

# AI-Driven Blockchain Governance System for One Health Stakeholder Engagement in Uganda



Main Hall, Main building  
Makerere University Kampala  
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## PRESENTER

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## AFFILIATIONS



## INTRODUCTION

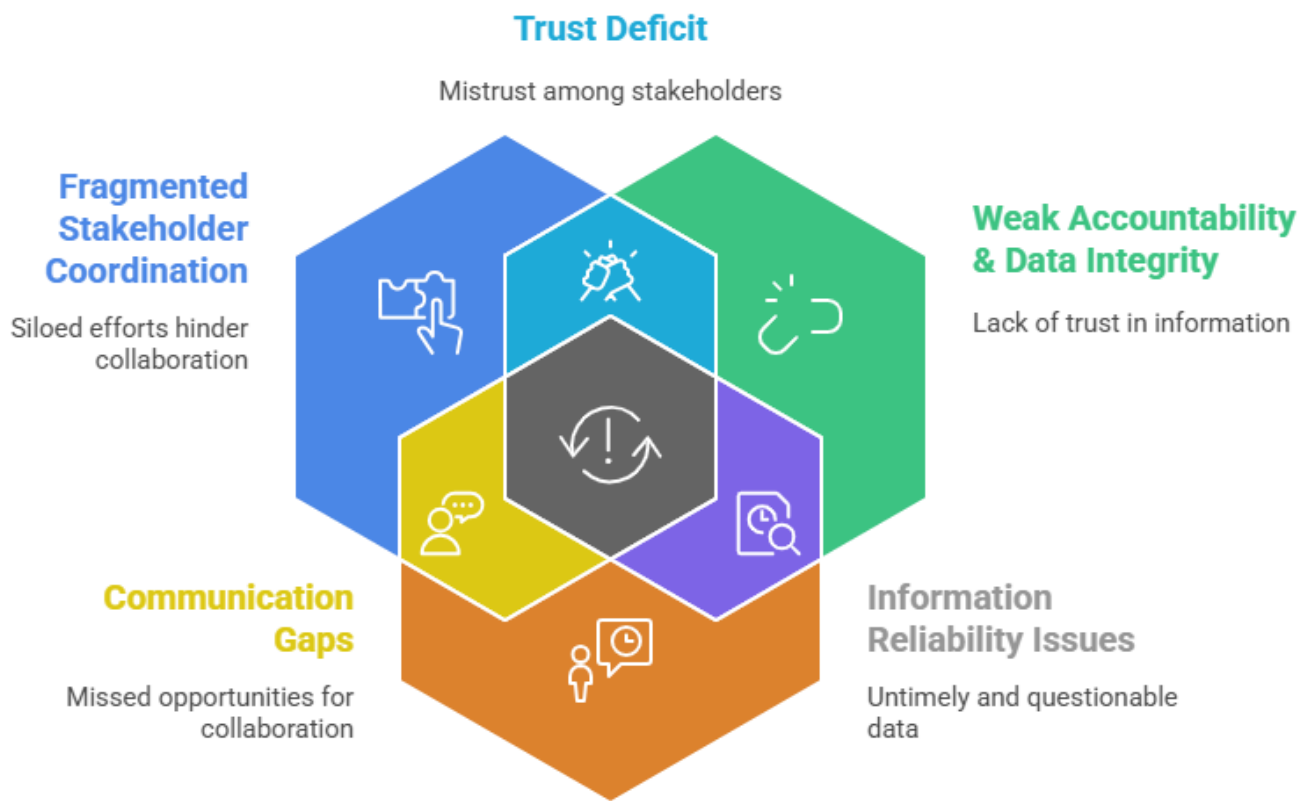
Uganda’s high exposure to zoonotic diseases stems from:

- Heavy reliance on agriculture
- Rapid population growth
- Close human-animal-environment interactions

Despite adopting a One Health approach, the Ministry of Health faces:

- Fragmented stakeholder coordination
- Weak accountability and data integrity
- Delayed information sharing

## Overlapping Barriers to Effective Stakeholder engagement in One Health Coordination



## OBJECTIVE

To assess the potential of AI-driven blockchain technology in improving stakeholder engagement during the implementation of Uganda’s One Health strategy.

