

THE REPUBLIC OF UGANDA

DRAFT REPORT ON
REGULATORY IMPACT ASSESSMENT ON
DATA

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DEFINITION OF KEY TERMS

i. Data: Any representation of facts, opinions or observations in a form suitable for processing, interpretation and use by humans or automated means.

ii. Personal Data: Any information relating to an identified or identifiable natural person, whether recorded in electronic, paper, or any other form, from which that person can be identified directly or indirectly.

iii. Data Subject: A natural person who is the subject of personal data and who can be identified, directly or indirectly, from that data.

iv. Data Controller: A person or institution that, alone or jointly with others, determines the purpose and means of collecting or processing data.

v. Data Processor: A person or institution that processes data on behalf of, and under the instructions of, a data controller.

vi. Metadata: Data that describes other data, including its origin, format, structure, ownership, and the context in which it was created, collected, or used.

vii. Data Lifecycle: The complete set of stages that data passes through from inception to final disposition, comprising creation/generation, collection, processing, analysis, storage/retention, access, use/application, and archiving or disposal/deletion.

viii. Data Creation/Generation: The formation of new data through deliberate human action, computational processes, or automated systems, rather than through the collection or measurement of pre-existing phenomena.

ix. Data Collection: The systematic gathering of data from primary or secondary sources using defined tools, protocols, and methods.

x. Data Processing: The cleaning, organising, transforming, and standardising of raw data into a coherent, quality-assured, and usable form.

xi. Data Storage/Retention: The preservation of data in physical or digital systems designed to protect it, maintain its integrity, and keep it accessible for a defined period.

xii. Data Access: The ability of authorised users to discover, retrieve, and use data held in a system, subject to applicable governance, security, and privacy controls.

xiii. Data Archiving: The transfer of data no longer in active use to secure, long-term storage for historical, legal, evidential, or reference purposes, while preserving its accessibility and integrity.

xiv. Data Disposal/Deletion: The permanent and secure removal of data from active and backup systems once it is no longer required and its retention period has lapsed, in a manner that prevents recovery.

xv. Data Governance: The overall system of policies, standards, decision rights, and accountability structures by which an organisation or country directs and controls the management of data as a strategic asset.

xvi. Data Management: The comprehensive set of operational practices, processes, and technologies used to create, collect, store, process, protect, analyse, and use data throughout its lifecycle.

xvii. Data Interoperability: The ability of different data systems, institutions, and platforms to exchange, interpret, and jointly use data in a consistent and meaningful manner.

xviii. Open Data: Data that is made freely available in a format that allows it to be accessed, used, re-used, and redistributed by anyone, subject to attribution or share-alike requirements at most.

xix. Data Breach: Any unauthorised access to, disclosure, alteration, loss, or destruction of data, whether accidental or deliberate.

xx. National Data Policy: A Government instrument that establishes the national principles, standards, institutional mandates, and implementation guidelines for the management of data across its lifecycle.

1.0 INTRODUCTION

This Report on the Regulatory Impact Assessment (RIA) on Data covers an analysis of issues, causes, effects, and appropriate options for addressing challenges related to the creation/generation, collection, processing, analysis, storage/retention, access, use/application, and archiving or disposal/deletion of data in Uganda. The assessment was conducted in a participatory manner following Regulatory Best Practices, and included multi-stakeholder consultative sessions, review of relevant literature, policies and laws, and a structured problem-tree and solution-tree analysis of Uganda's data ecosystem.

The report encompasses the definition and scope of data, the identification of issues affecting the creation, management, and use of data in Uganda, the main causes and sub-causes of those issues, their effects, and appropriate options for addressing the identified causes. It is structured as follows: Introduction, Background, Problem Statement, Vision, Mission, Goal, Strategic Objectives and Strategic Actions, Outcomes, Purpose and Outcome Statement, Methodology, Options Selection, Options Analysis, Conclusion, and Recommendations, together with supporting Annexes.

2.0 BACKGROUND

This section provides an assessment of Data in Uganda in terms of its definition, scope, strengths, weaknesses, opportunities, threats, main issues, causes, and effects.

2.1 Subject

Data means any representation of facts, opinions or observations in a form suitable for processing, interpretation and use by humans or automated means.

Data are discrete symbols, measurements, or observations that represent facts, quantities, or characteristics of phenomena in the world. Data is fundamentally raw; until it is interpreted, organised, and contextualised, it has no inherent meaning. Data becomes **information** once it is given context and meaning; information becomes **knowledge** once it is synthesised into understanding; and knowledge becomes **wisdom** once it is applied intelligently to decisions and action.

Full Scope of Data

Data exhibits the following fundamental characteristics: it is **atomic**, existing as discrete units such as numbers, text, dates, and measurements; it is **represented** in symbols, formats, or values, whether binary, numeric, textual, or visual; it is **verifiable**, in that it can be observed, measured, or recorded; it is **permanent**, in that it is capable of being stored and retrieved; and it is inherently **plural**, a single item being referred to as a *datum*.

Data may be classified by nature into quantitative data (numerical measurements, counts, and statistics), qualitative data (descriptive text, observations, and narratives), categorical data (groups or classifications), and ordinal data (ranked or ordered values). It may be classified by origin into primary data (directly collected from the source), secondary data

(derived from existing sources), structured data (organised in defined formats such as databases and spreadsheets), and unstructured data (free-form, such as images, audio, and text documents). It may also be classified by source into observational, experimental, transactional, administrative, and sensor/Internet-of-Things (IoT) data.

Data manifests across a range of forms, including text, numbers, images and video, audio, spatial data (coordinates, maps, and geographical information), temporal data (timestamps, time series, and sequences), and metadata (data about data, describing who created it, when, and how it was collected).

The Data Lifecycle

The scope of Data consists of eight elements corresponding to the stages of the data lifecycle:

i. Creation/Generation

This element covers the formation of new data that is not based on the measurement of pre-existing phenomena, but is instead deliberately produced through human action, computational processes, or automated systems. It encompasses the generation of synthetic datasets for testing, training, or research; the production of simulations, forecasts, and modelled scenarios; experimental data generated through controlled research and development; and computationally derived data produced through algorithms, artificial intelligence, and machine learning. The purpose of this element is to ensure that Uganda can deliberately fill critical data gaps and support innovation, planning, and evidence-based decision-making even where no natural data-generating event exists.

ii. Collection

This element covers the systematic gathering of data from primary and secondary sources using defined tools, protocols, and methods. It encompasses the identification of relevant data sources; the design and application of standardised collection instruments, sensors, and administrative systems; the recording of data in its initial form; and the documentation of the context in which the data was collected. The purpose of this element is to ensure that raw data entering Uganda's data ecosystem is complete, consistent, and fit for its intended use.

iii. Processing

This element covers the cleaning, organising, and transforming of raw data into a coherent, quality-assured, and usable form. It encompasses the detection and correction of errors and inconsistencies; the standardisation of formats, units, and naming conventions; the removal of duplicates and irrelevant information; and the restructuring of data through normalisation and aggregation. The purpose of this element is to convert raw data into a reliable dataset ready for analysis.

iv. Analysis

This element covers the systematic examination of processed data to identify patterns, trends, correlations, and relationships. It encompasses the application of statistical, mathematical, and computational methods; the exploration of data to test hypotheses and

detect anomalies; and the generation of descriptive and inferential findings. The purpose of this element is to extract meaningful insight from Uganda's data assets.

v. Storage/Retention

This element covers the preservation of data in physical or digital systems designed to protect it, maintain its integrity, and keep it accessible for a defined period. It encompasses the selection and maintenance of appropriate storage infrastructure; the implementation of backup and redundancy measures; and the establishment of access controls and security protocols. The purpose of this element is to ensure that data remains safe, intact, and available for as long as it is required.

vi. Access

This element covers the ability of authorised users to discover, retrieve, and use data held within a system, subject to applicable governance, security, and privacy controls. It encompasses the establishment of data-sharing platforms and protocols; the clarification of data classification and jurisdiction; and the removal of unnecessary bureaucratic and technical barriers to legitimate use. The purpose of this element is to ensure that data reaches those who need it, when they need it.

vii. Use/Application

This element covers the translation of data and derived insights into decisions, policies, programmes, and innovations. It encompasses the interpretation of analytical findings within their policy and operational context; the communication of insights to decision-makers; and the monitoring of whether applied insights improve outcomes. The purpose of this element is to ensure that data drives real improvements in governance, service delivery, and national development.

viii. Archiving or Disposal/Deletion

This element covers the preservation of data no longer in active use for historical, legal, or evidentiary purposes, or its permanent and secure removal once it is no longer required. It encompasses the establishment of retention schedules; the transfer of inactive data to secure long-term archives; and the secure disposal of data whose retention period has lapsed. The purpose of this element is to preserve institutional memory where required, while managing the risks and costs of retaining data indefinitely.

2.2 Situational Analysis

SWOT Analysis of Uganda's Data Ecosystem

The SWOT analysis below is based on Uganda's data governance landscape and draws on findings consistently reported by the National Information Technology Authority, Uganda (NITA-U), the Uganda Bureau of Statistics (UBOS), the Personal Data Protection Office (PDPO), the Ministry of ICT and National Guidance, the Uganda Communications

Commission, and development partners including the World Bank, UNDP, and UNECA. It reflects the current state of Uganda's data ecosystem and provides a basis for policy reform and strategic planning.

Table 1: SWOT Analysis of Uganda's Data Ecosystem

Strengths	Weaknesses
Existing Data Protection and Privacy Act, 2019. Uganda has a functioning legal framework and a dedicated Personal Data Protection Office overseeing compliance.	**Absence of a comprehensive National Data Policy.** There is no single instrument establishing unified national standards, mandates, and implementation guidelines for data management.
Established National IT Authority (NITA-U). NITA-U provides a National Data Centre, e-Government infrastructure, and an interoperability framework (UgHub).	**Fragmented and siloed institutional data systems.** Many institutions operate standalone systems that cannot easily communicate or share data.
Established national statistical system. UBOS coordinates national statistics and has decades of institutional experience in data collection.	**Weak data quality management.** Inconsistent collection methods, formats, and definitions across sectors undermine data reliability.
Growing mobile and internet penetration. Uganda's mobile money and telecommunications infrastructure provides a platform for digital data generation and access.	**Shortage of skilled data professionals.** There are limited numbers of data engineers, scientists, and stewardship professionals across Government and the private sector.
Functioning digital identity system. The National Identification and Registration Authority (NIRA) provides a foundation for unique identification across data systems.	**Low data literacy and weak evidence-based decision-making culture.** Many decision-makers and citizens do not fully appreciate the value of data.
Active regional and continental engagement. Uganda participates in the East African Community, the African Union Data Policy Framework, and AfCFTA digital trade discussions.	**Inadequate archival infrastructure.** Physical and digital archival facilities are limited, and format obsolescence threatens long-term data preservation.
Vibrant and growing private sector data generators. Telecommunications, banking, and fintech companies generate large volumes of transactional data.	**Unreliable power and connectivity in rural areas.** Data collection, storage, and access are disrupted by frequent power outages and poor rural connectivity.
Existing sector legal instruments. Laws such as the Access to Information Act, 2005 and the Statistics Act provide partial legal coverage for specific aspects of data management.	**Weak enforcement of existing data security and privacy provisions.** Limited resources for breach management, access controls, and encryption expose data to security risks.

Opportunities	Threats
Growing digital economy and AI investment. Global and regional interest in artificial intelligence and digital transformation creates opportunities for data-driven innovation.	**Rising cybersecurity threats.** Increasing digitisation exposes Uganda's data systems to a growing volume and sophistication of cyberattacks.
Regional and continental data frameworks. The AU Data Policy Framework and AfCFTA digital trade protocols offer frameworks for harmonised, cross-border data governance.	**Widening digital divide.** Disparities in connectivity, devices, and digital literacy between rural and urban, and male and female, populations risk excluding vulnerable groups.
Expanding youth and technology talent pool. Uganda's young population and growing technology hubs provide a pipeline for data science and innovation talent.	**Regional competitiveness pressure.** Neighbouring countries with more advanced data governance frameworks risk attracting investment and talent away from Uganda.
Development partner support. Continued support from the World Bank, UNDP, UNECA and other partners for digital transformation and statistical capacity building.	**Data sovereignty and cross-border data flow risks.** Absence of clear rules increases the risk of Uganda's data being processed or stored in ways that do not serve national interests.
Growing open data movement. Increasing global and regional momentum for open government data creates an opportunity for Uganda to expand public access to and use of data.	**Rapid technological change outpacing regulation.** The pace of innovation in artificial intelligence, cloud computing, and data analytics risks outstripping Uganda's regulatory capacity.
National digitalisation and e-Government agenda. Ongoing Government investment in digital public infrastructure provides a platform for stronger data systems.	**Brain drain of skilled data professionals.** Trained statisticians, data engineers, and scientists continue to migrate to better-resourced institutions and countries.
Private-sector and academic partnerships. Opportunities exist to partner with telecommunications companies, financial technology firms, and universities to expand data generation and innovation.	**Erosion of public trust from data mismanagement.** Continued data breaches, poor service delivery, or misuse of personal data risk further eroding citizen trust in Government data systems.

Strategic Implications of the SWOT

The analysis suggests that Uganda's data ecosystem is institutionally present but structurally fragmented. Its principal strengths lie in the existence of a Data Protection and Privacy Act, an established National IT Authority, a functioning national statistical system, and growing digital infrastructure. However, these strengths have not yet translated into a coherent, unified data-management ecosystem, owing to the absence of a comprehensive national data policy, fragmented institutional systems, weak data quality management, and a shortage of skilled data professionals.

The greatest opportunities stem from Uganda's growing digital economy, its young and expanding technology talent pool, continued development partner support, and ongoing regional and continental data-governance harmonisation. If accompanied by the introduction of a comprehensive National Data Policy, sustained investment in infrastructure and skills, and a stronger culture of evidence-based decision-making, these factors could substantially improve the quality, security, and use of data across Government, the private sector, and society.

The principal threats, including rising cybersecurity risks, a widening digital divide, rapid technological change, and the continued brain drain of skilled professionals, underscore the importance of urgent, coordinated, and sustained intervention to secure Uganda's data ecosystem and protect the trust of citizens and institutions in it.

2.3 Main Issues of Concern

Based on the subject definition and the scope of the data lifecycle, the following main issues of concern were identified in Uganda's data ecosystem:

i. Limited creation/generation of data.

ii. Inadequate collection of data.

iii. Inadequate processing of data.

iv. Inadequate analysis of data.

v. Inadequate storage/retention of data.

vi. Limited access to data.

vii. Inadequate use/application of data.

viii. Improper archiving or disposal/deletion of data.

2.4 Main and Sub-Causes

The main issues identified above are attributable to seven main causes, each with a set of sub-causes, as follows:

Main Cause 1: Inadequate Computational Infrastructure and Capacity for Data Management

i. Limited investment in data centre facilities, server capacity, and backup systems.

ii. Limited laboratory facilities and experimental infrastructure for generating scientific data.

iii. Unreliable electricity supply disrupting data collection and storage systems.

iv. Unreliable internet connectivity, especially in rural areas, and high costs of internet.

v. Difficult terrain and poor road networks impeding field-based data collection efforts.

vi. Inadequate tools and software needed to create/generate and collect data.

vii. High reliance of institutions on manual processes rather than automated data-processing software.

viii. Limited access to specialised data analysis software (SPSS, R, Python, advanced BI tools) and advanced computational resources.

ix. Many institutions using outdated, incompatible storage systems that cannot communicate.

x. Outdated technologies and systems that are difficult to upgrade or integrate with new approaches.

xi. Insufficient storage infrastructure maintenance and upgrades.

xii. Inadequate office and facility space for servers and archival materials.

xiii. Limited archival facilities (physical and digital) for long-term data preservation.

xiv. Digital data degrading over time due to format obsolescence and storage degradation.

xv. Data lost during organisational restructuring or system migrations.

xvi. Limited investment in artificial intelligence and machine learning systems that generate data.

xvii. Limited investment in research and development activities that produce experimental data.

xviii. Weak start-up and entrepreneurship ecosystem limiting innovation in data-generation tools.

Main Cause 2: Shortage of Trained Personnel to Design and Implement Data Systems and Collection Protocols

i. Shortage of data engineers and specialists trained in data cleaning and transformation.

ii. Shortage of statisticians, data scientists, and analytical professionals.

iii. Shortage of data scientists trained in synthetic data generation and simulation modelling techniques.

iv. Shortage of IT professionals to manage secure, scalable storage systems and technical infrastructure.

v. Shortage of professionals trained in long-term data stewardship and archival management.

vi. Limited data literacy and lack of appreciation of the value of data across all levels.

vii. High proportion of the population without digital literacy or basic computer skills.

viii. Few advanced training programmes in statistical, analytical, and technical methods.

ix. Few educational and professional development programmes in data-management skills at all levels.

x. Limited knowledge and skills in synthetic data generation, simulation modelling, and contextualisation.

xi. High staff turnover and limited capacity building and retention.

xii. Brain drain of scientists, researchers, and skilled data professionals to more developed countries and regional hubs.

xiii. Difficulty in translating technical findings into local languages and culturally appropriate formats.

xiv. Limited skills in how to contextualise data, draw meaningful conclusions, operationalise recommendations, and implement evidence-based interventions from analysis.

xv. Insufficient incorporation of community and traditional knowledge into interpretation and application.

xvi. Insufficient collaboration between different disciplinary experts in analysis and interpretation.

xvii. Rigidity and unwillingness to adapt to new data practices and technologies.

xviii. Analysts separated from those who collected or understand the data context and operational realities.

