgrade Its Data Centres with NVIDIA Supercomputers to Drive Africa's AI Future. - Cassava Tech' (Cassava Tech24 March 2025) <https://www.cassavatechnologies.com/cassava-to-upgrade-its-data-centres-with-nvidia-supercomputers-to-drive-africas-ai-future/>.

106 David Thomas, 'Cassava and Nvidia to Launch Africa's "First AI Factory"'

107 Ibid.

108 Ibid.

109 Ibid.

110 Kehinde Abiodun, 'Digital Infrastructure & Sustainable Data Centers Investment in Africa: Role of Tier III & Tier IV' (2025) 6 International Journal of Multidisciplinary Research and Growth Evaluation 1878 <https://www.researchgate.net/publication/389010095_Digital_infrastructure_sustainable_data_centers_investment_in_Africa_Role_of_Tier_III_Tier_IV> accessed 20 March 2025.

2.3 Programmes Geared Towards Capacity Building for AI Skills

There was a notable need for capacity-building in technical and theoretical AI skills, machine learning, and data analytics skills in 2023.[111] This included calls for restructuring national education systems, intensifying university research, and developing AI handbooks for policymakers. In the years since, programmes have been gearing up to improve the level of capacity on the continent. Educational initiatives such as the African Institute for Mathematical Sciences (AIMS) and Data Science Africa have expanded, offering more AI and machine learning bootcamps across countries like Senegal, Rwanda, Kenya and Nigeria. Online platforms like Zindi have grown, hosting AI competitions that train thousands of African data scientists annually.[112] There is also significant corporate involvement in capacity building. Tech giants like Google and Microsoft have scaled up skills programs, such as Google's Hustle Academy[113] and Microsoft's AI skilling initiative,[114] training Africans in AI fundamentals, cloud computing, and responsible AI practices. Grassroots efforts complementing these programmes through community-driven AI hubs, such as iHub[115] in Nairobi and Co-creation Hub[116] in Lagos, have launched fellowships, mentorship programs and hackathons, fostering practical AI skills among young people. In academia, the University of Nairobi in 2024 launched an MSc in Artificial Intelligence, with the intention of developing a skilled workforce with advanced skills in machine learning, algorithms, and data science.[117] Strathmore University's various training programmes like ILab's Certificate in Data Science[118] and Master of Science in Data Science and Analytics[119] also build capacity and skills, including training in deep learning algorithms and Huawei-related AI products.[120] Strathmore's CIPIT also trains lawyers, policymakers and innovators on intellectual property concerns arising in AI development.[121] Additionally, Maseno University also offers a Master of Science in Artificial Intelligence[122] to advance AI expertise among students. Through a 2025 hackathon, the Maseno University Computing and Informatics Students Association, in partnership with the Maseno Centre for Applied Artificial

111 CIPIT, 'The State of AI in Africa Report 2023' (2023) <https://cipit.strathmore.edu/wp-content/uploads/2023/05/The-State-of-AI-in-Africa-Report-2023-min.pdf>.

112 'How Zindi Africa Empowers Data Scientists, Startups & NGOs?' (Tech Culture Africa2025) <https://techcultureafrica.com/zindi-africa> accessed 16 April 2025.

113 'Google Re-Launches Hustle Academy with AI Focus to Empower African Businesses – Kenya News Agency' (Kenyanews.go.ke14 May 2024) <https://www.kenyanews.go.ke/google-re-launches-hustle-academy-with-ai-focus-to-empower-african-businesses/> accessed 18 April 2025.

114 'Microsoft Launches AI Skilling Initiative in Kenya' (CIO Africa14 November 2024) <https://cioafrica.co/microsoft-launches-ai-skilling-initiative-in-kenya/> accessed 16 April 2025.

115 'Programs - IHUB' (iHUB 6 August 2024) <https://ihub.co.ke/programs/> accessed 16 June 2025.

116 https://www.facebook.com/CcHUBNigeria, 'Startups' (Co-Creation Hub Nigeria (CcHUB)) <https://cchub.africa/startups/>.

117 'Interested in Master of Science in Artificial Intelligence? | DEPARTMENT of COMPUTER SCIENCE' (Uonbi.ac.ke10 April 2025) <https://computerscience.uonbi.ac.ke/latest-news/interested-master-science-artificial-intelligence> accessed 29 May 2025.

118 'Certificate in Data Science | Strathmore University' (Strathmore University26 April 2024) <https://strathmore.edu/certificate-in-data-science/> accessed 29 May 2025.

119 'Master of Science in Data Science & Analytics @ ILabAfrica' (@iLabAfrica - Changing Lives Through Research and Innovation16 January 2024) <https://ilabafrica.strathmore.edu/master-of-science-in-data-science-analytics/> accessed 29 May 2025.

120 'HCIA – Artificial Intelligence - @ILabAfrica' (@iLabAfrica - Changing Lives Through Research and Innovation27 February 2024) <https://ilabafrica.strathmore.edu/hcia-artificial-intelligence/> accessed 29 May 2025.

121 'AI and IP Training - Centre for Intellectual Property and Information Technology Law'(7 October 2024) <https://cipit.strathmore.edu/ai-and-ip-training/> accessed 29 May 2025.

122 'All Programmes | Academic Programmes-Maseno University' (Maseno.ac.ke2025) <https://programmes.maseno.ac.ke/all_programmes> accessed 29 May 2025.

Intelligence (MCAAI), offered participants opportunities to develop solutions aligned with the Sustainable Development Goals (SDGs) on quality education, reducing inequalities, and industry, innovation and infrastructure.[123] The United States International University-Africa (USIU), also based in Nairobi, offers a Bachelor of Science in Data Science and Analytics to train students in data analysis, private and public applications in data-driven decision making.[124] Its pre-university Data Analytics program teaches high school graduates data visualisation skills, through training in Power BI and R for practical data management.[125] In South Africa, the University of Pretoria hosts a Data Science programme, building data analytics skills among students through training in machine learning, Python and Spark.[126] The programme's Data Science for Social Impact[127] initiative equips students to address societal challenges using local language NLP and data-driven solutions, preparing graduates for impactful roles in industry and research.

These and other capacity building efforts across Africa are playing a vital role in driving AI development by cultivating local expertise to address contextualised concerns. These initiatives are equipping professionals with the ethical and technical skills required to develop responsible AI solutions in critical sectors, including education, agriculture, and sustainable development initiatives. As such, these efforts not only narrow the AI skills gap but also ensure that African AI innovation is contextualised to locally relevant and inclusive designs that reflect the continent's priorities.

2.4 Investments in AI Innovation

Research on the state of AI in Africa must analyse investments that pour into AI development, both from local and foreign sources. The 2023 Report notes increased funding for AI startups as part of broader startup investment trends, with contributions from global players like IBM, Google, and Microsoft. However, it notes limited funding for African universities and research institutions, hindering local innovation. Global partnerships and open-source initiatives have continually propelled Africa's AI ecosystem, emphasising equitable collaboration and local leadership in AI development. Microsoft's $1 billion digital ecosystem project with G42 in East Africa aims to support the development of AI models for local languages and establish innovation labs to train developers, addressing the skills gap.[128] Venture capital funding in Africa is also growing, with African tech ecosystems raising over $2 billion annually by 2025, a portion of which supports AI ventures.[129] Notable investments include Nigeria's InstaDeep, which was acquired by the

123 'Maseno University Computing and Informatics Students Association (MUCISA) Hackathon 2025: Smart Campus Solutions at Maseno University | Maseno University - Fountain of Excellence' (Maseno.ac.ke2025) <https://www.maseno.ac.ke/maseno-university-computing-and-informatics-students-association-mucisa-hackathon-2025-smart-campus> accessed 29 May 2025.

124 USIU-Africa, 'Bachelor of Science in Data Science and Analytics' (USIU-Africa2024) <https://www.usiu.ac.ke/2240/bachelor-science-in-data-analytics/> accessed 29 May 2025.

125 USIU-Africa, 'Pre-University Programs' (USIU-Africa2025) <https://www.usiu.ac.ke/3847/pre-university-programs/> accessed 29 May 2025.

126 'Data Science | University of Pretoria' (Up.ac.za 2025) <https://www.up.ac.za/data-science> accessed 29 May 2025.

127 UP - Department of Computer Science, 'Data Science for Social Impact' (Up.ac.za 2025) <https://www.cs.up.ac.za/research/dsfsi/> accessed 29 May 2025.

128 Carol Odero, 'Microsoft, G42 Announce $1B Initiative for Kenya' (CIO Africa 22 May 2024) <http://cioafrica.co/microsoft-g42-announce-1b-initiative-for-kenya/> accessed 16 April 2025.

129 James Anyanzwa, 'African Technology Startups Scoop $2b Funding' (The EastAfrican12 May 2022) <https://www.theeastafrican.co.ke/tea/business-tech/african-technology-startups-3807064> accessed 18 April 2025.

German multinational BioNTech in 2023 for $680 million, and is now expanding AI for healthcare, and South Africa's Aerobotics, which utilises AI for precision farming.

2.5 AI Strategy and Policy

In 2023, CIPIT noted the initial AI policy frameworks, with Mauritius, Egypt, Zambia, Tunisia, and Botswana having some form of National AI programmes. At the time, the African Union was engaged in efforts to create a continental AI strategy, and the African Commission on Human and Peoples' Rights had indicated a keen focus on AI and human rights. However, the 2023 Report emphasised the lack of comprehensive regulation and accountability mechanisms for AI systems across the continent.

