DATASPHERE INITIATIVE

KIGALI-RWANDA AI SANDBOXES CO-CREATION LAB REPORT

April 2025

Acknowledgements

This Co-creation Lab Report is authored by **Morine Amutorine**, Africa Sandboxes Forum Lead, and **Risper Onyango**, Research Assistant, Datasphere Initiative. The Datasphere Initiative would like to thank all of the participants who contributed their time, insights, and expertise to this co-creation lab. This workshop was enriched by the valuable perspectives of a diverse group of stakeholders from across the digital policy and data governance ecosystem.

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Key Insights

- AI is often portrayed in extreme ways - either as revolutionary or harmful. Sandboxes can help create a balanced perspective of both potential and risks for African contexts.
- There is significant value in implementing sandboxes even before formal AI regulations exist, enabling experimentation that can inform more effective regulatory frameworks.
- Sandboxes offer practical solutions to reduce deployment time for AI innovations across Africa by creating environments where applications can be vetted and aligned with diverse national requirements.
- Africa has an opportunity to lead in responsible AI development by documenting sandbox successes and failures, contributing valuable knowledge to the global AI governance conversation.
- Building capacity for regulators, innovators and youth is essential for sandbox success, requiring investment in technical expertise and awareness to maximize impact across the continent.

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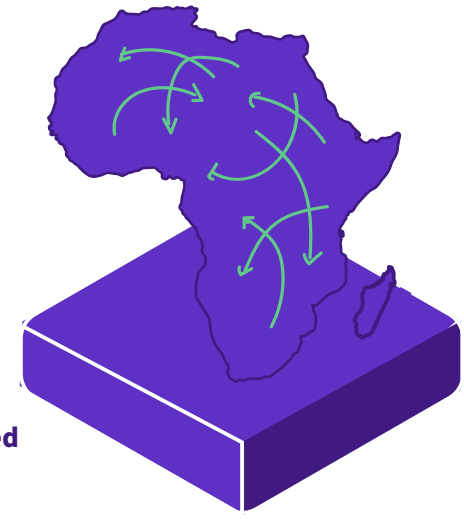
INTRODUCTION

The inaugural Global AI Summit on Africa held in Kigali on April 3-4, 2025, brought together high-level policymakers, AI experts, thought leaders, industry pioneers, and researchers from across Africa and beyond. This summit explored the transformative AI opportunity for Africa and outlined practical steps needed to realize this potential.

Building momentum before the Summit, the Datasphere Initiative (DI) kicked off its **AI Sandboxes Co-creation Lab Series** with a focused Africa session on **April 2nd**. This new initiative creates a collaborative environment where diverse stakeholders can co-design and refine responsible sandbox models that can foster AI innovation while ensuring appropriate safeguards.

Hosted at Westerwelle Startup Haus Kigali, as a side-event of the Global AI Summit on Africa, the Lab convened 17 participants representing government regulators, private sector leaders, academics, and development organizations. The three-hour session drew on insights from DI's latest research publications: the Africa Sandboxes Outlook and the Sandboxes for AI report. Participants explored areas where sandboxes can have the greatest impact in shaping AI development in Africa, with conversations spanning data and infrastructure, skills and capacity, regulation and governance frameworks, and data governance and rights. Below are key insights that emerged from the dialogue.

STRATEGIC OPPORTUNITIES FOR AI SANDBOXES IN AFRICA



1. Sandboxes as a means of establishing a balanced perspective of both potential and risks of AI for Africa.

AI has been characterized at extreme ends: as a revolutionary force for social economic transformation to some, and as an instrument for inequality and human rights concerns to others. Sandboxes offer a practical middle ground to place both potential and risks in proper perspective. This balanced approach can help categorize potential harms across key domains: data and infrastructure, skills and capacity, regulation and governance frameworks, and rights.

Simultaneously, sandboxes can open restrictive datasets to researchers for building and testing AI models, giving stakeholders better understanding of real possibilities. This enables evaluation of both positive applications (such as medical diagnostics) and potential risks, generating evidence-based insights currently lacking in many AI discussions across Africa.

2. Sandboxes as an enabler for timely rollout of responsible AI innovation across the continent.

Responsible AI is increasingly seen as a competitive edge, and sandboxes help bridge the gap between innovation and regulation, making it easier to deliver solutions that both meet market needs and align with public interest.

Regulatory sandboxes offer a practical way to fast-track the rollout of responsible AI solutions across Africa, not by removing oversight, but by making the path to compliance more efficient and collaborative. For regulators, sandboxes offer practical insights into emerging technologies; for innovators, they provide opportunities to learn regulatory requirements firsthand; for civil society and other stakeholders, sandboxes create opportunities to advocate for human rights protections and ensure AI innovations are developed safely for both people and the planet. This model provides a structured environment where all stakeholders can work together early in the process - testing new tools, refining frameworks and identifying risks before full scale deployment, which helps innovators move forward with greater clarity and less red tape, while upholding safety, ethics and user trust.