Main Cause 3: Absence of a Comprehensive National Data Policy, Standards, and Implementation Guidelines

i. Absence of clear guidelines on what data to retain, for how long, and proper deletion protocols.

ii. Inconsistencies among existing sector laws governing data (e.g. Cap. 97).

iii. Unclear regulatory compliance frameworks for data privacy during collection, storage, and use.

iv. Slow harmonisation with regional/continental frameworks (e.g. the AU Data Policy Framework, AfCFTA protocols).

v. Inadequate partnerships and synergy between Government, private, and NGO sectors in data management.

vi. Overlapping and clashing institutional mandates in data management, causing confusion and duplication.

vii. Multiple agencies collecting similar data using different methods, creating duplication and inconsistency.

viii. No clear institutional ownership for translating insights into policy decisions or actions and maintaining accountability.

ix. Absence of unified data generation and collection standards and protocols across sectors and institutions.

x. Lack of standardised definitions of what to measure across sectors (health, education, agriculture).

xi. Lack of unified data storage and archival standards across Government and private institutions.

xii. Lack of standardisation of data formats, terminology, and identifiers across institutions/agencies.

xiii. No monitoring of whether applied insights actually improved outcomes, limiting organisational learning.

xiv. Limited pilot projects and experimental data initiatives.

xv. Weak research culture and limited academic institutions conducting experimental research.

xvi. Limited laboratory facilities and experimental infrastructure for generating scientific data.

xvii. Weak intellectual property protection limiting motivation for research and data creation.

xviii. Inadequate incentive structures for innovation, data-driven experimentation, and evidence-based practice.

xix. Limited investment in open data initiatives that require data creation and sharing infrastructure.

xx. Low awareness of data's value and a weak culture of evidence-based decision-making at all levels.

xxi. Organisational cultures resistant to data-driven change and evidence-based approaches.

xxii. Development pressures and emergencies overshadowing evidence-based planning and decision-making.

xxiii. Decision-makers prioritising political or short-term goals over data-driven approaches.

xxiv. Demand for quick results constraining the depth of analytical investigation and interpretation.

xxv. Pressure to deliver quick insights constraining the depth of analytical investigation, interpretation, and quality assurance.

Main Cause 4: Weak Data Quality Management Systems

i. Poor data collection criteria, tools, and unsuitable collection processes.

ii. Human error during collection, processing, and analysis.

iii. Inconsistent collection methods resulting in messy, difficult-to-process data.

iv. Inconsistent standardisation of data formats, terminology, and identifiers across institutions.

v. Limited documentation of data origin, collection methods, and context, complicating processing and future use.

vi. Processing requirements complicated by the use of multiple local languages in collected data.

vii. Processing backlogs due to limited staff and resources.

viii. Low awareness or buy-in from communities on the importance and purpose of data provision.

ix. Limited publicly available and consolidated data for broader access and use.

Main Cause 5: Non-Compliance with Data Protection and Privacy Laws

i. Failure to anonymise data during collection, leaving personally identifiable information exposed.

ii. Security vulnerabilities, including weak access management, password protection, and authentication systems.

iii. Shortage of data security policies and standardised breach-management protocols.

iv. Improper data disposal methods and malicious/unauthorised deletion, creating security risks.

v. Poor data privacy culture, awareness, and training among data collectors and data subjects.

vi. Limited resources for robust security systems, firewalls, and encryption.

vii. Uncertainty about safe deletion procedures and fear of exposing sensitive information during proper disposal.

viii. Data privacy concerns and perceived loss of commercial advantage limiting data sharing.

ix. Lack of consent by data collectors, subjects, and system owners for data sharing.

x. Limited investment in archival systems, maintenance, and secure infrastructure.

xi. Long-term storage costs viewed as a burden rather than a strategic investment.

xii. Historical data seen as having limited utility, causing prioritisation of current data only.

Main Cause 6: Poor Systems Integration and Coordination, with Standalone/Siloed Systems and Departmental Isolation

i. Limited investment in interoperable data infrastructure and insufficient storage capacity.

ii. Gaps in the centralised data centre and underutilisation of shared infrastructure.

iii. Limited platforms for data sharing and weak change management (e.g. adoption of UgHub).

iv. Unclear data classification tiers and jurisdiction over data across institutions.

v. Weak cross-border data-sharing protocols (e.g. AfCFTA digital trade protocols).

vi. Data hoarding, mistrust between institutions, and limited awareness of available datasets.

vii. Bureaucratic restrictions delaying access to needed data.

viii. High proportion of the population without access to digital platforms for data retrieval.

ix. Limited skills to interpret and utilise available data, and a failure to understand accessible data.

x. Limited publicly available and consolidated data for broader access.

Main Cause 7: Limited Demand from Stakeholders for Evidence-Based Decision-Making and Data-Driven Practices

i. Limited awareness of the value of synthetic and generated data for decision-making and planning.

ii. Weak demand from decision-makers for generated data (forecasts, scenarios, simulations).

iii. Insights identified but with no budget or capacity to implement recommendations.

iv. Weak organisational culture and resistance to the adoption of data-driven approaches.

v. Limited investment in open data and data-driven innovation initiatives.

vi. Inadequate incentive structures for innovation and data-driven experimentation.

2.5 Effects

The main issues and their underlying causes have resulted in fourteen main effects on Uganda's data ecosystem, governance, and national development, as follows:

Main Effect 1: Compromised Evidence-Based Policy and Decision-Making Across Government and Institutions

i. Continued reliance on anecdotal information and informal knowledge instead of data.

ii. Evidence-based recommendations not implemented or adopted by decision-makers.

iii. Analytical findings disconnected from policy and programme contexts.

iv. Insights not reaching or influencing decision-makers effectively.

v. Decision-makers continuing to use outdated or informal decision-making methods.

vi. Reduced legitimacy of evidence in policy debates and discussions.

vii. Inability to monitor progress toward national development goals.

viii. Inefficient targeting of interventions and resources to those most in need.

Main Effect 2: Degraded Quality of Public Services and Programmes Across Sectors

i. Continued implementation of failing programmes despite evidence of poor performance.

ii. Health, education, and social outcomes worse than those achievable with available evidence.

iii. Inability to demonstrate programme effectiveness and justify public expenditure.

iv. Inability to scale successful programmes due to weak evidence documentation.

v. Reduced ability to measure and address inequality and disparities in service access.

vi. Inability to track vulnerable populations and marginalised groups effectively.

vii. Difficulty identifying the actual extent of problems, such as poverty, disease, and access gaps.

Main Effect 3: Loss of Trust and Credibility in Public Institutions

i. Reduced trust in data systems among institutions and the public.

ii. Reduced credibility of national statistics internationally.

iii. Community frustration from repeated data collection requests without visible benefit.

iv. Inability to fulfil freedom of information and transparency requirements.

v. Reduced public confidence in Government decision-making.

Main Effect 4: Economic Inefficiency and Waste of Public Resources

i. Public resources wasted on ineffective initiatives and programmes.

ii. Inefficient use of collected data that remains unexplored and under-analysed.

iii. Increased costs of service delivery due to system inefficiencies and duplication.

iv. Wasted investments in data systems that produce limited returns.

v. Limited data revenue collection and double taxation due to incomplete data visibility.

vi. Extended time required to prepare data, causing operational delays.

Main Effect 5: Undermined Public Health, Safety, and Disaster Preparedness

i. Poor data for disease surveillance and epidemic response.

ii. Limited capacity for population health and disease modelling.

iii. Reduced capability for disaster preparedness modelling and simulation.

iv. Limited information for climate change adaptation and disaster risk reduction.

v. Continued high levels of preventable mortality, morbidity, and poverty.

Main Effect 6: Constrained Innovation and Economic Growth

i. Reduced competitiveness in technology and innovation sectors.

ii. Reduced research output and scientific advancement.

iii. Missed opportunities for innovation-driven economic growth.

iv. Reduced competitiveness in academic and research sectors.

v. Reduced economic productivity and growth.

vi. Reduced international competitiveness and global standing.

Main Effect 7: Loss of Historical Knowledge and Institutional Memory

i. Loss of historical data needed for trend analysis and longitudinal studies.

ii. Institutional knowledge lost when analytical staff depart.

iii. Inability to conduct historical research or validate past findings.

iv. Inability to measure long-term programme impacts and trends.

v. Inability to assess the effectiveness of past policies and interventions.

vi. Reduced ability to prepare for future crises based on historical patterns.

Main Effect 8: Undermined Sectoral Capacity and Planning

i. Poor agriculture statistics affecting food security planning.

ii. Limited employment data affecting labour market policies.

iii. Inadequate data for urban planning and infrastructure development.

iv. Limited information for climate change adaptation planning.

v. Insufficient data for environmental monitoring and protection.

Main Effect 9: Unreliable Data Availability for Critical Analysis and Decision-Making

i. Data unavailable when needed for critical analysis or decision-making.

ii. Loss of collected data due to system failures or environmental damage.

iii. Inability to process large volumes of data efficiently.

iv. Inability to combine or compare data from different sources.

v. Inconsistent data rendering it unsuitable for rigorous analysis.

vi. Duplicated records creating false patterns and misleading statistics.

Main Effect 10: Limited Accountability for Outcomes Despite Available Evidence

i. Poor audit trails preventing accountability for data use and decisions.

ii. Compliance violations for failing to meet data retention requirements.

iii. Inability to provide evidence for legal disputes or complaints.

iv. Increased risk of litigation and non-compliance.

v. Difficulty complying with international data standards and requirements.

Main Effect 11: Compromised National Security Due to Data Breaches

i. Exploitation of citizens' data due to weak access controls and authentication failures.

ii. Sensitive data improperly deleted, exposing individuals to risk.

iii. Increased vulnerability to cyberattacks and data theft.

iv. Unauthorised access to sensitive data due to weak security.

v. Financial and psychological harm to individuals from data exposure.

Main Effect 12: Limited Insight into Complex Social, Economic, and Health Challenges

i. Inability to identify trends, patterns, or emerging problems.

ii. Poor forecasting capabilities affecting planning and preparedness.

iii. Inability to disaggregate data to understand disparities and inequality.

iv. Limited understanding of programme impact and effectiveness.

v. Limited capacity for predictive analytics and risk assessment.

vi. Inability to identify cost-effective interventions.

Main Effect 13: Limited Progress on National Development Goals and Sustainable Development Targets

i. Constrained ability to plan strategically for medium- and long-term development.

ii. Inability to conduct scenario planning and forecasting for strategic decisions.

iii. Inability to model the impacts of potential interventions or policies.

iv. Institutional silos preventing cross-sector application of evidence.

v. Inconsistency and misinformation across sectors.

vi. Inability to obtain a complete organisational picture of challenges.

Main Effect 14: Reduced Value Creation from Data Assets

i. Low utilisation of data and available evidence in operations.

ii. Missed opportunities for scientific discovery and value addition.

iii. Weak research and innovation ecosystem limiting competitiveness.

iv. Underutilisation of shared infrastructure and data assets.

v. Data hoarding and mistrust limiting access to valuable information.

3.0 PROBLEM STATEMENT

Data means any representation of facts, opinions or observations in a form suitable for processing, interpretation and use by humans or automated means.

The lifecycle of Data consists of eight elements: Creation/Generation; Collection; Processing; Analysis; Storage/Retention; Access; Use/Application; and Archiving or Disposal/Deletion.

The main issue of concern is the limited creation/generation, inadequate collection, inadequate processing, inadequate analysis, inadequate storage/retention, limited access, inadequate use/application, and improper archiving or disposal/deletion of data across Government institutions and the private sector in Uganda.

The issue is caused by inadequate computational infrastructure and capacity for data management, due to: limited investment in data centre facilities and server capacity; unreliable electricity supply disrupting data collection and storage; unreliable internet connectivity, especially in rural areas, with high connectivity costs; and inadequate tools and software needed to create, generate, collect, and process data.

The issue is also caused by a shortage of trained personnel to design and implement data systems and collection protocols, due to: limited data literacy and lack of appreciation of data's value across all levels; high staff turnover with limited capacity building and retention; brain drain of scientists and skilled professionals to more developed countries; and difficulty in translating technical findings into local languages and culturally appropriate formats.

Further, the issue is caused by the absence of a comprehensive national data policy, standards, and implementation guidelines, due to: low awareness of data's value and a weak culture of evidence-based decision-making at all levels; inadequate incentive structures for innovation and data-driven experimentation; decision-makers prioritising political or short-term goals over data-driven approaches; and the absence of clear guidelines on data retention and proper deletion protocols.

Furthermore, the issue is caused by weak data quality management systems, due to: poor data collection criteria and tools; inconsistent collection methods resulting in messy data; limited documentation of data origin and collection context; and low community awareness and buy-in regarding the importance of data provision.

The issue is also caused by non-compliance with data protection and privacy laws, due to: failure to anonymise data during collection; security vulnerabilities, including weak access management and authentication systems; a shortage of data security policies and breach-management protocols; and poor data privacy culture and training among data collectors.

Additionally, the issue is caused by poor systems integration and coordination, with standalone/siloed systems, due to: limited investment in interoperable data infrastructure; gaps in the centralised data centre and underutilisation of shared infrastructure; data hoarding and mistrust between institutions; and bureaucratic restrictions delaying access to needed data.

Finally, the issue is caused by limited demand from stakeholders for evidence-based decision-making and data-driven practices, due to: limited awareness of the value of data for decision-making; weak organisational culture and resistance to data-driven approaches; insights identified but with no budget or capacity to implement recommendations; and inadequate incentive structures for innovation and data-driven experimentation.

These issues have resulted in compromised evidence-based policy and decision-making across Government and institutions, due to: continued reliance on anecdotal information instead of data; evidence-based recommendations not implemented or adopted by decision-makers; inability to monitor progress toward national development goals; and inefficient targeting of interventions and resources to those most in need.

The issues have also led to degraded quality of public services and programmes across sectors, as a result of: continued implementation of failing programmes despite evidence of poor performance; inability to demonstrate programme effectiveness and justify public expenditure; reduced ability to measure and address inequality and disparities in service access; and difficulty identifying the actual extent of problems such as poverty, disease, and access gaps.

Notably, the issues have led to loss of trust and credibility in public institutions, due to: reduced trust in data systems among institutions and the public; reduced credibility of national statistics internationally; and reduced public confidence in Government decision-making.

The issues have also resulted in economic inefficiency and waste of public resources, due to: public resources wasted on ineffective initiatives and programmes; increased costs of service delivery due to system inefficiencies and duplication; and wasted investments in data systems that produce limited returns.

Further, the issues have undermined public health, safety, and disaster preparedness, as a result of: poor data for disease surveillance and epidemic response; limited capacity for population health and disease modelling; and reduced capability for disaster preparedness modelling and simulation.

Furthermore, the issues have constrained innovation and economic growth, due to: reduced competitiveness in technology and innovation sectors; reduced research output and scientific advancement; and reduced economic productivity and growth.

The issues have also led to loss of historical knowledge and institutional memory, due to: loss of historical data needed for trend analysis and longitudinal studies; institutional knowledge lost when analytical staff depart; and inability to assess the effectiveness of past policies and interventions.

Additionally, the issues have undermined sectoral capacity and planning, as a result of: poor agriculture statistics affecting food security planning; limited employment data affecting labour market policies; and inadequate data for urban planning and infrastructure development.

The issues have further resulted in unreliable data availability for critical analysis and decision-making, due to: data being unavailable when needed for critical analysis; loss of collected data due to system failures or environmental damage; and inconsistent data rendering it unsuitable for rigorous analysis.

Moreover, the issues have limited accountability for outcomes despite available evidence, due to: poor audit trails preventing accountability for data use and decisions; compliance violations for failing to meet data retention requirements; and difficulty complying with international data standards and requirements.

The issues have also compromised national security due to data breaches, as a result of: exploitation of citizens' data due to weak access controls; increased vulnerability to cyberattacks and data theft; and unauthorised access to sensitive data due to weak security.

Further still, the issues have limited insight into complex social, economic, and health challenges, due to: inability to identify trends, patterns, or emerging problems; poor forecasting capabilities affecting planning and preparedness; and limited capacity for predictive analytics and risk assessment.

The issues have also limited progress on national development goals and sustainable development targets, due to: constrained ability to plan strategically for medium- and long-term development; institutional silos preventing cross-sector application of evidence; and inability to obtain a complete organisational picture of challenges.

Finally, the issues have reduced value creation from data assets, due to: low utilisation of data and available evidence in operations; missed opportunities for scientific discovery and value addition; and data hoarding and mistrust limiting access to valuable information.

Evidence for the Problem Statement

A. Compromised Evidence-Based Decision-Making

Uganda has no single instrument establishing unified national data standards, mandates, and implementation guidelines. In the absence of such a framework, planning and budgeting decisions across Ministries, Departments and Agencies continue to rely substantially on administrative estimates and institutional judgement rather than on validated data, and there is no national mechanism that tracks whether evidence supplied to decision-makers actually changed a decision or improved an outcome.

B. Fragmented and Siloed Institutional Data Systems

Institutions continue to operate standalone systems procured on a project-by-project basis. Although NITA-U has established the UgHub interoperability platform and a National Data Centre, adoption remains uneven, and many systems still cannot exchange data without manual intervention. The absence of a unique identifier consistently applied across institutional records further prevents the linking of records held by different agencies.

