



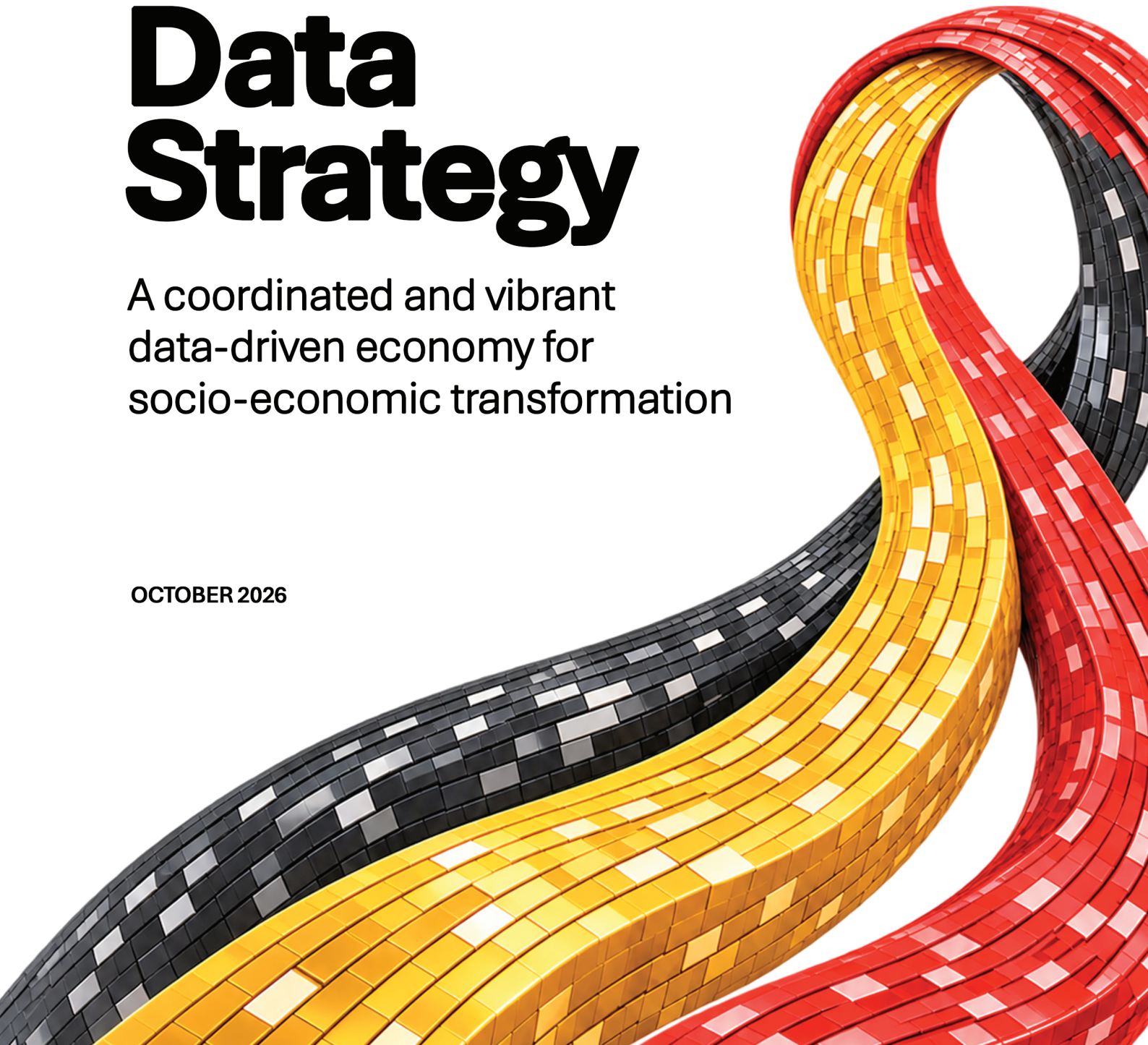
THE REPUBLIC OF UGANDA

UGANDA

National Data Strategy

A coordinated and vibrant
data-driven economy for
socio-economic transformation

OCTOBER 2026



Uganda National Data Strategy 2026/27–2030/31

© Government of the Republic of Uganda, 2026 All rights reserved.

Published by the Ministry of ICT and National Guidance

ICT House, Plot 10-12 Parliament Avenue | P.O. Box 7817, Kampala, Uganda | Tel: +256-414-236262 |

Email: ictinfo@ict.go.ug | Website: www.ict.go.ug

First published: October 2026

Permitted use. Users may reproduce, translate, and share this document, in whole or in part, for non-commercial, educational, research, and public-policy purposes without prior permission, provided that:

- a) The source is fully acknowledged using the recommended citation below.
- b) The content is not altered in a way that misrepresents the Government’s policy positions.
- c) Any adaptation or translation is clearly marked as such and is not presented as an official version.

Reproduction for commercial purposes requires prior written permission from the Permanent Secretary, Ministry of ICT and National Guidance.

Official version. The authoritative version of this Strategy is the version published by the Ministry on www.ict.go.ug.

If a version differs from the official version, the official version prevails.

Disclaimer. The Government of Uganda has taken reasonable care to ensure the accuracy of the information in this publication at the time of release. Data, figures, and references to third-party sources are provided for policy guidance and do not constitute legal advice. Mention of specific organisations, products, or platforms does not imply endorsement.

This Strategy was developed with technical support from UN Global Pulse and United Nations Development Programme.

How to cite this document

Recommended citation

Government of Uganda. (2026). Uganda National Data Strategy 2026/27–2030/31. Kampala: Ministry of ICT and National Guidance.

Other styles

- **APA (7th ed.):** Ministry of ICT and National Guidance. (2026). Uganda national data strategy 2026/27–2030/31. Government of Uganda. [URL]
- **Harvard:** Government of Uganda (2026) Uganda National Data Strategy 2026/27–2030/31. Kampala: Ministry of ICT and National Guidance. Available at: [URL] (Accessed: [date]).
- **Chicago:** Government of Uganda, Ministry of ICT and National Guidance. Uganda National Data Strategy 2026/27–2030/31. Kampala, 2026.

Short form (for in-text references and footnotes after first full citation): UNDS (2026), or “GoU, 2026.”

Citing a specific section: Government of Uganda (2026), Uganda National Data Strategy, Section [x.x], p. [xx].

Foreword



The Government of Uganda has continuously demonstrated a strong commitment to leveraging ICT as a key enabler for national development. Our journey, as outlined in Uganda Vision 2040, seeks to harness the immense potential of various sectors, with data and ICT playing pivotal roles. This vision is embedded within our National Development Plans, where we focus on fostering innovation, enhancing service delivery, and driving socio-economic growth. The Digital Transformation Roadmap, launched in 2023, recognised data as vital to achieving the Digital Uganda Vision.

The Ministry of ICT and National Guidance is proud to present the National Data Strategy, a framework designed to create a coordinated and vibrant data-driven economy. This strategy facilitates socio-economic transformation through the pillars of data governance, data infrastructure, and strategic data utilisation. Guided by principles of integrity, security, transparency, and inclusivity, among others, this strategy ensures ethical and beneficial data practices for all Ugandans. The strategy's value propositions include promoting transparency, accountability, ethical data use, and data literacy. Additionally, it focuses on fostering collaboration, developing robust infrastructure, protecting privacy, driving innovation, and enhancing government efficiency. By doing so, we aim to empower civic engagement and improve livelihoods nationwide.

The Ministry extends its deepest gratitude to the private sector, civil society, development partners, media, cultural institutions, the public, government Ministries, Departments and Agencies, and academia for their involvement in developing the strategy. Your dedication and vision are the cornerstones of this monumental endeavour.

We thank UN Global Pulse for the technical expertise it provided from the first co-creation workshop to the launch. Global Pulse's research and foresight methods grounded the strategy in evidence gathered across the country and tested its choices against the futures Uganda could face. We also thank the United Nations Development Programme, which supported the Digital Transformation Roadmap and served as a scaling partner for this strategy, and the William and Flora Hewlett Foundation for supporting Global Pulse's work.

Together, let us unlock the power of data to build a prosperous and resilient Uganda.

For God and My Country,

A handwritten signature in blue ink, reading 'J. Kasule'.

Rt. Hon. Justine Kasule Lumumba
Minister of ICT and National Guidance

Message from the Minister of State for ICT and National Guidance (Information)



Uganda's National Data Strategy, developed by the Ministry, in collaboration with UN Global Pulse, offers an important opportunity to strengthen how the Government and the private sector manage, share, and communicate information to the public. Ultimately, the success of this Strategy will be measured not simply by the data we collect, but by how effectively we use it to improve service delivery, inform decisions and help citizens better understand Government programmes.

As we implement the Strategy, we must ensure that data is meaningful and useful to the people it is intended to serve.

Public information should be accurate, timely and easy to understand. When information is shared in accessible formats and appropriate languages, citizens are better equipped to make informed decisions, access services, and hold public institutions accountable.

Government communicators and the media play a particularly important role in this process. By verifying information, interpreting data responsibly and communicating findings clearly, they can help the public understand issues affecting their communities. This also helps reduce the spread of misinformation and prevents data from being misunderstood or misrepresented.

At the same time, greater access to information must be matched by strong respect for privacy. Public trust depends on how responsibly institutions collect, use, share and protect personal information. Citizens should understand why their information is being collected, how it will be used, and what measures are in place to safeguard it. Transparency and accountability must therefore go hand in hand with personal data protection.

I therefore encourage all institutions involved in implementing the National Data Strategy to make public awareness and citizen feedback integral to their plans. We must not only communicate information to the public; we must also listen to citizens, understand their concerns, and use their feedback to improve how we deliver services.

By working together, Government institutions, the private sector, the media and citizens can help ensure that the Strategy delivers practical benefits to communities across Uganda. Our shared responsibility is to turn data into better information, better decisions and, ultimately, better outcomes for our people. Thank you.

For God and My Country.

A handwritten signature in black ink, reading 'J. Sebugwawo'.

Hon. Joyce Nabosa Sebugwawo

Minister of State for ICT and National Guidance (Information)

Preface



In the rapidly evolving digital landscape, data has emerged as a cornerstone of innovation, economic growth, and societal progress. As the lifeblood of decision-making processes, data serves as a powerful tool for predicting trends, informing strategic actions, and fostering a culture of evidence-based policymaking. Across the globe, countries increasingly recognise data as a national asset, integral to advancements in both the public and private sectors. Uganda, keenly aware of this global trend, is poised to harness data to propel its socio-economic transformation.

The development of Uganda's National Data Strategy marks a pivotal step in this journey. This strategy is the culmination of extensive collaboration among the Ministry of ICT and National Guidance, various government Ministries, Agencies and Departments (MDAs), the private sector, civil society, academia, media and international development partners. It provides a comprehensive framework for data governance, data infrastructure, and strategic utilisation, aiming to optimise the value of data for Uganda's development goals.

This strategy is informed by national, regional, and global policy frameworks, including Uganda Vision 2040, the Digital Uganda Vision, the Digital Transformation Roadmap and the African Union's data policy framework. Each document underscores the transformative potential of data in achieving socio-economic development, enhancing public service delivery, and fostering innovation. The National Data Strategy aligns with these broader visions and seeks to fill existing gaps by proposing the development of a National Data Policy, which will provide overarching guidance for various data-related strategies and initiatives.

The methodology used to craft this strategy was comprehensive and inclusive, combining conventional approaches such as stakeholder consultations and environmental analyses with non-conventional methods like the Futures and Foresight Methodology. This blend of approaches ensured that the strategy is forward-looking, adaptable, and resilient in the face of future challenges and opportunities. We owe it to UN Global Pulse for technical expertise across these methods, and to the United Nations Development Programme, which served as the strategy's scaling partner.

Uganda's National Data Strategy is structured around three main pillars: Data Governance, Data Infrastructure, and Strategic Data Utilisation — supported by enablers focused on People and Culture, and Research and Innovation. These pillars and enablers are designed to work in harmony, driving Uganda towards a coordinated and vibrant data-driven economy that can deliver on its aspirations of socio-economic transformation.

As you engage with this strategy, you will find a detailed roadmap that outlines the vision, mission, guiding principles, and value propositions for key stakeholders. This strategy is not merely a document; it is a call to action for all stakeholders to collaborate, innovate, and leverage data as a strategic asset to achieve a prosperous and inclusive future for all Ugandans.



Dr. Aminah Zawedde

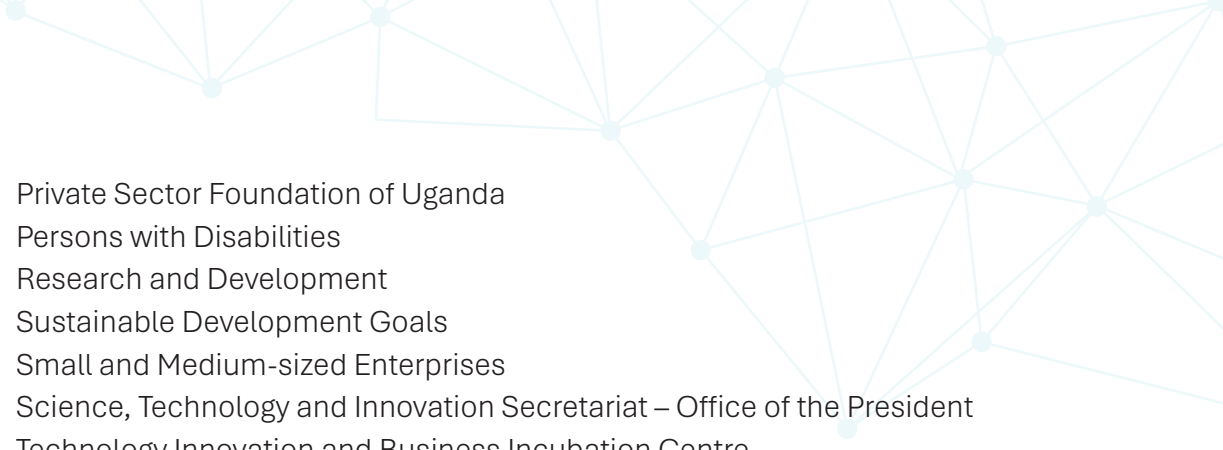
Permanent Secretary, Ministry of ICT and National Guidance

Acronyms and Abbreviations

4IR	4th Industrial Revolution
AI	Artificial Intelligence
API	Application Programming Interface
ATMS	Agro-industrialisation, Tourism development, Mineral-based industrial development, and Science, Technology and Innovation
AU	African Union
BoU	Bank of Uganda
CAO	Chief Administrative Officer
CERT	Computer Emergency Response Team
CSOs	Civil Society Organisations
DCIC	Directorate of Citizenship and Immigration Control
DEAR-OP	Directorate of Economic Affairs and Research – Office of the President
DLGs	District Local Governments
DSAU	Data Science Africa Uganda
DTR	Digital Transformation Roadmap
DT-TWG	Digital Transformation – Technical Working Group
DUV	Digital Uganda Vision
EAC	East African Community
EGP	Electronic Government Procurement
EOC	Equal Opportunities Commission
EU	European Union
FITSPA	Financial Technologies Services Providers Association
GIZ	GIZ Deutsche Gesellschaft für Internationale Zusammenarbeit (German Agency for International Cooperation)
GoU	Government of Uganda
GPSDD	Global Partnership for Sustainable Development Data
HCM	Human Capital Management System
HMIS	Health Management Information System
ICT	Information and Communications Technology
ID	Identification
IFMIS	Integrated Financial Management Information System
ILO	International Labour Organisation
IoT	Internet of Things
IOM	International Organisation for Migration
IP	Intellectual Property
IPPS	Integrated Pension and Payroll System
IRA	Insurance Regulatory Authority
ISOC	Internet Society
IT	Information Technology