As of 2025, more countries, including Kenya, Ghana, Namibia and Ethiopia, have finalised or drafted national AI strategies, focusing on empowering AI development for the agriculture, health, mining and education sectors. Nigeria has implemented its National Policy on AI, establishing the National Centre for AI and Robotics[130] as a hub for research and deployment.

Most notably, the AU's AI Continental Strategy was adopted in June 2024, outlining priorities for harmonised AI governance, cross-border data sharing, and capacity building. It emphasises "African AI" tailored to local needs, realities and cultures, and calls for the regional integration of both the development and governance of AI. Governments have also continuously invested in AI innovation, with increased budgets for AI. African nations have also demonstrated an increased regulatory focus on AI; data protection laws have been enacted or strengthened in 40 African countries by February 2025, addressing AI-related privacy concerns. Countries like Tunisia and Zambia have introduced ethical AI guidelines, emphasising transparency and fairness in AI deployment.

Despite these advances, challenges persist, including limited internet access – only 37% of Africans were online in 2023 – and high computational costs, which restrict AI scalability. Even so, Africa's AI landscape is flourishing, driven by local innovation and strategic global alliances, positioning the continent as a hub for innovative, context-specific AI solutions. African innovators have made remarkable strides, developing and scaling AI applications in healthcare, agriculture, and climate tech that address local needs. The AU's 2024 Continental AI Strategy has further catalysed policy discussions and advancements in Rwanda and Nigeria, promoting ethical AI frameworks and talent retention. While infrastructure disparities and skill shortages persist, the momentum of Africa's AI ecosystem, fueled by a blend of local expertise, global support, and policy innovation, signals a transformative future.

130 Federal Ministry of Communications, Innovation and Digital Economy (FMCIDE), National Artificial Intelligence Strategy 2024 (August 2024) <https://ncair.nitda.gov.ng/wp-content/uploads/2024/08/National-AI-Strategy_01082024-copy.pdf> accessed 5 May 2025

Part 3: Practical AI: AI Use and Impact in the Agriculture, Health, Legal, and Creative Sectors

Image Source: vecteezy.com

Africa is increasingly adopting AI to unlock opportunities and address challenges in critical areas such as agriculture, health, legal services and the creative industry. In Agriculture, AI-powered technologies such as drone monitoring and predictive analysis are being harnessed across Africa to improve crop productivity for smallholder farmers in countries like Kenya and Rwanda to enhance food security.[131] Similarly, AI is transforming healthcare through early disease detection and supporting health data analysis, contributing to improved outcomes across Africa.[132] The legal sector is also leveraging AI to expand access to justice, while the creative industry utilises AI to foster innovation and cultural expressions reflecting Africa's rich diversity. While the preceding mapping provides a continental overview of the AI ecosystem, a use case approach is presented focusing on a more grounded examination of how AI is being adopted across the identified sectors noting significant shifts in the scope of initiatives since the 2023 report, and providing regional examples of AI investments, use and impact.

3.1 AI in Agriculture

The global landscape for AI applications in agriculture is expected to undergo significant expansion, with a compound annual growth rate (CAGR) estimated at 23% between the years 2023 and 2028.[133] This growth is projected to elevate the market size from $1.7 billion to $4.7 billion during this timeframe.[134] In Sub-Saharan Africa, the agri-food technology sector has experienced remarkable development, as evidenced by private investments surging from under $10 million in 2014 to around $600 million by 2022.[135] This investment growth reflects a burgeoning interest in the potential of technology to improve agricultural productivity and efficiency. However, the sector is confronted by a multitude of challenges, including inadequate productivity levels, resource misallocation, environmental threats, climatic variability and socio-economic barriers.[136] Nevertheless, these obstacles concurrently present an opportune moment for the integration of AI into agricultural practices, potentially ushering in a transformative era characterised by sustainable, efficient and resilient farming methods.[137] In this section, we will examine the diverse ways in which AI can contribute to addressing the unique challenges Africa's agricultural sector faces, with a focus on the different applications of AI technologies, their implications for efficient resource management and the potential effects on the socio-economic conditions of smallholder farmers.

Within Sub-Saharan Africa, 80% of the food grown and consumed is produced by smallholder farmers who utilise less than two hectares of agricultural land.[138] They tend to utilise redundant farming techniques and lack access to timely and relevant information that could inform and manage their farming activities.[139] An

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133 Jenane C, Is Artificial Intelligence the future of farming? Exploring opportunities and challenges in Sub-Saharan Africa (12th March 2025) World Bank Blogs <https://blogs.worldbank.org/en/agfood/artificial-intelligence-in-the-future-of-sub-saharan-africa-far#:~:text=AI%20offers%20transformative%20potential%20for,security%20and%20fostering%20economic%20growth> last accessed 15th of April 2025.

134 Ibid.

135 Ibid.

136 Omdena AI Insights, Transforming African Agriculture with AI at the Forefront (5th February 2024) < https://www.omdena.com/blog/transforming-african-agriculture-with-ai-at-the-forefront> last accessed 15th April 2025.

137 Ibid.

138 Ricciardi, V. et al. How much of the world's food do smallholders produce? [2018] Global Food Security, Vol 17, 64-72.

139 GSMA, AI for Africa Use cases delivering impact [2024] <https://www.gsma.com/solutions-and-impact/connectivity-for-good/mobile-for-development/

informed approach to farming would assist with efficient agricultural output that allows for scaling.[140] AI promises to unlock agricultural impact through value addition within the agricultural supply chain. AI technologies have the potential to source real-time data, produce algorithms that optimise farming activities and allow for predictive analytics.[141]

A prominent example of such technology is precision agriculture. This innovative approach utilises advanced tools and techniques to precisely manage field variability in crops, improving efficiency and sustainability in farming practices.[142] This includes utilising machine learning and big data analytics to process and assess extensive data sets such as weather patterns and soil composition.[143] These machine learning algorithms use the data sets to give farmers informative insights, improving crop management.[144] The potential scalability of precision agriculture's AI-powered tools is supported by surrounding factors such as the increase in mobile penetration in the African market, with a projected 614 million mobile subscriptions as of 2025.[145] Additionally, the agricultural market boasts 250 million smallholder farmers, representing a ripe opportunity for them to use these technologies.[146]

Key examples of AI Agri-precision tools include ThridEye, a Kenyan-based project that uses flying sensors to analyse obtained imagery.[147] The real-time data gathered by these sensors helps farmers make informed decisions on how to allocate resources like water, seeds, fertiliser and labour.[148] This optimises yields whilst simultaneously encouraging efficient waste management.[149] UjuziKilimo, a Kenyan-based Agri-AI application, mirrors the operations of ThirdEye as it uses AI to inspect and manage soil health as well as provide insights to farmers on crop rotation and watering to maximise yields.[150] Nigeria boasts of Agri-AI applications such as Kitovu, which utilises a combination of satellite and spatial data to provide accurate agronomic data that allows farmers to optimise and monitor crop health.[151] Additionally, there is Riwe Technologies, which applies machine learning and satellite imagery to curate contextualised recommendations for crop health and management.[152] Agri-AI applications within South Africa uniquely blend indigenous knowledge and AI. The ITIKI project is an example, blending AI and indigenous environmental knowledge to predict droughts, notifying farmers through their mobile phones.[153]

These Agri-AI applications fall under the data-driven agricultural domain, necessitating the availability and accessibility of large volumes of data sources ranging from geospatial to

wp-content/uploads/2024/07/AI_for_Africa.pdf> 36.

140 Ibid.

141 Ibid.37.

142 Ibid.

143 Ibid.

144 Ibid.

145 Ibid.

146 Ehui S, Ronchi L, Kennedy F & Loboguerrero M A , Scaling agriculture science and innovation for a climate-resilient future in Africa , World Bank [2023] <https://blogs.worldbank.org/en/agfood/scaling-agriculture-science-and-innovation-climate-resilient-future-africa> last accessed 20th April 2025.

147 ThirdEye, Flying Sensors to Support Farmers' Decision Making < http://www.thirdeyewater.com > last accessed 20th April 2025.

148 Ibid.

149 Ibid.

150 UjuzKilimo< https://ujuzikilimo.com/> last accessed 20th April 2025.

151 Kitovu < https://kitovu.com.ng> last accessed 20th April 2025.

152 Riwe Technologies < https://www.riwe.io> last accessed 20th April 2025.

153 Information Technology and Indigenous Knowledge with Intelligence, ITIKI Drought Prediction Tool < https://urida.co.za> last accessed 20th April 2025.

agronomic data.[154] Moreover, there is a reliance on local language data that allows for the applications to be contextualised.[155] However, implementation realities persist, such as data quality and representativeness issues that limit the effective deployment of these applications.[156] Nonetheless, AI applications within the African Agri-Market offer promising opportunities that can unlock significant socio-economic benefits for communities across the continent. These applications can potentially improve agricultural productivity, enhance food security, and empower smallholder farmers, ultimately contributing to the region's overall economic development.