C. Duplication of Data Collection Effort

Multiple agencies collect similar data from the same populations using different instruments, definitions, and periodicities. This duplication imposes avoidable cost on the public purse, increases respondent fatigue in surveyed communities, and produces competing figures for the same indicator, which in turn weakens the authority of official statistics.

D. Data Quality and Standardisation Deficits

Inconsistent collection methods, undocumented data provenance, and the absence of standardised definitions across the health, education, and agriculture sectors mean that substantial analyst time is consumed on manual cleaning and reconciliation before analysis can begin. Processing backlogs arising from limited staffing further delay the availability of data for decision-making.

E. Data Security, Privacy and Retention Gaps

Although the Data Protection and Privacy Act, 2019 establishes obligations for data controllers and processors and the Personal Data Protection Office supervises compliance, implementation remains constrained by limited resourcing for access controls, encryption, and standardised breach-management protocols. There are no clear national guidelines prescribing how long categories of data should be retained or how they should be securely disposed of once the retention period lapses.

F. Skills, Infrastructure and Institutional Memory Constraints

Shortages of data engineers, statisticians, data scientists, and archival stewardship professionals persist across Government, compounded by high staff turnover and the continued migration of trained professionals to better-resourced institutions and jurisdictions. Unreliable power supply and limited rural connectivity disrupt collection and storage, while limited archival facilities and format obsolescence place historical datasets at risk of permanent loss.

4.0 VISION

"A Uganda where accurate, secure, and well-governed data drives transparent governance, innovation, and inclusive National development."

5.0 MISSION

"To build a coordinated, secure, and technologically enabled national data ecosystem that ensures the adequate creation, collection, processing, analysis, storage, access, use, and archiving of data for the benefit of Government, the private sector, and all Ugandans."

6.0 GOAL

To achieve a fully functional, secure, and well-governed National data ecosystem in Uganda, characterised by: Robust Data Creation and Generation; Comprehensive and Standardised Data Collection; Efficient and Quality-Assured Data Processing; Rigorous and Insightful Data Analysis; Secure and Sustainable Data Storage and Retention; Open and Equitable Data Access; Effective Data Use and Application for Decision-Making; and Proper Data Archiving and Responsible Disposal/Deletion.

To achieve this goal, the eight elements of the data lifecycle are anchored in the following specific pillars:

i. **Robust Data Creation and Generation:** Fostering deliberate, innovative production of new data, including synthetic datasets, simulations, and forecasts, to fill critical data gaps.

ii. **Comprehensive and Standardised Data Collection:** Ensuring data is gathered systematically, consistently, and inclusively from all relevant sources across Government and the private sector.

iii. **Efficient and Quality-Assured Data Processing:** Guaranteeing that raw data is cleaned, standardised, and transformed into reliable, ready-to-use datasets.

iv. **Rigorous and Insightful Data Analysis:** Enabling deep, evidence-generating examination of data to uncover patterns, trends, and relationships relevant to national development.

v. **Secure and Sustainable Data Storage and Retention:** Safeguarding data integrity and availability through resilient, modern, and well-maintained storage and archival infrastructure.

vi. **Open and Equitable Data Access:** Ensuring that data reaches authorised users, institutions, and citizens promptly, safely, and without unnecessary barriers.

vii. **Effective Data Use and Application for Decision-Making:** Translating data and analytical insights into evidence-based policies, programmes, and innovations.

viii. **Proper Data Archiving and Responsible Disposal/Deletion:** Preserving institutional memory where required, while securely and lawfully disposing of data whose retention period has lapsed.

7.0 STRATEGIC OBJECTIVES AND STRATEGIC ACTIONS

From the main and sub-causes, seven strategic objectives and corresponding strategic actions were derived as follows:

SO 1: To Develop and Strengthen Computational Infrastructure and Capacity for Effective Data Management

Strategic Actions:

i. Invest in modern data center facilities with adequate server capacity and comprehensive backup systems

ii. Establish and equip laboratory facilities with state-of-the-art experimental infrastructure for generating scientific data

iii. Improve reliability of electricity supply to ensure uninterrupted data collection and storage operations

iv. Enhance internet connectivity throughout rural and urban areas and work to reduce connectivity costs

v. Develop robust infrastructure and systems to support field-based data collection in difficult terrain and remote locations

vi. Procure adequate tools and software platforms needed to create, generate, collect, and process data

vii. Transition institutions from manual processes to automated data processing software and systems

viii. Provide institutions with access to specialized data analysis software (SPSS, R, Python, advanced BI tools) and advanced computational resources

ix. Upgrade institutional storage systems to modern, compatible platforms that enable seamless communication and data exchange

x. Modernize outdated technologies and systems to facilitate integration with new data management approaches

xi. Implement systematic maintenance and upgrade schedules for storage infrastructure

xii. Secure adequate office and facility space for servers, equipment, and archival materials

xiii. Establish comprehensive archival facilities (both physical and digital) for long-term data preservation

xiv. Implement preservation strategies and protocols to prevent digital data degradation due to format obsolescence

xv. Develop and implement protocols to prevent data loss during organizational restructuring and system migrations

xvi. Increase investment in artificial intelligence and machine learning systems for data generation and analysis

xvii. Fund research and development activities that produce experimental data and innovative solutions

xviii. Strengthen the startup and entrepreneurship ecosystem to stimulate innovation in data generation tools and services

SO 2: To Build a Highly Skilled and Motivated Workforce for Data Systems Design and Implementation

Strategic Actions:

i. Recruit and develop data engineers and specialists trained in data cleaning and transformation

ii. Establish and fill positions for statisticians, data scientists, and analytical professionals across all sectors

iii. Build institutional capacity by training data scientists in synthetic data generation and simulation modeling techniques

iv. Enhance skills of IT professionals to manage secure, scalable storage systems and technical infrastructure

v. Develop and certify professionals trained in long-term data stewardship and archival management best practices

vi. Enhance data literacy and cultivate appreciation for the value of data across all organizational levels and sectors

vii. Implement comprehensive digital literacy programs for populations lacking basic computer skills

viii. Establish advanced training programs in statistical, analytical, and technical methods at tertiary institutions

ix. Create comprehensive educational and professional development programs in data management skills and competencies

x. Build knowledge and skills in synthetic data generation, simulation modeling, and data contextualization

xi. Implement competitive staff retention strategies and provide ongoing professional development opportunities

xii. Create financial and career incentives to retain talented scientists, researchers, and data professionals within Uganda

xiii. Build institutional capacity to translate technical findings into local languages and culturally appropriate formats

xiv. Develop and enhance skills in how to contextualize data, draw meaningful conclusions, operationalize recommendations, and implement evidence-based interventions

xv. Establish formal mechanisms for incorporating community and traditional knowledge into interpretation and application processes

xvi. Foster active collaboration between different disciplinary experts in data analysis and interpretation

xvii. Promote organizational flexibility and cultivate willingness to adapt to new data practices and technologies

xviii. Facilitate regular and meaningful interaction between data analysts and data collectors to enhance contextual understanding and quality.

SO 3: To Establish a Comprehensive National Data Policy, Standards, and Implementation Guidelines

Strategic Actions:

i. Develop and enact clear national guidelines on data retention periods and proper deletion protocols

ii. Harmonize inconsistencies among existing sector laws governing data (e.g. Cap. 97) to create coherence

iii. Establish transparent and comprehensive regulatory compliance frameworks for data privacy during collection, storage, and use

iv. Accelerate harmonization with regional and continental frameworks (e.g. AU Data Policy Framework, AfCFTA protocols)

v. Strengthen partnerships and enhance synergy between government, private, and NGO sectors in data management

vi. Clarify institutional mandates and eliminate overlapping responsibilities to reduce confusion and duplication

vii. Coordinate and consolidate data collection activities across agencies to eliminate duplication and ensure consistency

viii. Designate clear institutional ownership for translating insights into policy decisions and maintain accountability for outcomes

ix. Establish unified data generation and collection standards and protocols across all sectors and institutions

x. Develop and standardize definitions of key metrics to measure across priority sectors (health, education, agriculture)

xi. Adopt unified data storage and archival standards across both government and private institutions

xii. Standardize data formats, terminology, and identifiers across institutions and agencies for seamless integration

xiii. Implement comprehensive monitoring systems to track whether applied insights improved outcomes and enable organizational learning

xiv. Support and expand pilot projects and experimental data initiatives across priority sectors

xv. Strengthen research culture and actively support academic institutions conducting experimental research

xvi. Support and expand laboratory facilities and experimental infrastructure for generating scientific data

xvii. Strengthen intellectual property protection frameworks to incentivize research and data creation activities

xviii. Establish adequate incentive structures for innovation, data-driven experimentation, and evidence-based practice

xix. Invest in open data initiatives and provide infrastructure needed for data creation and sharing

xx. Build widespread awareness of data's value and cultivate a strong organizational culture of evidence-based decision-making

xxi. Foster organizational cultures that embrace data-driven change and fully support evidence-based approaches

xxii. Develop balanced strategies to address emergency needs while maintaining commitment to evidence-based planning

xxiii. Encourage decision-makers to prioritize data-driven approaches as a core element of policy formulation

xxiv. Allocate adequate time and resources for rigorous analytical investigation and interpretation

xxv. Ensure sufficient time, resources, and quality assurance mechanisms for comprehensive analytical investigation, interpretation, and validation.

SO 4: To Strengthen Data Quality Management Systems and Processes

Strategic Actions:

i. Establish rigorous data collection criteria, tools, and standardized collection processes across all data sources

ii. Implement comprehensive quality assurance mechanisms to minimize human error during collection, processing, and analysis

iii. Standardize collection methods across institutions to ensure consistency and reproducibility of data quality

iv. Apply consistent standardization of data formats, terminology, and identifiers across all institutions and sectors

v. Document data origin, collection methods, and contextual information systematically to facilitate processing and future use

vi. Develop effective protocols to address data quality challenges arising from use of multiple local languages

vii. Allocate adequate staff and resources to eliminate processing backlogs and ensure timely data availability

viii. Build community awareness and secure buy-in regarding the importance and purpose of data provision

ix. Consolidate, validate, and make quality data publicly available for broader access and use.

SO 5: To Ensure Full Compliance with Data Protection and Privacy Laws

Strategic Actions:

i. Implement robust and consistent data anonymization procedures during data collection

ii. Strengthen security systems including access management, password protection, and authentication controls

iii. Develop comprehensive data security policies and standardized breach management and response protocols

iv. Establish secure data disposal methods with proper authorization, oversight, and documentation

v. Build strong data privacy culture, awareness, and training among data collectors and data subjects

vi. Invest adequately in robust security systems, firewalls, and encryption technologies

vii. Develop clear, safe, and well-documented deletion procedures and train all personnel appropriately

viii. Address data privacy concerns through transparent governance and demonstrate mutual commercial benefits of data sharing

ix. Establish informed consent procedures for data collectors, subjects, and system owners before data sharing

x. Invest adequately in archival systems, maintenance, and secure infrastructure for data preservation

xi. Recognize and treat long-term data storage as a strategic investment in institutional assets

xii. Develop systems and strategies to preserve historical data and maintain continued access for legitimate use.

SO 6: To Promote Systems Integration, Coordination, and Data Interoperability

Strategic Actions:

i. Invest strategically in interoperable data infrastructure with sufficient storage capacity for current and future needs

ii. Strengthen the centralized data center and optimize utilization of shared infrastructure across institutions

iii. Establish platforms and mechanisms for data sharing and implement effective change management processes (e.g. UgHub adoption)

iv. Clarify data classification tiers and define institutional jurisdiction over data to eliminate ambiguity

v. Develop strong cross-border data-sharing protocols (e.g. AfCFTA digital trade protocols) to enable regional cooperation

vi. Build trust between institutions and promote active awareness of available datasets and their utility

vii. Streamline bureaucratic processes to facilitate timely and efficient access to needed data

viii. Expand digital platform access to broader population segments to enable widespread data retrieval

ix. Build institutional and individual skills to effectively interpret and utilize available data for decision-making

x. Consolidate, validate, and make quality data publicly available for broader institutional and public access.

SO 7: To Stimulate Demand and Build Support for Evidence-Based Decision-Making and Data-Driven Practices

Strategic Actions:

i. Create widespread awareness of the value of synthetic and generated data for decision-making and strategic planning

ii. Actively promote demand from decision-makers for generated data products (forecasts, scenarios, simulations)

iii. Allocate adequate budgets and build organizational capacity to implement evidence-based recommendations

iv. Cultivate strong organizational cultures that embrace and reward data-driven approaches

v. Increase strategic investment in open data and data-driven innovation initiatives and projects

vi. Establish adequate and attractive incentive structures for innovation and data-driven experimentation

8.0 OUTCOMES

The achievement of the strategic objectives and strategic actions is expected to generate fourteen main outcomes, each with a set of sub-outcomes, as follows:

Outcome 1: Enhanced Evidence-Based Policy and Decision-Making Across Government and Institutions

Sub-Outcomes:

i. Increasing reliance on data and evidence instead of anecdotal information and informal knowledge by decision-makers

ii. Consistent implementation and adoption of evidence-based recommendations by decision-makers

iii. Connection of analytical findings to policy and program contexts across institutions

iv. Translation of technical results into clear, understandable recommendations for stakeholders

v. Effective reach and influence of insights on decision-makers at all levels

vi. Transition by decision-makers from outdated or informal methods to modern, evidence-based approaches

vii. Development of clear mutual understanding between analysts and decision-makers about data implications

viii. Grounding of conclusions in complete contextual understanding of issues by analytical teams

ix. Identification of actionable policy implications from all analytical work

x. Timeliness of conclusions to inform critical policy decisions appropriately

xi. Increased legitimacy and influence of evidence in policy debates and discussions

xii. Strengthening of evidence base informing policy formulation and program design

xiii. Effective monitoring and tracking of progress toward national development goals

xiv. Early detection of emerging trends and changes in social conditions requiring responsive action

xv. Prioritization of problems and interventions based on robust empirical evidence

xvi. Efficient targeting of interventions and resources to those most in need.

Outcome 2: Improved Quality of Public Services and Programs Across Sectors

Sub-Outcomes:

i. Identification and reform or discontinuation of failing programs based on evidence

ii. Continuous improvement of service delivery and program outcomes across sectors

iii. Achievement of health, education, and social outcomes at levels supported by available evidence

iv. Seamless and efficient service delivery resulting from compatible data systems

v. Demonstration and justification of program effectiveness through evidence

vi. Consistent monitoring of program performance against targets and benchmarks

vii. Embedding of learning and continuous improvement in service delivery practices

viii. Achievement of intended effectiveness by development interventions and projects

ix. Scaling and replication of successful programs based on documented evidence

x. Systematic measurement and addressing of inequality and disparities in service access

xi. Effective tracking and targeting of vulnerable populations and marginalized groups

xii. Comprehensive understanding of population needs, behaviors, and characteristics

xiii. Accurate identification of the actual extent of problems (poverty, disease, access gaps).

Outcome 3: Increased Citizen Confidence and Trust in Government and Institutions

Sub-Outcomes:

i. Growing trust in data systems by both institutions and the public

ii. Earning of positive reputation and maintenance of public trust by government institutions

iii. Valuing and acting upon data-driven insights by stakeholders

iv. Recognition of analytical work as relevant and practical

v. Gaining of credibility by national statistics domestically and internationally

vi. Demonstration of tangible benefits from data collection and provision by communities

vii. Transparent fulfillment of freedom of information and transparency requirements by government

viii. Increased legitimacy and influence of evidence in policy debates.

Outcome 4: Efficient Allocation of Limited Public Resources

Sub-Outcomes:

i. Allocation of public resources exclusively to effective initiatives and programs

ii. Full exploration and analysis of collected data to maximize utility

iii. Reduction of operational costs through improved efficiency in service delivery

iv. Elimination of fragmentation and duplication costs through system integration

v. Efficient and cost-effective use of storage resources

vi. Delivery of substantial returns from investments in data systems

vii. Optimization of return on investment in data and research systems

viii. Prevention of double taxation through complete data visibility and proper revenue collection

ix. Identification and pursuit of innovation and continuous improvement opportunities

x. Identification of cost-effective interventions through evidence

xi. Timely data preparation without causing operational delays.

Outcome 5: Enhanced Capability to Respond Effectively to Crises and Emergencies

Sub-Outcomes:

i. Enablement of effective disease surveillance and rapid epidemic response through robust data

ii. Development of strong capacity for population health and disease modeling

iii. Strengthening of disaster preparedness through comprehensive modeling and simulation

iv. Well-developed risk modeling and assessment capabilities

v. Availability of information for effective climate change adaptation and disaster risk reduction

vi. Improvement of infrastructure and disaster planning through proper simulations

vii. Effective operation of public health surveillance systems across the country

viii. Significant reduction of preventable mortality, morbidity, and poverty

ix. Early detection and rapid response to emerging health threats and disease patterns.