## INNOVATION

This study explored how an AI-powered Hyperledger Fabric blockchain system can:

- Strengthen stakeholder governance
- Improve transparency and collaboration
- Enhance data security and real-time decision-making

## METHODOLOGY

- Design: Retrospective qualitative study
- Tool: Hyperledger Fabric prototype applied to MoH Strategic Plan (2020/21–2024/25)

Data Collection:

- Document review
- Key informant interviews
- Focus group discussions

## ANALYSIS

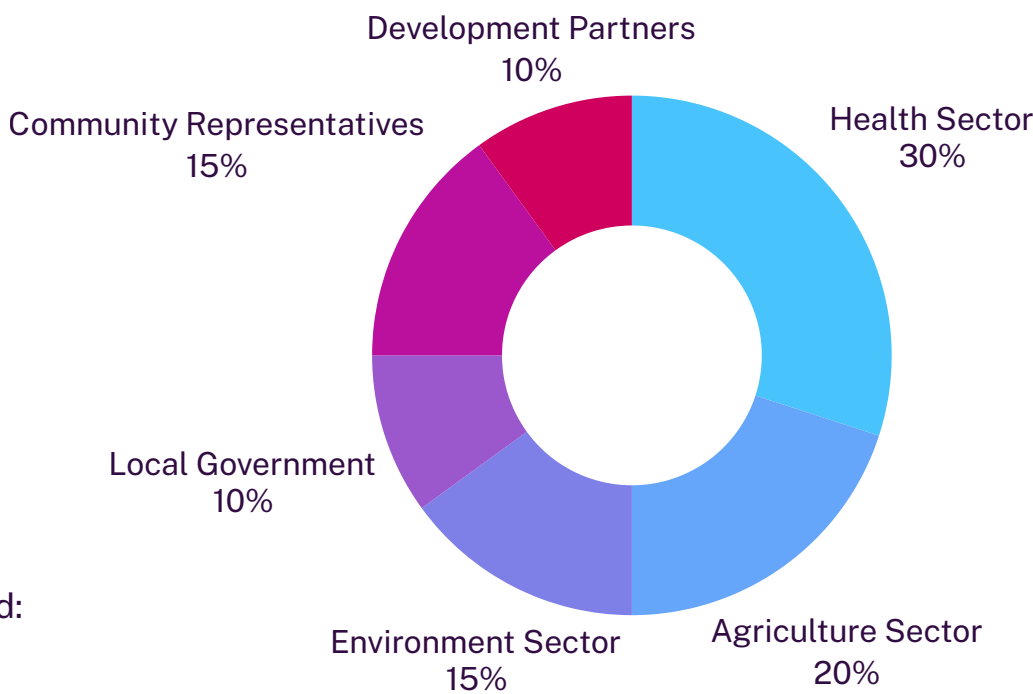
- Inductive coding by two independent coders
- Krippendorff’s interpretive content analysis using NVivo
- JBI-modified qualitative extraction tool

## KEY FINDINGS

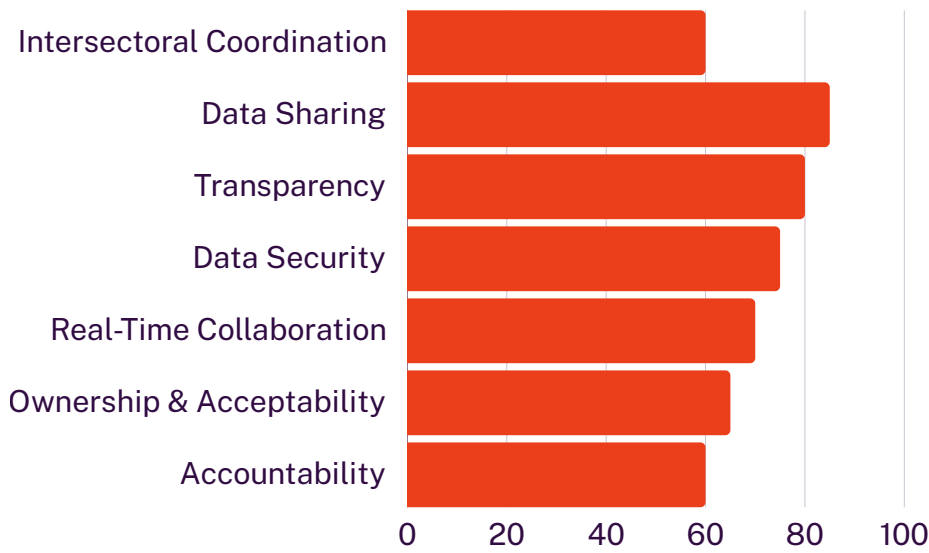
Blockchain integration would have enabled:

- 🗝️ Secure, seamless data sharing
- 🤝 Real-time collaboration across sectors
- 📄 Tamper-proof documentation for transparency
- 🌱 Greater ownership and social acceptability

## PERCEIVED TRANSPARENCY BENEFIT OF TAMPER PROOF DOCUMENTATION BY STAKEHOLDER GROUPS



## RELATIVE IMPACT SCORES OF KEY BENEFITS IDENTIFIED (%)



## CONCLUSION

An AI-driven blockchain governance system can:

- Break silos and foster multisectoral synergy
- Build trust and accountability
- Improve health outcomes in zoonotic disease response

## IMPLICATIONS FOR AI IN HEALTH

This approach demonstrates how AI + Blockchain can:

- Operationalize inclusive stakeholder engagement
- Strengthen digital health governance
- Advance resilient public health systems in East Africa