3.2 AI in Health

Africa's healthcare landscape faces a significant paradox: a rising disease burden coupled with a critical shortage of healthcare professionals.[157] Sub-Saharan Africa, for example, faces a deficit of 2.4 million doctors and nurses,[158] leaving only 1.3% of the world's healthcare workforce to address 25% of the global disease burden.[159] While challenges such as limited resources, infrastructure gaps, and reliance on foreign drug sources persist, the increasing mobile penetration across the continent creates an opportunity to leverage AI-driven solutions.[160] AI offers a substantial opportunity to enhance African healthcare by enabling a shift from reactive responses to proactive, preventative strategies.[161] To successfully implement AI, a sustainable ecosystem ensuring equitable access is essential.[162] These technologies can expedite the development of affordable, high-quality, and accessible healthcare, while also addressing the resource-constrained environments prevalent in many African nations.[163] By enhancing connectivity and facilitating the flow of health information, AI can contribute to early disease detection, improved diagnostics, and more efficient healthcare management.[164] The use of AI allows for the development of policies that are tailored to address health disparities based on evidence. [165]

Across Africa, a vibrant landscape of AI-driven health applications is emerging with diverse functionalities designed to address the specific healthcare challenges of various African nations. Examples include telemedicine and remote patient monitoring. AI-powered telemedicine applications utilise other technologies such as virtual consultation, instant messaging, and video conferencing, allowing patients to connect with healthcare providers remotely.[166] Additionally, real time data processing happens, as patient data is collected and collated efficiently through smartphones or chatbots.[167] Examples

154 GSMA (n13) 41.

155 Ibid.

156 Ibid.

157 Adebisi Y A., Nwogu I B, Alaran A J, Badmos, A O, Bamgboye, A O, Rufai B O, Okonji O C, Malik, M O, Teibo J O, Abdalla S F., Lucero-Prisno D E III, Samai M & Akande-Sholabi, W, Revisiting the issue of access to medicines in Africa: Challenges and recommendations. [2022] Public Health Challenges, 1(2) 106.

158 Ibid.

159 Naicker S, Plange-Rhule J, Tutt R C. & Eastwood J B, Shortage of healthcare workers in developing countries -Africa [2009] Ethnicity & Disease, 19, 60–64.

160 Adebisi (n102).

161 Laghmari S, Artificial Intelligence, a key tool to improve the African Heath System <https://infomineo.com/artificial-intelli-gence-a-key-tool-to-improve-the-african-health-system/> last accessed 20th April 2025.

162 Ibid.

163 Alaran A M, Lawal K S, Mustapha H J, Alhassan E, Ahmed M M, Abdullateef A, Usman A H, Muhamad K M & Lucero-Prisno D EIII, Challenges and opportunities of artificial intelligence in African health space [2025] Digital Health < https://doi.org/10.1177/20552076241305915>

164 Ibid.

165 Townsend A B, Sihlahla I , Naidoo M, Naidoo S, Donnelly-Lee & Thaldar W D, Mapping the regulatory landscape of AI in healthcare in Africa [2023] Front. Pharmacol, Sec, ESLI in Science and Genetics.

166 CEIMIA (n56) 19.

167 Ibid.

include Health-E-Net Botswana. Driven by a mission to amplify the scale and impact of African health technologies, Health-E-Net collaborates with sponsors, industry, and governments to leverage technological advancements in healthcare.[168] PaperEMR, their core offering, provides a straightforward solution for digitising paper-based data, empowering community health workers to streamline reporting and procurement.[169] Paired with the Gabriel telemedicine platform, Health-E-Net expands access to consultations and medications through remote online and offline services.[170]

Medical imaging is an emerging AI-driven process that uses AI algorithms to detect subtle indicators of disease in its early stages, which might be missed by conventional diagnostic approaches.[171] This capability is invaluable, as it enables prompt therapeutic intervention, potentially increasing survival rates and enhancing patient outcomes.[172] Key examples include Neural Labs Kenya, which uses AI algorithms (NeuralSight) to identify over 20 breast, heart and respiratory pathologies to allow for early intervention and disease management.[173] AI EMR management facilitates forecasting the supply and demand for medical services, utilising data points such as historical data and staffing data.[174] This provides for informed and evidence-based decision making. Nigeria's LifeBank, for example, aims to revolutionise the medical supply chain to ensure sustainable and efficient operations using AI-powered processes such as AirX, a forecasting and predictive tool that manages oxygen supply through the application of data analytics.[175] It utilises historical data, weather conditions and relevant inputs to predict oxygen use and demand, creating a more efficient supply system.[176]

AI in healthcare presents a complex landscape of potential benefits and inherent challenges. AI systems can automate tasks and analyse medical images, leading to early disease detection, improved treatment outcomes and increased efficiency.[177] These advancements can translate to significant cost savings and better allocation of resources.[178] However, the path to widespread AI adoption is fraught with obstacles, including infrastructure disparities, ethical concerns about data privacy, and the need for supportive governmental policies.[179] Overcoming these hurdles requires standardised data infrastructures, promotion of AI innovation and implementation of comprehensive regulations.[180]

3.3 AI in the Legal Industry

The advent of AI tools is transforming legal practice, promising enhanced efficiency that lets legal professionals draft documents, conduct research and even predict case outcomes at an unprecedented pace.[181] While AI applications are growing,

168 Health-E-Net, Revolutionizing the capture and use of data in Global Health https://health-e-net.org last accessed 27th April 2025.

169 Ibid.

170 Ibid.

171 Pinto-Coelho L, How Artificial Intelligence is Shaping Medical Imaging Technology: A Survey of Innovations and Applications [2023] Bioengineering (Basel) 10(12).

172 Ibid.

173 Neural Labs < https://neurallabs.africa> last accessed 27th April 2025.

174 CEIMIA (n111) 21.

175 LifeBank Nigeria < www.lifebankcares.com > last accessed 27th April 2025.

176 Ibid.

177 CEIMIA (n119).

178 Ibid.45.

179 Ibid.

180 Ibid.

181 Hlomani H, AI's Impact on the African Legal Profession: A Revolution in Progress? , Data for Governance Alliance Policy Brief No.30 [2024].

they currently represent a 3% market share of the legal tech industry within the African market.[182] This indicates a significant opportunity for further growth and development of AI-driven legal solutions on the continent. CIPIT mapped current AI applications within the legal life cycle, starting with legal due diligence. AI can help by automating the review of all necessary legal documents and information to assist with legal audits during transactions like mergers and acquisitions.[183] An example would be Afriwise, an AI-powered legal research tool that centralises up-to-date regulatory information for various stakeholders who are interacting and navigating the African legal landscape.[184] AI applications can automate legal documents such as agreements and contracts. Automating these tasks with AI leads to cost savings by eliminating the inefficiencies and tediousness associated with manual drafting and template retrieval.[185] AI applications like Nigeria's Wonder.Legal allows lawyers to maximise their productivity by automating the drafting process from a repository of over 200 legal templates.[186] South Africa's Contract Corridor mirrors similar functionalities, but it extends to include an additional function of contract analysis within the African context.[187] It uses NLP algorithms that extract relevant data from legal agreements to facilitate efficient contract review and risk assessment.[188]

However, the recent case of *Mavundla v MEC: Department of Co-Operative Government and Traditional Affairs KwaZulu-Natal and Others*[189] serves as a critical reminder of the risks associated with the use of AI in legal practice. In this instance, the legal representatives of the applicant submitted fictitious case law references, which may have been generated by AI tools such as ChatGPT without sufficient verification.[190] The court's strong condemnation of this negligence highlighted the significant threat posed by AI "hallucinations"; the phenomenon whereby AI systems generate false or misleading information, undermining the integrity of legal processes.[191] This situation underscores the pressing need for legal professionals and judicial officers to acquire heightened digital competencies and ethical oversight capabilities when integrating AI tools into their practice.

The lessons from the Mavundla case extend beyond mere caution; they emphasise that while AI possesses tremendous potential for enhancing efficiency and accessibility in legal research, it also demands a rigorous commitment to ethical practices and digital literacy.[192] Legal practitioners must be equipped to not only utilise AI effectively but also critically evaluate its outputs. This capability is essential when ensuring the accuracy and reliability of AI-generated information, ultimately protecting the legal integrity of their work.[193] Stakeholders, including bar associations, policymakers, and technology developers, must collaborate to create comprehensive strategies for AI implementation that prioritise ethical considerations and address

182 Lawyers Hub Kenya, State of Legal Tech on Africa Report [2022] <https://www.lawyershub.org/Digital%20Resources/Reports/STATE_OF_LEGAL_TECH_IN_AFRICA_REPORT_2022_1.pdf> last accessed 27th April 2025.

183 Hlomani(126).

184 Afriwise < https://www.afriwise.com/about-us> last accessed 27th April 2025.

185 Hlomani(n128).

186 Wonder.Legal Nigeria < https://www.wonder.legal/ng/> last accessed 27th April 2025.

187 Contract Corridor < https://contractcorridor.com> last accessed 27th April 2025

188 Ibid.

189 (7940/2024P) [2025] ZAKZPHC 2 (8 January 2025) .