Outcome 6: Accelerated Innovation and Technological Advancement Across Sectors

Sub-Outcomes:

i. Becoming highly competitive in technology and innovation sectors

ii. Creation of significant innovations and value through utilization of data assets

iii. Acceleration of research output and scientific advancement

iv. Identification and pursuit of scientific discovery and innovation opportunities

v. Driving of economic growth through innovation and entrepreneurial activity

vi. Reaching of high quality standards by research outputs and publications

vii. Becoming internationally competitive in academic and research sectors

viii. Attraction of research partnerships and international collaboration opportunities

ix. Development of robust and economically productive research and innovation ecosystem

x. Significant increase in economic productivity and growth

xi. Improvement of Uganda's international competitiveness and global standing

xii. Attraction of international investment and partnerships to the country.

Outcome 7: Preserved and Accessible Institutional Memory and Historical Context

Sub-Outcomes:

i. Preservation and accessibility of historical data for trend analysis and longitudinal studies

ii. Retention and accessibility of institutional knowledge despite staff transitions

iii. Documentation and accessibility of past experiences and lessons for learning

iv. Enablement of historical research and validation of past findings

v. Support of ongoing research opportunities through historical datasets

vi. Accurate measurement of long-term program impacts and trends

vii. Systematic tracking of changes in conditions over extended periods

viii. Assessment of past policy effectiveness and intervention outcomes

ix. Verification of past decisions and documentation of institutional history

x. Accurate reconstruction of events and emergencies from records

xi. Appropriate preservation and accessibility of data that should be archived

xii. Maintenance of accessibility of historical data despite format changes over time

xiii. Comprehensive understanding of population trends and behavioral patterns.

Outcome 8: Strengthened Sectoral Capacity and Strategic Planning

Sub-Outcomes:

i. Support of agriculture through strong statistics enabling food security planning

ii. Guidance of agricultural productivity improvements by quality data

iii. Guidance of labor market policies by reliable employment data

iv. Effective matching of skills with job opportunities

v. Guidance of urban planning and infrastructure development by adequate data

vi. Improvement of infrastructure service planning through proper simulations

vii. Systematic identification of infrastructure needs and gaps

viii. Support of climate change adaptation planning by quality information

ix. Foundation of environmental monitoring and protection by sufficient data.

Outcome 9: Reliable Data Availability for Critical Analysis and Decision-Making

Sub-Outcomes:

i. Ensuring of data integrity through robust backup and recovery systems

ii. Protection of collected data from loss due to system failures or environmental damage

iii. Preservation and accessibility of data across organizational transitions and migrations

iv. Timeliness of data preparation without creating operational bottlenecks

v. Efficient processing of large volumes of data

vi. Seamless combination and comparison of data from different sources

vii. Availability of timely processed data for decision-making

viii. Ensuring of consistent data quality suitable for rigorous analysis

ix. Completeness of data with minimal missing information

x. Maintenance of data integrity free from duplication and false patterns

xi. Consistent categorization of data across datasets for valid comparison.

Outcome 10: Demonstrated Accountability for Outcomes Based on Evidence

Sub-Outcomes:

i. Demonstration and justification of program effectiveness through evidence

ii. Documentation of clear audit trails for data use and decision-making

iii. Ensuring of comprehensive audits with adequate historical records and documentation

iv. Consistent meeting and demonstration of compliance with data retention requirements

v. Availability of evidence to support legal disputes and complaints

vi. Minimization of litigation risks and compliance issues

vii. Maintenance of audit capability across system migrations and transitions

viii. Compliance of data management with international standards and requirements

ix. Elimination of organizational liability for data management failures.

Outcome 11: Robust Data Security and Protection of National Security

Sub-Outcomes:

i. Protection of citizens' data through strong access controls and authentication

ii. Proper management and secure deletion of sensitive data

iii. Following of secure and best practice data deletion procedures

iv. Development of system resilience against cyberattacks and data theft

v. Prevention of unauthorized access to sensitive data through security measures

vi. Protection of individuals from financial and psychological harm from data exposure

vii. Protection of data from loss and malicious attacks.

Outcome 12: Deep Understanding of Complex Social, Economic, and Health Challenges

Sub-Outcomes:

i. Identification and understanding of trends, patterns, and emerging problems

ii. Deep understanding of complex relationships between variables

iii. Development of forecasting capabilities enabling effective planning and preparedness

iv. Comprehensive disaggregation of data to understand disparities and inequality

v. Conducting of rigorous testing of hypotheses and program effectiveness

vi. Development of strong understanding of program impacts and effectiveness

vii. Understanding of causal mechanisms and drivers of problems

viii. Support of policy decisions through advanced statistical analysis

ix. Development of strong predictive analytics and risk assessment capabilities

x. Achievement of high quality standards by research outputs and publications

xi. Identification of cost-effective interventions through rigorous analysis

xii. Attraction of research partnerships and international collaboration opportunities.

Outcome 13: Accelerated Progress on National Development Goals and Sustainable Development Targets

Sub-Outcomes:

i. Strengthening of strategic planning for medium and long-term development

ii. Guidance of strategic decisions by scenario planning and forecasting

iii. Accurate modeling of impacts of potential interventions and policies

iv. Testing of business models and strategic initiatives before implementation

v. Filling of critical data gaps through generated data

vi. Inclusion of community and local voices in planning and policy processes

vii. Alignment of findings with institutional capacity for implementation

viii. Assurance of intended and positive outcomes from application of evidence

ix. Application of evidence across sectors to achieve integrated solutions

x. Development of robust collaboration and knowledge sharing across institutions

xi. Availability of consistent and accurate information across sectors

xii. Facilitation of regional cooperation through aligned mandates and protocols

xiii. Enabling of comprehensive response through complete organizational picture of challenges.

Outcome 14: Optimized Value Creation from Data Assets

Sub-Outcomes:

i. Full utilization of data and evidence in operations and decision-making

ii. Maximization of utility through full exploration and analysis of collected data

iii. Pursuit of scientific discovery and innovation opportunities

iv. Development of robust and competitive research and innovation ecosystem

v. Full utilization of shared infrastructure and data assets

vi. Making available of high-quality, consolidated data publicly for broad use

vii. Opening of data to facilitate trust-building and maximize organizational value.

9.0 PURPOSE AND OUTCOME STATEMENT

The purpose is to ensure adequate creation/generation, collection, processing, analysis, storage/retention, access, use/application, and archiving or disposal/deletion of data across government institutions and the private sector in Uganda.

This will be achieved by establishing enhanced evidence-based policy and decision-making across government and institutions through increasing reliance on data and evidence by decision-makers, ensuring consistent implementation and adoption of evidence-based recommendations, and connecting analytical findings to policy and program contexts; improving the quality of public services and programs across sectors through continuous improvement of service delivery outcomes, demonstration of program effectiveness through evidence, and systematic tracking of vulnerable populations and marginalized groups; and increasing citizen confidence and trust in government institutions through growing trust in data systems, earning of positive reputation by government institutions, and transparent fulfillment of freedom of information requirements.

Additionally, the purpose will be achieved by establishing efficient allocation of limited public resources through allocation of resources exclusively to effective initiatives, optimization of return on investment in data systems, and identification of cost-effective interventions; enhancing capability to respond effectively to crises and emergencies through enablement of effective disease surveillance, development of strong health and disease modeling capacity, and strengthening of disaster preparedness; and accelerating innovation and technological advancement through acceleration of research output, attraction of research partnerships and international collaboration, and improvement of Uganda's international competitiveness and global standing.

Furthermore, the purpose will be achieved by preserving institutional memory and historical context through preservation of historical data for longitudinal studies, retention of institutional knowledge despite staff transitions, and documentation of past experiences for organizational learning; strengthening sectoral capacity and strategic planning through support of agriculture with strong statistics for food security, guidance of labor market policies by reliable employment data, and improvement of infrastructure service planning; ensuring reliable data availability for critical analysis through ensuring data integrity through backup systems, seamless combination and comparison of data from different sources, and timely availability of processed data for decision-making; demonstrating accountability for outcomes based on evidence through demonstration of program effectiveness, documentation of clear audit trails, and compliance with international data standards; ensuring robust data security and protection of national security through protection of citizens' data through strong access controls, proper management and secure

deletion of sensitive data, and prevention of unauthorized access; achieving deep understanding of complex social, economic and health challenges through identification and understanding of trends and patterns, comprehensive disaggregation of data to understand disparities, and conducting rigorous testing of program effectiveness; accelerating progress on national development goals through strengthening of strategic planning for medium and long-term development, inclusion of community and local voices in planning, and enabling of comprehensive response through complete organizational picture of challenges; and optimizing value creation from data assets through full utilization of data in operations and decision-making, maximization of utility through exploration and analysis of collected data, and pursuit of scientific discovery and innovation opportunities.

10.0 METHODOLOGY

This section describes the tools, steps, and analysis used in the Regulatory Impact Assessment (RIA) on Data.

The RIA process was coordinated through a multi-stakeholder engagement involving the National Information Technology Authority, Uganda (NITA-U), the Personal Data Protection Office (PDPO), the Uganda Bureau of Statistics (UBOS), the Ministry of ICT and National Guidance, and a broad range of Government, academic, media, and private-sector stakeholders. The assessment was conducted in a participatory manner, following Regulatory Best Practices, and included structured consultative sessions on the definition and scope of data, a situational (SWOT) analysis of Uganda's data ecosystem, and a review of relevant literature, policies, and laws.

Stakeholders were selected based on their expertise, mandates, and direct involvement in the creation, collection, processing, analysis, storage, access, use, and archiving of data in Uganda. They were engaged through consultative working sessions and structured group discussions, through which evidence was generated and consensus on the analysis was built, including on the agreed definition of "Data" adopted in this report.

The following analytical tools were applied: the Problem Tree tool was used to identify issues, main causes, sub-causes, and effects of the challenges in Uganda's data ecosystem; the Solution Tree was used for the formulation of the Vision, Mission, Goal, Strategic Objectives, Strategic Actions, and Outcomes; and root-cause analysis was used to separate the main causes and sub-causes.

The Regulatory Best Practices applied included: focus on citizens' and institutions' interests; use of evidence in the process; specificity to the given problem; assessment of various options; structured and systematic consultations; simplicity and clarity; weighing of benefits and costs; communicability; implementability and enforceability; and assessibility, monitorability and evaluability.

The literature and data reviewed included the Data Protection and Privacy Act, 2019 and its Regulations; the National Information Technology Authority, Uganda Act, 2009; the Access to Information Act, 2005; the Uganda Bureau of Statistics Act, 1998/2013; the Registration of Persons Act, 2015; the National Records and Archives Act; relevant provisions of Cap. 97;

the African Union Data Policy Framework; the African Continental Free Trade Area (AfCFTA) digital trade protocols; and other regional and international literature on data governance and management.

The analysis applied the following six parameters to minimise bias: (i) **Cost Analysis**, involving identification of the disadvantages, demerits, or cons of each option, with the option with the least demerits ranked first; (ii) **Benefits Analysis**, involving identification of the advantages, merits, or pros of each option, with the option with the highest merits ranked first; (iii) **Positive Impact and Distribution of Impact Analysis**, involving identification of stakeholders and positive changes occurring under each option, with the option generating the most positive impacts ranked first; (iv) **Negative Impact and Distribution of Impact Analysis**, involving identification of negative changes under each option, with the option generating the least negative impacts ranked first; (v) **Ease of Implementation and Enforcement Analysis**, involving assessment of the ease of implementing or enforcing actions under each option, with the easiest option ranked first; and (vi) **Ease of Monitoring and Evaluation Analysis**, involving assessment of the ease of monitoring and evaluating implementation under each option, with the easiest option ranked first.

11.0 OPTIONS SELECTION

This section provides the broader possible options from which the relevant options were identified and pre-qualified for analysis. It further provides the tally of the options selected across the strategic objectives and strategic actions.

11.1 Possible Options

For any given regulatory or policy problem, several possible options or alternatives are available for addressing it. In line with Regulatory Best Practice, the following fourteen (14) possible options were considered:

i. **Do Nothing:** Maintaining the current situation without any intervention, and allowing the inadequate management of data across its lifecycle to continue unaddressed.

ii. **Maintain Status Quo:** Containing the problem at its current level without allowing the situation to worsen, without introducing new measures to improve it.

iii. **Mobilisation of Citizens:** Actively engaging citizens, communities, and institutions to participate in, and drive, behavioural and cultural change around the value and provision of data.

iv. **Carryout Awareness Creation/Sensitization:** Addressing limited information, poor attitudes, low data literacy, and negative mindsets towards data provision and use through information dissemination and communication campaigns.

v. **Enhancing the Implementation of Existing Policies:** Putting extra effort, resourcing, and institutional attention into implementing existing adequate policies, mandates, and frameworks that are not yet generating the desired results.

vi. **Strengthening Enforcement of Existing Laws and Regulations:** Increasing enforcement of existing adequate data-related laws and regulations that are not generating the desired results due to weak compliance.

vii. **Enhancing Coordination:** Involving various Government, private sector, academic, and civil society stakeholders in structured collaboration mechanisms to achieve improved data management results.

viii. **Innovation:** Introducing new technologies, methods, tools, or systems — such as artificial intelligence, synthetic data generation, and digital platforms — where existing approaches are insufficient.

ix. **Self-regulation:** Allowing institutions and sectors to adopt internal data-management protocols and standards before formal Government regulation is established.

x. **Enhancing Monitoring and Evaluation of Implementation of Existing Policies:** Ensuring timely and regular tracking of the implementation of existing data-related policies to identify and correct implementation gaps.

xi. **Mainstreaming within Existing Policies, Laws and Regulations:** Embedding data-management actions within existing national, sectoral, and institutional frameworks, such as the National Development Plan and sector strategic plans, without introducing additional instruments.

xii. **Revision of Existing Policies:** Revising existing data-related policies where provisions are inadequate, contain gaps, or are ambiguous for effective implementation.

xiii. **Amendment of Existing Laws and Regulations:** Amending existing data-related laws — including the Data Protection and Privacy Act, 2019; the National Information Technology Authority, Uganda Act, 2009; the Access to Information Act, 2005; and the Uganda Bureau of Statistics Act — where provisions constrain action, contain gaps, or are ambiguous for effective enforcement.

xiv. **Introduction of New Policies, Laws, and Regulations:** Introducing new instruments, including a comprehensive National Data Policy and, where necessary, a National Data Act, where actions cannot be carried out within existing frameworks. This option could only be considered if all other options had been considered and rejected and if the benefits outweighed the costs.

11.2 Selection of Options

Using the strategic objectives and actions as the basis, the possible options were assessed for their relevance in implementing each of the 98 strategic actions across the seven strategic objectives. The tally of options selected was as follows:

Table 2: Tally of Options

Option	Tally	Rank
Enhancing the implementation of existing policies	37	1
Enhancing coordination	15	2
Introduction of new policies, laws and regulations	15	2
Innovation	13	4
Carryout awareness creation/sensitization	9	5
Mainstreaming within existing policies, laws and regulations	5	6
Amendment of existing laws and regulations	3	7
Enhancing monitoring and evaluation of implementation of existing policies	1	8
Revision of existing policies	0	9
Strengthening enforcement of existing laws and regulations	0	9
Self-regulation	0	9
Mobilisation of citizens	0	9
Maintain status quo	0	9
Do nothing	0	9

The top 7 options by tally were pre-qualified for analysis, in addition to the 'Do Nothing' option, which served as the baseline for analysis. These were: Enhancing the Implementation of Existing Policies; Enhancing Coordination; Introduction of New Policies, Laws and Regulations; Innovation; Carryout Awareness Creation/Sensitization; Mainstreaming within Existing Policies, Laws and Regulations; and Amendment of Existing Laws and Regulations.

Enhancing Monitoring and Evaluation of Implementation of Existing Policies was tallied against only one strategic action and was therefore not pre-qualified as a standalone option; the monitoring and evaluation dimension it represents is nonetheless assessed as one of the six analytical parameters applied to every pre-qualified option in Section 12. Revision of Existing Policies, Strengthening Enforcement of Existing Laws and Regulations, Self-regulation, Mobilisation of Citizens, and Maintain Status Quo were not tallied against any strategic action and were therefore not pre-qualified, as Uganda's data challenge is fundamentally one of an absence of a comprehensive policy and standards, rather than one of underenforcement of, or insufficient revision to, existing adequate instruments.

The details of the options selection by strategic objective and action are provided in Annex 1.

12.0 OPTIONS ANALYSIS

This section presents the results of the analysis of the seven prequalified options, including the 'Do Nothing' baseline. The analysis applied six parameters: cost, benefit, positive impact and distribution, negative impact and distribution, ease of implementation, and ease of monitoring and evaluation.

12.1 Cost Analysis

This analysis involved identifying the disadvantages, demerits, or costs of using each option in carrying out actions to achieve the strategic objectives. The option with the least demerits was ranked first.

The analysis revealed that the best option in terms of cost was Carryout Awareness Creation/Sensitization, ranked first (Rank 1), as it leverages existing Government communication channels at NITA-U, UBOS and the Ministry of ICT and National Guidance at minimal institutional cost, with no new legal instrument required. Mainstreaming within Existing Policies, Laws and Regulations ranked second (Rank 2), requiring only the embedding of provisions into planning instruments that are already being prepared. Enhancing the Implementation of Existing Policies ranked third (Rank 3), requiring moderate additional resourcing across a large number of implementing institutions, but entirely within existing budgetary and legal mandates.

Enhancing Coordination ranked fourth (Rank 4), incurring moderate transaction costs for Memoranda of Understanding, joint technical working groups and secretariat functions. Amendment of Existing Laws and Regulations ranked fifth (Rank 5): while legislative drafting, Cabinet approval and parliamentary timelines carry real costs, these are bounded and transitional, concentrated in the short-to-medium term. Innovation ranked sixth (Rank 6), owing to the cost of technology procurement, piloting, specialised technical capacity and research and development funding.