JICA	Japan International Cooperation Agency
KPI	Key Performance Indicator
KRC	Kabarole Research and Resource Centre
LGs	Local Governments
M&E	Monitoring and Evaluation
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries
MAK	Makerere University
MIA	Ministry of Internal Affairs
ML	Machine Learning
MMU	Mountains of the Moon University
MoDVA	Ministry of Defence and Veteran Affairs
MoEMD	Ministry of Energy and Mineral Development
MoES	Ministry of Education and Sports
MoFA	Ministry of Foreign Affairs
MoFPED	Ministry of Finance, Planning and Economic Development
MoGLSD	Ministry of Gender, Labour and Social Development
MoH	Ministry of Health
MoICT&NG	Ministry of ICT and National Guidance
MoTIC	Ministry of Trade, Industry and Cooperatives
MoJCA	Ministry of Justice and Constitutional Affairs
MoPS	Ministry of Public Service
MoTWA	Ministry of Tourism, Wildlife and Antiquities
MTN	MTN Uganda Limited
NAPR	National Annual Performance Report
NCDC	National Curriculum Development Centre
NCHE	National Council for Higher Education
NDP	National Development Plan
NDS	National Data Strategy
NDSC	National Data Steering Committee
NDO	National Data Office
NG	National Guidance
NGOs	Non-Governmental Organisations
NIRA	National Identification and Registration Authority
NITA-U	National Information Technology Authority – Uganda
NPA	National Planning Authority
NS4IR	National Strategy on the Fourth Industrial Revolution
NUDIPU	National Union of Disabled Persons in Uganda
NWSC	National Water and Sewerage Corporation
OAG	Office of the Auditor General
OP	Office of the President
OPM	Office of the Prime Minister
PDM	Parish Development Model
PDPO	Personal Data Protection Office
PNSD	Plan for National Statistical Development
PPDA	Public Procurement and Disposal of Public Assets Authority



PSFU	Private Sector Foundation of Uganda
PWDs	Persons with Disabilities
R&D	Research and Development
SDGs	Sustainable Development Goals
SMEs	Small and Medium-sized Enterprises
STIs	Science, Technology and Innovation Secretariat – Office of the President
TIBIC	Technology Innovation and Business Incubation Centre
TWG	Technical Working Group
UBA	Uganda Bankers’ Association
UBC	Uganda Broadcasting Corporation
UBOS	Uganda Bureau of Statistics
UCC	Uganda Communications Commission
UDLS	Uganda Driver Licensing System
UEA	Uganda Evaluators’ Association
UGX	Uganda Shilling
UIA	Uganda Investment Authority
UICT	Uganda Institute of Communications Technology
ULS	Uganda Law Society
UMI	Uganda Management Institute
UMRA	Uganda Microfinance Regulatory Authority
UN	United Nations
UNATU	Uganda National Teachers’ Union
UNBS	Uganda National Bureau of Standards
UNCDF	United Nations Capital Development Fund
UNCT	United Nations Country Team
UNDP	United Nations Development Programme
UNEB	Uganda National Examinations Board
UNICEF	United Nations Children’s Fund
UNGP	United Nations Global Pulse
UNRCO	United Nations Resident Coordinator’s Office
UNITAR	United Nations Institute for Training and Research
UPU	Uganda Pentecostal University
URA	Uganda Revenue Authority
URSB	Uganda Registration Services Bureau

Executive Summary

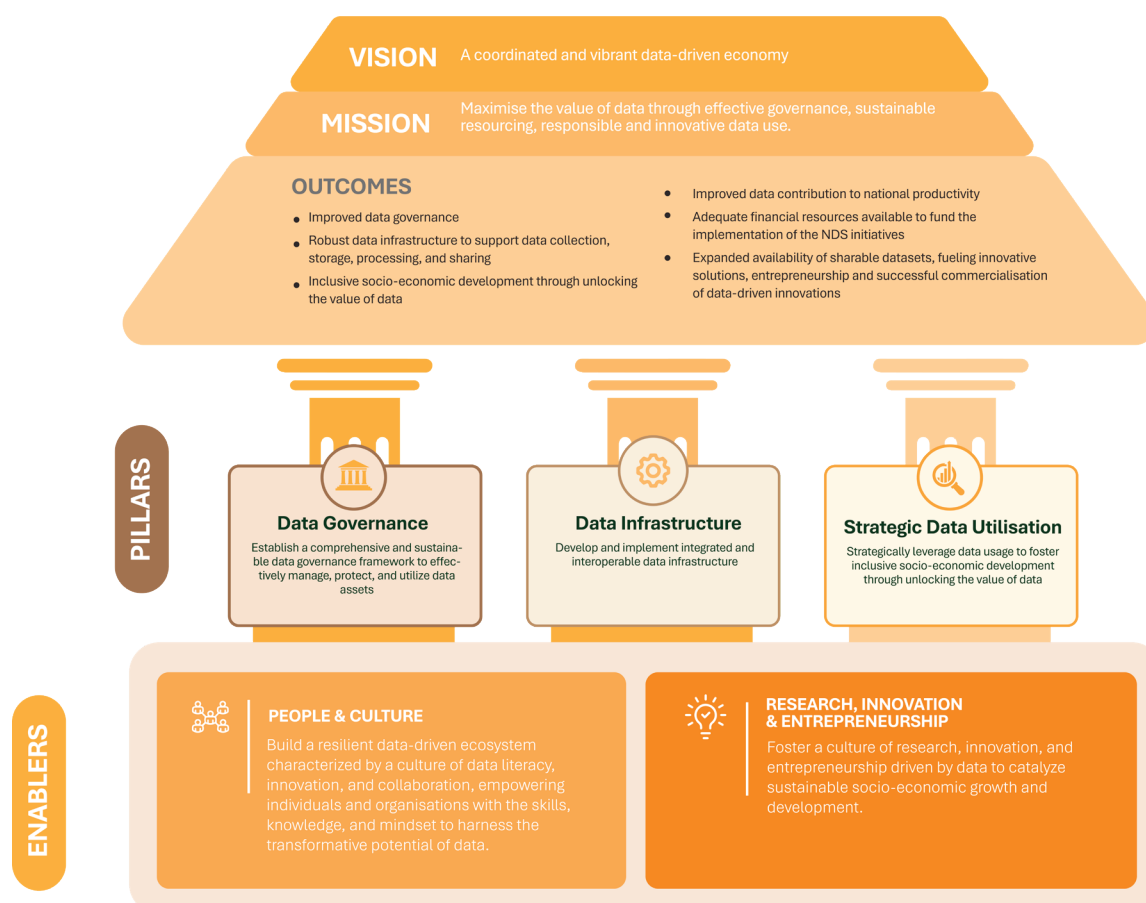
In the modern era, data is the cornerstone of the Fourth Industrial Revolution, powering AI, precision medicine, robotics, and IoT. Effective data governance is essential to harness these opportunities for economic growth, policymaking, and improved public services. A well-implemented National Data Strategy ensures that a nation maximises the benefits of its data, while fostering public trust.

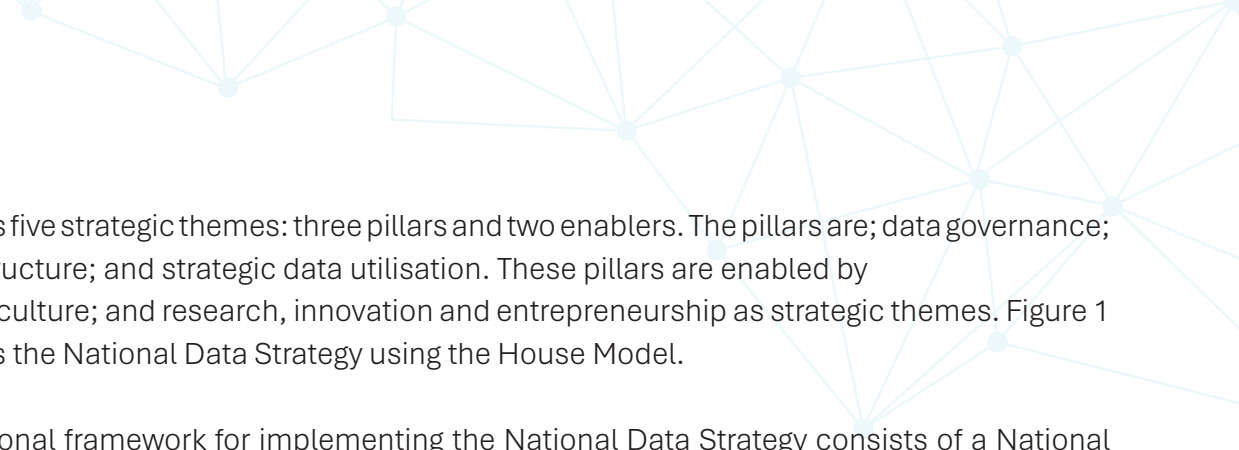
Uganda's National Data Strategy (NDS) aims to build a leading data economy, strengthen policy implementation, and unlock the full potential of its data ecosystem. The strategy aims to address challenges such as fragmented data, a low data-use culture, low trust, and a lack of common standards, while also promoting opportunities for innovative data use.

The strategy's vision is to create a “coordinated and vibrant data-driven economy for socio-economic transformation.” The strategy's implementation will be guided by the principles of integrity and ethics; protection and security; transparency and accountability; trust; standardisation; and equity and inclusivity.

Immediate collaboration among stakeholders is crucial to standardise data formats, improve management practices, and foster sector-specific solutions. These efforts will build a more efficient and inclusive data ecosystem, driving national progress and development.

Figure 1: Summary House Model of the National Data Strategy





The NDS has five strategic themes: three pillars and two enablers. The pillars are; data governance; data infrastructure; and strategic data utilisation. These pillars are enabled by people and culture; and research, innovation and entrepreneurship as strategic themes. Figure 1 summarises the National Data Strategy using the House Model.

The institutional framework for implementing the National Data Strategy consists of a National Data Steering Committee, a National Data Office, and Technical Committees that link with Officers in the MDAs. These structural elements will be established in the Ministry of ICT and National Guidance.

The National Data Strategy is a vital tool for Uganda to unlock data's transformative potential. By embracing participatory data governance, Uganda can achieve its socio-economic transformation goals, ensuring data serves as a catalyst for sustainable growth and development.

Table of Contents

Foreword	1
Message from the Minister of State for ICT and National Guidance (Information).....	2
Preface	3
Acronyms and Abbreviations	5
Executive Summary.....	8
Table of Contents	10
1. Introduction	14
1.1 Background	14
1.2 Policy Basis for the National Data Strategy	14
1.3 Scope of the National Data Strategy	17
2. Foundations of the National Data Strategy	19
2.1 Vision	19
2.2 Mission.....	19
2.3 Guiding Principles	19
2.4 Value Propositions.....	20
2.5 Summary of the Current Environment	21
3. Strategic Themes and Decisions.....	26
3.1 Strategic Themes	26
3.2 Data Governance	26
3.3 Data Infrastructure	31
3.4 Strategic Data Utilisation	34
3.5 People and Culture	36
3.6 Research, Innovation and Entrepreneurship	39
4. Strategy Implementation.....	43
4.1 Implementation Plan	43
4.2 Financing.....	43
4.3 Institutional Framework.....	44
4.4 Monitoring and Evaluation	48
4.5 Risk Analysis and Mitigation Strategies	49
5. Appendices	52
Appendix 1: Implementation Plan	52
Appendix 2: Detailed Resource Requirements.....	62
Appendix 3: Monitoring & Evaluation Framework	76

List of Tables

Table 3.1: Strategic themes and sub-themes.....	26
Table 3.2: Strategic Decisions – Data Governance	28
Table 3.3: Strategic Decisions - Data Infrastructure.....	32
Table 3.4: Strategic Decisions – Strategic Data Utilisation.....	34
Table 3.5: Strategic Decisions – People and Culture.....	37
Table 3.6: Strategic Decisions - Research, Innovation and Entrepreneurship	40
Table 4.1: Summary of resource requirements.....	43
Table 4.2: Sources of funding	44
Table 4.4: Risk analysis and mitigation strategies.....	49
Table A1.1: Implementation Plan – Data Governance.....	52
Table A1.2: Implementation Plan – Data Infrastructure.....	55
Table A1.3: Implementation Plan – Strategic Data Utilisation	57
Table A1.4: Implementation Plan – People and Culture	58
Table A1.5: Implementation Plan – Research, Innovation and Entrepreneurship	60
Table A2.1: Resource requirements – Data Governance	62
Table A2.2: Resource Requirements – Data Infrastructure.....	65
Table A2.3: Resource Requirements – Strategic Data Utilisation	68
Table A2.4: Resource Requirements – People and Culture	71
Table A2.5: Resource Requirements – Research, Innovation and Entrepreneurship ..	73
Table A3.1: Monitoring and evaluation framework - Data Governance	76
Table A3.2: Monitoring and evaluation framework - Data Infrastructure.....	80
Table A3.3: Monitoring and evaluation framework – Strategic Data Utilisation.....	82
Table A3.4: Monitoring and evaluation framework – People and Culture	83
Table A3.5: Monitoring and evaluation framework – Research, Innovation and Entrepreneurship	85

List of Figures

Figure 1: Summary House Model of the National Data Strategy	8
Figure 2: National Data Office Structure	47
Figure 3: How the National Data Office links to the National Development Plan technical committees.....	48

01

Introduction



1. Introduction

1.1 Background

Data is a collection of qualitative and quantitative observations organised in a way that allows systematic analysis to serve a specified purpose. The primary intent is often to use evidence to predict outcomes, inform strategic actions, or serve as a reliable reference for future use. Generating and utilising data holds prime significance for a diverse spectrum of entities, spanning from individuals and enterprises to governments, due to a multitude of reasons, including:

- a) Provision of evidence of the occurrence of a phenomenon in terms of frequency, severity, and magnitude;
- b) Supporting an argument or position from an informed perspective;
- c) Keeping track of performance or the lack thereof;
- d) Saving of resources through informed and prudent investments;
- e) Supporting future innovations, inventions, and discoveries; and
- f) Improvement, replication, and scale-up of events, products, and services.

Data plays a pivotal role in driving economic growth and development. Derived insights can drive evidence-based policymaking and enhance the delivery of public services, aligning with national and regional priorities, optimizing the use of public and private data resources, and improving global competitiveness. At the same time, data can spur economic growth and create opportunities in the private sector. These are some of the benefits of implementing a national data strategy. Other benefits include improving decision-making, spurring innovation across sectors and driving economic growth, promoting transparency by making government and private-sector data more accessible to the public and innovators, and enhancing equity and inclusion.

To harness data's benefits to the fullest, countries must deliberately craft a vision and strategy for governing and responsibly using this invaluable resource. This is precisely the objective of the National Data Strategy: to chart a course towards effective governance and safe utilisation of data, thereby optimising its potential for societal progress and economic prosperity.

The Ministry of ICT and National Guidance, other MDAs, the private sector, and development partners have collaborated to develop Uganda's National Data Strategy. The scope of data in this strategy is quite comprehensive, including all data regardless of its size (small or big), source (government or private sector), or format (digitised or analogue).

1.2 Policy Basis for the National Data Strategy

Many countries across the globe have developed and are implementing national data strategies. In Africa, Nigeria, Ghana, Senegal, Egypt, and South Africa have developed national data strategies. Uganda is on course to join these leading countries. The country has already achieved key milestones that will strengthen data governance. This includes operationalising the Personal Data

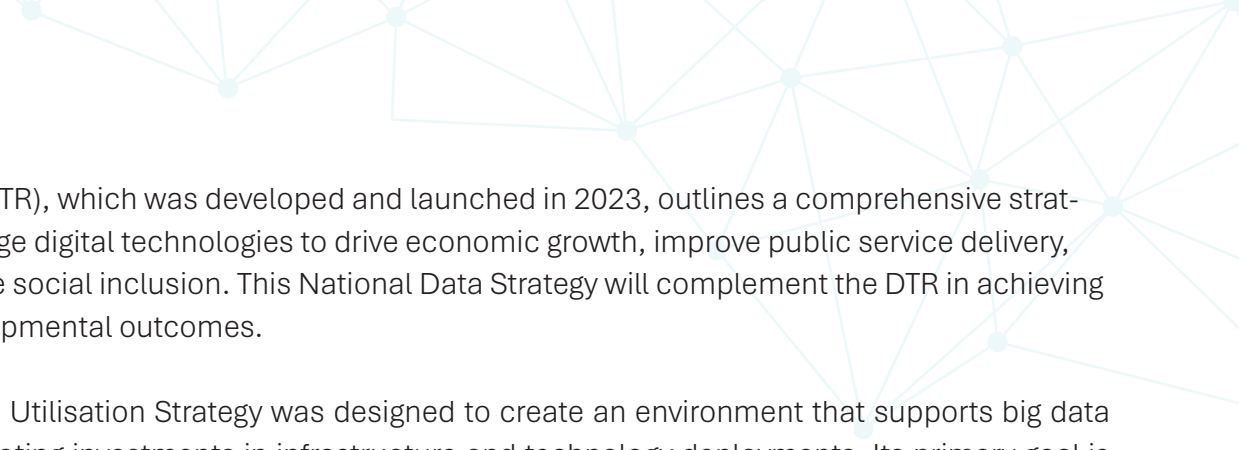
Protection Office (PDPO), which regulates the collection and processing of personal data and enforces the Data Protection and Privacy Act of 2019.