190 Ibid.

191 Ibid.

192 Hlomani(137).

193 Ibid.

inherent biases within these systems.[194]

A focus on the judiciary shows that countries like Tanzania and Kenya have already begun taking steps towards this goal. In Tanzania, AI is being implemented to carry out transcriptions of the matters heard in court, freeing the judges and magistrates from the strenuous job of writing.[195] This is done by feeding the system with the country's official language, Kiswahili, as well as English, for an accurate translation and transcription of cases to decrease errors that had previously slowed the process and increased backlog.[196]

Kenya is currently conducting public participation for an AI framework within the judiciary to introduce the use of AI to further their mission of 'Social transformation through access to Justice'.[197] In a colloquium whose theme was 'Digital Transformation, Technology and the Law', judicial officers and key stakeholders engaged in meaningful discussions on the use of AI in judicial decision making, block-chain application in legal transactions, cyber security, internet of things, data protection and privacy, and the ethical implications that come with automating justice.[198]

While this may seem like a breath of fresh air for Africa's justice systems and institutions, judicial officers ought to be aware of the new risks that could be created by AI and, as such, possess the know-how to implement measures that mitigate these potential risks.[199] The UNESCO guidelines on the use of AI in courts have provided an avenue that fosters the growth and use of responsible AI within the justice system through holding conferences on AI capacity building, empowering public administrations, enhancing global digital creation and promoting knowledge exchange and partnerships.[200]

3.4 AI in the Creative Industry

The African creative economy is transforming significantly with AI integration, democratising access to innovative tools and opportunities. This removes traditional barriers such as high costs, the need for extensive training, and the scarcity of resources.[201] By 2025, AI is expected to significantly enhance the ability of creators, particularly in rural areas, to leverage AI-driven tools for artistic expression, thereby promoting inclusivity and diversifying the creative industries across the continent.[202] The impact of AI is linked to addressing existing disparities in access to creative resources. Algorithmic fairness and accountability will remain crucial as AI tools gain prevalence in contexts where traditional infrastructure

194 Ibid.

195 Tanzania's court system goes for AI solution <https://www.google.com/url?q=https://www.africa-legal.com/news/tanzanias-court-system-goes-for-ai-solutions/102631&sa=D&source=docs&ust=1746746734619656&usg=AOvVaw3_29ELIP2sIPF-84NC7cuqk> Last accessed on 9th May 2025.

196 Ibid.

197 The Magistrate's and Kadhis colloquium 2025:Advancing Tech justice in Kenya's judiciary <https://www.google.com/url?q=https://jsc.go.ke/the-magistrates-and-kadhis-colloquium-2025-advancing-tech-justice-in-kenyas-judiciary/&sa=D&source=docs&ust=1746746734619714&usg=AOvVaw00TRMSN7zT-bjv80zsaIIaX> last accessed on 5th May 2025.

198 Ibid.

199 Building AI and the rule of law in Eastern Africa:Unesco listened to judicial professionals on guidelines for the use of AI in courts and tribunals<https://www.google.com/url?q=https://www.unesco.org/en/articles/building-ai-and-rule-law-eastern-africa-unesco-listened-judicial-professionals-guidelines-use-ai&sa=D&source=docs&ust=1746746734619762&usg=AOvVaw1RLodsMkJ4QscuZM4h0fcA>last accessed on 5th May 2025.

200 Ibid.

201 How Africa's creative economy is driving transformation <https://african.business/2024/10/long-reads/how-africas-creative-economy-is-driving-transformation> last accessed 30th April 2025.

202 Ibid.

is lacking.[203] By promoting the inclusion of diverse cultural perspectives in AI development, the technology can assist in avoiding biases that have historically marginalised communities, thereby expanding their representation in the creative sectors.[204] Furthermore, the role of AI in educational transformation, particularly in environments challenged by socio-economic factors, can boost skill development and creativity among young people, bridging gaps in artistic training.[205]

In Kenya's creative ecosystem, AI is already being used in various sub-sectors. In film production, producers and writers are exploring AI in pre- and post-production phases to enhance creative workflows and reduce overhead costs.[206] Writers are incorporating AI into their writing and research processes, while graphic designers and visual artists use AI to improve their workflows and creative outputs, accelerating the creative process.[207] Corporations in Kenya are also using AI to create billboards with AI-generated graphics, showcasing AI's potential in marketing and advertising.[208]

Despite these promising advancements, several challenges persist in implementing AI within the African creative economy. Notably, the issue of algorithmic bias could jeopardise fair representation if AI systems are not designed with inclusivity in mind.[209] The importance of utilising diverse datasets is paramount; a lack of such datasets could perpetuate existing stereotypes and biases.[210] Moreover, there are broader implications related to the ethical deployment of AI technologies where educating stakeholders on ethical considerations, legal frameworks, and socio-cultural impacts is essential to ensure that AI serves as a tool for empowerment rather than oppression, allowing for responsible and beneficial AI applications in creative sectors.[211]

203 Ibid.

204 Ibid.

205 Genesis Analytics, The Creative Sector and Youth Employment- Kenya [2024] <https://fundfory-outhemployment.nl/wp-content/uploads/2024/12/Learning-agenda-research-study-on-Kenyas-creative-ecosystem_v3final.pdf> last accessed 30th April 2025

206 Ibid.

207 Ibid.

208 Ibid.

209 Pasipamere N & Muroyiwa A, Navigating algorithm bias in AI: ensuring fairness and trust in Africa [2024]
Front. Res. Metr. Anal Sec. Scholarly Communication.

210 Ibid.

211 Ibid.

Part 4: Responsible AI: Policies, Laws, and Frameworks

Image Source: vecteezy.com

The ethical and equitable use of AI in Africa continues to gain critical urgency, with the need for AI regulation characterised by the foundational building blocks of AI governance structures through National AI strategies. In the time since the 2023 State of AI report, there has been an increase in the development of national AI strategies, which collectively highlight the trajectory towards AI regulation with key considerations on AI ethics. A significant instrument is the African Union Continental AI Strategy. Developed in 2024, it outlines the African vision for leveraging AI, pointing to parameters that must be considered in building a holistic regional AI ecosystem and governance structure. In examining the growing body of strategic initiatives aimed at fostering responsible AI on the continent, key focus is established on how national governments are responding through the development and refinement of their own AI strategies. Anchored in the Continental AI strategy, observations are made on the emerging principles, institutional arrangements, and normative frameworks shaping Africa's approach to responsible and rights-based AI deployment.

4.1 AU-AI Continental Strategy

Continued discussions on AI have intensified globally, leading to increased regulation worldwide. Due to the continued use of AI across critical sectors in Africa and Africa's unique values and experiences, an African-based approach is appropriate to ensure the ethical use of AI. The AU-AI Continental Strategy has developed a harmonised strategy for Africa to harness the benefits of AI for social and economic growth while mitigating incidental risks.[212]

The Continental AI Strategy was endorsed by the AU Executive during the 45th ordinary session in Accra, Ghana, on 18-19 July 2024.[213] This underscores Africa's commitment to an Africa-centric approach to AI and a unified approach to inclusive, ethical and development-focused AI governance aligned with Agenda 2063. The strategy was adopted alongside the Global Digital Compact for Africa (GDC) to guide Africa's effort towards social and economic development.[214] The Digital Compact for Africa and the AU-AI Strategy align with the AU's 2030 Digital Transformation Strategy and Agenda 2063. The Strategy is keen on minimising risk through human rights-centred governance and emphasises equitable distribution of AI benefits, taking into account vulnerable communities.[215] It focuses on developing robust data infrastructure, enhancing private sector development, ensuring a vibrant AI startup ecosystem, focusing on priority sectors such as agriculture, education, and health, and facilitating cross-border data flows by addressing legislative landscapes across African countries.[216]

4.1.1 The AU-AI Strategy Goals

The Strategy's key goals include harnessing AI's transformative power for social and economic development in line with the

212 https://cipit.strathmore.edu/an-in-depth-analysis-of-the-au-ai-continental-strategy-and-implications-on-ai-governance-in-the-continent/

213 African Union, 'Continental Artificial Intelligence Strategy,' https://au.int/en/documents/20240809/continental-artificial-intelligence-strategy accessed on 09 May 2025

214 Ayang Macdonald, 'African Union adopts AI strategy to streamline continental digital transformation efforts,' https://www.biometricupdate.com/202407/african-union-adopts-ai-strategy-to-streamline-continental-digital-transformation-efforts accessed 08 May 2025

215 Global Center on AI Governance, 'Africa Now Has a Continental AI Strategy: What Next?'Ayantola Alayande and Rachel Adams https://cdn.prod.website-files.com/620b3700f2c761fd986be9f5/66d5b90f59c77ef2ccc7fd5e_Africa%20now%20has%20a%20continental%20strategy_What%20next.pdf accessed 08 May 2025

216 African Union, 'Continental Artificial Intelligence Strategy' (n4)

Sustainable Development Goals (SDGs) and Agenda 2063 through inclusivity and innovation. Another goal is to minimise the risks associated with AI deployment through prioritising human rights, ethical considerations and diversity. The AU-AI Strategy also aims to stimulate investment in regional and international AI initiatives through public and private sector engagement. National and regional cooperation, as well as investment in infrastructure, education, and research, remain key goals of the Strategy.[217]

4.1.2 The AU-AI Strategy principles

The core principles of the strategy include cooperation and integration by national organisations and international entities for a uniform approach for AI governance, as well as a local first approach that calls for African control over the design, deployment and integration of AI tailored to its specific needs and values. A people-centred approach is also preferred to ensure benefits to all segments. The principle of ethics and transparency is recommended to avoid biases, inequalities and marginalisation of communities. Inclusion and diversity, as well as peace, prosperity, human rights, and human dignity, also form part of the core principles of the Strategy. The implementation of the Strategy spans the years 2025-2030, with the first phase focusing on research, public engagement and partnerships for resource mobilisation. The final stage then focuses on policy, monitoring and evaluation frameworks.[218] The African Union is helping member states by organising dialogues nationally and internationally to strengthen the regulatory capacity, offering technical assistance for policy development and advancing AI data policy frameworks to help manage, govern and utilise data to enable innovation.[219] So far, 22 of the 35 interested countries have benefited from the AU's technical support.