Introduction of New Policies, Laws and Regulations ranked seventh (Rank 7), as developing and enacting a comprehensive National Data Policy — and, where necessary, a National Data Act — requires extensive multi-sectoral consultation, drafting and a full policy or legislative process. Critically, however, the fifteen actions assigned to this option, including unified national data standards, retention and deletion guidelines, institutional ownership of data insights and standardised sectoral metric definitions, cannot be delivered by any lighter-touch instrument, making the cost of introduction the justified price of structural reform. Do Nothing ranked last (Rank 8), carrying the highest long-term hidden costs through continued data mismanagement, avoidable security breaches, wasted public expenditure and deepening competitive disadvantage relative to regional peers.

The details of the cost analysis are provided in Annex 2.1.

12.2 Benefits Analysis

This analysis involved identifying the advantages, merits, and benefits of each option. The option with the highest merits was ranked first.

Introduction of New Policies, Laws and Regulations ranked first (Rank 1): it uniquely delivers permanent, enforceable benefits that no other option can replicate — unified national standards for data generation, collection, formats, terminology and identifiers; binding retention and deletion protocols; clear institutional ownership and accountability for translating data into policy; standardised definitions of what to measure across health, education and agriculture; and durable incentive structures for data-driven innovation. These benefits are structurally durable and distributed across all stakeholder groups.

Enhancing the Implementation of Existing Policies ranked second (Rank 2), delivering measurable benefits across all seven strategic objectives without requiring any new legal instrument, as it is the most relevant option for 37 of the 98 strategic actions. Amendment of Existing Laws and Regulations ranked third (Rank 3), removing inconsistencies among existing sector laws and clarifying overlapping institutional mandates with legally binding effect. Enhancing Coordination ranked fourth (Rank 4), generating strong harmonisation benefits among NITA-U, UBOS, the Personal Data Protection Office and sector Ministries, Departments and Agencies.

Innovation ranked fifth (Rank 5), generating valuable but longer-horizon benefits through artificial intelligence, synthetic data generation and digital platforms. Mainstreaming within Existing Policies, Laws and Regulations ranked sixth (Rank 6), offering modest and diffuse benefits given its limited enforceability. Carryout Awareness Creation/Sensitization ranked seventh (Rank 7), generating meaningful but narrower demand-side benefits. Do Nothing ranked last (Rank 8), generating no benefit whatsoever.

The details of the benefits analysis are provided in Annex 2.2.

12.3 Stakeholder Analysis

The key stakeholders who implement actions, or who can be affected by any action in Uganda's data ecosystem, were identified for the Positive and Negative Impact and Distribution of Impact Analysis. These were organised into six categories: Policy and Regulatory Oversight (Government); Data-Generating and Custodian Institutions; Private Sector and Professional Bodies; Academia, Research and Innovation Actors; Civil Society, Media and Citizens/Data Subjects; and Development Partners and Regional/Continental Bodies.

Central among these are the Ministry of ICT and National Guidance, the National Information Technology Authority, Uganda (NITA-U), the Personal Data Protection Office, the Uganda Bureau of Statistics, the Ministry of Finance, Planning and Economic Development and the National Planning Authority on the policy and regulatory side; sector Ministries, Departments and Agencies, Local Governments, the Uganda Revenue Authority and the

National Identification and Registration Authority as data-generating and custodian institutions; and telecommunications companies, financial technology firms, banks, universities, research institutions, the media and citizens as data subjects on the participant side. The full stakeholder mapping and the associated Power-Interest Matrix are provided in Annex 2.3.1.

12.4 Positive Impact and Distribution of Impact Analysis

Under this analysis, positive impacts were identified and distributed among stakeholders per option and compared across all options, with the option generating the most positive impacts ranked first.

Introduction of New Policies, Laws and Regulations ranked first (Rank 1) on this parameter: it is the only option that permanently establishes unified national data standards benefiting every institution that creates or uses data; clarifies institutional mandates and ownership, ending the duplication and confusion between agencies collecting similar data; provides binding legal certainty on retention, deletion and cross-border data flows; and creates durable incentive structures that benefit researchers, innovators and the private sector across all future cycles. These impacts are structurally durable and distributed broadly across all six stakeholder categories.

Enhancing the Implementation of Existing Policies ranked second (Rank 2), generating wide-reaching positive impact across nearly all stakeholder categories quickly by activating mandates that already exist. Enhancing Coordination ranked third (Rank 3), generating strong positive impact concentrated among Government agencies through improved harmonisation and reduced duplication. Amendment of Existing Laws and Regulations ranked fourth (Rank 4), delivering significant positive impact through legal clarity for specific institutions and data subjects.

Innovation ranked fifth (Rank 5), generating strong positive impact for technologically forward institutions, the private sector and youth entrepreneurs. Carryout Awareness Creation/Sensitization ranked sixth (Rank 6), generating positive impact primarily for citizens and communities on the demand side. Mainstreaming within Existing Policies, Laws and Regulations ranked seventh (Rank 7), with modest and diffuse positive impact spread thinly across many sector plans. Do Nothing ranked last, as it generated no positive impact for any stakeholder group.

The details of the positive impact analysis are provided in Annex 2.3.2.

12.5 Negative Impact and Distribution of Impact Analysis

Under this analysis, negative impacts were identified and distributed among stakeholders per option, with the option generating the least negative impacts ranked first.

Carryout Awareness Creation/Sensitization ranked first (Rank 1) with minimal adverse consequences. Enhancing the Implementation of Existing Policies ranked second (Rank 2), with negative impact limited to short-term resource strain on implementing agencies. Introduction of New Policies, Laws and Regulations ranked third (Rank 3): although its development involves a transitional period of adjustment, a single comprehensive enacted instrument thereafter removes the recurring ambiguity, duplication and conflicting mandates that continuously harm the fragmented status quo, so its net ongoing negative impact is low and bounded. Mainstreaming within Existing Policies, Laws and Regulations ranked fourth (Rank 4), carrying a low but real risk of creating a false sense of progress given its limited enforceability.

Enhancing Coordination ranked fifth (Rank 5), carrying the risk of diffuse accountability and coordination fatigue where no single institution holds a clear mandate. Amendment of Existing Laws and Regulations ranked sixth (Rank 6): amending several separate statutes carries transitional regulatory uncertainty spread across each instrument and can leave residual gaps between them. Innovation ranked seventh (Rank 7), carrying the risk of widening the digital divide for rural and less digitally literate populations, and of pilot failure, if not carefully managed. Do Nothing ranked last (Rank 8), imposing unlimited compounding losses on citizens, institutions and Uganda's development trajectory.

The details of the negative impact analysis are provided in Annex 2.3.3.

12.6 Ease of Implementation/Enforcement Analysis

In this analysis, the ease of implementing or enforcing each action under the various options was assessed. The option with the easiest implementation was ranked first.

Carryout Awareness Creation/Sensitization ranked first (Rank 1) — deployable immediately through existing Government communication channels with no new legal instrument. Enhancing the Implementation of Existing Policies ranked second (Rank 2), being straightforward to implement using existing institutional mandates, though requiring sustained coordination across many institutions. Introduction of New Policies, Laws and Regulations ranked third (Rank 3): although its preparation stage is demanding, a single comprehensive enacted instrument thereafter provides one clear implementation vehicle and legal mandate for every institution, removing the recurring difficulty of aligning many separate, partial instruments. Enhancing Coordination ranked fourth (Rank 4), requiring the negotiation of Memoranda of Understanding but no legislative approval.

Mainstreaming within Existing Policies, Laws and Regulations ranked fifth (Rank 5), requiring alignment with National Development Plan and sector planning cycles across many institutions with no power to compel action. Innovation ranked sixth (Rank 6),

requiring specialised technical capacity, procurement and piloting. Amendment of Existing Laws and Regulations ranked seventh (Rank 7): amending several separate sector laws — the Data Protection and Privacy Act, 2019, the NITA-U Act, 2009 and related instruments — is protracted and must be coordinated statute by statute. Do Nothing was ranked last because, despite requiring no effort, it cannot achieve the objective.

Details of the ease of implementation analysis are provided in Annex 2.3.4.

12.7 Ease of Monitoring and Evaluation Analysis

Using this analysis, the ease of monitoring and evaluating each action under the various options was assessed. The option with the easiest monitoring and evaluation was ranked first.

Carryout Awareness Creation/Sensitization ranked first (Rank 1) — trackable through attendance records, media-reach statistics and data-literacy survey data. Enhancing the Implementation of Existing Policies ranked second (Rank 2), trackable through existing institutional performance and budget-execution reports. Introduction of New Policies, Laws and Regulations ranked third (Rank 3): a single enacted instrument yields clear, centrally-defined statutory indicators — institutional adoption rates, standards issued and compliance levels — reported through one accountable framework once operational. Enhancing Coordination ranked fourth (Rank 4), monitorable through joint secretariat reporting, though complicated by multiple reporting lines.

Mainstreaming within Existing Policies, Laws and Regulations ranked fifth (Rank 5): plan inclusion is easily verified, but the actual implementation of plan provisions is not systematically reported. Amendment of Existing Laws and Regulations ranked sixth (Rank 6): indicators are measurable once amended provisions take effect, but impact appears slowly and is spread across several separate statutes. Innovation ranked seventh (Rank 7), being hardest to monitor given the experimental and rapidly evolving nature of new technologies and the difficulty of setting stable indicators for pilots. Do Nothing was ranked last, as there was no intervention to monitor.

The details of the ease of M&E analysis are provided in Annex 2.3.5.

13.0 CONSULTATIONS

This Regulatory Impact Assessment was informed by structured consultative sessions bringing together the National Information Technology Authority, Uganda (NITA-U), the Personal Data Protection Office (PDPO), the Uganda Bureau of Statistics (UBOS), the Ministry of ICT and National Guidance, representatives of academia, the media, and other Government and non-Government stakeholders involved in the creation, collection, processing, analysis, storage, access, use, and archiving of data in Uganda.

The consultations were used to build consensus on the definition and scope of "Data" adopted in this report, to validate the situational analysis and the identification of issues, causes, and effects, and to inform the formulation of the Vision, Mission, Goal, Strategic Objectives, Strategic Actions, and Outcomes. Records of the consultative sessions are maintained by the Ministry of ICT and National Guidance and are available on request.

14.0 CONCLUSION

The results of the options analysis are summarised in Table 3 below.

Table 3: Summary of Options Analysis

Criteria	Enhancing Implementation	Enhancing Coordination	New Policies & Laws	Innovation	Awareness Creation	Mainstreaming	Amendment of Laws	Do Nothing
Cost Rank	3	4	7	6	1	2	5	8
Benefit Rank	2	4	1	5	7	6	3	8
Positive Impact Rank	2	3	1	5	6	7	4	8
Negative Impact Rank	2	5	3	7	1	4	6	8
Ease of Impl. Rank	2	4	3	6	1	5	7	8
Ease of M&E Rank	2	4	3	7	1	5	6	8
Total Rank	**13**	**24**	**18**	**36**	**17**	**29**	**31**	**48**
Final Overall Rank	**1**	**4**	**3**	**7**	**2**	**5**	**6**	**8**

Key to column headings: Enhancing Implementation = Enhancing the Implementation of Existing Policies; Enhancing Coordination = Enhancing Coordination; New Policies & Laws = Introduction of New Policies, Laws and Regulations; Innovation = Innovation; Awareness Creation = Carryout Awareness Creation/Sensitization; Mainstreaming = Mainstreaming within Existing Policies, Laws and Regulations; Amendment of Laws = Amendment of Existing Laws and Regulations; Do Nothing = Do Nothing (baseline).

The analysis evaluated the seven options which were prequalified for analysis, in addition to the 'Do Nothing' option, which is a baseline for analysis, across six distinct dimensions (Cost, Benefit, Positive Impact, Negative Impact, Ease of Implementation, and Ease of M&E) to determine the most viable path forward. Total Rank is the sum of the six dimension ranks, where the lowest Total Rank is the best option. Each option returned a distinct Total Rank, so the eight options are separated outright and no tie-breaking was required. The following conclusions are drawn from the matrix:

Rank 1 — Enhancing the Implementation of Existing Policies. This option achieves Rank 2 or better on all six parameters and is the most relevant option for 37 of the 98 strategic actions. It delivers measurable results through the existing mandates and systems of NITA-U, the Personal Data Protection Office, UBOS and sector Ministries, Departments and Agencies, without any new legal instruments.

Rank 2 — Carryout Awareness Creation/Sensitization. This option achieves Rank 1 on Cost, Negative Impact, Ease of Implementation and Ease of M&E — the highest-yield, lowest-risk immediate tactical intervention. It is the fastest mechanism for closing data-literacy gaps, building community buy-in for data provision and stimulating institutional demand for evidence-based decision-making, though it cannot by itself resolve structural, legal or technical gaps.

Rank 3 — Introduction of New Policies, Laws and Regulations. This option is the highest-ranked structural reform option and the only one that permanently resolves the central cause identified in the Problem Statement: the absence of a comprehensive national data policy, standards and implementation guidelines. It ranks first on both Benefit and Positive Impact, establishing unified national standards, clarifying institutional mandates and ownership, and providing durable legal certainty for all stakeholders. Although its preparation is demanding, a single comprehensive enacted instrument thereafter provides one clear implementation vehicle (Ease of Implementation Rank 3), the clearest statutory monitoring indicators (Ease of M&E Rank 3), and a low ongoing negative impact (Rank 3), because it removes the recurring ambiguity and duplication that continuously harm the fragmented status quo. Its strong overall position confirms it as the central structural pillar of Uganda's data-governance reform agenda, to be pursued in parallel with the higher-ranked enabling options rather than after them.

Rank 4 — Enhancing Coordination. This option performs consistently across the matrix, achieving Rank 3 on Positive Impact and reasonable scores elsewhere, and reflects its value in harmonising the currently fragmented efforts of NITA-U, UBOS, the Personal Data Protection Office and sector Ministries, Departments and Agencies. It is tempered by

moderate transaction costs and the risk of diffuse accountability where no single institution holds a clear overarching mandate.

Rank 5 — Mainstreaming within Existing Policies, Laws and Regulations. This option is low-cost (Rank 2), but is constrained by its modest and diffuse positive impact (Rank 7) and limited enforceability, since embedding data considerations into existing plans without a dedicated instrument cannot compel action.

Rank 6 — Amendment of Existing Laws and Regulations. This option scores well on Benefit (Rank 3) and Positive Impact (Rank 4), reflecting the legal-certainty benefits of amending the Data Protection and Privacy Act, 2019, the NITA-U Act, 2009 and related sector laws. It is held back by the cost and complexity of amending several separate statutes (Ease of Implementation Rank 7), which a single comprehensive instrument avoids.

Rank 7 — Innovation. Positioned near the bottom of the matrix, Innovation generates valuable long-term benefits through artificial intelligence, synthetic data generation and digital platforms, but is constrained by above-average cost (Rank 6), the highest Negative Impact risk among the active options (Rank 7, reflecting digital-divide and pilot-failure concerns) and the greatest monitoring and evaluation difficulty (Rank 7), given the experimental and rapidly evolving nature of new technologies.

Rank 8 — Do Nothing. This option occupies the absolute bottom position across all six parameters, confirming that Uganda's fragmented, under-resourced and non-standardised data-management landscape — and the compounding effects on evidence-based decision-making, service delivery, public trust, resource efficiency, crisis preparedness, innovation, institutional memory, sectoral planning, accountability and national security documented in the Problem Statement — will worsen materially in the absence of sustained and coordinated intervention.

15.0 RECOMMENDATIONS

In line with the analysis and conclusion, a hybrid, phased implementation strategy should be adopted rather than viewing the options in the conclusion in complete isolation. The recommendations for strengthening the creation/generation, collection, processing, analysis, storage/retention, access, use/application, and archiving or disposal/deletion of data in Uganda are as follows:

i. **Immediately operationalise an Enhanced Implementation Framework as the primary policy engine** (Derived from Rank 1). NITA-U, the Personal Data Protection Office, UBOS, and sector Ministries, Departments and Agencies, in collaboration with the Ministry of ICT and National Guidance, should: fully activate existing mandates to invest in data-centre facilities, storage systems, and archival infrastructure; scale up recruitment and deployment of data engineers, statisticians, and data scientists within existing establishment structures; strengthen data-quality management and anonymisation practices already required under the Data Protection and Privacy Act, 2019; and accelerate adoption of the UgHub interoperability platform. This

framework should be activated immediately as the most impactful option deployable within existing legal and budgetary mandates.

ii. **Launch a sustained National Data Literacy and Awareness Campaign** (Derived from Rank 2). The Ministry of ICT and National Guidance, in collaboration with NITA-U, UBOS, and media partners, should: deploy multilingual digital, radio, print, and community-outreach campaigns to raise data literacy and public appreciation of the value of data; sensitise decision-makers on the benefits of evidence-based, data-driven decision-making; build community awareness and buy-in for data provision; and popularise available public datasets to increase their utilisation. This campaign should be launched immediately, in parallel with the Enhanced Implementation Framework.

iii. **Develop and enact a comprehensive National Data Policy, and where necessary a National Data Act, as the central structural pillar of data governance reform** (Derived from Rank 3). The Ministry of ICT and National Guidance, in collaboration with NITA-U, UBOS, the Personal Data Protection Office, the Ministry of Justice and Constitutional Affairs, the Attorney General's Chambers, and Parliament, should initiate and fast-track development of a National Data Policy that:

   a. Establishes clear national guidelines on data retention periods and proper deletio n/disposal protocols across all Government institutions;

   b. Designates clear institutional ownership and accountability for translating data in sights into policy decisions;

   c. Establishes unified national standards for data generation, collection, formats, ter minology, identifiers, storage, and archival practices across the public and private sectors; and

   d. Establishes adequate incentive structures for innovation, data-driven experimenta tion, retention of data professionals, and evidence-based practice.