The National Data Strategy is informed by several national and regional policy directions. Building on this strategy, entities or programmes may develop strategies specific to their needs. At a national level, the Uganda Vision 2040 aims to transform Uganda into a modern, prosperous, competitive upper-middle-income country by 2040. This Vision highlights data and ICT as pivotal to achieving sustainable socio-economic transformation by enhancing productivity, innovation, and global competitiveness. In its 4th medium-term plan (NDP IV) to implement this vision, Uganda plans to achieve tenfold economic growth, from US\$50 billion in 2023/24 to US\$500 billion over the next 15 years, by focusing on four priority anchor sectors: agro-industrialisation; tourism development; mineral-based industrial development with oil and gas, including petrochemical industries; and (STI) science, technology, and innovation (including knowledge) (ATMS). Indeed, NDP IV places significant emphasis on leveraging data for socio-economic development, including data-driven decision-making for development planning, enhanced monitoring and evaluation of development targets, enhanced digital infrastructure development, increased public and private sector collaboration, and building the capacity of institutions and individuals to use data effectively.

The Digital Uganda Vision (DUV) sets the aspirations aligned to the overall national agenda set in Vision 2040. The vision of DUV is ‘a digitally empowered society and a knowledge-based economy’. Its overall goal is ‘digitalisation that inspires innovation and productivity of people, organisations, businesses and government by 2040’. It aims to foster a digitally inclusive society, spur economic growth, create jobs, and improve the overall quality of life for Ugandans through the strategic application of ICT. This is achieved through five pillars: digital infrastructure and connectivity, digital services, cybersecurity and data protection and privacy, digital skills, and innovations and entrepreneurship. The Digital Transformation Roadmap translates the aspirations of the DUV into practical and actionable steps, aiming to enhance economic competitiveness, improve the lives of citizens, and ensure inclusive development and social impact. The Digital Transformation Roadmap recognises data as a critical resource for achieving the ambitions of the Digital Uganda Vision and recommends developing the National Data Strategy as one actionable step.

The National ICT Policy (2012) underscores the transformative potential of data and ICT in driving socio-economic development. Although this policy still has gaps, the section on emerging policy trends identifies policy interventions in ten areas where ICT can contribute to national development. These emerging areas will require data to have an even greater impact on the economy. Since this policy’s publication, other areas have emerged, including 4th Industrial Revolution (4IR) technologies. Data is essential to unlocking the potential of the 4IR, serving as the primary fuel for advancing Artificial Intelligence (AI), precision medicine, robotics, and the Internet of Things (IoT). The judicious use and protection of data will determine the ultimate outcome of this revolution, whether positive or negative. During the planned review of the National ICT policy, the role of data and ICT in shaping all sectors of the economy should be articulated explicitly.

At a strategy level, the National Strategy on the Fourth Industrial Revolution recognises data as a critical national and business asset and recommends accelerating the implementation of Uganda’s data exchange (data market). It also recommends the development of a National Data Strategy (ibid, p.84). Further, the Digital Transformation



Roadmap (DTR), which was developed and launched in 2023, outlines a comprehensive strategy to leverage digital technologies to drive economic growth, improve public service delivery, and enhance social inclusion. This National Data Strategy will complement the DTR in achieving these developmental outcomes.

The Big Data Utilisation Strategy was designed to create an environment that supports big data use by promoting investments in infrastructure and technology deployments. Its primary goal is to accelerate the use of data for innovation and development. It establishes a strong legal and regulatory framework, defines data's role in driving innovation and the digital economy, improves access to quality data and digital intelligence, and advocates an open data policy to enhance transparency, reduce corruption, and increase public trust. This strategy on big data utilisation will complement the National Data Strategy. It is ideal that both the Big Data Utilisation Strategy and the National Data Strategy are guided by one overarching National Data Policy.

At the EA Community level, efforts are underway to finalise an EAC digital transformation strategy. This strategy aims to position the region as a leader in digital transformation, foster inclusive growth, and advance towards a unified EAC single digital market.

At the continental level, the African Union data policy framework³ should guide Uganda's National Data Strategy before it develops a customised national data policy. In particular, the regional policy framework champions, among others, R&D and innovation across diverse data-related domains, capacity building in data analytics and data management, digital infrastructure enhancement, a reliable digital ID system, a secure and trustworthy data environment through robust cybersecurity, development and adoption of local ethical codes emphasising both digital and human rights, a cohesive legal and regulatory framework, resourcing the public sector to harness data for public benefit while ensuring citizen protection, public and private sector collaboration, and establishing appropriate institutional arrangements.

Finally, at the global level, the National Data Strategy aligns with Uganda's commitment #5 for SDG acceleration and transformation⁴, which focuses on intensifying efforts to unleash data's full potential to improve the lives of all Ugandans.

Despite the alignment of the National Data Strategy with national and regional policy documents as outlined above, there's still a need to develop a National Data Policy to provide overarching guidance to the various data-related strategies that have been developed or will be developed in the future, including the National Data Strategy, Big Data Utilisation Strategy, and Digital Transformation Roadmap. A related National Data Law and regulations would also need to be developed as recommended in this strategy.

1.3 Scope of the National Data Strategy

Uganda's National Data Strategy is designed to operate for five years from its approval. This is assumed to be 2025/26 to 2029/30, coinciding with the fourth National Development Plan. The strategy comprises three main pillars:

- a) Data Governance:** This pillar focuses on establishing robust data policies and legal frameworks, ensuring ownership, control, and access to data, enhancing data security and protection measures, fostering coordination and collaboration among stakeholders, and upholding data quality standards.
- b) Data Infrastructure:** The strategy emphasises integrating existing and future data infrastructure, including public data infrastructure, to improve data accessibility and usability across sectors.
- c) Strategic Data Utilisation:** This pillar aims to identify and leverage strategic use cases to drive inclusive socio-economic development by unlocking data value and using its insights effectively.

The three pillars are supported by two overarching enablers. The first enabler focuses on people and culture, emphasising the cultivation of data skills and a culture that supports data utilisation. The second enabler, research, innovation, and entrepreneurship, advances data-driven innovations through research, development, and commercialisation.

Each pillar and enabler is defined by specific goals, outcomes, objectives, initiatives, and key performance indicators (KPIs). These components are precisely crafted to align with the overarching vision of fostering *'a coordinated and vibrant data-driven economy for socio-economic transformation.'*

02

Foundations of the National Data Strategy



2. Foundations of the National Data Strategy

The foundations of the National Data Strategy are its vision, mission, guiding principles and its value propositions to key stakeholders. These are outlined below.

2.1 Vision

A coordinated and vibrant data-driven economy for socio-economic transformation

Definition of terms:

- *Coordinated* implies working together harmoniously towards a common goal.
- *Vibrant data-driven economy* entails leveraging data as a strategic asset to drive innovation, productivity, competitiveness, and economic growth across all economic sectors.
- *Socio-economic transformation* refers to significant changes in society and the economy driven by the effective, innovative use of data and information, including improved GDP and enhanced well-being for citizens.
- Mission

2.2 Mission

Maximising the value of data means extracting the greatest economic, social and public benefit from data assets.

Definition of terms:

- *Maximising the value of data* means achieving the highest possible value from data.
- *Sustainable sourcing* means data funding that is more dependent on local resource mobilisation.
- *Responsible data use* entails ethical, secure, and transparent handling to safeguard privacy, fairness, and societal well-being.
- *Innovative use of data* means harnessing data for creative solutions and new opportunities.

2.3 Guiding Principles

The following principles will guide the implementation of the national data strategy:

- a) Integrity and ethics:** The National Data Strategy shall ensure the accuracy, completeness, consistency, and reliability of data throughout its lifetime while exercising responsible use of data and protecting personal information.
- b) Protection and security:** always, the National Data Strategy shall safeguard data from damage loss and put controls for access to data.
- c) Transparency and accountability:** The National Data Strategy is committed to openly providing information about data sources, usage, and handling practices and to remain accountable for the management, use, and sharing of data.

- d) **Trust:** The National Data Strategy will foster confidence, reliability, and transparency in the collection, management, and use of data among stakeholders. This trust is essential to build strong relationships, promote collaboration, and maximise the value and impact of data-driven initiatives.
- e) **eStandardisation:** The National Data Strategy will adopt consistent frameworks, formats, and protocols for collecting, managing, and sharing data across government agencies, sectors, and stakeholders. This standardisation aims to ensure interoperability, compatibility, and reliable data, enabling seamless integration, exchange, and use of information for decision-making and service delivery.
- f) **Equity and inclusivity:** The National Data Strategy will ensure that data initiatives, processes, and outcomes benefit all segments of society, including the marginalised and vulnerable populations. This will address disparities, promote fairness, and empower individuals and communities to participate in and benefit from data initiatives.

2.4 Value Propositions

The following are the value propositions for the various key stakeholders:

- a) A comprehensive data governance framework to ensure transparency, accountability, and ethical use of data across all sectors
- b) Data literacy and technical capacity building to empower stakeholders at all levels to effectively collect, analyse, and utilise data for informed decision-making
- c) A culture of collaboration and trust among stakeholders to facilitate seamless data sharing and exchange, driving innovation and driving societal progress
- d) A robust infrastructure and technology solutions to support the collection, storage, processing, and dissemination of data, enabling efficient and secure data management practices
- e) Protection of privacy and security rights of individuals while maximising the socio-economic benefits derived from data-driven initiatives, thereby ensuring equitable access and fair treatment for all
- f) Continuously monitor and evaluate the impact of National Data Strategy implementation to adapt to evolving needs, address emerging challenges, and maximise the value generated for society as a whole.
- g) Accessibility and utilisation of private sector data and data from other generators for development
- h) Innovation, competitiveness, and efficiency in government operations
- i) Empowered civic engagement and enhanced livelihoods

2.5 Summary of the Current Environment

2.5.1 Strengths

a) Policy

- Evidence-based planning is widely appreciated by both technocrats and political leadership
- Operational Ug-Hub for data sharing and collaboration
- National ICT policy is being revised
- Existence of the AU data governance policy framework
- Data Protection and Privacy Act provide for ethical and responsible use of personal data
- Access to Information Act provides for data sharing between the government agencies and the public
- Harnessing ICT is a high priority for the government as outlined under NDP III Digital Transformation Programme

b) Institutional framework

- Strong at the national and sub-national levels to manage data - UBOS, MoPS, NIRA, NITA-U and MoICT & NG
- Government and non-state actors have been organised in a reporting framework of the NDP III programs
- UBOS has capacity to collect large data sets and has the PNSD
- NPA launched the NDP III web-based M&E system that is now being operationalised to provide performance data on national indicators
- OAG has capacity to undertake value for money audits
- OPM tracks performance towards SDGs & respective targets

c) HR capacities

- Most districts, municipalities and cities have planners with a team of technical staff for data governance at the local level
- A lot of capacity has been built for M&E, use of systems and planning with statistics at all levels of government (districts are able to do local level statistical abstracts)
- Sustained development partner and private sector support
- UN and other agencies are keen to support statistics for development (UN Women on Gender Statistics, ILO on labour surveys, UNDP on various interventions to support UBOS etc.)
- Private sector has been very actively participating in SME surveys despite the large scale of firm informality in Uganda
- The rolling out of the Parish Development Model provides a new window for analysis of grassroots data

- A well constituted and highly vibrant Digital Transformation Program in the ND
- Existence of willing and capable data governance champions in top management of Government, Non-Government Organisations, and the Private Sector could easily be harnessed
- The private sector has extensively harnessed the potential of data, setting a benchmark for other sectors to follow.

d) Partnerships and programmes

- Sustained development partner and private sector support
- UN and other agencies are keen to support statistics for development (UN Women on Gender Statistics, ILO on labour surveys, UNDP on various interventions to support UBOS etc.)
- Private sector has been very actively participating in SME surveys despite the large scale of firm informality in Uganda
- The rolling out of the Parish Development Model provides a new window for analysis of grassroots data

e) Youth dividend

- Youth as early adopters of data culture and emerging technologies

2.5.2 Limitations

a) Culture

- Conservative cultural norms which could limit the adoption of data-driven technologies
- Weak data sharing practices that partly could have been influenced by the Official Secrets Act 1964¹
- Weak organisational learning
- Data governance not entrenched
- Weak collaboration between MDAs (silos)
- Weak Culture of compliance
- Weak trust relationship between Government and Private Sector umbrella bodies still limits free data flow/sharing
- Official secrets Act and Uganda Government security instructions worsen the data culture

b) Infrastructure

- Limited high-speed internet penetration – critical for processing and analysis large data sets
- Limited capacity and use of cloud services
- Limited/Inadequate investment in critical data infrastructure, logistics, tools, & other support systems like internet access - challenge for data management

1 <https://ulii.org/akn/ug/act/1964/39/eng@2000-12-31>

c) Systems

- The NDP III web-based M&E system is not yet fully operational
- Lack of main reference system that pools together all M&E systems into one-fold and links it to the grassroots networks and non-state actors
- Many isolated information systems with little integration into the NDP III or NAPR reporting framework

d) Policy

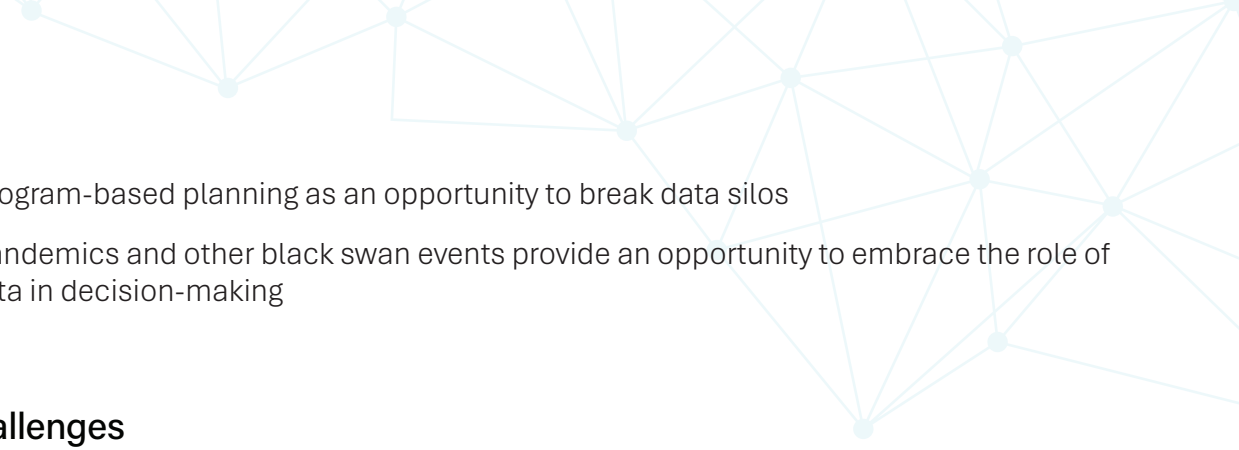
- Lack of a comprehensive data governance framework, including a national data policy
- Some MDAs lack policies on data, data security, and data sharing
- MDAs' data goals not aligned to national data needs
- Overlapping data mandates

e) Data

- Duplication of data
- Limited data utilisation
- Limited data dissemination/sharing
- Low awareness & appreciation for data
- Low demand for data
- No feedback mechanisms for data collectors to appreciate the value
- Low data use culture
- Limited availability of sharable datasets

2.5.3 Opportunities

- a) Developments in technology, enabling digitalisation and data analytics
- b) Open data which improves data transparency and governance and provides opportunities for innovation
- c) Data benchmarks/frameworks (e.g. SDGs, GPSDD, IODC, ADPPC, OECD, AUCC, ...) provide a framework for gauging progress and improving data governance and management practices – sign on it and adapt
- d) Data as a driver of socio-economic development and as key in attracting Foreign Direct Investment
- e) Collaboration: Private sector, civil society organisations and development partners continue to sponsor surveys and studies— key data sources
- f) fResourcing: Various development partners like EU, UN agencies, GIZ, World Bank, JICA among others willing to support processes to strengthen data governance in Uganda
- g) Legal framework: Opportunity to review legal frameworks
- h) Private sector and civil society as important data sources: The private sector, e.g. telecom operators and banks have a lot of data that could be useful for national development

- 
- i) iProgram-based planning as an opportunity to break data silos
 - j) jPandemics and other black swan events provide an opportunity to embrace the role of data in decision-making

2.5.4 Challenges

- a) Global economic downturn, creating challenges in funding development projects
- b) The threat of AI to disrupt all sectors of the economyRapid data growth, creating challenges for compute and storage resources
- c) Multiplicity of data needs and ‘sponsors’ leading to overlaps and duplicity
- d) Over reliance on donor funding for data governance that may compromise data sovereignty
- e) Political interference and interventions with a bias to use or seek ‘selective or subjective’ data to interpret or use for certain needs and outcomes
- f) Pandemics or epidemics (e.g. COVID-19 and Ebola) as well climate change as well as civil unrest that slow down data work

03

Strategic Themes and Decisions



3. Strategic Themes and Decisions

3.1 Strategic Themes

Strategic themes represent the foundational pillars upon which the strategy is built, derived from a thorough analysis of both internal and external environments. Table 4.1 illustrates the identified themes and sub-themes resulting from this analysis.