4.2 Africa Digital Compact

The Africa Digital Compact (ADC) was adopted at the 2024 Summit of the Future through stakeholder engagement. It aims at achieving an "open, free and safe digital sphere for all" through shared responsibilities.[220]ADC also focuses on preventing existing digital inequalities from being amplified.[221] The ADC aims to enable everyone to benefit from AI by eliminating technology access disparities. Its underlying principles are international law, commitment to equity and its core principle of inclusivity. The AU-AI Strategy and the ADC converge with responsible AI, a human-centric approach and ethical considerations.

4.3 AU-AI Strategy and National AI Strategies.

The Strategy calls for domestication by countries to reflect their aspirations and unique needs and translate the vision into actionable policies.[222] Sixteen African countries, including Kenya, Ghana, Nigeria and Rwanda, have developed their national

217 Ibid

218 Ibid p. 60-61 https://cipit.strathmore.edu/an-in-depth-analysis-of-the-au-ai-continental-strategy-and-implications-on-ai-governance-in-the-continen[t/] accessed 08 May 2025

219 https://au.int/en/pressreleases/20250404/african-union-champions-ai-africas-socioeconomic-transformation accessed 09 May 2025

220 Gwagwa A & Mollema J T W, How Could the United Nations Global Digital Compact prevent Cultural Imposition and hermeneutical injustice [2024] Patterns Perspective, Cell Press Vol 5:1,2.
United Nations, Global Digital Compact [2024] < https://www.un.org/global-digital-compact/sites/default/files/2024-09/Global%20Digital%20Compact%20-%20English_0.pdf>

221 United Nations, A Global Digital Compact – an Open, Free and Secure Digital Future for All, " Our Common Agenda Policy Brief 5 (May 2023) < https://indonesia.un.org/sites/default/files/2023-07/our-common-agenda-policy-brief-gobal-digi-compact-en.pdf>
5

222 Ibid.

AI strategies, with others like Tanzania, Cameroon and Namibia having ongoing discussions.

4.3.1. The National AI Strategies

The AI strategies developed after the adoption of the AU -AI Strategy reflect its key pillars, even so those developed prior also reflect key pillars maintaining relevance and applicability in the hopes for harmonised efforts in governing AI in Africa. Kenya, for instance, through the Kenya National Strategy 2025-2030, launched in March 2025, aligns with the AU-AI Strategy's emphasis on sectoral priorities, ethical governance and capacity building. Similar to the AU-AI Strategy, it focuses on inclusive and responsible AI as well as local data sovereignty.[223]

South Africa's National AI Policy Framework (August 2024) aligns with the AU-AI Strategy's ethical governance pillars and focuses on human rights.[224] Similarly, Nigeria's National AI Strategy focuses on ethical AI, private sector development and inclusive governance, a reflection of the pillars of the AU–AI Strategy. Zambia's National AI Strategy (2024-2026), launched in November 2024, commits to global best standards such as the AU-AI Strategy and emphasises inclusive and ethical governance and infrastructure development.

The increase in AI strategy development in Africa shows the growing government commitments to regulate and govern responsible AI in Africa with key thematic areas appearing in most strategies. A foundational objective to harness AI for social economic development in priority sectors such as education, agriculture, healthcare, education, public administration and financial sector is shared across the AI strategies. For instance, Kenya's National AI strategy prioritizes AI applications in sectors such as Agriculture, healthcare and support of small and medium enterprises (SMEs). Similarly, the South Africa AI strategy focuses on health, especially predictive analysis to reduce hospital readmissions.[225] Zambia's AI strategy also adopts a phased approach in AI integration in Education and public service delivery. This sector specific approach aligns with the AU AI strategy highlighting AI's key role in accelerating Agenda 2063 and SDGs and in line with the AU AI strategy vision of fostering ethical AI and impactful AI adoption in Africa.[226]

The African AI strategies, taking into account the significant risks AI poses such as biases, Security vulnerabilities, discrimination among others emphasize the development of robust ethical governance and risk mitigation mechanisms to ensure responsible AI development. Rwanda's AI strategy includes governance models like ethical oversight committees and thorough risk assessment mechanisms to embed ethics in AI policy making ensuring AI systems align with legal standards. The Kenyan AI strategy also emphasizes on principles such as inclusivity, accountability and transparency. It also calls for ethical

223 The World Economic Forum, underscores AI sovereignty as a term that describes a nation's ability to protect and advance its interests through the strategic use of AI. https://www.weforum.org/stories/2024/04/sovereign-ai-what-is-ways-states-building/

[5]Dan Cooper, Benjamin S. Haley , Deon Govender, Ahmed Mokdad and Mosa Mkhize 'Kenya's AI Strategy 2025-2030: Signals for Global Companies Operating in Africa' (Lexology, 1 April 2025[1] <https://www.lexology.com/library/detail.aspx?g=e0e6ec12-e4a5-4f38-b5aa-9db706d53bb7>

224 https://www.globalcenter.ai/analysis/articles/african-countries-are-racing-to-create-ai-strategies-but-are-they-putting-the-cart-before-the-horse

225 South Africa National AI Policy Framework (October 2024) https://fwblaw.co.za/wp-content/uploads/2024/10/South-Africa-National-AI-Policy-Framework-1.pdf accessed 10 June 2025.

226 African Countries Are Racing to Create AI Strategies (Global Center on AI, 11 April 2025) https://www.globalcenter.ai/analysis/articles/african-countries-are-racing-to-create-ai-strategies-but-are-they-putting-the-cart-before-the-horse accessed 10 June 2025.

frameworks especially for clinical AI applications aligning with AU's vision by ensuring AI respects human rights and promotes equitable access. Ghana's AI strategy also emphasizes multi sector stakeholder engagement in developing ethical guidelines and frameworks that address bias, social inclusion and privacy.[227]

Africa acknowledges the critical shortage of infrastructure and AI experts with most African strategies providing for investment in infrastructure, research institutions and human capital development to reduce overreliance on foreign AI technologies and foster homegrown solutions tailored to Africa's unique contexts. The Egypt 2nd edition AI strategy emphasizes on smart city initiatives and Industrial research and development. Similarly, Kenya's National AI strategy plans to establish national AI research centreS and promote private public partnerships for stronger AI ecosystems.[228] All these align The AU AI strategy call to foster homegrown AI capacity to accelerate AI adoption in Africa as the strategy notes that Africa accounts for about 3% of the global AI talent only with brain drain remaining a challenge.[229]

Africa AI strategies also focus on data governance and sovereignty ensure responsible AI that respects data privacy and national control over sensitive data. The Kenyan National AI strategy for example, emphasizes on data sovereignty, data privacy, ethics and cybersecurity as the core enablers of AI ecosystems. It emphasizes on a local first approach to data governance ensuring Kenyan data is leveraged and protected for Kenyan citizens.[230] For Ghana, the AI strategy integrates data governance in the digital transformation agenda emphasizing the development of frameworks for the regulation of data collection, use and storage. The Nigeria AI strategy focuses on building data infrastructure policies to protect ethical data management and ensure responsible data sharing for AI innovation. The Rwanda AI Strategy also provides for a n approach that balances data localization with the need for foreign investment by incorporating data governance as an AI enabler.

All Africa AI strategies share common visions geared towards achieving Agenda 2063 with differences emerging based on each country's needs. The sector priorities differ based on the country's specific needs. The Kenya National AI strategy for instance focuses on AI adoption in several critical sectors like healthcare, education, SMEs and public delivery. Zambia's strategy on the other hand is focused on pragmatic sectoral integration targeting agriculture, healthcare, mining and climate. Mauritius AI Strategy focuses on manufacturing, fintech, smart ports management and healthcare. African countries are making significant strides in developing AI strategies in alignment of the AU AI strategy. Such strategies share common goals and are tailored to each country's needs while their success will depend on the effective implementation of the policies, investment in infrastructure and talent and talent.

227 Kenya Ministry of ICT, Kenya Artificial Intelligence Strategy 2025–2030 (March 2025) https://ict.go.ke/sites/default/files/2025-03/Kenya%20AI%20Strategy%202025%20-%202030.pdf accessed 10 June 2025.

228 Florence A. Ogonjo, 'The Kenya National AI Strategy 2025-2030: Regional and Global Positioning' (CIPIT Strathmore University, 22 April 2025) https://cipit.strathmore.edu/the-kenya-national-ai-strategy-2025-2030-regional-and-global-positioning/ accessed 10 June 2025.

229 African Union, 'Africa Declares AI a Strategic Priority as High-Level Dialogue Calls for Investment, Inclusion, and Innovation' (17 May 2025) https://au.int/en/pressreleases/20250517/africa-declares-ai-strategic-priority-investment-inclusion-and-innovation accessed 10 June 2025.

230

However, some gaps and risks must be addressed to achieve the Strategy's goals. Such risks stem from uneven regulatory capacity for the countries, infrastructure risks, and a lack of AI talent, which hinder the adoption of AI as well as the equitable distribution of AI benefits. There is also the risk of AI exacerbating existing inequalities if not properly managed, an issue that can widen the urban-rural digital divide and marginalise communities. Risks around bias and data privacy issues remain complex and evident, especially with cross-border data flows.

The AU–AI Strategy advocates for ethical principles such as protecting human dignity, a human-centred approach, and inclusivity to address such gaps. Africa requires investments in digital infrastructure, skills, and capacity building to achieve objectives such as ethical AI adoption and inclusive use of AI. Stakeholder engagement and cooperation to share knowledge, technical expertise and infrastructure have the potential to help Africa harness the benefits of AI while mitigating risks.