   NB: As the highest-ranked structural reform option and the only one that addresses th e central cause of Uganda's data-management challenges — the absence of a compreh ensive national data policy, standards, and implementation guidelines — this instrum ent should be initiated immediately and prepared concurrently with Recommendatio ns i and ii, so that it is ready for Cabinet consideration, and where necessary parliame ntary consideration, as soon as possible.

iv. **Institutionalise a formal National Data Governance Coordination Platform** (Derived from Rank 4). A structured Technical Working Group and Memorandum of Understanding should be established among the Ministry of ICT and National Guidance, NITA-U, UBOS, the Personal Data Protection Office, the National Planning Authority, and sector Ministries, Departments and Agencies, to: eliminate overlapping mandates and duplicative data-collection efforts; coordinate harmonisation with regional and continental data frameworks (the African Union

Data Policy Framework and AfCFTA digital trade protocols); build trust and data-sharing between institutions; and jointly resource the centralised National Data Centre and shared infrastructure. This platform should be formally established within six months of this report's adoption, with a dedicated secretariat and quarterly reporting to the Ministry of ICT and National Guidance and Cabinet.

v. **Mainstream data-management provisions within existing national and sectoral planning instruments** (Derived from Rank 5). The National Planning Authority and the Ministry of Finance, Planning and Economic Development should embed data creation, collection, quality, storage, access, and use provisions within the National Development Plan, sector strategic plans, and institutional performance frameworks, so that data management is treated as a cross-cutting priority pending the enactment of the National Data Policy.

vi. **Enact targeted amendments to existing data-related laws and regulations** (Derived from Rank 6). The Ministry of ICT and National Guidance and the Ministry of Justice and Constitutional Affairs, in collaboration with NITA-U, the Personal Data Protection Office, the Attorney General's Chambers, and Parliament, should initiate and fast-track the following amendments:

    a. Amend the Data Protection and Privacy Act, 2019 and its regulations to strengthen breach-notification and standardised breach-management protocols, and to clarify the enforcement powers of the Personal Data Protection Office;

    b. Amend the National Information Technology Authority, Uganda Act, 2009 to strengthen NITA-U's mandate over data-centre standards, interoperability, and archival infrastructure;

    c. Harmonise inconsistencies among existing sector laws governing data (including Cap. 97 and related instruments) to remove overlapping and clashing institutional mandates; and

    d. Amend relevant intellectual property laws to strengthen protection and incentivise research and data-creation activities.

    These amendments should be prepared concurrently with the National Data Policy referred to in Recommendation iii above, so that legislative alignment is achieved as one coherent package.

vii. **Incubate controlled innovation through pilot projects and regulatory sandboxes** (Derived from Rank 7). NITA-U and UBOS, in collaboration with the Uganda National Council for Science and Technology, universities, and financial and information technology companies, should: pilot artificial intelligence and machine learning applications for data generation and analysis; test synthetic data-generation and simulation-modelling tools for policy planning; incubate open-data initiatives; and support the start-up and entrepreneurship ecosystem around data-generation

tools. These pilots should be tightly scoped, time-limited, and subject to full supervisory monitoring by NITA-U and UBOS.

viii. **Formally document the Do Nothing option as an actively rejected baseline** (Derived from Rank 8). NITA-U and UBOS should formally document the quantifiable and compounding costs of continued inaction — including continued poor data quality, unresolved institutional fragmentation, avoidable data-security breaches, degraded public-service delivery, weakened crisis-preparedness capability, and lost opportunities for innovation and national development — in their regular performance reports to the Ministry of ICT and National Guidance, Cabinet, and Parliament.

DECLARATION

I have read the Report on the Regulatory Impact Assessment on Data. I am satisfied that the benefits justify the costs of the selected options.

Signed ……

Date ……

Rt. Hon. Justine Kasule Lumumba

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ANNEXES

The following annexes provide the full details of the options selection and analysis that underpin the findings, conclusion, and recommendations in this report:

i. **Annex 1: Options Selection** — Full Options Selection Table showing the mapping of all strategic objectives and actions to options, with justification for each option selected.

ii. **Annex 2.1: Cost Analysis** — Detailed cost analysis table showing the disadvantages, demerits, and costs of each option across all seven strategic objectives.

iii. **Annex 2.2: Benefits Analysis** — Detailed benefits analysis table showing the advantages, merits, and benefits of each option across all seven strategic objectives.

iv. **Annex 2.3.1: Stakeholders in Uganda's Data Ecosystem** — Full stakeholder mapping, together with the Stakeholder Power-Interest Matrix.

v. **Annex 2.3.2: Positive Impacts and Distribution of Impacts Analysis** — Detailed positive impact analysis table showing the positive changes generated under each option and their distribution across identified stakeholders.

vi. **Annex 2.3.3: Negative Impacts and Distribution of Impacts Analysis** — Detailed negative impact analysis table showing the adverse consequences of each option and their distribution across identified stakeholders.

vii. **Annex 2.3.4: Ease of Implementation/Enforcement Analysis** — Detailed ease of implementation and enforcement analysis table showing the assessment of implementation difficulty under each option across all strategic objectives.

viii. **Annex 2.3.5: Ease of Monitoring and Evaluation Analysis** — Detailed ease of M&E analysis table showing the assessment of monitoring and evaluation difficulty under each option across all strategic objectives.

ANNEX 1: OPTIONS SELECTION

Full Options Selection Table — Mapping of Strategic Objectives and Actions to Options with Justification.

#	Strategic Action	Option Selected	Justification
SO 1: To Develop and Strengthen Computational Infrastructure and Capacity for Effective Data Management			
1	Invest in modern data center facilities with adequate server capacity and comprehensive backup systems	**Enhancing Implementation of Existing Policies**	Falls under NITA-U's existing e-Government infrastructure mandate.
2	Establish and equip laboratory facilities with state-of-the-art experimental infrastructure for generating scientific data	**Enhancing Implementation of Existing Policies**	Falls within UNCST and sector research institutions' existing mandates.
3	Improve reliability of electricity supply to ensure uninterrupted data collection and storage operations	**Enhancing Coordination**	Requires cross-sector coordination with UEDCL/UMEME and energy regulators, outside the data policy remit.
4	Enhance internet connectivity throughout rural and urban areas and work to reduce connectivity costs	**Enhancing Coordination**	Requires coordination with the Uganda Communications Commission and telecom operators.
5	Develop robust infrastructure and systems to support field-based data collection in difficult terrain and remote locations	**Innovation**	Requires new field-data-collection methods and technologies for hard-to-reach areas.
6	Procure adequate tools and software platforms needed to create, generate, collect, and process data	**Enhancing Implementation of Existing Policies**	Procurement falls under existing institutional budgets and NITA-U standards.
7	Transition institutions from manual processes to automated data processing software and systems	**Innovation**	Automating manual processes requires new technological approaches.
8	Provide institutions with access to specialized data analysis software (SPSS, R, Python, advanced BI tools) and advanced computational resources	**Enhancing Implementation of Existing Policies**	Falls under existing institutional ICT budgeting and NITA-U guidelines.
9	Upgrade institutional storage systems to modern, compatible platforms that enable seamless communication and data exchange	**Enhancing Implementation of Existing Policies**	Falls under the existing NITA-U interoperability framework.
10	Modernize outdated technologies and systems to facilitate integration with new data management approaches	**Innovation**	Modernization requires new technology adoption.
11	Implement systematic maintenance and upgrade schedules for storage infrastructure	**Enhancing Implementation of Existing Policies**	Maintenance is an operational function under existing institutional mandates.
12	Secure adequate office and facility space for servers, equipment, and archival materials	**Enhancing Implementation of Existing Policies**	Falls under existing public works and institutional facility mandates.
13	Establish comprehensive archival facilities (both physical and digital) for long-term data preservation	**Enhancing Implementation of Existing Policies**	Falls under the existing National Records and Archives Act mandate.

#	Strategic Action	Option Selected	Justification
14	Implement preservation strategies and protocols to prevent digital data degradation due to format obsolescence	**Innovation**	Requires new digital-preservation technology and formats.
15	Develop and implement protocols to prevent data loss during organizational restructuring and system migrations	**Enhancing Implementation of Existing Policies**	Can be addressed through existing institutional data-management protocols.
16	Increase investment in artificial intelligence and machine learning systems for data generation and analysis	**Innovation**	AI/ML systems represent new technological approaches.
17	Fund research and development activities that produce experimental data and innovative solutions	**Enhancing Coordination**	Requires coordination with UNCST, universities and research bodies.
18	Strengthen the startup and entrepreneurship ecosystem to stimulate innovation in data generation tools and services	**Innovation**	Building a startup/entrepreneurship ecosystem requires new approaches and incentive models.
SO 2: To Build a Highly Skilled and Motivated Workforce for Data Systems Design and Implementation			
1	Recruit and develop data engineers and specialists trained in data cleaning and transformation	**Enhancing Implementation of Existing Policies**	Falls under existing Public Service recruitment and staffing mandates.
2	Establish and fill positions for statisticians, data scientists, and analytical professionals across all sectors	**Enhancing Implementation of Existing Policies**	Falls under existing Public Service structures and establishment.
3	Build institutional capacity by training data scientists in synthetic data generation and simulation modeling techniques	**Innovation**	Synthetic data/simulation training is a new, emerging skill area.
4	Enhance skills of IT professionals to manage secure, scalable storage systems and technical infrastructure	**Enhancing Implementation of Existing Policies**	Falls under existing institutional capacity-building mandates.
5	Develop and certify professionals trained in long-term data stewardship and archival management best practices	**Introduction of New Policies, Laws and Regulations**	No certification/stewardship standard currently exists; a new instrument is required.
6	Enhance data literacy and cultivate appreciation for the value of data across all organizational levels and sectors	**Carryout Awareness Creation/Sensitization**	Addresses limited appreciation of data's value through information and campaigns.
7	Implement comprehensive digital literacy programs for populations lacking basic computer skills	**Carryout Awareness Creation/Sensitization**	Addresses low digital literacy through public education campaigns.
8	Establish advanced training programs in statistical, analytical, and technical methods at tertiary institutions	**Enhancing Coordination**	Requires collaboration with Ministry of Education and universities.
9	Create comprehensive educational and professional development programs in data management skills and competencies	**Enhancing Coordination**	Requires collaboration with Ministry of Education, NCHE and training institutions.
10	Build knowledge and skills in synthetic data generation, simulation modeling, and data contextualization	**Innovation**	Synthetic data/simulation modeling skills are an emerging technical area.

#	Strategic Action	Option Selected	Justification
11	Implement competitive staff retention strategies and provide ongoing professional development opportunities	**Enhancing Implementation of Existing Policies**	Falls under existing Public Service HR retention policies.
12	Create financial and career incentives to retain talented scientists, researchers, and data professionals within Uganda	**Introduction of New Policies, Laws and Regulations**	No dedicated incentive/retention scheme exists for data professionals; requires a new instrument.
13	Build institutional capacity to translate technical findings into local languages and culturally appropriate formats	**Carryout Awareness Creation/Sensitization**	Addressed through targeted communication and training campaigns.
14	Develop and enhance skills in how to contextualize data, draw meaningful conclusions, operationalize recommendations, and implement evidence-based interventions	**Enhancing Implementation of Existing Policies**	Falls under existing training and capacity-development mandates.
15	Establish formal mechanisms for incorporating community and traditional knowledge into interpretation and application processes	**Enhancing Coordination**	Requires coordination with local governments and cultural/community institutions.
16	Foster active collaboration between different disciplinary experts in data analysis and interpretation	**Enhancing Coordination**	Requires structured collaboration across disciplines and institutions.
17	Promote organizational flexibility and cultivate willingness to adapt to new data practices and technologies	**Mainstreaming within Existing Policies, Laws and Regulations**	Embedding flexibility/adaptability within existing HR and institutional practices.
18	Facilitate regular and meaningful interaction between data analysts and data collectors to enhance contextual understanding and quality	**Enhancing Coordination**	Requires structured engagement between analysts and data collectors across institutions.
SO 3: To Establish a Comprehensive National Data Policy, Standards, and Implementation Guidelines			
1	Develop and enact clear national guidelines on data retention periods and proper deletion protocols	**Introduction of New Policies, Laws and Regulations**	No guidelines on retention/deletion currently exist; requires a new national instrument.
2	Harmonize inconsistencies among existing sector laws governing data (e.g. Cap. 97) to create coherence	**Amendment of Existing Laws and Regulations**	Requires amending existing sector laws (e.g. Cap. 97) to remove inconsistencies.
3	Establish transparent and comprehensive regulatory compliance frameworks for data privacy during collection, storage, and use	**Enhancing Implementation of Existing Policies**	The Data Protection and Privacy Act, 2019 already provides a compliance framework requiring stronger implementation.
4	Accelerate harmonization with regional and continental frameworks (e.g. AU Data Policy Framework, AfCFTA protocols)	**Enhancing Coordination**	Requires coordination with regional/continental bodies (AU, AfCFTA).
5	Strengthen partnerships and enhance synergy between government, private, and NGO sectors in data management	**Enhancing Coordination**	Requires structured partnership platforms across government, private sector and NGOs.
6	Clarify institutional mandates and eliminate overlapping responsibilities to reduce confusion and duplication	**Amendment of Existing Laws and Regulations**	Overlapping mandates are embedded in existing sector laws requiring amendment.
7	Coordinate and consolidate data collection activities across agencies to eliminate duplication and ensure consistency	**Enhancing Coordination**	Requires coordination among multiple agencies collecting similar data.

#	Strategic Action	Option Selected	Justification
8	Designate clear institutional ownership for translating insights into policy decisions and maintain accountability for outcomes	**Introduction of New Policies, Laws and Regulations**	No instrument currently designates institutional ownership for data insights; requires a new policy.
9	Establish unified data generation and collection standards and protocols across all sectors and institutions	**Introduction of New Policies, Laws and Regulations**	No unified data generation/collection standard currently exists.
10	Develop and standardize definitions of key metrics to measure across priority sectors (health, education, agriculture)	**Introduction of New Policies, Laws and Regulations**	No standardized sectoral metric definitions currently exist.
11	Adopt unified data storage and archival standards across both government and private institutions	**Introduction of New Policies, Laws and Regulations**	No unified storage/archival standard currently exists across institutions.
12	Standardize data formats, terminology, and identifiers across institutions and agencies for seamless integration	**Introduction of New Policies, Laws and Regulations**	No unified data format/terminology standard currently exists.
13	Implement comprehensive monitoring systems to track whether applied insights improved outcomes and enable organizational learning	**Enhancing Monitoring and Evaluation of Implementation of Existing Policies**	Concerns tracking whether existing interventions and insights are improving outcomes.
14	Support and expand pilot projects and experimental data initiatives across priority sectors	**Innovation**	Pilot projects and experimental data initiatives are inherently innovative activities.
15	Strengthen research culture and actively support academic institutions conducting experimental research	**Enhancing Coordination**	Requires collaboration with academia and research institutions.
16	Support and expand laboratory facilities and experimental infrastructure for generating scientific data	**Enhancing Implementation of Existing Policies**	Falls under existing UNCST and research-institution mandates.
17	Strengthen intellectual property protection frameworks to incentivize research and data creation activities	**Amendment of Existing Laws and Regulations**	Requires strengthening IP protection under existing IP-related laws.
18	Establish adequate incentive structures for innovation, data-driven experimentation, and evidence-based practice	**Introduction of New Policies, Laws and Regulations**	No dedicated incentive structure for data-driven innovation currently exists.
19	Invest in open data initiatives and provide infrastructure needed for data creation and sharing	**Innovation**	Open data initiatives represent a new approach to data infrastructure and sharing.
20	Build widespread awareness of data\'s value and cultivate a strong organizational culture of evidence-based decision-making	**Carryout Awareness Creation/Sensitization**	Addresses low awareness of data's value through communication and campaigns.
21	Foster organizational cultures that embrace data-driven change and fully support evidence-based approaches	**Mainstreaming within Existing Policies, Laws and Regulations**	Embedding data-driven culture into existing organizational practices and plans.
22	Develop balanced strategies to address emergency needs while maintaining commitment to evidence-based planning	**Mainstreaming within Existing Policies, Laws and Regulations**	Embedding balanced planning approaches into existing emergency and development frameworks.