Table 3.1: Strategic themes and sub-themes

Theme	Sub-themes	Theme	Sub-themes
1. Data governance	• Data policy and legal framework • Data ownership, control and access • Data security and protection • Data coordination and collaboration • Data quality	2. Data Infrastructure	• Infrastructure • Data infrastructure integration • Public data infrastructure
3. Strategic Data Utilisation	• Data registries • Strategic use cases • Use data to improve service delivery		
4. People and Culture	• Data skills • Data culture	5. Research, Innovation and	• Research and development • Data-driven innovation • Commercialisation of data-driven innovations

3.2 Data Governance

Data governance involves establishing policies, laws, regulations, and standards to manage, protect, ensure the quality of, and utilise data assets across a country's entire data ecosystem. It also includes implementing high standards of data protection and security to safeguard individuals and businesses from potential misuse or breaches.

Data governance relies on structures to oversee and coordinate data-related activities, enforce compliance with data governance policies, and resolve conflicts. This entails establishing



governance structures, committees, councils, or agencies responsible for coordination and assigning accountability and ownership for specific datasets or data domains to designated data stewards.

Furthermore, data governance involves risk management, enabling agencies to minimise risks associated with collected and held data while maximising its value. Mechanisms, protocols, and agreements that grant authorised access to data, promote data sharing and collaboration, and safeguard data privacy, confidentiality, and security are crucial components.

Open data is also part of data governance, in which government agencies and other data generators publish data openly, subject to national policies and laws, so researchers, innovators, and other users can access and use it.

In summary, data governance aims to establish a responsible data management culture, promote transparency, accountability, and trust in data, and maximise the value and utility of data assets for informed decision-making, innovation, and socioeconomic development, in alignment with policy, legal, and regulatory requirements.

Key data governance challenges in Uganda include:

- a) Lack of a coordinated regulatory framework
- b) Insufficient consideration for non-personal data in data protection legislation
- c) Silence on data in the private sector within the regulatory regime
- d) Lack of coherent mechanisms for cross-border data flows
- e) Data existing in silos across different Ministries, Departments, and Agencies (MDAs)
- f) Restrictions on data access and sharing
- g) Inadequate provision for data governance
- h) Lack of open data policy

Strategic decisions entail the goals, objectives and initiatives to take advantage of the strengths and opportunities and, at the same time, deal with limitations and challenges in data governance. The decisions also include outcomes and key performance indicators associated with the goals, objectives and initiatives. Outcomes represent the medium-term changes beneficiaries will encounter. Monitoring and evaluating progress toward these outcomes requires measuring performance using key performance indicators (KPIs). Tables 3.2 shows the strategic decisions associated with data governance.

Table 3.2: Strategic Decisions – Data Governance



Goal 1: Establish a comprehensive and sustainable data governance framework to effectively manage, protect, and utilise data assets



Ultimate Outcome 1: Improved data governance

Objectives	Initiatives	Intermediate Outcomes	KPIs
1.1 Develop new and update existing regulatory frameworks in the entire data ecosystem	- Undertake a gap analysis on existing regulatory frameworks with respect to data governance - Support MDAs and local governments to develop in-house data policies, data management guidelines and data structures with roles and responsibilities - Strengthen and update existing relevant regulatory frameworks where there are gaps - Mainstream inclusivity (gender, persons with disabilities (PWDs) and other marginalised groups) in the relevant laws, policies and regulations - Develop a national data policy informed by good practice (e.g. the AU Data Policy Framework, EAC data governance initiatives and the EU Data Act and Data Governance Act) - Develop a flexible regulatory environment through the use of regulatory sandboxes to facilitate innovative data use - Ensure compliance with applicable data policies, laws, and regulations	Data Regulatory frameworks developed and updated	No. of Data regulatory frameworks developed and updated
		Improved compliance with established data National and International Regulatory Frameworks	Compliance index (see definition in Appendix 3)
		Enhanced stakeholder confidence	Stakeholder satisfaction index regarding data governance (%)
1.2 Strengthen the security of data systems and mitigate risks in the data ecosystem	- Strengthen enforcement of existing policies and regulations on data protection and security - Operationalise and strengthen capacity development and collaboration among Computer Emergency Response Teams (CERTs) at sectoral, national, sub-national and regional levels - Invest in modern data security tools and technologies to mitigate cybersecurity threats - Strengthen national, regional, continental and international mechanisms for secure and compliant cross-border data transfer	Improved data security and protection	Categories of data assets classified, protected, and monitored to safeguard against unauthorised access, disclosure, or misuse (No)

Objectives	Initiatives	Intermediate Outcomes	KPIs
			Serious data breaches reported and resolved within set timelines (%) Regional or continental/ international data protection and cybersecurity conventions ratified (No) CERT personnel and teams trained (No) Collaboration frameworks established among CERT teams (No)
1.3 Strengthen data ownership, control and access to data collected within Uganda, and from Ugandans in accordance with national, regional and international laws and regulations	- Classify and regulate access to data collected within Uganda and from Ugandans - Enhance data residency requirements and ensure compliance with national laws and regulations regarding data handling and storage - Regulate access to Uganda's strategic/sensitive data - Promote greater utilisation of data by government agencies in their decision-making processes	Strengthened legal and policy frameworks on data access Reduced unauthorised access to Ugandan data Improved sharing and data use in planning, innovation and decision making	Compliance index (%) – to be defined Guidelines on personal and non-personal data developed (No) No. of agencies using data for decision-making

Objectives	Initiatives	Intermediate Outcomes	KPIs
1.4 Streamline coordination and establish collaboration along the data value chain	- Set up data governance frameworks at both national and agency levels to foster coordination and collaboration among key stakeholders and partners - Establish and operationalise regional coordination centres or operational working groups - Develop a coordination mechanism to streamline interventions from development partners in the digital economy sector - Introduce incentives and recognition programmes to encourage and reward data sharing and collaboration among stakeholders, including businesses, research institutions, government agencies, and civil society organisations	Comprehensive data governance framework at national and local government levels (including non-state actors) outlining roles, responsibilities, policies, and procedures for managing data effectively	Defined governance structures implemented and operational at national and local government levels (No)
		Increased stakeholder collaborations on data	No of collaborations among stakeholders
		Improved data sharing	Data sharing agreements established between state and non-state actors (No)
			Organisations sharing data (No)

Objectives	Initiatives	Intermediate Outcomes	KPIs
1.5 Ensure high data quality across the entire data value chain	- Standardise and harmonise data collection procedures to reduce costs - Create comprehensive standards and protocols for data and metadata to ensure consistency and facilitate seamless integration and exchange across government ministries, departments, and agencies (MDAs) as well as the private sector - Collaborate with other countries and international organisations to establish common standards and frameworks for data sovereignty - Standardise primary data registries as single sources of truth - Strengthen enforcement of data standards - Implement proactive monitoring and remediation strategies to address data quality challenges effectively	Increased data standardisation	Primary datasets with standardised data formats, definitions, and coding schemes (No)
		Improved data quality	Primary datasets without errors, inaccuracies, or inconsistencies (No.)
		Timeliness in data updates and information dissemination	Primary datasets processed and relevant reports disseminated within set timelines (No.)

3.3 Data Infrastructure

Data infrastructure comprises the technological and organisational components essential for supporting the effective management, processing, sharing, and analysis of data across various sectors and stakeholders within a country. It involves establishing infrastructure to systematically collect and aggregate data from diverse sources, including government agencies, private sector organisations, research institutions, and sensors, for developmental and innovative purposes. Interoperability between different data sources and systems is facilitated through the development of data integration frameworks, APIs, and standards.

For data storage, there is a requirement to develop infrastructure to securely store and manage large volumes of both structured and unstructured data. To analyse this data effectively, it is crucial to implement data analytics tools for transforming and extracting valuable insights to inform decision-making. Additionally, to facilitate authorised access to data and promote collaboration among stakeholders, platforms, portals, and repositories need to be created.

Improving the accessibility, usability, and value of government data to citizens, businesses, researchers, and other stakeholders is essential. This fosters greater transparency in governance, accountability in public service delivery, and innovation in using data for societal benefit.

Table 3.3 shows the strategic decisions for data infrastructure.

Table 3.3: Strategic Decisions - Data Infrastructure



Goal 2: Develop and implement integrated and interoperable data infrastructure



Ultimate Outcome 2: Robust data infrastructure to support data collection, storage, processing, sharing and use

Objectives	Initiatives	Intermediate Outcomes	KPIs
2.1 Establish a robust data infrastructure to facilitate all the processes of the data value chain	- Digitise and digitalise the entire data value chain - Procure suitable infrastructure that enables timely data collection, processing, storage, sharing, and utilisation	Enhanced data infrastructure capacity	- Services that have been digitised (%) - Tier IV data centres established & services offered (#)
	- Build and enhance data infrastructure, including data centres, cloud computing platforms, energy infrastructure, and high-speed internet connectivity. - Ensure new infrastructure complies with existing data standards and protocols	Increased availability of data storage and processing facilities	- Service availability e.g. service uptime (%) - Percentage growth in stakeholders utilising data infrastructure - Current data storage as a share of required storage (%)
2.2 Ensure integration and interoperability of data	- Establish a data sharing framework that facilitates personal and non-personal data sharing between enterprises within the country - Evaluate and enhance the data integration platform to serve as a national data sharing infrastructure	Enhanced cost savings from collaboration and sharing of resources in the data ecosystem	Cost savings from collaboration and sharing of resources in the data ecosystem (%)

Objectives	Initiatives	Intermediate Outcomes	KPIs
	- Enhance new and existing data systems to incorporate accessibility needs for Persons with Disabilities (PWDs) and other minority groups - Utilise regional integration efforts and protocols to advance the development of critical digital data systems - Allocate resources towards acquiring modern data security tools and technologies - Establish digital platforms or marketplaces that facilitate the monetisation of data assets and services, subject to adherence to ethical and privacy standards		
2.3 Develop public data infrastructure to enhance access and utilisation	- Collaborate with citizens and stakeholders to identify key datasets for release, ensuring they are presented in accessible and user-friendly formats - Enhance the availability and accessibility of public datasets for citizens, businesses, and other stakeholders through centralised data portals, APIs, and comprehensive data catalogs - Implement initiatives across government that make data publicly accessible, aiming to enhance transparency, accountability, and trust between citizens and public agencies, ultimately improving the delivery of public services - Review, strengthen and use digital signature infrastructure (e.g. public key infrastructure)	Increased sharing of public data	Datasets shared by state and non-state actors (#)
		Stakeholders accessing publicly shared data (% increase)	- Stakeholders (e.g. innovators) accessing shared public datasets (#) - Institutions with open data sharing platforms (#) (%)Increased access to publicly shared data by stakeholders

3.4 Strategic Data Utilisation

Strategic data utilisation involves the intentional and systematic use of data by policymakers to inform decision-making and guide policy formulation. This approach ensures that policies and strategies are grounded in robust data analysis and contextual insights. By harnessing data, policymakers can pinpoint priority areas for intervention, allocate resources more efficiently, and tailor policies to address the specific needs and challenges of different population groups.

Strategic data utilisation also facilitates evidence-based interventions across various sectors of the economy and society, undertaken by government officials and other stakeholders. This entails designing and implementing development interventions, programmes, and projects based on empirical evidence and data-driven insights. Integrating data analysis and insights into decision-making processes at all levels of governance, from national policy formulation to local service delivery, enables the effective use of data to tackle socio-economic challenges, promote inclusive development, and achieve national development goals.

With strategic data utilisation, organisations can establish robust monitoring and evaluation systems to assess the impact of data initiatives on society. This ensures accountability and tracks progress towards desired outcomes.

Table 3.4 shows the strategic decisions associated with the strategic data utilisation theme.

Table 3.4: Strategic Decisions – Strategic Data Utilisation



Goal 3: Strategically leverage data usage to foster inclusive socio-economic development through unlocking the value of data



Ultimate Outcome 3: Inclusive socio-economic development through unlocking the value of data

Objectives	Initiatives	Intermediate Outcomes	KPIs
3.1 Promote the use of primary and secondary registries to support effective data utilisation for socio-economic development	- Designate and streamline primary registries Create, merge and update secondary registries to operationalise primary registries - Strengthen administrative data and digitalise appropriately - Improve ease of finding and access to data assets from the various sectors - Promote use of data by government for planning and decision making	Increased data utilisation for decision making	Percentage of NDP IV indicators that have data Data systems integrated to facilitate cross-system data sharing and collaboration (#)
3.2 Implement data-driven services in the priority areas to foster social-economic development	- Develop an evaluation framework for impact of unlocking the value of data Promote the use of emerging technologies (e.g. AI, block chain, big data analytics, IoT, etc.) in harnessing data to create impact - Implement and evaluate the impact of data in selected priority sectors(agro-industrialisation; tourism development; mineral-based industrial development, including oil, gas and petrochemicals; and science, technology and innovation, including knowledge (ATMS)) - Scale the data use cases to other priorities	Enhanced productivity in the selected use cases Increased integration of emerging technologies (e.g. AI, machine learning and big data analytics) to harness the value of data in socio-economic development	Value of output per employee (UGX, M) Projects leveraging emerging technologies and data to create impact (#)

3.5 People and Culture

The people theme involves both essential data skills and the fostering of a data-centric culture. Data skills encompass a broad spectrum of competencies, knowledge, and capabilities that enable individuals and organisations to effectively manage, analyse, interpret, and use data for various purposes.

At its core, data literacy involves developing a foundational understanding of data concepts, terminology, and principles. This entails grasping diverse data types (e.g., structured, unstructured), sources, formats, and considerations of data quality. By building data literacy, individuals can critically assess, interpret, and communicate data effectively.

However, data skills go beyond basic literacy to include proficiency in various data analysis and manipulation techniques, tools, and methodologies. This includes expertise in statistical analysis, data mining, data visualisation, and exploratory data analysis. These skills enable individuals and institutions to identify data needs, recognise patterns, trends, and correlations, and derive valuable insights from datasets. This analytical expertise strengthens the ability to communicate data-derived insights effectively and supports informed decision-making and problem-solving.

Moreover, data management skills play a pivotal role. This includes familiarity with data collection methods, storage, retrieval, cleaning, preprocessing, and documentation and metadata management. Proficiency in data management is essential to maintain data quality, integrity, security, and compliance with regulatory standards.

These skills collectively underpin maximising the value and impact of data assets, facilitating evidence-based decision-making, promoting innovation, and driving socioeconomic development across diverse sectors. Although skilled individuals with these data literacy skills exist in work environments, organisations must embed these skills into their culture. The key question is whether the environment allows these skilled workers to effectively use their acquired skills. Establishing a comprehensive data knowledge base for stakeholders and decision-makers is vital. By leveraging these skills, we can maximise the value and impact of data assets, facilitate evidence-based decision-making, promote innovation, and drive socioeconomic development across various sectors. Therefore, mainstreaming data science/analytics in the public sector, academia, CSOs and the private sector will unlock this potential.

Data culture encompasses the values, norms, attitudes, and behaviours within society that prioritise and promote the effective use of data for decision-making, problem-solving, and innovation. It reflects the collective mindset, practices, and beliefs shaping how individuals and institutions perceive, approach, and interact with data assets and technologies. Many aspects of this strategy contribute to fostering an appropriate data culture. For instance, promoting transparency and openness in data sharing and access facilitates data-driven decision-making and public accountability in data governance.