4.4 Statements and Declarations

4.4.1 Windhoek Statement

Over the years, organisations such as UNESCO have been instrumental in building momentum on responsible AI through regional blocs. This is characterised by the Windhoek Statement on Artificial Intelligence in Southern Africa, adopted in June 2022,[231] and the Nairobi Statement on Artificial Intelligence and Emerging Technologies in Eastern Africa, adopted in June 2024.[232] Both statements make recommendations for key thematic areas in the AI ecosystem: AI and data governance, capacity building and awareness raising, investment and infrastructure, education, research, development and innovation, environment and disaster risk reduction, gender and collaboration and partnerships.[233] Specific to the Southern African region, the Windhoek Declaration outlines a strategic framework for ethical and inclusive AI development across the eight key thematic areas. It calls for Africa-centric AI governance, emphasising updated regulations, transparent algorithms, and localised datasets to mitigate biases and bridge digital divides.[234]

The Statement prioritises public awareness campaigns and institutional training, with infrastructure investments targeting connectivity, high-performance computing, and rural innovation hubs.[235] On education, the Statement advocates for decolonised AI curricula, science, technology, engineering, the arts, and mathematics (STEAM) integration, and teacher upskilling.[236] On research and innovation, the Statement focuses on context-driven solutions in health and agriculture, supported by talent retention schemes. Environmental sustainability recommendations emphasise the use of AI for climate action and disaster resilience, incorporating indigenous knowledge.[237] Gender equity is considered in the recommendations, which propose measures that include promoting women in STEAM and debiasing datasets.[238] Multistakeholder collaboration is emphasised within the context of aligning

231 Windhoek Statement on Artificial Intelligence in Southern Africa (Windhoek, 9 September 2022) <https://unesdoc.unesco.org/ark:/48223/pf0000383197> accessed 9 May 2025

232 United Nations Educational, Scientific and Cultural Organization (UNESCO), Nairobi Statement on Artificial Intelligence and Emerging Technologies in Eastern Africa (26 June 2024) <https://unesdoc.unesco.org/ark:/48223/pf0000390381> accessed 9 May 2025

233 n182

234 Windhoek Statement (n 187) 3

235 Windhoek Statement (n 187) 3-4

236 Windhoek Statement (n 187) 4-5

237 Windhoek Statement (n 187) 5

238 Ibid

regional policies and strengthening partnerships under frameworks like the AU Digital Transformation Strategy 2020-2030.

4.4.2 Nairobi Statement

The Nairobi Statement, specific to the Eastern Africa region, similarly outlines comprehensive recommendations across key thematic areas to harness AI for sustainable development while addressing governance, ethics, and capacity gaps. The Statement emphasises AI and data governance, urging the implementation of ethical frameworks, robust data policies, and inclusive regulatory measures to mitigate biases and ensure transparency.[239] Recommendations on capacity-building highlight the need for public awareness, skills development, and institutional strengthening, particularly for marginalised groups, alongside leveraging UNESCO's assessment tools.[240] With regards to investment and infrastructure, the Statement calls for enhanced funding, regional collaboration, and digital hubs to support AI innovation.[241] The recommendation on education focuses on integrating AI literacy into curricula, promoting gender-inclusive STEAM programs, and developing localised AI tools for teachers and students.[242] The research and innovation recommendation advocates for increased investment in context-driven AI solutions and talent retention, while the environment and gender recommendation stress leveraging AI for climate resilience and ensuring gender-responsive policies.[243] The Statement also emphasises the need for multistakeholder partnerships and regional alignment to amplify Africa's participation in global AI discourse.

239 UNESCO (n183) 4

240 UNESCO (n 183) 4-5

241 UNESCO (n 183) 5

242 UNESCO (n 183) 5-6

243 UNESCO (n 183) 6-7

4.4.3 Africa Declaration on Artificial Intelligence

The Global AI Summit on Africa held in Kigali, Rwanda, brought together government heads, investors and international organisations across the continent with the aim of making progress in "shaping Africa's role in the global AI economy".[244] The Summit culminated in the signing of the Africa Declaration on Artificial Intelligence on 4 April 2025 by 54 signatories. The Declaration acknowledges Africa's unique opportunities and challenges, and rapid AI development and adoption. It further recognises the transformative power of AI and alignment with the AU-AI Strategy, AI Data Policy Framework and ADC, reaffirming its commitment to Agenda 2063 and the SDGs.[245] To ensure it achieves the intended objectives, the Africa Declaration stipulates the goals, the guiding principles and commitments to ensure.

Objectives of the Declaration

The objectives of the African AI Declaration mirror the aims of the AU-AI Strategy. Specifically, the Declaration emphasises ethical governance and focuses on inclusive and responsible AI. These objectives are: to drive innovation and competitiveness in African industries, economies and societies, to foster sustainability and responsibility throughout the AI cycle from the design, development, deployment, use and governance of AI technologies in Africa, and to position Africa as a global leader in trustworthy, inclusive and ethical AI adoption.[246]

244 https://c4ir.rw/global-ai-summit-on-africa accessed on 09 May 2025

245 The Africa Declaration on Artificial Intelligence 2025, preamble https://c4ir.rw/docs/Africa-Declaration-on-Artificial-Intelligence.pdf

246 The Africa Declaration on Artificial Intelligence 2025, 2.2

Guiding principles of the Declaration

The African AI Declaration focuses on three guiding principles aimed at the ethical adoption of AI in Africa, aligning with the AU-AI Strategy's pillars and focus. The first principle – sovereignty, inclusivity, and diversity in African AI design – speaks to the deployment of AI to benefit all African communities, Africa's strategic priorities, diverse cultural contexts, and shared values.[247] Similar to the AU-AI Strategy, collaboration remains key with the Declaration calling for regional, global and public-private sector collaboration to prioritise investment in domestic infrastructure, ensuring long-term sustainability and inclusive AI growth in Africa.[248] Lastly, the Declaration calls for safeguards to be implemented for the prevention of harm and protection of ethics, privacy, transparency and explainability while also prioritising environmental sustainability, human rights and dignity.[249]

Commitments of the Declaration

The African AI Declaration focuses on seven key commitments: data, talent, compute infrastructure, governance, market, institutional cooperation and investment to meet the set objectives.[250]

In relation to talent, the Declaration commits to developing a pipeline of AI practitioners across Africa by launching continent-wide education initiatives and adapting higher education programs to provide globally competitive AI skills. The Declaration commits to the establishment of an African scientific panel composed of experts to advocate for evidence-based research on AI's socio-economic impacts to inform practitioners, policymakers and researchers.[251]

The Declaration commits to supporting responsible national AI policies and governance frameworks aligned with the AU-AI Strategy. Through the creation of a continent-wide knowledge sharing platform to inform best practices, the Declaration will streamline Africa's approach to AI policy and governance.[252]

The commitment in relation to the market involves establishing a regional AI incubation and scaling hub to support Africa-led innovations with commercial potential and adopt an "African-first" approach for AI procurement. Some of the efforts will include an African AI innovation sandbox, an AfCFTA regulatory sandbox and AI research centers.[253] A $60 million Africa AI Fund will be developed to drive future infrastructural development and innovation.[254] This initiative aims to de-risk early-stage ventures and accelerate Africa's journey to becoming a global innovation hub. Lastly, the Declaration commits to establish the Africa AI Council for high-level engagement and strategic alignment with digital transformation efforts globally.[255]

Collectively, the increase in national AI strategies plus continental and regional bloc commitments towards building responsible and ethical AI form a foundational basis for considerations of AI regulation in the continent. Although no country has established a legislative act yet, this is a significant step in the advancements and considerations of AI

247 Ibid 2.1.1

248 Ibid 2.1.3

249 Ibid 2.1.2

250 Ibid 3

251 Ibid 3.1

252 Ibid 3.6

253 Ibid 3.4

254 Ibid 3.5 https://techlabari.com/africa-launches-landmark-ai-declaration-at-global-summit-in-kigali/ accessed on 09 May 2025

255 Ibid 3.7

policy compared to commitments to AI regulation in 2023.

4.4.3 Hamburg Declaration on responsible Artificial Intelligence for Sustainable development

The Hamburg Declaration on Responsible Artificial intelligence (AI) for sustainable Development provides for a global commitment for responsible AI harnessing for the empowerment of developing countries. It promotes equitable harnessing of AI with a focus on promoting equity and inclusion i.e gender inclusivity to ensure AI benefits everyone especially marginalized communities to reduce inequalities. The declaration upholds human rights, gender equality and inclusivity in development and deployment of AI while combating disinformation to build trustworthy and transparent AI systems.[256]

The declaration is based on five key guiding principles of The 2030 Agenda being people, planet (economic sustainability), peace (trustworthy and transparency), prosperity (economic participation and local innovation) and partnership between governments, civil societies, private sector and academia to promote inclusive AI.[257]

It further provides for expansion of AI education especially for women and girls and supporting local AI innovation for African countries. At the heart of the agenda includes inclusion, equality and sustainable development worldwide developing nations as a key focus.[258] The declaration is expected to significantly impact AI governance in Africa by ensuring inclusive AI frameworks with Africa needs and priorities at the center. For Africa, the Declaration encourages African countries to develop frameworks unique to their social, economic and ethical challenges. The declaration will also strengthen Africa's capacity in AI governance by building local expertise and infrastructure to reduce foreign dependency. Through promotion of knowledge sharing and collaboration across Africa and global partners to harmonize AI regulation and ethical guidelines.[259]

256 United Nations Development Programme (UNDP), Hamburg Declaration on Responsible Artificial Intelligence for Sustainable Development (2025) https://www.bmz-digital.global/wp-content/uploads/2025/06/250603_Hamburg_Declaration.pdf accessed 10 June 2025.