#	Strategic Action	Option Selected	Justification
23	Encourage decision-makers to prioritize data-driven approaches as a core element of policy formulation	**Carryout Awareness Creation/Sensitization**	Addresses political short-termism through sensitization of decision-makers.
24	Allocate adequate time and resources for rigorous analytical investigation and interpretation	**Enhancing Implementation of Existing Policies**	Falls under existing institutional planning and resourcing mandates.
25	Ensure sufficient time, resources, and quality assurance mechanisms for comprehensive analytical investigation, interpretation, and validation	**Enhancing Implementation of Existing Policies**	Falls under existing institutional quality-assurance mandates.
SO 4: To Strengthen Data Quality Management Systems and Processes			
1	Establish rigorous data collection criteria, tools, and standardized collection processes across all data sources	**Introduction of New Policies, Laws and Regulations**	No unified national data-quality standard currently exists.
2	Implement comprehensive quality assurance mechanisms to minimize human error during collection, processing, and analysis	**Enhancing Implementation of Existing Policies**	Falls under existing institutional quality-assurance mandates.
3	Standardize collection methods across institutions to ensure consistency and reproducibility of data quality	**Introduction of New Policies, Laws and Regulations**	No standardized national collection methodology currently exists.
4	Apply consistent standardization of data formats, terminology, and identifiers across all institutions and sectors	**Introduction of New Policies, Laws and Regulations**	No unified national data-format standard currently exists.
5	Document data origin, collection methods, and contextual information systematically to facilitate processing and future use	**Enhancing Implementation of Existing Policies**	Falls under existing institutional documentation and records-management practices.
6	Develop effective protocols to address data quality challenges arising from use of multiple local languages	**Innovation**	Addressing multi-language processing challenges requires new technological/methodological approaches.
7	Allocate adequate staff and resources to eliminate processing backlogs and ensure timely data availability	**Enhancing Implementation of Existing Policies**	Falls under existing institutional staffing and resource-allocation mandates.
8	Build community awareness and secure buy-in regarding the importance and purpose of data provision	**Carryout Awareness Creation/Sensitization**	Addresses low community awareness through information and outreach campaigns.
9	Consolidate, validate, and make quality data publicly available for broader access and use	**Enhancing Implementation of Existing Policies**	Falls under the existing Access to Information Act, 2005 mandate.
SO 5: To Ensure Full Compliance with Data Protection and Privacy Laws			
1	Implement robust and consistent data anonymization procedures during data collection	**Enhancing Implementation of Existing Policies**	Already required under the Data Protection and Privacy Act, 2019; needs stronger enforcement.
2	Strengthen security systems including access management, password protection, and authentication controls	**Enhancing Implementation of Existing Policies**	Falls under existing institutional ICT security mandates.

#	Strategic Action	Option Selected	Justification
3	Develop comprehensive data security policies and standardized breach management and response protocols	**Introduction of New Policies, Laws and Regulations**	No standardized national breach-management protocol currently exists.
4	Establish secure data disposal methods with proper authorization, oversight, and documentation	**Enhancing Implementation of Existing Policies**	Falls under existing data-disposal provisions of the Data Protection and Privacy Act, 2019.
5	Build strong data privacy culture, awareness, and training among data collectors and data subjects	**Carryout Awareness Creation/Sensitization**	Addresses poor privacy culture through training and awareness campaigns.
6	Invest adequately in robust security systems, firewalls, and encryption technologies	**Enhancing Implementation of Existing Policies**	Falls under existing institutional ICT security budgets and mandates.
7	Develop clear, safe, and well-documented deletion procedures and train all personnel appropriately	**Enhancing Implementation of Existing Policies**	Falls under existing Data Protection and Privacy Act, 2019 provisions requiring operationalisation.
8	Address data privacy concerns through transparent governance and demonstrate mutual commercial benefits of data sharing	**Enhancing Coordination**	Requires coordination between data-holding institutions and the private sector on data-sharing benefits.
9	Establish informed consent procedures for data collectors, subjects, and system owners before data sharing	**Enhancing Implementation of Existing Policies**	Consent requirements already exist under the Data Protection and Privacy Act, 2019.
10	Invest adequately in archival systems, maintenance, and secure infrastructure for data preservation	**Enhancing Implementation of Existing Policies**	Falls under existing institutional archival and infrastructure mandates.
11	Recognize and treat long-term data storage as a strategic investment in institutional assets	**Mainstreaming within Existing Policies, Laws and Regulations**	Embedding long-term storage as a strategic investment within existing budgeting practices.
12	Develop systems and strategies to preserve historical data and maintain continued access for legitimate use	**Enhancing Implementation of Existing Policies**	Falls under the existing National Records and Archives Act mandate.
SO 6: To Promote Systems Integration, Coordination, and Data Interoperability			
1	Invest strategically in interoperable data infrastructure with sufficient storage capacity for current and future needs	**Enhancing Implementation of Existing Policies**	Falls under the existing NITA-U interoperability framework.
2	Strengthen the centralized data center and optimize utilization of shared infrastructure across institutions	**Enhancing Implementation of Existing Policies**	Falls under existing National Data Centre mandate under NITA-U.
3	Establish platforms and mechanisms for data sharing and implement effective change management processes (e.g. UgHub adoption)	**Enhancing Implementation of Existing Policies**	UgHub already exists as a platform requiring stronger adoption and change management.
4	Clarify data classification tiers and define institutional jurisdiction over data to eliminate ambiguity	**Introduction of New Policies, Laws and Regulations**	No data-classification/jurisdiction standard currently exists.
5	Develop strong cross-border data-sharing protocols (e.g. AfCFTA digital trade protocols) to enable regional cooperation	**Enhancing Coordination**	Requires cross-border coordination under AfCFTA and regional bodies.

#	Strategic Action	Option Selected	Justification
6	Build trust between institutions and promote active awareness of available datasets and their utility	**Enhancing Coordination**	Requires structured trust-building engagement across institutions.
7	Streamline bureaucratic processes to facilitate timely and efficient access to needed data	**Enhancing Implementation of Existing Policies**	Falls under existing administrative/service-delivery reform mandates.
8	Expand digital platform access to broader population segments to enable widespread data retrieval	**Innovation**	Expanding digital platform access requires new technological and outreach approaches.
9	Build institutional and individual skills to effectively interpret and utilize available data for decision-making	**Enhancing Implementation of Existing Policies**	Falls under existing institutional training and capacity-building mandates.
10	Consolidate, validate, and make quality data publicly available for broader institutional and public access	**Enhancing Implementation of Existing Policies**	Falls under the existing Access to Information Act, 2005 mandate.
SO 7: To Stimulate Demand and Build Support for Evidence-Based Decision-Making			
1	Create widespread awareness of the value of synthetic and generated data for decision-making and strategic planning	**Carryout Awareness Creation/Sensitization**	Addresses limited awareness through information and communication campaigns.
2	Actively promote demand from decision-makers for generated data products (forecasts, scenarios, simulations)	**Carryout Awareness Creation/Sensitization**	Addresses weak demand through targeted sensitization of decision-makers.
3	Allocate adequate budgets and build organizational capacity to implement evidence-based recommendations	**Enhancing Implementation of Existing Policies**	Falls under existing institutional budgeting and planning mandates.
4	Cultivate strong organizational cultures that embrace and reward data-driven approaches	**Mainstreaming within Existing Policies, Laws and Regulations**	Embedding data-driven culture into existing organizational values and practices.
5	Increase strategic investment in open data and data-driven innovation initiatives and projects	**Innovation**	Open data and data-driven innovation initiatives represent new approaches.
6	Establish adequate and attractive incentive structures for innovation and data-driven experimentation **ESTABLISHMENT OF THE GOAL/PURPOSE**	**Introduction of New Policies, Laws and Regulations**	No dedicated incentive structure for data-driven innovation currently exists.

ANNEX 2.1: COST ANALYSIS

Costs, disadvantages and demerits of each option across all seven Strategic Objectives. Total = count of bullet entries. Rank 1 = fewest entries = least costly.

Strategic Objective	Enhancing the Implementation of Existing Policies	Enhancing Coordination	Introduction of New Policies, Laws and Regulations	Innovation	Carryout Awareness Creation/ Sensitization	Mainstreaming within Existing Policies	Amendment of Existing Laws and Regulations	Do Nothing
SO 1: To Develop and Strengthen Computational Infrastructure and Capacity for Effective Data Management								
	• Substantial recurrent budget required to activate existing NITA-U data-centre and backup mandates. • Competing claims on MDA ICT budgets already stretched by service-delivery priorities.	• Negotiating shared infrastructure arrangements with UCC and energy regulators is slow and costly. • Joint procurement arrangements require legal and technical structuring costs.	• Drafting national infrastructure and storage standards requires specialised technical and legal expertise. • New standards trigger compliance retrofit costs across all data-holding institutions.	• High capital cost of artificial intelligence platforms, high-performance computing and cloud resources. • Recurrent licensing, bandwidth and maintenance costs strain institutional budgets. • Rapid technological obsolescence risk on procured equipment and platforms.	• Modest media and outreach costs, but awareness alone cannot fund infrastructure.	• Embedding infrastructure provisions in sector plans carries minimal direct cost.	• Amending the NITA-U Act to strengthen infrastructure mandates requires parliamentary time.	• Continued data loss from system failures, power outages and format obsolescence. • Escalating remediation costs as legacy systems degrade further. • Widening infrastructure gap relative to regional peers raises future catch-up costs.
SO 2: To Build a Highly Skilled and Motivated Workforce for Data Systems Design and Implementation								
	• Recruitment and retention costs fall on the existing Public Service wage bill without new funding. • Training and refresher programmes divert technical staff from operational duties.	• Coordinating curricula with the Ministry of Education, NCHE and universities involves long lead times. • Secretariat and convening costs for joint capacity-building platforms.	• Establishing a data-stewardship certification framework requires new institutional machinery. • New professional requirements impose training and accreditation costs on institutions.	• Specialised trainers in synthetic data generation and simulation modelling are scarce and expensive. • Skills acquired become obsolete quickly, requiring repeated investment.	• Campaign costs are low, but sensitisation alone does not create technical skills.	• Adding data-skills provisions to existing human resource plans is low-cost.	• Limited scope exists for statutory amendment to resolve skills shortages.	• Accelerating brain drain increases future recruitment and training costs. • Persistent errors from untrained collectors impose continuous rework costs. • Institutional memory continues to be lost with every staff departure.
SO 3: To Establish a Comprehensive National Data Policy, Standards, and Implementation Guidelines								
	• Effort spent enforcing partial existing instruments yields limited returns while the policy gap persists.	• Harmonisation with AU and AfCFTA frameworks requires sustained diplomatic and technical engagement. • Multi-agency negotiation to	• Extensive multi-sectoral consultation across all MDAs, private sector, academia and civil society. • Cabinet approval and, where a National Data Act is	• Pilot projects require dedicated ring-fenced funding outside normal budget lines. • Innovation cannot substitute for the statutory standard-	• Sensitisation cannot substitute for the absent policy instrument.	• Aligning the NDP and sector plans requires planning-cycle coordination with the NPA. • Non-binding provisions may require repeated re-	• Harmonising inconsistencies across multiple sector laws is legally complex. • Cabinet and parliamentary processes are	• Duplication across agencies continues to waste scarce public resources. • The policy vacuum deepens, raising the eventual cost of comprehensive reform.

Strategic Objective	Enhancing the Implementation of Existing Policies	Enhancing Coordination	Introduction of New Policies, Laws and Regulations	Innovation	Carryout Awareness Creation/ Sensitization	Mainstreaming within Existing Policies	Amendment of Existing Laws and Regulations	Do Nothing
		resolve overlapping mandates is protracted.	required, a full parliamentary process. • Legal drafting, regulatory impact assessment and costing exercises. • Long lead time defers benefits while preparation costs are incurred upfront.	setting the policy gap requires.		insertion at each planning cycle.	protracted and resource-intensive. • Amendment addresses only existing provisions, leaving fundamental policy gaps unfilled.	• Uganda falls further behind AU and AfCFTA harmonisation timelines.
SO 4: To Strengthen Data Quality Management Systems and Processes								
	• Quality-assurance supervision adds recurrent workload to already backlogged processing units.	• Agreeing common quality standards across sectors requires repeated technical working sessions.	• Developing unified national data-quality standards requires technical committees and pilot testing. • Institutions must re-tool collection instruments to comply with new standards.	• Multi-language processing tools require costly localisation and linguistic expertise. • Automated quality tools require validation against Ugandan datasets before deployment.	• Community outreach costs are minimal relative to quality-system requirements.	• Quality provisions inserted into existing plans at negligible marginal cost.	• Statutory quality standards require drafting and stakeholder consultation. • Institutions face compliance retrofit costs once amended provisions take effect.	• Poor-quality data continues to drive costly programme misallocation. • Manual cleaning and reconciliation continue to consume scarce staff time.
SO 5: To Ensure Full Compliance with Data Protection and Privacy Laws								
	• Encryption, access-control and audit tooling costs are borne by individual institutions.	• Inter-institutional negotiation on data-sharing safeguards consumes scarce legal resources.	• New breach-management and retention protocols require drafting, consultation and rollout. • Compliance costs fall on controllers and processors across the public and private sectors.	• Advanced security technologies carry high procurement and specialist support costs.	• Privacy-awareness campaigns are inexpensive but do not fund security controls.	• Privacy provisions embedded in existing compliance frameworks at low cost.	• Amending the Data Protection and Privacy Act, 2019 requires legal drafting and consultation. • Strengthened enforcement powers imply new supervisory resourcing for the PDPO.	• Avoidable breaches impose financial, legal and reputational costs. • Non-compliance exposure grows under the existing legal framework. • Post-incident remediation costs far exceed the cost of prevention.
SO 6: To Promote Systems Integration, Coordination, and Data Interoperability								
	• UgHub onboarding and change-management costs recur across many MDAs.	• MOU negotiation, secretariat staffing and dispute resolution costs across many institutions. • Coordination cannot compel	• Data-classification and jurisdiction rules require extensive inter-agency negotiation. • System re-architecture is needed to meet new	• Building new interoperability platforms risks duplicating investment already made in UgHub. • Integration engineering costs	• Publicising available datasets is cheap but does not achieve technical integration.	• Interoperability language added to sector plans with minimal expense.	• Amending laws to mandate interoperability requires cross-ministerial agreement. • Transitional compliance costs	• Fragmented systems continue to multiply integration costs over time. • Duplicated data collection persists across institutions at public expense.

Strategic Objective	Enhancing the Implementation of Existing Policies	Enhancing Coordination	Introduction of New Policies, Laws and Regulations	Innovation	Carryout Awareness Creation/ Sensitization	Mainstreaming within Existing Policies	Amendment of Existing Laws and Regulations	Do Nothing
		compliance, so costs recur without guaranteed results.	interoperability requirements.	across heterogeneous legacy systems are substantial.			arise during the amendment period.	
SO 7: To Stimulate Demand and Build Support for Evidence-Based Decision-Making								
	• Sustained internal advocacy is required to shift entrenched decision-making habits.	• Convening decision-makers across sectors repeatedly to build demand is resource-intensive.	• Designing statutory incentive structures requires fiscal analysis and Treasury concurrence. • New reporting obligations add administrative burden on implementing institutions.	• Forecasting and simulation tools require sustained funding before demand is proven. • Risk of sunk cost if decision-makers do not adopt the generated outputs.	• Lowest-cost route to building demand, using existing Government communication channels.	• Embedding evidence-use requirements in performance frameworks is inexpensive.	• Statutory incentive provisions require Treasury and legislative concurrence.	• Resources continue to be allocated without evidence, wasting public expenditure. • Returns on existing investments in data systems remain unrealised.
Total Entries (Score)	**9**	**11**	**16**	**14**	**7**	**8**	**12**	**18**
Rank	**3**	**4**	**7**	**6**	**1**	**2**	**5**	**8**

ANNEX 2.2: BENEFITS ANALYSIS

Advantages, merits and benefits of each option across all seven Strategic Objectives. Total = count of bullet entries. Rank 1 = most entries = greatest benefit.