Table 3.5 presents the strategic decisions for the People and Culture theme.

Table 3.5: Strategic Decisions – People and Culture



Goal 4: Build a resilient data-driven ecosystem characterised by a culture of data literacy, innovation, and collaboration, empowering individuals and organisations with the skills, knowledge, and mindset to harness the transformative potential of data



Ultimate Outcome 4: Improved contribution of data to national productivity

Objectives	Initiatives	Intermediate Outcomes	KPIs
4.1 Build and strengthen data literacy and technical skills across sectors to empower individuals and organisations to effectively collect, analyze, and utilise data	- Design and implement data literacy programmes targeting policymakers, government officials, development partners, educators, students, and the general public - Work with educational institutions (MoES, NCHE and other educational bodies) - targeting women, youth, persons with disabilities and other marginalised groups who may ordinarily be excluded - Implement skill development programmes to build technical expertise in data analytics, AI, big data and other data tools among government officials, researchers, analysts, and other relevant stakeholders to maximise the value of data - Mainstream Data Science/Analytics in the public sector, academia, civil society organisations and the private sector. - Build and strengthen capacity in modern tools and technologies (including AI) to maximise the value of existing data	Increased Data Literacy: Policy makers, public officials and stakeholders have improved data knowledge and skills in data analysis	Proportion of policies with comprehensive data analysis. Percentage of stakeholders completing data literacy training programmes
		Increased membership in Data-Literate Communities of Practice	Growth in membership of data-literate communities of practice.
		Increased Investment in Data Skills Development	Percentage of annual budget allocations to data skills development

Objectives	Initiatives	Intermediate Outcomes	KPIs
4.2 Foster a culture of data-driven decision-making across government, academia, private sector, and civil society to maximise the value and impact of data	• Develop and implement awareness campaigns, educational programmes, and communication initiatives to raise awareness about the importance and benefits of data-driven decision-making • Orient and promote leadership commitment and accountability in prioritising data-driven approaches and initiatives at all levels of government, business, development partners and civil society • Promote the adoption of innovative and all-inclusive data-driven planning and decision-making • Recognise and celebrate exemplary initiatives, projects, and individuals that demonstrate the transformative power of data-driven decision-making in driving positive change and achieving measurable impacts • Promote ethical and responsible data practices to ensure the ethical collection, use, and sharing of data while safeguarding privacy, security, and confidentiality • Promote inclusivity in data access (gender, youth, differently abled persons, people speaking local languages)	Supportive data culture leading to increased utilisation of data	Percentage growth in the public interactions with data platforms and tools developed and made accessible
		Enhanced public awareness and engagement with data	Frequency of media mentions of data related terms
		Increased inclusivity in data access	Percentage increase in the number of data platforms/initiatives that have inclusive data features

3.6 Research, Innovation and Entrepreneurship

This theme focuses on leveraging data-driven research, innovation (both product and process), and commercialisation to drive transformative change and socioeconomic advancement in Uganda. It emphasises the need to foster a conducive ecosystem that promotes creativity, collaboration, and investment in data-driven solutions, positioning Uganda as a continental leader in digital innovation.

The research element is about encouraging and supporting high-quality research in data science, analytics, and related fields, fostering a culture of inquiry, exploration, and discovery. This may involve investing in research infrastructure, developing talent, and building collaborative partnerships to advance knowledge and expertise in data-driven disciplines. Research will create prototypes that will need testing and experimentation for market fitness. Thus the logical next step is to stimulate innovation and entrepreneurship in the development of data-driven solutions that address pressing societal challenges and create new economic opportunities. These solutions will need innovation hubs that can provide support, funding, and mentorship to help startups, SMEs, and innovators translate ideas into impactful products, services, and businesses.

Finally, data-driven solutions must be commercialised to create value. This involves transferring research outputs and intellectual property from academia/innovation hubs to industry, promoting the commercialisation of innovative technologies and solutions. To unlock value, it is necessary to establish mechanisms for technology licensing, venture capital investment, and industry partnerships to accelerate the adoption and scaling of data-driven innovations.

This theme will complement Uganda's efforts to achieve commitment 3 of the 'National Commitments for SDG Acceleration and Transformation'². This commitment entails accelerating inclusive actions to leverage the advantages of Science, Technology and Innovation. Uganda's development aspirations require its national Science, Technology and Innovation (STI) plans and programmes to contribute effectively to social and economic development. This theme will contribute to social and economic development by commercialising data-driven innovations.

² <https://sdgs.un.org/national-commitments-sdg-transformation/23506>

Table 3.6 shows the strategic decisions of the research, innovation, and entrepreneurship theme.

Table 3.6: Strategic Decisions - Research, Innovation and Entrepreneurship



Goal 5: Foster a culture of research, innovation, and entrepreneurship driven by data to catalyse sustainable socio-economic growth and development



Ultimate Outcome 5: Innovative solutions and successful commercialisation of data-driven innovations

Objectives	Initiatives	Intermediate Outcomes	KPIs
5.1 Foster a culture of R&D and innovation leveraging data to address societal challenges	• Provide online access to open data collected by the government, private sector, development partners, academia, businesses, and individuals to academia and innovators to support R&D and innovation • Promote/incentivise research, availability and utilisation of data in developing new products, processes and services for commercial and social purposes to address current and future national priorities • Safeguard intellectual property arising from data innovation, in alignment with national IP policy • Increase government uptake of locally developed data solutions	Enhanced availability of openly accessible datasets	Percentage change in number of datasets shared
		Increased innovative solutions leveraging data to address societal challenges and drive economic growth	Percentage change of locally developed innovative solutions leveraging data and used by Government
			Percentage change in protected innovative data solutions

5.2 Promote entrepreneurship and facilitate the commercialisation of home-grown data-driven innovations to drive economic growth and create jobs for the youth	• Encourage innovators to exploit open data in developing new data-driven solutions • Offer grants, tax incentives, and business development services to local aspiring entrepreneurs and innovators to launch and grow data-driven ventures • Create a big data and AI sandbox to ensure compliance of big data, AI innovations with the country's data laws and regulations and development of best practices (align with big data utilisation strategy) • Support business data localisation in critical competitive areas • Facilitate cross-border data flows to foster digital free trade	Increased entrepreneurship of data-driven solutions	Percentage change in data-driven startups incubated and accelerated
			Percentage change in Investment attracted by data-driven startups
		Increased commercialisation of data-driven innovations	Percentage change in revenue generated by commercialised innovations
			Amount of money saved through adoption of locally developed innovations by Government
			Person-hours saved during provision of government services
			Percentage change in jobs created by commercialised data-driven innovations

04

Strategic Implementation



4. Strategy Implementation

4.1 Implementation Plan

The implementation plan is shown in Appendix 1.

4.2 Financing

Table 4.1 summarises the resource requirements to implement each strategic theme. The detailed costing is shown in Appendix 2.

Table 4.1: Summary of resource requirements

Themes	Cost (UGX, B)					
	Y1	Y2	Y3	Y4	Y5	Total
1. Data governance	150.2	166.8	81.3	77.5	77.5	553.3
2. Data infrastructure	246.5	174.5	100.3	100.3	63.3	684.9
3. Strategic data utilisation	14.8	19.4	20.0	10.1	7.1	71.4
4. People and Culture	6.46	10.34	7.37	5.11	4.66	34.0
5. Research, innovation and entrepreneurship	67.0	63.4	63.0	62.8	62.8	319.0
Total	484.9	434.4	272.0	255.9	215.4	1,662.6

Table 4.2 shows the sources of funding for the resource requirements shown in Table 4.1.

Table 4.2: Sources of funding

Source of Funding	Key Assumptions	Amount in 5 years (UGX, B)
1. Government of Uganda	MDAs will budget for their data initiatives	1,220
2. Development partners	GoU will ensure there is coordinated funding by development partners to reduce duplication	55
3. Allocation of funding for data initiatives by private sector	Private sector will budget for their share of data initiatives	54
4. Non-tax revenue from monetisation of data services	MDAs will monetize data related services	333.6
Total		1,662.6

Note that the data budget spans the whole of government. That is, in addition to the Ministry of ICT and National Guidance data budget, other ministries, departments and agencies will need to budget for their data initiatives in the National Data Strategy. The Ministry of ICT and National Guidance will need to work with MoFPED and Cabinet to ensure MDAs prioritise the data strategy and allocate resources accordingly.

4.3 Institutional Framework

The institutional framework will have three components: the National Data Steering Committee (NDSC), which will serve as the governance organ; the National Data Office (NDO); and linkages to data personnel in MDAs. These components are described below.

4.3.1 National Data Steering Committee

The Ministry of Information Communication Technology & National Guidance is rolling out the Uganda National Data Strategy, with a vision of a coordinated and vibrant data-driven economy for socio-economic transformation. The Ministry coordinates efforts to ensure maximisation of the value of data through effective governance, sustainable resourcing, responsible and innovative data use.

In order to coordinate the implementation of this ambitious transformation, the Ministry of ICT&NG requires a mechanism to consolidate strategic advisory from different stakeholders involved in the data value chain from generation and utilisation. This calls for a multiple-stakeholder National Data Steering Committee advising the Ministry of ICT&NG on matters associated with data. The Committee is expected to make key policy decisions, guide the government in the implementation of the NDS, and ensure effective oversight through receiving and reviewing regular reports and the results of periodic evaluations concerning the implementation of the NDS. The goal of the Steering Committee is to coordinate and provide strategic leadership concerning data governance, utilisation, and entrepreneurship.

Steering Committee Objectives:

- a) Ensure effective and efficient implementation of the NDS
- b) Promote best practices for data governance, use and sharing
- c) Monitor compliance with relevant laws, regulations, and standards
- d) Assess and mitigate risks associated with data systems
- e) Promote a culture of data use and governance

Steering Committee Roles and responsibilities:

- a) Ensure that all interventions under the NDS are in line with the existing policies, laws and regulations.
- b) Support the review and development of data-related policies, strategies, plans, standards, guidelines and Standard Operating Procedures to support the implementation of the NDS.
- c) Provide a platform for NDS stakeholder engagement and feedback.
- d) Monitor the implementation of the NDS ensuring that its goals and objectives are achieved.
- e) Review and approve the recommendations for the implementation of data initiatives in both the public and private sectors.
- f) Review periodic monitoring and evaluation reports and advise MoICT&NG accordingly.
- g) Provide policy guidance on NDS implementation.
- h) Take the lead in promoting policy dialogue and advocacy on issues identified by the NDS implementing entities.
- i) Review and endorse data-related proposals, reports and studies.
- j) Review and endorse new data innovations.

Committee Meetings:

The Steering Committee shall have one standing meeting at least every quarter. It can however schedule an ad hoc meeting as and when necessary.

Committee Members:

The National Data Steering Committee shall consist of members with expertise in data governance, data infrastructure and systems, data utilisation, data resources, research, innovation and entrepreneurship. The composition shall include the following:

- a) Chair: The Ministry of Finance, Planning and Economic Development will chair the NDSC
- b) Co-chair: Office of the Prime Minister shall be the co-chair of the NDSC
- c) Members: The Membership of the committee shall comprise key representatives from the private sector, the public sector and civil society organisations (CSOs).
- d) Secretariat: The MoICT&NG shall serve as the Secretariat of the Steering Committee. The Secretariat will prepare briefing papers and progress reports and provide all the necessary information and evidence that the committee needs to make informed decisions

Accountability:

The National Data Steering Committee will convene under the supervision of the Office of the Prime Minister and MoFPED.

Role of the Chair:

- Provide leadership and strategic direction to members / Chair meetings of the Steering Committee
- Chair meetings of the steering committee and provide strategic direction to the meeting.

Roles of Members:

- Attend and actively participate in strategy and planning meetings.
- Contribute to the development and review of policies and procedures.
- Support risk assessments and audits as required.
- Report on progress and issues related to their areas of expertise.

Roles of the Secretariat:

- Document all deliberations of the steering committee
- Prepare the agenda of the meetings in consultation with the Chair
- Keep a database/archive of all documents relevant to the National Data Steering Committee's business.
- Receive, collate issues and prepare documentation on those issues for presentation to and deliberation by the Steering Committee

4.3.2 Structure of the National Data Office

The structure of the National Data Office is given in figure 2.

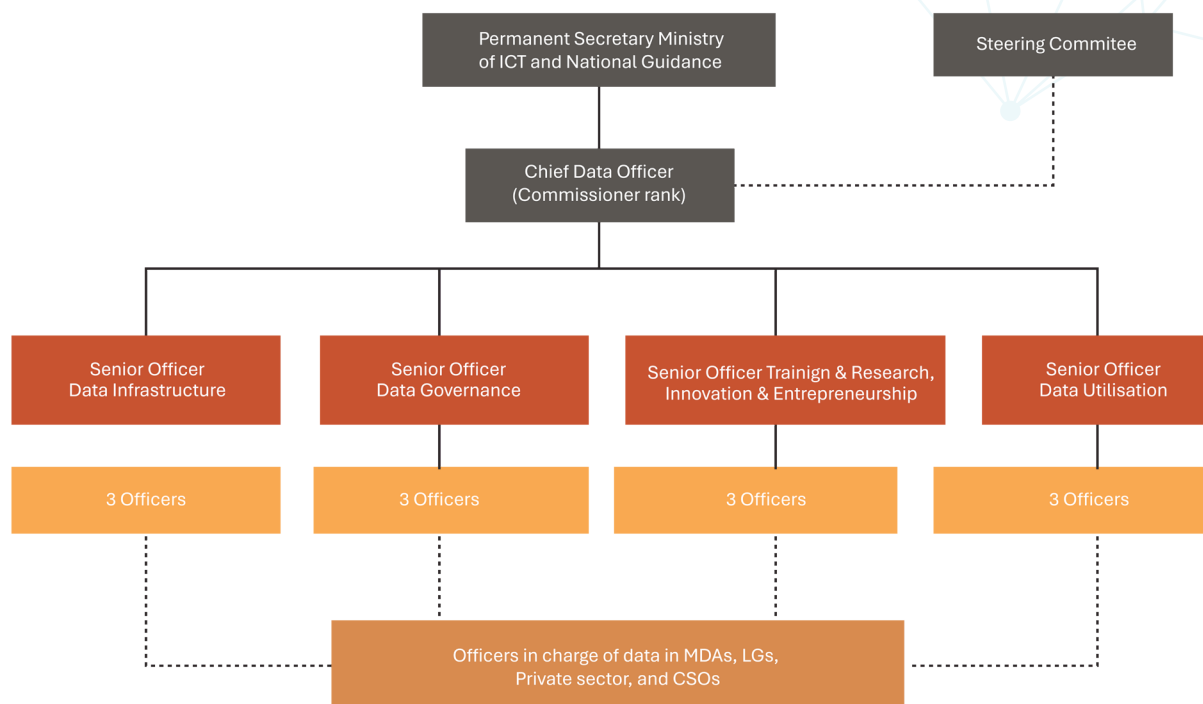


Figure 2: National Data Office Structure

The National Data Office will be the management arm of the National Data Steering Committee. It will implement the National Data Strategy under the leadership of the Chief Data Officer, who will be at Commissioner Level. Each of the pillars in the strategy will be headed by a Senior Officer, each with three Officers to start with. In addition, there will be another senior officer in charge of the enablers: People and Culture; and Research, Innovation and Entrepreneurship

The National Data Office will operate without the need for additional personnel, as it will leverage existing human resources within the host institution. Operational funding will be drawn from the host institution's budget, supplemented by contributions from other MDAs.

4.3.3 Linking the National Data Office to the National Development Plan Technical Committees

The Chairs of the Data Technical Committees should make up the National Data Steering Committee. There will be a data technical committee for each of the four NDP IV priority anchor sectors (ATMS), plus a fifth committee on Governance and Security.. These committees work directly with Officers in MDAs to execute the National Data Strategy initiatives. These officers will be appointed or re-designated by the Ministry of ICT and National Guidance. The Officers would need to work with Statistical Officers and other officers in charge of data in MDAs, LGs, Private sector and CSOs to achieve the data strategy goals and objectives.