257 Global Society Earth — Hamburg Declaration Sets Global Benchmark for Responsible AI
Analytical piece describing the Declaration as a framework for ethical AI aligned with the Sustainable Development Goals and its significance for global AI governance.
https://www.globalsociety.earth/post/hamburg-declaration-sets-global-benchmark-for-responsible-ai-in-sustainable-development

258 BMZ Digital.Global, 'Hamburg Declaration on Responsible AI' (2025) https://www.bmz-digital.global/en/hamburg-declaration-on-responsible-ai/ accessed 10 June 2025.

259 The Voice of Africa — Africa at the Heart of the Hamburg Declaration
Focuses on the Declaration's impact on Africa, emphasizing local AI ecosystems, inclusive education, and the continent's development challenges addressed through responsible AI.
https://thevoiceofafrica.com/2025/06/03/africa-at-the-heart-of-the-hamburg-declaration-a-new-era-for-responsible-ai-and-sustainable-development/

Key Observations and Findings

Image Source: vecteezy.com

The State of AI in Africa Report 2025 highlights the evolution of the African continent and the extent to which AI is being leveraged, the benefits and persistent challenges. From a regional perspective, Eastern Africa, Southern Africa and Western Africa are notably leading in the AI landscape characterised by innovation hubs and startups such as Kenya's Apollo Agriculture, Nigeria's Intron Health and South Africa's Aerobatics. In contrast, the Central African Region continues to experience more concentrated challenges characterised by infrastructural gaps. With respect to investment, Microsoft and G42's US $ 1 billion geothermal powered data centre in Kenya signifies a focus on building the digital ecosystem and promoting skills training to address the talent and skills gaps through training and innovation hubs. This Report also notes that there are currently approximately 140 operational data centres throughout the continent, laying the foundation for sovereign AI. However, lingering vulnerabilities are noted arising from reliance on foreign cloud infrastructure and policy development and enforcement.

The Report's four core sections, AI and Data Governance, Innovation and Infrastructure, Practical Sectoral Applications and Responsible and Ethical AI, collectively underscore both the opportunities and challenges ahead. The AI data governance discussion highlights Africa's push for data sovereignty and the protection of African data sets like Masakhane's NLP tools for indigenous languages through licensing frameworks that protect local interests while warning of surveillance risks and ethical gaps. The innovation analysis reveals a growing startup ecosystem which will continue to thrive with continuous investments in building skills, local talent and addressing compute capacity shortages. The sectoral discussions demonstrate AI's real-world impact, from boosting crop yields to democratising healthcare access, though scalability remains hampered by infrastructural and funding constraints. Finally, the focus on responsible and ethical AI reveals the continent's growing policy approach in the regulation of AI, demonstrated by the development of national AI strategies and a continental strategy further reflecting movement towards more intentional AI-specific regulation. Collectively, these themes demonstrate the continent's positioning in the global AI landscape, offering foresight in establishing areas that will advance Africa's success in the AI ecosystem by balancing rapid adoption with inclusive governance, homegrown talent development, and sustainable infrastructure.

AI continues to reshape key sectors. In the Agricultural sector, smallholder farmers are using predictive tools to combat climate volatility, in health telemedicine platforms bridge healthcare gaps, and in the creative industries, AI is leveraged to amplify underrepresented voices. These advancements are, however, not considered in a vacuum, the digital divide continues to persist, with computational costs hindering AI scalability and ethical issues such as data security and algorithmic biases raising challenges that risk further perpetuating AI related harms and inequalities.

Significantly, an analysis of the various efforts to address capacity and infrastructure challenges through infrastructure investments and capacity-building programs reveals that the majority of these projects originate from local African startups, research hubs, and academic institutions. Funding in the African AI ecosystem is largely driven by

investment from global tech companies, which primarily focus on infrastructure development. International development grants are more focused towards academia and research, with venture capital supporting AI start-ups and AI use case ventures. While African governments are increasingly formulating AI strategies and data protection laws, their influence over the founding and operational funding of many specific innovation projects and private data centres appears to be through creating an enabling policy environment and attracting foreign direct investment.

In addressing the key thematic areas in the assessment of the current state of AI in Africa, the report calls for investment in local talent and infrastructure. Moreover, it highlights considerations for an African AI governance structure and asks that it reflects the realities of the African AI ecosystem, which considers responsible and ethical AI standards. Therefore, the path forward demands more than technological adoption; it requires a uniquely African AI lens in advancing the continent's global positioning in the AI ecosystem that centres local needs, cultures, and sovereignty.

Recommendations

Image Source: vecteezy.com

Artificial Intelligence offers immense potential for social transformation in Africa, but this potential can only be realised through deliberate, context-sensitive, and ethically grounded policy choices. Drawing on the most recent initiatives, the following recommendations can be considered.

1. *Harmonise and Implement the African Union Data Policy Framework*

Adopted in 2022, the African Union's Data Policy Framework presents a continent-wide vision for equitable data governance, intended to empower member states to regulate, share, and protect data in ways that foster both innovation and sovereignty. However, implementation remains uneven. States must now accelerate national-level adoption through harmonised legislation, cross-border data governance mechanisms, and the integration of community-based data justice frameworks. The recent call to action at the Digital Rights and Inclusion Forum 2024 underscored the urgency of this alignment, highlighting the risk that fragmented governance poses to digital integration across the continent.[260] In addition, sustainable funding mechanisms, domestic and donor-backed, are needed to support long-term data regulation, public education on digital rights, and accountability frameworks.

2. *Develop and Fund Localised, Open African Datasets*

The availability of high-quality, inclusive, and locally relevant data is essential for the development of fair and effective AI systems. Projects such as the Lacuna Fund have made commendable strides by supporting dataset creation across agriculture, health, language, and climate domains.[261] However, to avoid dependence on external priorities or datasets developed in the Global North, African governments must invest in the sovereign production of public-interest data.

National statistics offices, research institutions, and indigenous knowledge holders must be supported financially and institutionally to curate datasets reflecting Africa's linguistic, cultural, and ecological diversity. Such efforts are particularly vital in supporting NLP tools in African languages, as advanced by organisations like Masakhane.[262] These datasets should, where appropriate, be made open access to spur innovation, while ensuring data governance structures that protect privacy and community rights.

3. *Integrate AI Strategies into Broader Development Planning*

AI policy must be embedded in the broader architecture of development planning. AI should not be treated as a niche or technical sector, but as an enabling tool across education, climate resilience, health, agriculture, justice systems, and governance. Kenya's development of the national AI strategy demonstrates how states can align technological progress with national development goals such as Vision 2030, the African Union's Agenda 2063, and the SDGs.[263]

This integration ensures that public investment in AI supports tangible outcomes such as improving agricultural

260 Kenya ICT Action Network (KICTANet), 'KICTANet at DRIF25: Implementing the African Union Data Policy Framework' (KICTANet, 25 April 2024) https://www.kictanet.or.ke/kictanet-at-drif25-implementing-the-african-union-data-policy-framework/ accessed 5 May 2025.

261 Lacuna Fund, 'Apply for Funding' (Lacuna Fund, 2024) https://lacunafund.org/apply/ accessed 5 May 2025.

262 Masakhane, 'Masakhane Projects' (Masakhane.io, 2025) https://www.masakhane.io/ongoing-projects/ accessed 5 May 2025.

263 Ministry of Information, Communications and the Digital Economy, Kenya Artificial Intelligence Strategy 2025–2030 (Government of Kenya 2025) https://ict.go.ke/sites/default/files/2025-03/Kenya%20AI%20Strategy%202025%20-%202030.pdf accessed 6 May 2025.

productivity through innovative irrigation tools, enhancing disease surveillance, or driving inclusion in financial services. This also aligns AI with social protection frameworks, gender equality, and youth employment.

4. *Invest in Decentralised, Renewable Digital Infrastructure*

Infrastructural disparities remain a key barrier to equitable AI development across Africa. The centralisation of data processing in a few urban hubs risks excluding rural and under-resourced regions. Investing in decentralised data infrastructures, such as edge computing and regional data hubs, is necessary to mitigate these gaps.

In this context, the move toward renewable energy-powered infrastructure presents a significant opportunity. Africa's expansive geography, abundant solar, wind, and geothermal resources, and rising data needs make it well-suited for hosting sustainable digital infrastructure.[264] By leveraging these advantages, the continent can support the development of decentralised, green-powered data hubs that not only reduce carbon footprints but also enhance digital inclusion and resilience across regions.[265] This reflects a growing recognition of the importance of sovereign, sustainable, and locally accessible data infrastructure. African countries must now build on this model by establishing regional data centers that are energy-efficient, aligned with national cloud and data policies, and locally controlled. Public-private partnerships will be essential in funding these developments while ensuring safeguards around data sovereignty.