3. Sandboxes as an opportunity to facilitate responsible experimentation with AI regulatory tools

Sandboxes facilitate valuable experimentation even before comprehensive regulatory frameworks are established. This is particularly valuable for AI, where different stakeholder groups—including regulators and human rights advocates—are still developing their understanding of potential harms. The regulatory challenge lies in avoiding approaches that are either too restrictive (hindering innovation) or too relaxed (increasing risks).

Moreover, this experimentation during regulatory development leads to more effective use of resources spent on AI framework development, helps regulators understand the social impact of AI solutions, and provides opportunities to refine legislation while innovation continues. Developing practical evaluation frameworks for responsible AI implementation becomes possible through this approach.

4. Sandboxes as an opportunity to explore data sharing mechanisms.

Sandboxes provide unique opportunities to explore and test data sharing mechanisms crucial for AI development. This includes incentivizing data sharing through rewards or recognition for compliance—for example, acknowledging patients who allow their diagnostic data to be used for training automated diagnosis models. These environments can also test approaches for rewarding or spotlighting positive compliance as a way to encourage individuals or entities to share their data. Additionally, sandboxes enable exploration of synthetic data generation and simulation techniques for forecasting, building concrete scenarios that demonstrate AI's transformative potential while addressing questions like: "How do we reward positive compliance in data sharing?"

5. Operational sandboxes as an opportunity to build AI capabilities and create context-specific solutions.

Mechanisms within sandboxes can open up valuable datasets to African researchers for innovation and development. Operational sandboxes have tremendous potential to grow skills and capacity among Africa's youth and practitioners. By establishing spaces where datasets can be accessed and utilized for research and development, practitioners would gain hands-on experience with AI systems tailored to local contexts. These environments also create opportunities to address data standardization challenges, harmonize data dictionaries and formats across systems and regions. Even more importantly, sandboxes provide opportunities to create context-specific approaches that acknowledge computational limitations in different regions across Africa. For example, sandboxes can enable simulation of edge AI deployments where computing resources are scarce, leading to solutions optimized for the African context.

CHALLENGES IN THE AFRICAN AI LANDSCAPE

While exploring sandbox opportunities, the dialogue surfaced several systemic challenges within the African AI landscape that require attention from stakeholders across the ecosystem. They include:

1. AI poses a great risk to Africa's digital self-determination: Digital self-determination refers to Africa's right to control its own data, digital infrastructure, and technological development pathways according to local needs and values. In regards to data, this means Africa's right and ability to make decisions about how its data is collected, stored, processed, and monetized - which is currently not the case. Participants expressed that the continent faces a risk of digital colonialism, where data is collected and processed by external entities without African oversight or control. This power imbalance undermines Africa's agency and raises questions about how to test the impact of such dynamics and address low public trust in AI due to fears of exploitation or bias.

2. Regulatory complexity across different countries creates barriers to innovation.: Participants highlighted the time-consuming processes and inconsistent regulations between African nations that delay solution deployment and hinder continent-wide innovation.

3. Focus on compliance often overshadows innovation potential: Current approaches emphasize regulatory compliance rather than using sandboxes for their true purpose: building evidence and enabling innovation.

BARRIERS TO EFFECTIVE SANDBOX IMPLEMENTATION

Beyond the broader AI landscape challenges, discussion further revealed several practical obstacles to deploying successful sandbox initiatives, even when the will to implement them exists. They include;

1. **Limited regulatory capacity to design and implement sandboxes**
   Authorities often lack understanding about effective sandbox implementation and the benefits of leveraging comprehensive sandbox roadmaps, creating a need for capacity building specifically for sandbox operation.

2. **Insufficient practical know-how among key stakeholders**
   Both regulators and innovators often lack the practical understanding needed to properly evaluate AI risks and benefits. Participants noted that most sandbox evaluation panels consist primarily of legal experts rather than technologists, pointing to the need for hybrid teams capable of fair AI assessment.

3. **Low awareness of existing sandbox initiatives**
   There is inadequate awareness-building around sandbox activities, which has left some existing sandboxes, such as Uganda's Uganda Communications Commission testbed, operating with insufficient visibility and consequently lessening their impact.