Figure 3: How the National Data Office links to the National Development Plan technical committees

MINISTER OF ICT AND NATIONAL GUIDANCE			
Permanent Secretary – Ministry of ICT & NG National Data Steering Committee			
Chief Officer			
Technical Committees of the National Data Office			
1	Agro-industrialisation	MAAIF	Officers at MDAs
2	Tourism development	MoTWA	
3	Mineral development including Oil and Gas	MoEMD	
4	Science, technology and innovation development	STI	
5	Governance and Security	OP	

4.4 Monitoring and Evaluation

Periodic monitoring is crucial to the implementation process of the strategy. It aims to ensure that key performance indicators are met within the specified timeframe outlined in the plan, where objectives and strategies are clearly defined. Monitoring the strategy is paramount for three main reasons:

- to ensure adherence to the established parameters;
- to assess progress in alignment with plan expectations and determine if there is a need to adjust tactics for improved results; and
- to provide information periodically for decision-making.

The National Data Office will spearhead the monitoring and evaluation of performance. Quarterly self-assessments by the National Data Office will be submitted to the National Data Steering Committee, which will review them. The National Data Office will review these reports, reflecting the Data Office's performance. The Office of the Prime Minister will report consolidated quarterly monitoring results during Cabinet meetings. Furthermore, an independent consultant will conduct mid-term and end-term evaluations of the strategy implementation.

The monitoring and evaluation framework is shown in tables in Appendix 3.

4.5 Risk Analysis and Mitigation Strategies

The Probability (P) parameter, which quantifies the chances of a risk event occurring, is operationalised at three levels: 1 – Low; 2 – Moderate; 3 – High. Similarly, the Severity (S) parameter, which represents severity of the risk should it occur, is operationalised at the same three levels: 1 – Low; 2 – Moderate; 3 – High. The resultant risk impact (I) is the product of P and S as shown in Table 4.4.

Table 4.4: Risk analysis and mitigation strategies

Risk Impact (I)	Low (L)	Moderate (M)	High (H)
Resultant Score (I)	1, 2, 3	4, 6	9

Risk Category	Risk and Risk Description	Probability (P)	Severity (S)	Impact or Overall Risk Level (I=P*S)	Mitigation strategies	Risk Owner
Economic	Failure to prioritise NDS initiatives/ interventions by MDAs	2	2	4	Ensure buy-in from all MDAs	MoICTNG, OPM
	Failure of Parliament to appropriate resources to NDS initiatives	3	3	9	Ensure buy-in from Parliament	MoICTNG
	Inability to mobilise planned resources from development partners	3	3	9	Government to implement innovative funding mechanisms	OPM, MoFPED

Political	Inadequate support from the Executive	1	3	3	Ensure buy-in from the Executive	MoICTNG
	Inadequate support from private sector, CSOs and other data generators	1	2	2	Ensure buy-in from the private sector, CSOs and other data generators Incentivise private sector, CSOs and other data generators Create a conducive business environment	OP
	Resistance by MDAs and other actors	2	3	6	Ensure buy-in from all MDAs Policy and legal reform on data mandates	OPM, Parliament, Judiciary
	Coordination challenges across MDAs and other actors	3	3	9	Policy and legal reform on mandates on data Faithfully implement programme-based NDP	OPM
	Government bureaucracy inhibiting strategy execution	2	2	4	Public service reforms to increase efficiency, agility, etc.	MoPS, OP
	Strategy is not approved	3	3	9	Extensive stakeholder consultation	MoICTNG, OPM

Macro trends	Macro trends compromising execution of some aspects of the strategy, e.g. pandemics	1	3	3	Anticipatory planning (foresight thinking) Agility in responding to shocks	MoFPED, NPA
	Cybersecurity threats on datasets	2	3	6	Robust cyber defense of data Strong cyber policy, laws and regulations	MoICTNG, NITA-U, MIA, MoDVA
Policy and legislation	Inadequate policy and legal provisions to execute strategy	2	2	4	Ensure robust data governance Enforce regional policy commitments on data	NPA, MoICTNG
Geo-political interests	Data theft	3	3	9 (H)	Sensitisation of Government officers on data as a strategic resource Develop and enforce policy on control of strategic data Public awareness on data protection and security	MoIA, MoDVA
Sustainability	Over-reliance on donor funding	2	3	6	Government to intentionally fund strategic data initiatives	MoFPED, NPA
					Government to implement innovative funding mechanisms	

5. Appendices

Appendix 1: Implementation Plan

Tables A1.1 to A1.5 show the implementation plan for each of the strategic themes.

Table A1.1: Implementation Plan – Data Governance



Goal 1: Establish a comprehensive and sustainable data governance framework to effectively manage, protect, and utilise data assets

Objectives	Intermediate Outcomes	KPIs	Baselines (2022/23)	Targets	Time-lines	Responsibility	
						Lead	Support
1.1 Develop new and update existing data regulatory frameworks in the entire data ecosystem	Data Regulatory frameworks developed and updated	Data regulatory frameworks developed and updated. (No)	A review of 18 data regulatory frameworks was conducted	One data governance law developed At least 50 regulatory frameworks reviewed	Y1	MoICT&NG	Uganda Law Reform Commission Ministry of Justice and Constitutional Affairs (First Parliamentary Counsel) Cabinet Secretariat
	Improved compliance with established data National and International Regulatory Frameworks	Compliance index Refer to this	None	One compliance index developed	Y2	MoICT&NG	MoJCA; data-processing state and non-state actors (self-assessment) PDPO, UBOS, MoFPED
	Enhanced stakeholder confidence	Stakeholder satisfaction index regarding data governance (%)	TBD	One stakeholder survey deployed annually	Y2	MoICT&NG	PDPO

Objectives	Intermediate Outcomes	KPIs	Baselines (2022/23)	Targets	Time-lines	Responsibility	
						Lead	Support
1.2 Strengthen the security of data systems and mitigate risks in the data ecosystem	Improved data security and protection	A data classification framework developed with metrics to assess	TBD	One	Y5	MoICT&NG	NITA-U PDPO
		Primary datasets without errors, inaccuracies or inconsistencies (%) Target >90	TBD	80%	Y5	MoICT&NG	PDPO (Personal Data) CERTs (Non-Personal Data)
1.3 Strengthen data ownership, control and access to data collected in Uganda and from Ugandans in accordance with national, regional and international laws and regulations	Reduced unauthorised access to Ugandan data	Decline in reported incidents of unauthorised access to Ugandan datasets (%) No. of guidelines on authorised access to personal and non-personal data developed	TBD	80% One guideline developed	Y5	MoICT&NG	All government agencies with registries
	Improved data use in planning, innovation and decision making	No of state and non-state entities using data in decision making	TBD	At least 300 utilising state entities using data At least 20,000 non-state entities	Y2- Y5	MoICT&NG/ NPA/OPM	All agencies

Objectives	Intermediate Outcomes	KPIs	Baselines (2022/23)	Targets	Time lines	Responsibility	
						Lead	Support
1.4 Streamline coordination and establish collaboration along the data value chain	Comprehensive data governance framework at national and local government levels (including non-state actors) outlining roles, responsibilities, policies, and procedures for managing data effectively	No of defined governance structures implemented and operational at national and local government levels	TBD	A comprehensive coordination framework addressing structures at all levels	Y2	MoICT&NG	MoJCA, Regulatory bodies handling data
	Increased stakeholder collaborations on data	No of collaborations among stakeholders	TBD	At least 50	Y3	MoICT&NG	Treasury, MoJCA, Regulatory bodies handling data
	Improved data sharing	Data sharing agreements established between state and non-state actors (#)	TBD	100	Y2-Y5	MoICT&NG	All government agencies with registries
		Organisations sharing data (%)	0	80	Y5	MoICT&NG	Public and Private Sectors
1.5 Ensure high data quality across the entire data value chain	Increased data standardisation	Primary datasets with standardised data formats, definitions, and coding schemes (%)	TBD	100	Y3	UBOS	MoICT&NG, NITA-U, Regulatory bodies handling data
	Improved data quality	Primary datasets without errors, inaccuracies or inconsistencies (%)	TBD	<90	Y5	UBOS	MoICT&NG, NITA-U, Regulatory bodies handling data

Objectives	Intermediate Outcomes	KPIs	Baselines (2022/23)	Targets	Time-lines	Responsibility	
						Lead	Support
	Timeliness in data updates and information dissemination	Primary datasets processed and relevant reports disseminated within set timelines (%)	TBD	>95	Y5	UBOS	MoICT&NG, NITA-U, Regulatory bodies handling data

Table A1.2: Implementation Plan – Data Infrastructure


Goal 2: Develop and implement integrated and interoperable data infrastructure

Objectives	Intermediate Outcomes	KPIs	Baselines (2022/23)	Targets	Time-lines	Responsibility	
						Lead	Support
2.1 Establish a robust data infrastructure to facilitate all the processes of the data value chain	Enhanced data infrastructure capacity	Services that have been digitised (%)	TBD	30% of Service catalogue	Y3	NITA-U	Respective MDAs
		Tier IV data centres established & services offered (#)	TBD	2	Y3	NITA-U	MOFPED
	Increased availability of data storage and processing facilities	Service availability e.g. service uptime(%)	TBD	99.9%	Y3	NITA-U	MoICT&NG, Private Sector, Other Stakeholders
		Growth in stakeholders utilising data infrastructure	TBD	90%	Y3	NITA-U	MoICT&NG

Objectives	Intermediate Outcomes	KPIs	Baselines (2022/23)	Targets	Time-lines	Responsibility	
						Lead	Support
		Data storage capacity available (petabytes)	TBD	10 Petabytes	Y5	NITAU	PPDA/MoFPED
2.2 Ensure integration and interoperability of data	Enhanced cost savings from collaboration and sharing of resources in the data ecosystem	Services that have been digitised (%)	TBD	20%	Y5	MoICT&NG	UBOS, NIRA, URSB, Other MDAs, private sector
2.3 Develop public data infrastructure to enhance access and utilisation	Increased sharing of public data	Datasets shared by state and non-state actors (%)	TBD	99.9%	Y3	UBOS	State and non-state actors
	Increased access to publicly shared data by stakeholders	Stakeholders (e.g. innovators) accessing shared public datasets (#)	TBD	10,000	Y5	NITA-U	State and non-state actors
		Institutions with open data sharing platforms (#)	TBD	300	Y5	NITA-U	State and non-state actors
		(%)Increased access to publicly shared data by stakeholders	TBD	90%	Y5	NITA-U	State and non-state actors

Table A1.3: Implementation Plan – Strategic Data Utilisation



Goal 3: Strategically leverage data usage to foster inclusive socio-economic development through unlocking the value of data

Objectives	Intermediate Outcomes	KPIs	Baselines (2022/23)	Targets	Timelines	Responsibility	
						Lead	Support
3.1 Promote the use of primary and secondary registries to support effective data utilisation for social-economic development	Increased data utilisation for decision making	Percentage of NDP IV indicators that have data	36%	80%	Y5	NPA	UBOS, MoICT&NG, MoFPED
		Data systems integrated to facilitate cross-system data sharing and collaboration (#)	135	300	Y5	MoICT&N G	MoFPED, NITAU
3.2 Implement data driven services in the priority areas to foster social-economic development	Enhanced productivity in the selected use cases	Investment in ATMS as a proportion of GDP (%)	TBD	30	Y5	MoFPE	UIA, NPA
		Percentage increase in investments in ATMS	15%	30%	Y5	MoFPED	UIA, NPA
		Percentage increase in GoUof ATMS to GDP	15%	30%	Y5	MoFPED	UIA, NPA

Table A1.4: Implementation Plan – People and Culture



Goal 4: Build a resilient data-driven ecosystem characterised by a culture of data literacy, innovation, and collaboration, empowering individuals and organisations with the skills, knowledge, and mindset to harness the transformative potential of data

Objectives	Intermediate Outcomes	KPIs	Baselines (2022/23)	Targets	Timelines	Responsibility	
						Lead	Support
4.1 Build and strengthen data literacy and technical skills across sectors to empower individuals and organisations to effectively collect, analyze, and utilise data	Increased Data Literacy: Policy makers, public officials and stakeholders have improved data knowledge and skills in data analysis.	Proportion of policies with comprehensive data analysis.	TBD	60%	Y3	Cabinet Secretariat	All MDAs and LGs
		Percentage of stakeholders completing data literacy training programmes.	TBD	30%	Y3	MoICT&NG	All MDAs, PSFU, LGs, NGO Bureau
	Increased membership in Data-Literate Communities of Practice	Growth in membership of data-literate communities of practice, including DSAU and the Internet Society (ISOC)	TBD	300 Members	Y1	MoICT & NG	Communities of practice
	Increased Investment in Data Skills Development	Percentage of annual budget allocations to data skills development.	TBD	0.5%	Y1	MoFPED	All other MDAs, PSFU, NGO Bureau

4.2 Foster a culture of data-driven decision-making across government, academia, private sector, and civil society to maximise the value and impact of data	Supportive data culture leading to increased utilisation of data	Percentage growth in the public interactions with data platforms and tools developed and made accessible.	TBD	25%	Y1	MoICT&NG	MoPS
	Enhanced public awareness and engagement with data	Growth in media mentions of data-related terms (%)	TBD	15%	Y1	UCC	Media houses, Uganda Media Centre
	Increased inclusivity in data access	Percentage increase in the number of data platforms/initiatives with inclusivity access features	TBD	12% increase in platforms with inclusivity features	Y1	MoGLSD	EOC and NITA-U

Table A1.5: Implementation Plan – Research, Innovation and Entrepreneurship



Goal 5: Foster a culture of research, innovation, and entrepreneurship driven by data to catalyse sustainable socio-economic growth and development

Objectives	Intermediate Outcomes	KPIs	Baselines (2022/23)	Targets	Timeline s	Responsibility	
						Lead	Support
5.1 Foster a culture of R&D and innovation leveraging data to address societal challenges	Enhanced availability of openly accessible datasets	Percentage change in number of datasets shared	TBD	5%	Y1	MoICT&NG	STI-OP, NITA-U,
	Increased innovative solutions leveraging data to address societal challenges and drive economic growth	Percentage change Locally developed innovative solutions leveraging data and used by Government	TBD	5%	Y1	MoICT&NG, STI-OP	MoFPED, NPA, NITA-U, STI-OP, Private sector
		Registered patent/ copyrights/ trademarks innovative data solutions (#)	100	600 (100 per year)	Y5	URSB	MoICT&NG, STI-OP

5.2 Promote entrepreneurship and facilitate the commercialisation of home-grown data-driven innovations to drive economic growth and create jobs for the youth	Increased entrepreneurship of data-driven solutions	Percentage change in data-driven startups incubated and accelerated	TBD	80%	Y2	MoICT & NG	STI-OP, URSB
		Percentage change in Investment attracted by data-driven startups	TBD	10%	Y2	UIA	MoICT & NG, STI-OP
	Increased commercialisation of data-driven innovations	Percentage change in revenue generated by commercialised innovations	TBD	15%	Y5	URA	MoICT & NG, STI-OP
		Amount of money saved through adoption of locally developed innovations by government	TBD	40% by 2030	Y5	MoFPED	MoICT & NG, STI-OP, URA
		Man hours saved during provision of government services through adoption of innovations	TBD	40% by 2030	Y5	MoPS	MDAs, OPM
		Jobs created by commercialised data-driven innovations (Percentage change)	TBD	5% annual growth	Y5	MoICT & NG	STI-OP, UIA, MoFPED, UBOS

Appendix 2: Detailed Resource Requirements

Tables A2.1 to A2.5 show the resource requirements for each of the themes.