5. *Operationalise Ethical AI and Human Rights Frameworks*

The ethical and rights-based governance of AI is no longer optional. UNESCO's 2021 Recommendation on the Ethics of Artificial Intelligence provides a global reference point, and African countries should work toward domesticating and operationalising these standards.[266] This entails developing context-specific AI ethics frameworks that address algorithmic discrimination, surveillance risks, explainability, and environmental sustainability. Several African states, like Rwanda and Mauritius, have begun outlining ethical guidelines within their broader digital strategies, though implementation remains uneven.[267]

National regulatory bodies should be empowered to audit AI systems deployed in public service delivery, particularly in sensitive sectors such as policing, education, and healthcare. Ethical AI also requires meaningful participation like communities impacted by algorithmic decisions must have a say in how technologies are designed and used.

6. *Scale Capacity Building and*

264 International Energy Agency, Africa Energy Outlook 2022 (IEA 2022) https://www.iea.org/reports/africa-energy-outlook-2022 accessed 9 May 2025; United Nations Economic Commission for Africa, Building Forward Better: Towards a resilient and green Africa to combat climate change (UNECA 2021) https://repository.uneca.org/handle/10855/46606 accessed 9 May 2025.

265 World Bank, Digital Economy for Africa Initiative (DE4A) (World Bank 2021) https://www.worldbank.org/en/programs/all-africa-digital-transformation accessed 29 May 2025; Smart Africa, Smart Broadband 2025: Broadband Infrastructure Blueprint for Africa (Smart Africa 2022) https://smartafrica.org/resources/ accessed 9 May 2025

266 UNESCO, 'Harnessing Emerging Technologies for Sustainable Development in Africa, Including through the Implementation of the Recommendation on the Ethics of AI' (UNESCO, 2023) https://www.unesco.org/en/articles/harnessing-emerging-technologies-sustainable-development-africa-including-through-implementation accessed 5 May 2025.

267 Ministry of ICT and Innovation (MINICT) and Rwanda Utilities Regulatory Authority (RURA), National Artificial Intelligence Policy for Rwanda (April 2023) https://rura.rw/fileadmin/Documents/ICT/Laws/Rwanda_national_Artificial_intelligence_Policy.pdf accessed 6 May 2025, and Ministry of Technology, Communication and Innovation, Mauritius Artificial Intelligence Strategy (2018) https://treasury.govmu.org/Documents/Strategies/Mauritius%20AI%20Strategy.pdf accessed 6 May 2025.

Inclusive AI Education

No AI ecosystem can thrive without a critical mass of technically skilled professionals and an AI-literate population. Grassroots initiatives like AI Saturdays and the Masakhane NLP community have demonstrated that community-driven models can deliver tangible capacity-building outcomes.[268] These programs, often run by volunteers, have trained thousands across the continent in machine learning, dataset curation, and ethical AI development.

Governments should partner with these initiatives, integrating AI education into national curricula at secondary and tertiary levels, and expanding scholarship support for underrepresented groups. Special focus should be placed on gender inclusivity, digital accessibility, and rural inclusion to ensure equitable participation in the AI revolution.

268 Masakhane, 'About Us' (Masakhane.io, 2025) https://www.masakhane.io/ accessed 5 May 2025.

By implementing these recommendations, African countries can move beyond fragmented pilot programs toward sustainable, rights-based AI governance. The continent is well-positioned to become a global leader in responsible AI, provided that policy frameworks are bold, inclusive, and grounded in local realities.

7. Invest in Universal Access to Connectivity for AI Empowerment

It is vital for governments to invest in affordable, high-speed broadband and internet infrastructure, especially in underserved and rural regions on the continent. This would promote equitable access to connectivity, allowing Africans to access skills, resources and opportunities to create and use AI tools. This would also ensure that diverse populations, including young people, women, rural communities and people with disabilities, shape African-centred AI solutions, foster local development and reduce reliance on foreign AI tools.

Conclusion

Image Source: vecteezy.com

Shaped by innovation, the increase in policy attention and growing investment across the continent shows that the African AI ecosystem continues evolving and undergoing gradual transformation. From the mapping, growth of the ecosystem is evident. However, progress remains uneven. Regional leaders such as Kenya, South Africa, Nigeria, and Ghana are advancing rapidly in infrastructure development, strategic planning, and practical AI applications, while others, particularly in Central Africa, are still constrained by infrastructural and capacity challenges.

One of the most striking developments is the expanding recognition of data as a strategic resource. Across many countries, data governance has moved beyond foundational privacy concerns to encompass open data, digital sovereignty, and the inclusion of indigenous knowledge in dataset development. However, the gap between the existence of legal frameworks and their enforcement remains wide. Investments in data infrastructure, including the construction of new data centres and cloud facilities, signal a growing commitment to building sovereign and sustainable AI ecosystems, yet challenges such as poor connectivity, inconsistent electricity supply, and cross-border regulatory fragmentation continue to limit progress.

At the same time, Africa is becoming a fertile ground for AI-driven innovation, with solutions increasingly rooted in local realities. Startups, researchers, and civil society actors are using AI to respond to practical challenges in agriculture, healthcare, law, and the creative industries. These applications have not only improved service delivery and efficiency but also created new pathways for social and economic empowerment. Still, implementation gaps persist, particularly around data availability, contextual language models, and the integration of AI into existing systems.

The governance landscape is evolving in tandem with these technological shifts. The adoption of the AU-AI Continental Strategy and the emergence of national AI policies reflect a growing awareness of the need for coordinated and ethical AI development. These frameworks aim to centre African values, promote talent retention, and ensure that AI is used responsibly. Yet the true test lies in translating these policies into actionable, inclusive, and enforceable systems that are responsive to Africa's diverse social and economic contexts.

The current state of AI in Africa reveals a complex but promising picture of growing ambition, creative adaptation, and structural constraints. As Africa positions itself in the global AI ecosystem, balancing rapid technological adoption with equity, sustainability, and cultural relevance remains critical to harnessing AI for inclusive and equitable development.

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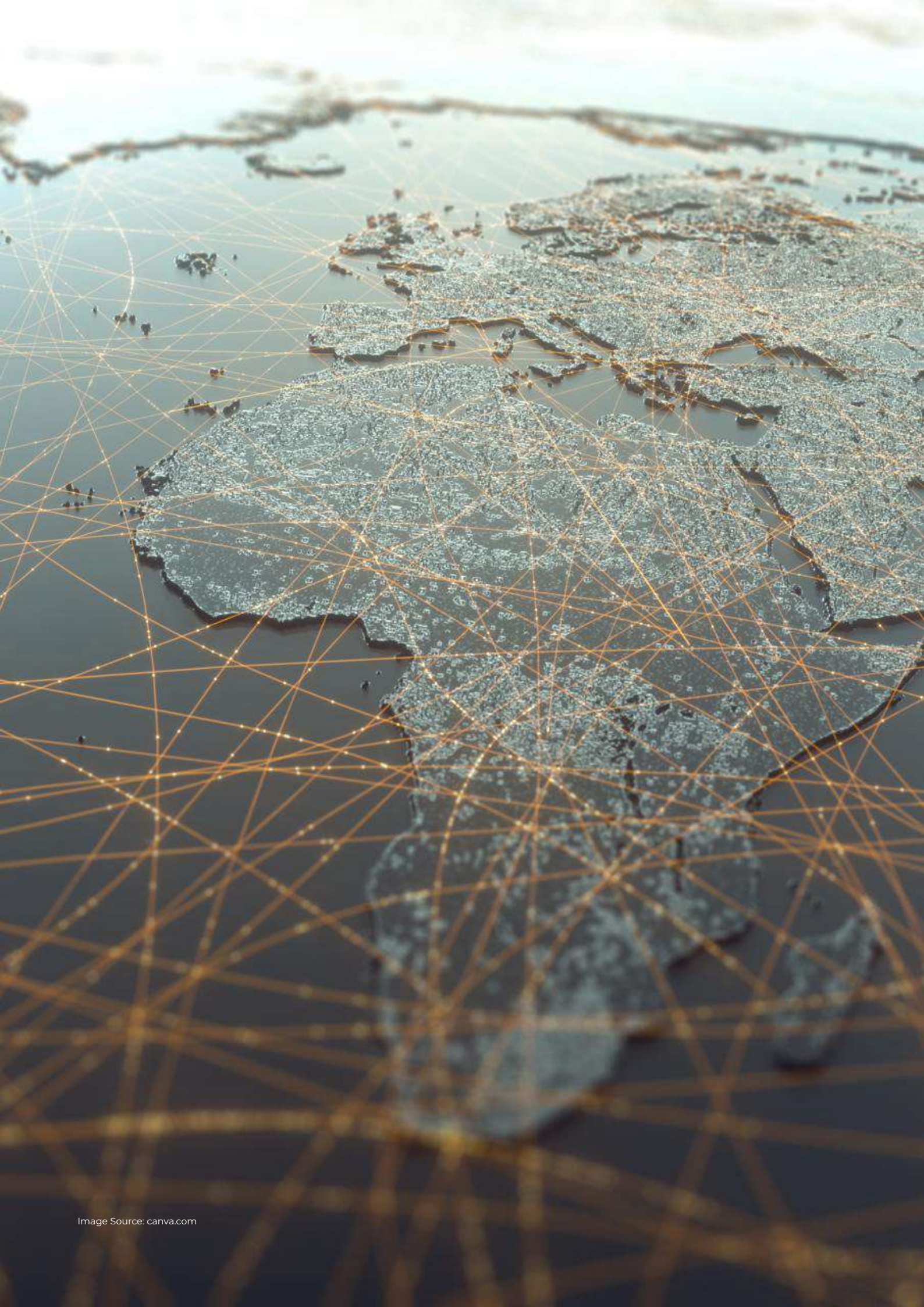

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