KEY IMPACT AREAS:

Where Sandboxes Can Have the Greatest Impact in Shaping AI Development in Africa

Throughout the discussion, participants identified several critical areas where AI sandboxes could drive significant positive change across the continent. Rather than viewing sandboxes as merely regulatory tools, the dialogue highlighted their potential as strategic catalysts in three interconnected domains. The following categories represent priority focus areas where sandbox implementations could yield the most meaningful outcomes, with specific examples of how they might address Africa's unique AI development challenges:

Data governance, digital sovereignty, and regulatory innovation

- Testing approaches to improve African control over data collection, storage, and processing.
- Facilitating experimentation before or during AI regulation formulation
- Testing practical implementation of governance frameworks.
- Finding the right balance between innovation and risk management.
- Exploring alternatives to data localization laws that block innovation through piloting interoperable frameworks.

Infrastructure and contextual solutions

- Testing AI solutions designed specifically for African contexts, particularly in low-resource environments.
- Exploring contextual approaches such as edge AI and other solutions suitable for infrastructure limitations.
- Creating sustainable business models for AI solutions beyond initial funding (e.g., "DPIs could underpin AI-agritech business models").

Skills and capacity development

- Creating accessible spaces where datasets can be used for research and development and building technical capability among African youth and practitioners.
- Equipping regulators with the lessons and growing their technical understanding needed to effectively regulate AI.
- Increasing sensitization and awareness around sandbox possibilities and implementation for different sectors.

MAKING SANDBOXES RESPONSIBLE

Participants strongly resonated with the concept of ensuring AI sandboxes are implemented responsibly across different stakeholder groups and environments. The discussion questions around cultural factors affecting trust, incentive structures, required skills, data risks, and interoperability sparked engaged dialogue, highlighting the importance of responsibility as a central consideration in sandbox design.

Several key principles emerged for making sandboxes responsible:

1. **Demonstrating tangible benefits** - Sandboxes must deliver clear, measurable value to all stakeholders to gain buy-in, extending beyond regulatory compliance to include capacity building and innovation support. Success stories and case studies can help illustrate potential impacts and encourage broader participation.

2. **Developing responsibility testing templates** - Creating adaptable guiding frameworks to assess responsibility across different dimensions will ensure consistent evaluation while incorporating cultural context and local values. These templates should remain flexible enough to adapt to different sectors and use cases across the continent.

3. **Grounding sandboxes in research and development** - To produce sustainable and scalable innovations, sandboxes must be rooted in strong research and development frameworks. Participants emphasized the importance of tapping into academic institutions and research talent to co-design experiments, assess outcomes, and strengthen the evidence base for policy and product deployment. This approach ensures that sandbox initiatives are not just policy pilots but platforms for meaningful, data-driven innovation.

4. **Building trust through inclusive design** - The group emphasized addressing cultural factors that might affect trust in AI and sandbox processes, while creating appropriate incentives for diverse stakeholder engagement, including civil society. Ensuring representation from communities potentially affected by AI applications was identified as crucial for building legitimate trust.

5. **Addressing data risks proactively** - Participants highlighted the importance of identifying and mitigating specific data vulnerabilities in the African context, implementing appropriate privacy safeguards, and creating clear protocols for handling sensitive data within sandbox environments.

6. **Promoting knowledge sharing and interoperability** - Designing sandboxes that facilitate learning between sectors and regions will maximize their impact. This includes creating standardized documentation and evaluation approaches, and building communities of practice around responsible AI sandbox implementation.

7. **Promoting open-source innovation ecosystems** - There was strong support for the idea that sandbox outcomes—whether AI models, policy frameworks, or digital infrastructure—should contribute to a broader ecosystem. Where possible, sandboxed products and solutions should adopt open-source principles to promote transparency, collaboration, and wider uptake. At the same time, clear mechanisms must be established to safeguard intellectual property (IP), ensuring that innovators/creators are recognized and incentivized, while the public benefits from shared innovation.

Participants emphasized that responsibility should not be treated as a compliance checkbox but rather as a foundational principle integrated throughout the sandbox lifecycle, from design to implementation to evaluation.

CONCLUSION: TESTING THE PROMISE THROUGH PRACTICE

The AI Sandboxes Co-creation Lab highlighted a clear consensus: sandboxes present a powerful opportunity for Africa to chart its own path in the AI revolution. Rather than simply reacting to global AI developments, sandboxes offer a proactive approach to testing, refining, and adapting AI technologies to address uniquely African challenges and opportunities.

Can we use sandboxes to test the promises of AI? The participants' resounding answer was yes. Through well-designed sandbox environments, Africa can move beyond theoretical discussions about AI's potential to practical demonstrations of impact across healthcare, agriculture, governance, and other critical sectors. **Sandboxes provide the missing link between ambitious policies and tangible outcomes by creating controlled environments where innovation can flourish while risks are contained.**

The science of sandboxing is nascent, particularly in the AI domain. This presents Africa with a unique opportunity to lead by documenting what works—and importantly, what doesn't. By capturing insights from diverse implementations across the continent, Africa can contribute valuable knowledge to the global conversation on responsible AI governance while developing solutions tailored to its specific contexts.