Table A2.1: Resource requirements – Data Governance



Goal 1: Establish a comprehensive and sustainable data governance framework to effectively manage, protect, and utilise data assets

Objectives	Initiatives	High-level Activities	Budget (UGX, B) and Timing				
			Y1	Y2	Y3	Y4	Y5
1.1 Develop new and update existing data regulatory frameworks in the entire data ecosystem	1.1.1 Undertake a gap analysis on existing regulatory frameworks with respect to data governance	Review the current laws, policies, regulations and guidelines in the data ecosystem	0.3	0	0	0	0
	1.1.2 Support MDAs and local government to develop in-house data policies, data management guidelines and data structures with roles and responsibilities	Revise and develop pertinent laws, policies, regulations, and guidelines that impact the data ecosystem	1.6	1.6	0	0	0
	1.1.3 Strengthen and update existing relevant regulatory frameworks where there are gaps						
	1.1.4 Mainstream inclusivity (gender, PWDs and other marginalized groups) in the relevant laws, policies and regulations						
	1.1.5 Develop a national data policy informed by best practices (e.g AU data policy framework, EAC data governance initiatives, EU digital service act, etc.)						
	1.1.6 Develop a flexible regulatory environment through the use of regulatory sandboxes to facilitate innovative data use						
	1.1.7 Ensure compliance with applicable data policies, laws, and regulations	Enforcement to be carried out by the relevant institutions, within their allocated budgets	0	0	0	0	0

Objectives	Initiatives	High-level Activities	Budget (UGX, B) and Timing				
			Y1	Y2	Y3	Y4	Y5
1.2 Strengthen the security of data systems and mitigate risks in the data ecosystem	1.2.1 Strengthen enforcement of existing policies and regulations on data protection and security 1.2.2 Operationalise and strengthen Computer Emergency Response Teams (CERTs) at sectoral, national, sub-national and regional levels 1.2.3 Invest in modern data security tools and technologies to mitigate cybersecurity threats 1.2.4 Strengthen national, regional, continental and international mechanisms for secure and compliant cross-border data transfer		0	0	0	0	0
1.3 Strengthen data ownership, control and access to data collected in Uganda and from Ugandans in accordance to national laws and regulations	1.3.1 Classify and regulate access to data collected within Uganda and from Ugandans 1.3.2 Enhance data residency requirements and ensure compliance with national laws and regulations regarding data handling and storage 1.3.3 Regulate access to Uganda's strategic/sensitive data 1.3.4 Promote greater utilisation of data by government agencies in their decision-making processes	Develop and implement data and service catalogues	6	6	0	0	0
		Implement the proposed National Data Institutional Framework	3.3	3.3	3.3	3.3	3.3
1.4 Streamline coordination and establish collaboration along the data value chain	1.4.1 Set up data governance frameworks at both national and agency levels to foster coordination and collaboration among key stakeholders and partners 1.4.2 Establish and operationalise regional coordination centres or operational working groups 1.4.3 Develop a coordination mechanism to streamline interventions from development partners in the digital economy sector	Establish and maintain data governance structures at national and agency levels for collaboration and coordination	1.0	1.0	0	0	0
		Establish regional coordination centres	0	15.8	0	0	0
		Map and establish a database of key partners in the data ecosystem	0	0	0	0	0

Objectives	Initiatives	High-level Activities	Budget (UGX, B) and Timing				
			Y1	Y2	Y3	Y4	Y5
	1.4.4 Introduce incentives and recognition programmes to encourage and reward data sharing and collaboration among stakeholders, including businesses, research institutions, government agencies, and civil society organisations	Carry out capacity building for data producers on effective collaboration and coordination	1.8	2.5	2.5	2.5	2.5
1.5 Ensure high data quality across the entire data value chain	1.5.1 Standardise and harmonise data collection procedures to reduce costs	Conduct assessment of existing registries (covered under digital transformation roadmap)	1.6	1.6	0	0	0
	1.5.2 Create comprehensive standards and protocols for data and metadata to ensure consistency and facilitate seamless integration and exchange across government ministries, departments, and agencies (MDAs) as well as the private sector	Develop data standards across the data value chain	0.6	0.5	0.5	0	0
	1.5.3 Collaborate with other countries and international organisations to establish common standards and frameworks for data sovereignty	Develop metadata standards (data exchange standards)	3.3	3.3	3.3	0	0
		Implement data standards	16.0	16.0	16.0	16.0	16.0
	1.5.4 Standardise primary data registries as single sources of truth	Standardise primary data registries	55.2	55.2	55.2	55.2	55.2
		Standardise foundational data registries	59.1	59.1	0	0	0
		Develop data architectures	0.4	0.4	0	0	0
	1.5.5 Strengthen enforcement of data standards Implement proactive monitoring and remediation strategies to address data quality challenges effectively	Institute a harmonisation structure to synchronise and harmonise data collection procedures	0	0.5	0.5	0.5	0.5
Sub-total 1 - Data Governance			150.2	166.8	81.3	77.5	77.5

Table A2.2: Resource Requirements – Data Infrastructure

**Goal 2:** Develop and implement integrated and interoperable data infrastructure

Objectives	Initiatives	High-level Activities	Budget (UGX, B) and Timing					Source of Funding
			Y1	Y2	Y3	Y4	Y5	
2.1 Establish a robust data infrastructure to facilitate all the processes of the data value chain	2.1.1 Digitise and digitalise the entire data value chain	Digitising, and digitalising	5	5	5	5	5	GoU Development Partners
	2.1.2 Procure suitable infrastructure that enables timely data collection, processing, storage, sharing, and utilisation	• Data infrastructure assessment and planning • Procurement and implementation of data infrastructure • Data infrastructure operationalisation and optimisation	5	5	5	5	5	GoU Development Partners
	2.1.3 Build and enhance data infrastructure, including data centres, cloud computing platforms, energy infrastructure, and high-speed internet connectivity	• Infrastructure development and upgrading • Establish and upgrade data centres • Implement cloud computing platforms • Develop energy infrastructure • Implement monitoring and management systems • Expand high speed internet connectivity	10	10	10	10	10	GoU Development Partners
	2.1.4 Ensure compliance with existing data systems and protocols	• Conduct regular audits • Establish or upgrade compliance policies and protocols • Training and awareness programmes	1	1	1	1	1	GoU Development Partners

Objectives	Initiatives	High-level Activities	Budget (UGX, B) and Timing					Source of Funding
			Y1	Y2	Y3	Y4	Y5	
2.2 Ensure integration and interoperability of data	2.2.1 Establish a data sharing framework that enables the exchange of both personal and non-personal data among enterprises within the country.	- Framework design and development - Build a secure data exchange platform, e.g. through UG-HUB or similar platform - Integrate with existing systems - Conduct stakeholder awareness	2.5	2.5	2.3	2.3	2.3	GoU Development Partners
	2.2.2 Evaluate and enhance the data integration platform to serve as a national data sharing infrastructure. 2.2.3 Enhance new and existing data systems to incorporate accessibility needs for Persons with Disabilities (PWDs) and other minority groups	- Evaluate and assess the national data integration platform - Enhance and develop the national data integration platform - Deploy and continuously develop the national data integration platform.	0.5	0.5	0.5	0.5	0.5	GoU Development Partners
	2.2.4 Utilise regional integration efforts and protocols to advance the development of critical digital data systems	Regional forums	0.5	0.5	0.5	0.5	0.5	GoU Development Partners
	2.2.5 Allocate resources towards acquiring modern data security tools and technologies.	- Evaluate and assess the data security requirements - Cost the required data security tools and technologies	1	1	1	1	1	GoU Development Partners
	2.2.6 Establish digital platforms or marketplaces that facilitate the monetisation of data assets and services	Establish digital platforms or marketplaces that facilitate the monetisation of data assets and services - could be in Infrastructure	220	148	74	74	37	GoU

Objectives	Initiatives	High-level Activities	Budget (UGX, B) and Timing					Source of Funding
			Y1	Y2	Y3	Y4	Y5	
2.3 Develop public data infrastructure to enhance access and utilisation	2.3.1 Collaborate with citizens and stakeholders to identify key datasets for release, ensuring they are presented in accessible and user-friendly formats	- Stakeholder engagements - Needs assessment	0.1	0.1	0.1	0.1	0.1	GoU, Development Partners
	2.3.2 Enhance the availability and accessibility of public datasets for citizens, businesses, and other stakeholders through centralised data portals, APIs, and comprehensive data and service catalogues	- Develop and implement centralised data protocols - Develop and implement public APIs for integration - Creation of comprehensive data and service (critical & others) catalogues	0.2	0.2	0.2	0.2	0.2	GoU, Development Partners
	2.3.3 Implement initiatives across government that make data publicly accessible, aiming to enhance transparency, accountability, and trust between citizens and public agencies, ultimately improving the delivery of public services	- Identify key datasets - Enhance open data standards - Create accessibility initiatives - Public awareness campaigns - Revamp websites of MDAs - Continuous monitoring and improvement	0.2	0.2	0.2	0.2	0.2	GoU, Development Partners
	2.3.4 Review, strengthen and use digital signature infrastructure (e.g. public key infrastructure)	- Infrastructure review and assessment - Implement infrastructure security enhancements - Promote use of digital signatures	0.5	0.5	0.5	0.5	0.5	GoU, Development Partners
Sub-total 2 - Data Infrastructure			246.5	174.5	100.3	100.3	63.3	

Table A2.3: Resource Requirements – Strategic Data Utilisation



Goal 3: Strategically leverage data usage to foster inclusive socio-economic development through unlocking the value of data

Objectives	Initiatives	High-level Activities	Budget (UGX, B) and Timing					Source of funding
			Y1	Y2	Y3	Y4	Y5	
3.1 Promote the use of primary and secondary registries to support effective data utilisation for social-economic development	3.1.1 Designate and streamline primary registries (persons, entities and property)	- Identify all the data points used in government operations - Develop data catalogue (data element and metadata) - Identify and profile primary registries and secondary registries	0.79	0.79	0	0	0	GoU
	3.1.2 Create, merge and update secondary registries to operationalise primary registries	- Awareness creation, outreach and validation - Develop/come up with agreeable format to harmonise primary registers - Harmonised secondary registries - Skilling and retooling - Carry out stakeholder engagements	0.39	1.18	1.18	0.79	0.39	GoU
	3.1.3 Strengthen administrative data and digitalise appropriately	- Mapping out and operationalise current administrative data systems - Skilling and retooling	3	5	8	2	1	GoU

Objectives	Initiatives	High-level Activities	Budget (UGX, B) and Timing					Source of funding
			Y1	Y2	Y3	Y4	Y5	
	3.1.4 Improve ease of finding and access to data assets from the various sectors Promote use of data by government for planning and decision making	- Awareness creation - Develop guidelines for data use and dashboards across the ATMS and other programmes - Create online data catalogs and data sharing platforms	1.5	2.5	4	1	0.5	GoU
3.2 Implement data driven services in the priority areas to foster social economic development	3.2.1 Develop and operationalise an evaluation framework for impact of unlocking the value of data	- Development and Dissemination - Mid-term evaluation - End-term evaluation	0.3	0	0.5	0	0.5	GoU
	3.2.2 Promote the use of emerging technologies (e.g. AI, blockchain, big data analytics, IoT, etc.) in harnessing data to create impact	- Promote policies and strategies on emerging technologies - Advocacy - Capacity building and cross learning - Implement flagship projects utilizing emerging technologies especially in ATMS programmes	1.5	2.5	2.6	2.7	1.7	GoU
	3.2.3 Implement and evaluate the impact of data in selected priority anchor programmes	Develop and operationalize secondary registries in the selected anchor programmes	5	5	1.2	1.2	1.2	GoU
		Building data analytics capacity	1.1	1.1	1.65	1.65	1.1	GoU

Objectives	Initiatives	High-level Activities	Budget (UGX, B) and Timing					Source of funding
			Y1	Y2	Y3	Y4	Y5	
		Develop and implement innovations around data use including Natural Language driven platform for information	1.2	1.3	0.9	0.8	0.7	GoU
	3.2.4 Scale the data use cases to the other priority programme	This is covered in the earlier initiatives	0	0	0	0	0	GoU
Sub-total 3 - Strategic Data Utilisation			14.784	19.372	20.03	10.142	7.096	

Table A2.4: Resource Requirements – People and Culture



Goal 4: Build a resilient data-driven ecosystem characterised by a culture of data literacy, innovation, and collaboration, empowering individuals and organisations with the skills, knowledge, and mindset to harness the transformative potential of data

Objectives	Initiatives	High-level Activities	Budget (UGX, B) and Timing					Source of Funding
			Y1	Y2	Y3	Y4	Y5	
4.1 Build and strengthen data literacy and technical skills across sectors to empower individuals and organisations to effectively collect, analyze, and utilise data	4.1.1 Develop and execute data literacy programmes aimed at policymakers, government officials, educators, students, and the general public to enhance their understanding and proficiency	Perform a gap analysis on data skills within both industry and educational institutions	1.2	0.65	0.2	0.11	0.11	MoICT&NG, PSFU, development partners
	4.1.2 Collaborate with educational institutions such as the Ministry of Education and Sports (MoES) and the National Council for Higher Education (NCHE), and other relevant bodies to embed data skills training into formal curricula across various disciplines	Review the curricula of various institutions to mainstream Data literacy in line with allocated budgets from the DTR	0	1.54	0.44	0.22	0	MoES, NCDC, NCHE, development partners
	4.1.3 Incorporate data skills training into current digital training initiatives, such as the Digital Skilling Programme	Develop new data literacy programmes and enrich existing digital programmes with data literacy.	0	1.37	0.68	0.23	0	MoICT&NG, CSOs, PSFU, development partners
	4.1.4 Launch data skills training initiatives tailored for women, youth, persons with disabilities and other groups who are often marginalised or excluded	Prepare and present packaged data training programmes to potential partners for funding consideration	0	0.2	0.2	0.2	0.2	MoICT&NG, MoFPED and MoES
	4.1.5 Implement skill development programmes aimed at enhancing technical expertise in data analytics, AI, big data, and other relevant data tools among government officials, researchers, analysts, and other stakeholders to optimise data utilisation	Implement training programmes in data literacy (e.g. data science bootcamps, courses, etc)	0.46	0.84	1.25	1.25	1.25	MoICT&NG, PSFU, MoES, CSOs, development partners

	4.1.6 Incorporate data science and analytics into the primary ICT schemes of service for public sector initiatives Build expertise in modern tools and technologies, including AI, to optimise the utilisation and value derived from existing data resources	Procure modern training tools and technologies (training aids) and conduct training in the use of these tools	0.3	0.3	0.3	0.3	0.3	MoICT&NG, PSFU, MoES, CSOs, development partners
		Develop and maintain database of available talent in data-related professions	0	1.14	0.2	0.2	0.2	MoES, NCHE, MoICT&NG, development partners
4.2 Foster a culture of data-driven decision-making across government, academia, private sector, and civil society to maximise the value and impact of data	4.2.1 Create and execute awareness campaigns, educational programmes, and communication initiatives aimed at promoting the significance and advantages of data-driven decision-making Establish and foster leadership commitment and accountability in prioritising data-driven approaches and initiatives across government, business, and civil society at all levels	Raise awareness about the benefits of utilising data throughout the entire data value chain	3.0	3.0	3.0	1.5	1.5	MoICT&NG, PSFU, MoES, CSOs, development partners
	4.2.2 Encourage the adoption of innovative and inclusive data-driven planning and decision-making practices 4.2.3 Acknowledge and celebrate exemplary initiatives, projects, and individuals that showcase the transformative impact of data-driven decision-making, driving positive change and achieving measurable outcomes	Encourage and reward innovative best practices in utilising data for decision-making (incentivising champions of data use)	0.5	0.5	0.5	0.5	0.5	MoICT&NG / MoPS, PSFU, all MDAs, CSOs and development partners
	4.2.4 Promote ethical and responsible data practices to ensure the ethical collection, use, and sharing of data while safeguarding privacy, security, and confidentiality Promote inclusivity in data access (gender, youth, differently abled persons)	Develop and rollout guidelines for MDAs, LGs, private sector, CSOs, academia and other stakeholders to promote and mainstream inclusivity in data access	1	0.8	0.6	0.6	0.6	MoGLSD, EOC, MoICT/NG, CSOs, development partners
	Sub-total 4 – People and Culture		6.46	10.34	7.37	5.11	4.66	

Table A2.5: Resource Requirements – Research, Innovation and Entrepreneurship



Goal 5: Foster a culture of research, innovation, and entrepreneurship driven by data to catalyse sustainable socio-economic growth and development

Objectives	Initiatives	High-level Activities	Budget (UGX, B) and Timing					Source of Funding
			Y1	Y2	Y3	Y4	Y5	
5.1 Foster a culture of research, development and innovation that leverages data to address societal challenges	5.1.1 Provide online access to open data collected by the government, private sector, development partners, academia, businesses, and individuals to academia and innovators to support R&D and innovation	• Catalogue publicly accessible data sources	0.3	0.3	0.2	0.2	0.2	GoU, Development Partners
		• Create open data platform	0.5	0.3	0.2	0.2	0.2	GoU, Development Partners
		• Stakeholder engagements & awareness campaigns	0.5	0.4	0.4	0.3	0.3	GoU, Development Partners
	5.1.2 Promote/incentivise research, availability and utilisation of data in developing new products, processes and services for commercial and social purposes to address current and future national priorities	• Identify and catalogue data use cases and/or opportunities for collaboration between private and public sector players with mutual benefit	0.4	0.3	0.3	0.3	0.3	GoU, Development Partners
		• Enhance Budget allocation for innovation and research funds to support data-driven innovative research projects and initiatives	50	50	50	50	50	GoU, Development Partners
		• Co-investment fund between Government and private sector, and development partners	10	10	10	10	10	GoU, Private Sector, Development Partners

		Incentivising data sharing from non state actors, e.g tax reductions	0	0	0	0	0	N/A
	5.1.3 Safeguard intellectual property arising from data innovation, in alignment with national IP policy	Awareness and Training of innovators, IP clinics	0.5	0.4	0.4	0.3	0.3	GoU, Development Partners, Private sector
	5.1.4 Increase government uptake of locally developed data solutions	Lobby government to prioritise locally developed solutions during procurement processes for data management systems	0	0	0	0	0	N/A
5.2 Promote entrepreneurship and facilitate the commercialisation of home-grown, data-driven innovations to drive economic growth and create jobs for the youth	5.2.1 Encourage innovators to exploit open data in developing new data-driven solutions	Training, sensitization and awareness programmes for innovators	0.5	0.4	0.3	0.3	0.3	GoU, Development Partners
	5.2.2 Offer grants, tax incentives, and business development services to local aspiring entrepreneurs and innovators to launch and grow data-driven ventures	Design tax incentive proposal for local innovators and entrepreneurs	0.3	0.3	0.2	0.2	0.2	GoU
	5.2.3 Create big data/AI sandbox to promote the use of big data, AI innovations	Implement sandboxes (virtual environment for AI Data and APIs)	3.0	0	0	0	0	GoU, Development Partners, Private Sector
		Stakeholder engagement to increase utilisation and awareness by different stakeholders such as schools and policymakers	0.2	0.2	0.2	0.2	0.2	GoU, Development Partners

	5.2.4 Support business data localisation in critical competitive areas	• Training, sensitisation and awareness programmes for innovators	0.3	0.3	0.3	0.3	0.3	GoU, Development Partners
	5.2.5 Facilitate cross-border data flows to foster digital free trade	• Establish collaborative mechanisms and frameworks to foster digital free trade across borders	0.5	0.5	0.5	0.5	0.5	GoU, Development Partners
Sub-total 5 – Research, Innovation and Entrepreneurship			67.0	63.4	63.0	62.8	62.8	

Appendix 3: Monitoring & Evaluation Framework

Table A3.1: Monitoring and evaluation framework - Data Governance



Goal 1: Establish a comprehensive and sustainable data governance framework to effectively manage, protect, and utilise data assets

Objectives	Intermediate Outcomes	KPIs	KPI Definition	Where is the Data?	How often do we collect it?	Who is Responsible?
1.1 Develop new and update existing data regulatory frameworks in the entire data ecosystem	Data Regulatory frameworks developed and updated	Data regulatory frameworks developed and updated. (No)	- Laws and regulations (non-personal data), policies and guidelines developed. - Review existing data-related regulatory frameworks	Ministry of ICT&NG	Annually	Uganda Law Reform Commission
				MoFPED Uganda Law Reform Commission	Annually	Ministry of Justice and Constitutional Affairs (First Parliamentary Counsel) Cabinet Secretariat

	Improved compliance with established data National and International Regulatory Frameworks	Compliance index	- A Compliance Index is a metric used to assess how well an organisation adheres to relevant regulatory frameworks. - Compliance Index = (Sum of Weighted Compliance Scores / Total Possible Score) * 100	Data processing state and non-state actors	Annually	Data processing state and non-state actors (self-assessment) MoICT&NG PDPO UBOS MoFPED
	Enhanced stakeholder confidence	Stakeholder satisfaction index regarding data governance (%)	Level of stakeholder satisfaction computed from a survey	Survey report	Annually	MoICT&NG PDPO
1.2 Strengthen the security of data systems and mitigate risks in the data ecosystem	Improved data security and protection	Data classification frameworks developed.	A data classification framework developed with metrics to assess	CERT Report (cert.ug) Data processing state and non-state actors	Annually	MoICT&NG NITA-U PDPO
		Serious data breaches reported and resolved within set timelines (%)	A repository of reported data breaches	PDPO (Personal Data) CERTs (Non-Personal Data)	Quarterly	PDPO (Personal Data) CERTs (Non-Personal Data)
		Regional, continental or international data protection and cybersecurity conventions ratified (No)	An inventory of ratified conventions developed and tracked	MoFA	Annually	MoFA

		CERT personnel and teams trained (No)	An inventory of number of CERT personnel trained	NITA-U UCC Uganda Bankers Association	Annually	NITA-U UCC Uganda Bankers Association
		Collaboration frameworks established among CERT teams (No)	Development and implementation of collaboration frameworks	NITA-U UCC Uganda Bankers Association MoJCA (Office of the Solicitor General)	Annually	NITA-U UCC Uganda Bankers Association MoJCA (Office of the Solicitor General)
1.3 Strengthen data ownership, control and access to data collected in Uganda and from Ugandans in accordance to national laws and regulations	Strengthened legal and policy frameworks on data access	Compliance index (%)	- A Compliance Index is a metric used to assess how well an organisation adheres to relevant regulatory frameworks - Compliance Index = (Sum of Weighted Compliance Scores / Total Possible Score) * 100	Data processing state and non-state actors	Annually	Data processing state and non-state actors (self-assessment) MoICT&NG PDPO UBOS MoFPED
		Guidelines on personal and non-personal data developed (No)	Guidelines developed, approved and disseminated on personal and non-personal data	Ministries, Departments and Agencies	Annually	Ministries, Departments and Agencies
	Improved sharing and data use in planning, innovation and decision making	Data driven decisions (%)	Percentage of the survey respondents who made decisions based on data	Survey report	Annually	UBOS

1.4 Streamline coordination and establish collaboration along the data value chain	Comprehensive data governance framework at national and local government levels (including non-state actors) outlining roles, responsibilities, policies, and procedures for managing data effectively	Defined governance structures implemented and operational at national and local government levels (No)	- Established functional governance structures. (State in the lead & non state are members of the structures)	MDAs	Annually	MoICT&NG
	Increased stakeholder collaborations on data	No of collaborations among stakeholders	Development and implementation of collaboration frameworks (will include surveys)	State and non-state actors	Annually	MoICT&NG
1.5 Ensure high data quality across the entire data value chain	Increased data standardisation	Primary datasets with standardised data formats, definitions, and coding schemes (No)	Developed and operationalised standards in place	MDAs	Annually	UBOS MoICT&NG NITAU
	Improved data quality	Primary datasets without errors, inaccuracies, or inconsistencies (no)	Share of primary datasets that pass validation checks for accuracy and consistency	State and non state actors	Quarterly	State and non state actors UBOS
	Timeliness in data updates and information dissemination	Primary datasets processed and relevant reports disseminated within set timelines (No)		State and non-state actors	Quarterly	State and non state actors UBOS

Table A3.2: Monitoring and evaluation framework - Data Infrastructure


Goal 2: Develop and implement integrated and interoperable data infrastructure

Objectives	Intermediate Outcomes	KPIs	KPI Definition	Where is the Data?	How often do we collect it?	Who is Responsible?
2.1 Establish a robust data infrastructure to facilitate all the processes of the data value chain	Enhanced data infrastructure capacity	Services that have been digitised (%)	Business and personal data verification services offered by MDAs, financial institutions and telecom service providers that have been transformed to operate through digital technologies in the public & private sector	Public Sector - NITAU Private Sector - BOU, UCC & IRA	Quarterly	NITAU , BOU, UCC & IRA
		Tier IV data centres established & services offered (#)	Number of Tier IV data centres established offering enhanced storage & processing/compute capacity to different stakeholders. These data centres can be established by GoU & private sector players	NITAU/UCC	Annually	NITAU/UCC
	Increased availability of data storage and processing facilities	Service availability e.g. service uptime(%)	Number of seconds service is available as a percent of Total Number of seconds within a specified period	NITA-U/UCC, Private sector data centres	Annual	NITA-U/UCC
			Service availability measure per annum should be equivalent to 99.999% per year. This means the service cannot be down for more than about 5 minutes per year.			

		Growth in the number of stakeholders utilizing data infrastructure	Number of public & private institutions utilizing data infrastructure.			
		Current data storage/required data storage (#)	Amount of storage space in teraBytes currently in use and additional space required	NITA-U, Private sector data centres	Quarterly	NITA-U
2.2 Ensure integration and interoperability of data	Enhanced cost savings from collaboration and sharing of resources in the data ecosystem	Cost savings from collaboration and sharing of resources in the data ecosystem (%)	Reduction in operation costs due to sharing of Infrastructure and human resource expertise	NITA-U and private sector regulators e.g. BoU & UCC MOFPED	Annual	NITA-U, MOFPED and private sector regulators eg BOU & UCC
2.3 Develop public data infrastructure to enhance access and utilisation	Increased access to publicly shared data by stakeholders	Stakeholders (e.g. Innovators) accessing shared public datasets (#)	Number of stakeholders accessing data through platforms offering open data.	NITA-U	Annual	NITA-U
		Institutions with open data sharing platforms (#)	The number of institutions that have established open data platforms			

Table A3.3: Monitoring and evaluation framework – Strategic Data Utilisation


Goal 3: Strategically leverage data usage to foster inclusive socio-economic development through unlocking the value of data

Objectives	Intermediate Outcomes	KPIs	KPI Definition	Where is the Data?	How often do we collect it?	Who is Responsible?
3.1 Promote the use of primary and secondary registries to support effective data utilisation for social-economic development	Increased data utilisation for decision making	Percentage of NDP IV indicators that have data	number of NDP IV indicators that have data as a percentage of the total number of indicators in the NDP IV results framework	MDAs, LGs, private sector	Quarterly	NPA MDAs, MoICT&NG
		Data systems integrated to facilitate cross-system data sharing and collaboration (#)	the number of institutions whose data systems have been integrated	MDAs, LGs, private sector	Quarterly	MoICT&NG
3.2 Implement data driven services in the priority areas to foster social-economic development	Enhanced productivity in the selected use cases	Proportion of investments in the ATMS to the GDP(%)	total monetary (UGX) value invested in the ATMS as proportion of GDP	MoFPED, BOU, UIA URA	Quarterly	MoFPED, UIA, NPA, UBOS
		Percentage increase in investments in ATMS	The change in amount of money (UGX) invested in ATMS	MoFPED, BOU, UIA URA	Quarterly	MoFPED, UIA, NPA, UBOS
		Percentage increase in GoUof ATMS to GDP	The change in how much ATMS contribute to national GDP	MoFPED, BOU, UIA URA	Quarterly	MoFPED, UIA, NPA, UBOS

Table A3.4: Monitoring and evaluation framework – People and Culture



Goal 4: Build a resilient data-driven ecosystem characterised by a culture of data literacy, innovation, and collaboration, empowering individuals and organisations with the skills, knowledge, and mindset to harness the transformative potential of data

Objectives	Intermediate Outcomes	KPIs	KPI Definition	Where is the Data?	How often do we collect it?	Who is Responsible?
4.1 Build and strengthen data literacy and technical skills across sectors to empower individuals and organisations to effectively collect, analyze, and utilise data	Increased Data Literacy: Policy makers, public officials and stakeholders have improved data knowledge and skills in data analysis.	Proportion of policies with comprehensive data analysis (%).	This is the proportion of policies submitted to cabinet that pass the criteria of data/evidence out of all the policies submitted to cabinet	Cabinet secretariat	Annually	Cabinet secretariat
		Percentage of stakeholders completing data literacy training programs.	Percentage of targeted stakeholders who completed data literacy training in the period in any of data literacy concepts	MoICT&NG MDAs PSFU LGs NGO Bureau	Annually	MoICT&NG
	Increased membership in Data-Literate Communities of Practice	Growth in membership of data-literate communities of practice including DSAU, internet society	This is the number of members subscribing to data-literate communities of practice per year including DSAU, internet society and any other.	The Data communities of practice	Annually	MoICT&NG
	Increased Investment in Data Skills Development	Percentage of the annual budget allocation to data skills development	This is the percent of annual budget allocated to data skills development in MDAs, LGs, CSOs and PSFU	MoFPED, MoICT &NG, MoES, PSFU	Annually	MoFPED

4.2 Foster a culture of data-driven decision-making across government, academia, private sector, and civil society to maximise the value and impact of data	Supportive data culture leading to increased utilisation of data	Percentage growth in public interactions with data platforms and tools developed and made accessible	This is the annual growth in the percentage of people utilizing data-driven digital platforms/portals and tools provided by MDAs, LGs, PSFU, and the NGO Bureau to access services, which include downloading data	MDAS, LGs, PSFU and NGO Bureau	Bi-annual	NITA-U
	Enhanced public awareness and engagement with data	Frequency of media mention of data related terms	Percentage growth in the frequency of media mentions of data terms in print media, broadcasts, social media and the internet.	UCC, Media houses, Uganda media centre	Monthly	UCC
	Increased inclusivity in data access	Percentage increase in the number of data platforms/ initiatives with inclusivity access features	This is the annual percentage increase in the number of data platforms/portals and initiatives with inclusivity features such as support for assistive devices for the visually impaired persons, the deaf, and other differently abled persons	MDAs, LGs, PSFU, NGO Bureau, National Council for Disability	Annually	MoGLSD, EOC and NITA-U

Table A3.5: Monitoring and evaluation framework – Research, Innovation and Entrepreneurship



Goal 5: Foster a culture of research, innovation, and entrepreneurship driven by data to catalyse sustainable socio-economic growth and development

Objectives	Intermediate Outcomes	KPIs	KPI Definitions	Where is the data?	How often do we collect it?	Who is responsible?
5.1 Foster a culture of R&D and innovation leveraging data to address societal challenges	Enhanced availability of openly accessible datasets	Percentage change in number of datasets shared	Number of new datasets on boarded onto open data sharing platform as a percentage of datasets on data sharing platforms.	Multiple organisational websites and integration platforms	Quarterly, Annually	MolCT
	Increased innovative solutions leveraging data to address societal challenges and drive economic growth	Percentage change Locally developed innovative solutions leveraging data and used by Government	Number of tech solutions locally developed and adopted by government as a percentage of total number of government data systems	FITSPA (The Financial Technologies Services Providers Association), Innovation hubs, Technology Innovation and Business Incubation Centre (TIBIC), E-Trade & Startup Association of Uganda	Quarterly, Annually	MolCT, MoFPED, STI-OP

Objectives	Intermediate Outcomes	KPIs	KPI Definitions	Where is the data?	How often do we collect it?	Who is responsible?
		Number of protected innovative data solutions	These are the data-intensive innovations whose IP is protected	URSB	Annually	URSB
5.2 Promote entrepreneurship and facilitate the commercialisation of home-grown data-driven innovations to drive economic growth and create jobs for the youth	Increased entrepreneurship of data-driven solutions	Percentage change in data-driven startups incubated and accelerated	Number of home-grown solutions bred from government and private innovation hubs/incubators maturing as a percentage of total innovations supported by both government and private sector at the start of the reference period	FITSPA (The Financial Technologies Services Providers Association), Innovation hubs, Technology Innovation and Business Incubation Centre (TIBIC), E-Trade & Startup Association of Uganda	Quarterly, Annually	MoICT, URSB, STI-OP
		Percentage change in annual Investment attracted by data-driven startups	This is the change in the percentage of the total amount of annual investments (such as foreign direct investment, local investment and expected tax) licensed by UIA	MoFPED, Crunchbase, Uganda Investment Authority	Quarterly, Annually	UIA
	Increased commercialisation of data-driven innovations	Percentage change in revenue generated by commercialised innovations (UGX, M)	This is the percentage change in the annual revenue collected by URA from commercialised home-grown solutions	URA, UCC and other regulators	Quarterly, Annually	URA

Objectives	Intermediate Outcomes	KPIs	KPI Definitions	Where is the data?	How often do we collect it?	Who is responsible?
		Amount of money saved through adoption of locally developed innovations by government	This is the amount of UGX saved from using the local solutions which were previously imported	MoFPED,URA	Quarterly, Annually	MoFPED
		Manhours saved during provision of government services through adoption of innovations	This is the difference in time (minutes) spent on a particular process after as a percent of the time before adoption of the innovation	MoPS, MDAs and OPM	MoI. quarterly, annually	MoPS, MDAs and OPM
		Percentage change in jobs created by commercialized data-driven innovations	Change in the Number of employees expressed as a percentage of persons employed by commercialised data driven innovations supported by government in the previous year	Innovation and Business Incubation Centre (TIBIC), E-Trade & Startup Association of Uganda, MoICT,STI-OP	Quarterly, Annually	CT