As the Global AI Summit on Africa progressed, the findings from the Co-creation Lab strongly aligned with broader discussions at the Summit, confirming the timeliness and relevance of such collaborative dialogues. The path forward will require sustained collaboration between regulators, innovators, civil society, and communities to ensure that sandboxes fulfill their promise as catalysts for responsible, inclusive, and transformative AI development across the continent.

ANNEXES

1. Session Pictures

Picture folder: here

2. Co-lab agenda

The workshop entailed a multi-stakeholder dialogue on designing and implementing responsible AI sandboxes. It highlighted insights from DI's two new publications and engaged stakeholders in shaping the building blocks of responsible AI sandboxes. Through interactive discussions, the discussions explored:

- The role of AI sandboxes in supporting regulatory innovation and ethical AI governance.
- The challenges and opportunities for sandboxes in Africa.
- Practical approaches for designing AI sandboxes that align with African contexts.
- How stakeholders—including governments, private sector, academia, and civil society—can collaborate to build inclusive, effective, and responsible AI ecosystems.

Time	Session
2:00 - 2:10 pm	Welcome and Introduction
2:10 - 2:55 pm	Session One: **Why Sandboxes Matter** • Insights from the Africa Sandboxes Outlook Report 2025. • Roundtable Discussion
2:55 - 3:25 pm	Session Two: **Sandboxes for AI—A New Frontier** • Insights into why and how regulators and companies should consider AI sandboxes. • Lightning Feedback Session
3:25 - 3:40 pm	Break
3:40 - 4:40 pm	Session Three: Responsible AI Sandboxing • Design Lab - AI Sandbox
4:40 - 5:10 pm	Session Four: Responsible Innovation Lab Defining essential elements for responsible development, implementation and assessment of AI sandboxes.
5:10 - 5:15 pm	Conclusion & Next Steps

1. Brainstorming a sandbox: Insights from group discussions

Group 1

1. Challenge Being Addressed

The group identified a persistent issue: **regulators and government institutions often lack understanding and preparedness for emerging technologies**, particularly in fast-evolving digital spaces such as AI and data-driven systems. This knowledge gap creates barriers to effective oversight and innovation.

2. Type of Sandbox

The group proposed the creation of a Regulatory Sandbox to serve as a structured yet flexible environment for testing emerging technologies, while building regulatory capacity and enabling real-time learning and adaptation.

3. Goal of the Sandbox

The overarching goal is to ensure that innovative technologies reach the right users in a safe, responsible, and effective manner—particularly where public good and social impact are at stake. The sandbox would act as a bridge between regulation and innovation.

4. Stakeholders to Be Involved

A strong ecosystem approach was recommended, incorporating diverse actors to ensure the sandbox is well-rounded and inclusive. Stakeholders include:

- Government and regulators – for policymaking and oversight
- Innovators and tech developers – who bring solutions into the sandbox
- End users and communities – to ensure the technology addresses real needs.
- Data suppliers – to support testing and inform model development
- Private sector partners – to drive investment and scalability

5. Relevant Guidelines and Standards

The group outlined key considerations for regulatory and technical alignment:

- Stakeholder engagement – Involve the right actors from the start to ensure alignment and accountability.
- Solution maturity criteria – Define baseline standards to ensure sandboxed technologies are sufficiently developed to undergo meaningful evaluation.
- Evaluation tools – Develop clear, context-sensitive evaluation frameworks to measure sandbox outcomes, impacts, and risks.

Group 2

1. Challenge Being Addressed

The group identified **interoperability of healthcare systems** between public and private providers, and limited access to medical care data in rural areas as the challenge to address. The group cited the current fragmentation in health data systems makes it difficult to share and utilize patient information efficiently, especially outside urban centers.

2. Type of Sandbox

The group proposed the creation of a Hybrid Model – Combining Regulatory and Operational sandbox elements.

3. Goal of the Sandbox

The goal of the sandbox is to harmonize data collection practices across diverse healthcare providers, both public and private, by establishing common standards for data processing, storage, and sharing. It aims to facilitate secure access to medical data, particularly in underserved rural communities, and promote interoperability between systems to improve health outcomes and inform evidence-based policy planning.

4. Stakeholders to be Involved

- Similar to Group 1, a strong ecosystem approach was recommended, incorporating diverse actors within the sandbox. This includes:
- Ministries of Health – for policy oversight, governance, and potential funding.
- Professional Healthcare Associations – to support capacity building and facilitate buy-in from medical professionals.
- International Development Partners – to provide financial and technical resources.
- Academic and Research Institutions – for evidence generation and monitoring of outcomes.
- AU-CDC – for coordination of continental health standards, frameworks and perspectives.

5. Relevant Guidelines and Standards

None were identified within the group discussion.

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