Strategic Objective	Enhancing the Implementation of Existing Policies	Enhancing Coordination	Introduction of New Policies, Laws and Regulations	Innovation	Carryout Awareness Creation/ Sensitization	Mainstreaming within Existing Policies	Amendment of Existing Laws and Regulations	Do Nothing
SO 1: To Develop and Strengthen Computational Infrastructure and Capacity for Effective Data Management								
	• Activates existing NITA-U mandates immediately without new legal authority. • Uses the established National Data Centre rather than building parallel capacity. • Delivers visible infrastructure improvements within current budget cycles.	• Unlocks shared infrastructure investment across institutions. • Aligns energy and connectivity planning with data-system requirements.	• Establishes binding national standards for data-centre, storage and archival infrastructure. • Creates a legal basis for sustained budget allocation to data infrastructure.	• Introduces AI and machine-learning capability for large-scale data generation. • Enables modern cloud and high-performance computing approaches.	• Builds public understanding of why data infrastructure investment matters.	• Secures infrastructure provisions in the NDP and sector plans.	• Strengthens NITA-U's statutory mandate over infrastructure and archival standards.	—
SO 2: To Build a Highly Skilled and Motivated Workforce for Data Systems Design and Implementation								
	• Scales recruitment within existing Public Service establishment structures. • Leverages existing training institutions and capacity-building mandates. • Improves retention through existing HR policy levers.	• Aligns university and NCHE curricula with national data-skills needs. • Enables joint training programmes across institutions at lower unit cost.	• Establishes a recognised data-stewardship certification and career pathway. • Creates statutory incentives for retention of scarce data professionals.	• Builds cutting-edge synthetic data and simulation-modelling skills. • Attracts younger technical talent into the public data workforce.	• Raises data literacy across the workforce and general population. • Improves collector understanding of the purpose of data collection.	• Anchors data-skills development in existing HR and planning frameworks.	• Provides statutory backing for professional data-stewardship requirements. • Strengthens intellectual property protection, incentivising research and data creation.	—
SO 3: To Establish a Comprehensive National Data Policy, Standards, and Implementation Guidelines								
	• Strengthens enforcement of the instruments Uganda already has. • Demonstrates institutional seriousness ahead of comprehensive policy reform.	• Accelerates harmonisation with AU and AfCFTA frameworks. • Reduces duplicative collection by aligning agency work programmes.	• Fills the central structural gap by creating a comprehensive national data policy. • Establishes unified standards for generation, collection, formats, terminology and identifiers.	• Pilot projects generate the evidence base for future policy design.	• Builds the constituency of support needed for policy adoption.	• Provides an interim vehicle for data priorities pending policy enactment. • Uses planning instruments already accepted across Government.	• Removes inconsistencies among sector laws with legally binding effect. • Permanently eliminates overlapping and clashing institutional mandates.	—

Strategic Objective	Enhancing the Implementation of Existing Policies	Enhancing Coordination	Introduction of New Policies, Laws and Regulations	Innovation	Carryout Awareness Creation/ Sensitization	Mainstreaming within Existing Policies	Amendment of Existing Laws and Regulations	Do Nothing
			• Assigns clear institutional ownership and accountability for translating data into policy. • Provides binding retention, archival and deletion protocols across Government.				• Creates enforceable clarity that coordination alone cannot deliver.	
SO 4: To Strengthen Data Quality Management Systems and Processes								
	• Applies existing quality-assurance mandates of UBOS across sectors. • Reduces processing backlogs through better resourcing of existing units.	• Builds cross-sector consensus on common quality definitions.	• Standardises definitions of what to measure across health, education and agriculture. • Makes data-quality compliance enforceable rather than discretionary. • Enables meaningful cross-sectoral comparison of data for the first time.	• Automates error detection and cleaning, reducing manual effort. • Provides tools to handle multi-language data more effectively.	• Increases community buy-in and willingness to provide accurate data.	• Embeds quality requirements in institutional performance frameworks.	• Gives statutory force to data-quality and documentation obligations. • Makes non-compliance with quality standards legally actionable.	—
SO 5: To Ensure Full Compliance with Data Protection and Privacy Laws								
	• Operationalises anonymisation and consent duties already in the 2019 Act. • Improves access controls and audit trails using existing security mandates.	• Builds inter-institutional trust needed for safe data sharing.	• Closes gaps left by existing law on retention, deletion and cross-border transfer. • Provides legal certainty to controllers, processors and data subjects alike. • Establishes standardised breach-management obligations nationally.	• Deploys advanced encryption and anomaly-detection capability.	• Improves privacy culture among data collectors and data subjects.	• Integrates privacy compliance into routine institutional planning.	• Strengthens PDPO enforcement powers and breach-notification duties. • Clarifies lawful bases for data sharing, unlocking currently blocked flows. • Provides court-enforceable protection for data subjects.	—
SO 6: To Promote Systems Integration, Coordination, and Data Interoperability								

Strategic Objective	Enhancing the Implementation of Existing Policies	Enhancing Coordination	Introduction of New Policies, Laws and Regulations	Innovation	Carryout Awareness Creation/ Sensitization	Mainstreaming within Existing Policies	Amendment of Existing Laws and Regulations	Do Nothing
	• Accelerates UgHub adoption using NITA-U's existing interoperability framework. • Optimises utilisation of the existing centralised data centre.	• Directly addresses siloed systems through structured joint working. • Improves awareness of, and access to, datasets held by other institutions. • Enables shared use of the national data centre and common infrastructure.	• Mandates interoperability, moving adoption from voluntary to obligatory. • Establishes clear data-classification tiers and institutional jurisdiction.	• Expands digital platform access for data retrieval by more users.	• Publicises available datasets, increasing their utilisation.	• Places interoperability on the agenda of every sector plan.	• Creates a statutory duty to share and interoperate, ending data hoarding. • Establishes legal authority for cross-border data-sharing protocols.	—
SO 7: To Stimulate Demand and Build Support for Evidence-Based Decision-Making								
	• Builds institutional demand through existing planning and budgeting processes. • Improves monitoring of whether applied insights change outcomes.	• Creates joint forums where evidence reaches multiple decision-makers at once.	• Creates durable statutory incentives for data-driven innovation and experimentation. • Embeds evidence-based decision-making as a legal requirement, not a preference.	• Produces forecasts, scenarios and simulations that stimulate demand for evidence.	• Directly stimulates decision-maker demand for evidence and analysis.	• Makes evidence use a standing element of performance assessment. • Builds cumulative institutional habit across successive planning cycles.	• Anchors incentives for data-driven practice in enforceable law.	—
Total Entries (Score)	**16**	**12**	**18**	**10**	**8**	**9**	**14**	**0**
Rank	**2**	**4**	**1**	**5**	**7**	**6**	**3**	**8**

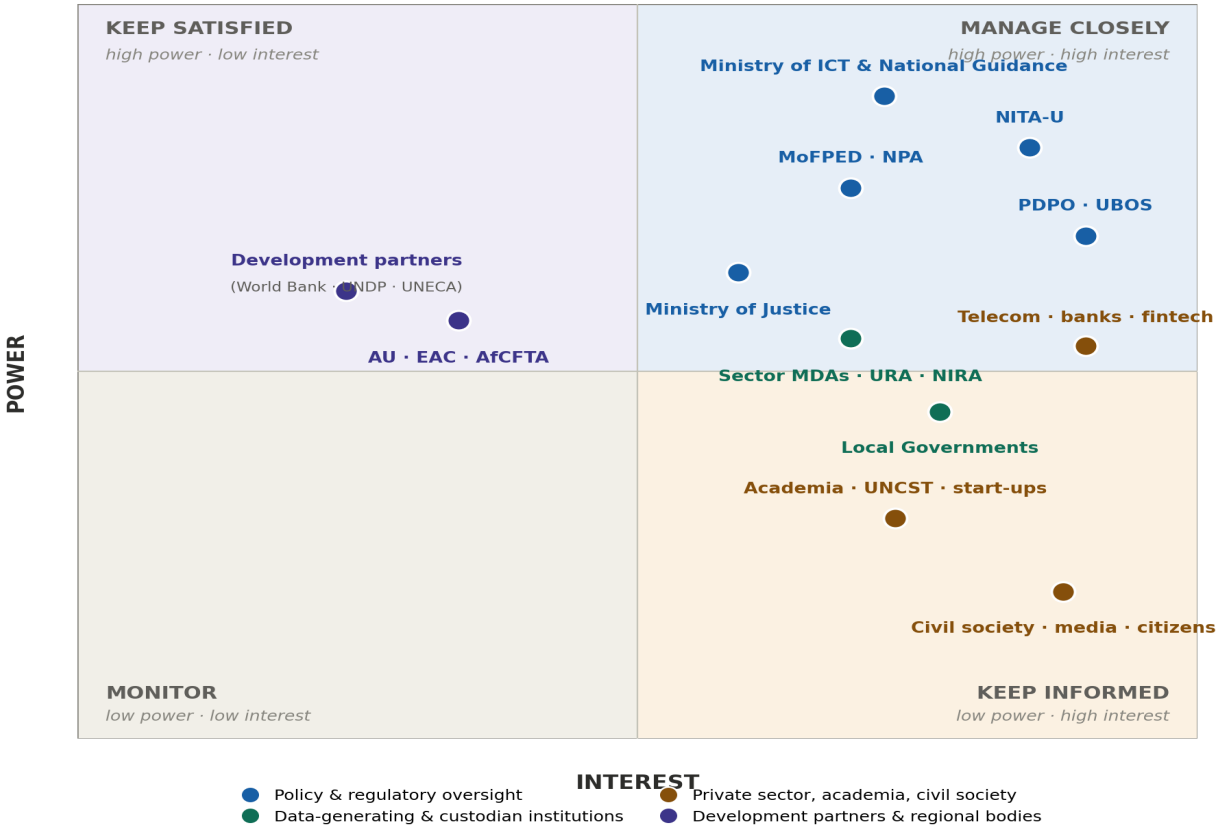
ANNEX 2.3.1: STAKEHOLDERS IN UGANDA'S DATA ECOSYSTEM

Stakeholder mapping and Power-Interest Matrix for Uganda's data ecosystem.

Stakeholder Category	Key Institutions	Power	Interest	Role / Stake in Data
Policy and Regulatory Oversight (Government)	Ministry of ICT and National Guidance; NITA-U; Personal Data Protection Office; Uganda Bureau of Statistics; Ministry of Finance, Planning and Economic Development; National Planning Authority; Ministry of Justice and Constitutional Affairs; Ministry of ICT& National Guidance; Ministry of Energy and Mineral Development	High	High	Set and enforce national data policy, standards and compliance; own the reform agenda.
Data-Generating and Custodian Institutions	Sector Ministries, Departments and Agencies; Local Governments; Uganda Revenue Authority; National Identification and Registration Authority; Ministry of Health; Ministry of Education and Sports; MAAIF	Medium	High	Create, collect, store and use the majority of Uganda's administrative data.
Private Sector and Professional Bodies	Telecommunications companies; financial technology firms; commercial banks; data and IT professional associations; Private Sector Foundation Uganda	Medium	High	Generate large volumes of transactional data; affected by compliance and data-sharing rules.
Academia, Research and Innovation Actors	Uganda National Council for Science and Technology; universities; research institutions; technology start-ups and innovation hubs	Low	High	Generate experimental and research data; depend on access to quality data for innovation.
Civil Society, Media and Citizens/Data Subjects	Civil society organisations; media houses; community groups; individual citizens as data subjects	Low	High	Provide personal data; bear the consequences of breaches and poor service delivery.
Development Partners and Regional/Continental Bodies	UNECA; World Bank; UNDP; African Union; East African Community; AfCFTA Secretariat	Medium	Medium	Fund and technically support data systems; set regional harmonisation frameworks.

Power-Interest Matrix

The matrix maps each stakeholder group by its power to shape data governance (vertical axis) and its interest in the outcome (horizontal axis), yielding four engagement strategies.



Reading the matrix: The concentration of the Ministry of ICT, NITA-U, PDPO and UBOS in the "manage closely" quadrant (high power, high interest) confirms why lead responsibility for the reform agenda rests with them. Development partners sit in "keep satisfied" — high leverage through funding, lower day-to-day interest. Citizens, academia and civil society fall into "keep informed": highly affected but with limited formal power, which is the gap the data-literacy campaign and open-data measures are designed to close.

ANNEX 2.3.2: POSITIVE IMPACTS AND DISTRIBUTION OF IMPACTS ANALYSIS

Positive changes generated under each option and their distribution across identified stakeholders. Total = count of bullet entries. Rank 1 = most entries = greatest positive impact.

Strategic Objective	Enhancing the Implementation of Existing Policies	Enhancing Coordination	Introduction of New Policies, Laws and Regulations	Innovation	Carryout Awareness Creation/ Sensitization	Mainstreaming within Existing Policies	Amendment of Existing Laws and Regulations	Do Nothing
SO 1: To Develop and Strengthen Computational Infrastructure and Capacity for Effective Data Management								
	• Data custodian institutions gain improved storage, backup and archival capacity quickly. • Citizens benefit from more reliable digital public services. • NITA-U's existing National Data Centre mandate is finally fully utilised.	• Energy and communications regulators align planning with data-system needs. • Institutions gain access to shared infrastructure they could not fund alone.	• Data-generating institutions gain enforceable infrastructure and storage standards. • Development partners gain a credible framework for infrastructure financing.	• Technologically advanced institutions gain AI and high-performance computing capability. • Start-ups and technology firms gain opportunities in data-generation tooling.	• Citizens better understand and support public investment in data infrastructure.	• Infrastructure needs gain standing recognition in the NDP and sector plans.	• NITA-U gains a strengthened statutory mandate over infrastructure standards.	—
SO 2: To Build a Highly Skilled and Motivated Workforce for Data Systems Design and Implementation								
	• Public service institutions gain additional trained data staff within existing structures. • Existing training institutions gain increased utilisation and relevance.	• Universities and NCHE align training output with national data-skills demand. • Institutions gain access to pooled training resources.	• Data professionals gain a recognised certification and career pathway. • Academia gains a clear national benchmark for curriculum design.	• Young technical professionals gain exposure to frontier data skills. • Academia gains access to advanced modelling and simulation methods.	• The general population gains improved digital and data literacy. • Data collectors better understand the purpose and value of their work.	• Data-skills development becomes a routine element of HR planning.	• Researchers and innovators benefit from stronger intellectual property protection.	—
SO 3: To Establish a Comprehensive National Data Policy, Standards, and Implementation Guidelines								
	• Regulatory bodies demonstrate visible progress using instruments already in force. • Government gains momentum and credibility ahead of comprehensive policy reform.	• Agencies with overlapping mandates reduce duplication of collection effort. • Uganda strengthens its standing with AU and AfCFTA partners.	• All six stakeholder categories gain unified national data standards for the first time. • Policy and regulatory bodies gain clear, non-overlapping mandates. • Citizens and data subjects gain enforceable retention and deletion protections. • Regional and continental bodies	• Pilot initiatives generate practical evidence to inform future policy.	• A broad constituency of support is built for policy adoption.	• Data priorities gain an interim vehicle pending policy enactment. • Planning institutions adopt data considerations as standard practice.	• Institutions gain permanent, court-enforceable clarity on mandates. • Sector regulators operate under harmonised rather than conflicting law. • Citizens benefit from a coherent legal framework governing their data.	—

Strategic Objective	Enhancing the Implementation of Existing Policies	Enhancing Coordination	Introduction of New Policies, Laws and Regulations	Innovation	Carryout Awareness Creation/ Sensitization	Mainstreaming within Existing Policies	Amendment of Existing Laws and Regulations	Do Nothing
			gain an aligned Ugandan counterpart framework.					
SO 4: To Strengthen Data Quality Management Systems and Processes								
	• UBOS and sector MDAs achieve measurable improvement in data reliability. • Programme managers gain data fit for planning and monitoring.	• Sector MDAs converge on common quality definitions and instruments. • Communities face fewer repeated and duplicative data requests.	• Sector MDAs gain standardised definitions enabling cross-sector comparison. • Citizens benefit from programmes designed on comparable, reliable data. • Researchers gain consistent datasets suitable for rigorous analysis.	• Processing units gain automated error detection, reducing manual burden. • Communities using local languages are better served by localised tools.	• Communities become more willing to provide accurate and complete data.	• Quality requirements enter institutional performance frameworks.	• Data controllers face legally binding quality and documentation duties. • Data users gain recourse where quality standards are breached.	—
SO 5: To Ensure Full Compliance with Data Protection and Privacy Laws								
	• Data subjects gain better protection through enforcement of the 2019 Act. • Institutions reduce breach exposure using existing security mandates.	• Institutions build the mutual trust required for lawful data sharing.	• Data subjects gain durable statutory privacy protection beyond current gaps. • Private-sector controllers gain legal certainty on lawful processing.	• Institutions gain advanced encryption and anomaly-detection capability.	• Data subjects better understand their privacy rights under the 2019 Act. • Collectors and processors internalise stronger privacy practice.	• Privacy compliance becomes part of routine institutional planning.	• The PDPO gains strengthened enforcement and breach-notification powers. • Data subjects gain court-enforceable remedies for privacy violations.	—
SO 6: To Promote Systems Integration, Coordination, and Data Interoperability								
	• MDAs gain faster data exchange through accelerated UgHub adoption. • Shared national infrastructure achieves better value for money.	• Siloed institutions gain structured channels for systematic data exchange. • Researchers and analysts gain visibility of datasets held elsewhere. • The national data centre and shared infrastructure are better utilised.	• All institutions gain a binding duty to interoperate, ending data hoarding. • Private sector gains predictable rules for cross-border data flows.	• Previously excluded users gain digital access to public datasets.	• Institutions and the public become aware of datasets already available.	• Interoperability appears on the agenda of every sector plan.	• Institutions acquire a statutory duty to share data, ending hoarding.	—
SO 7: To Stimulate Demand and Build Support for Evidence-Based Decision-Making								

Strategic Objective	Enhancing the Implementation of Existing Policies	Enhancing Coordination	Introduction of New Policies, Laws and Regulations	Innovation	Carryout Awareness Creation/ Sensitization	Mainstreaming within Existing Policies	Amendment of Existing Laws and Regulations	Do Nothing
	• Decision-makers receive better-quality evidence through existing planning processes. • Development partners see improved absorption and accountability.	• Decision-makers across sectors are exposed to evidence through joint forums.	• Innovators and researchers gain durable statutory incentives. • Decision-makers face an enforceable expectation to use evidence.	• Planners gain forecasts and scenarios that make evidence tangible.	• Decision-makers are directly sensitised to the value of evidence.	• Evidence use becomes a standing element of performance assessment.	• Incentives for evidence-based practice acquire binding legal force.	—
Total Entries (Score)	**15**	**13**	**17**	**10**	**9**	**8**	**11**	**0**
Rank	**2**	**3**	**1**	**5**	**6**	**7**	**4**	**8**

ANNEX 2.3.3: NEGATIVE IMPACTS AND DISTRIBUTION OF IMPACTS ANALYSIS

Adverse consequences of each option and their distribution across identified stakeholders. Total = count of bullet entries. Rank 1 = fewest entries = least negative impact.

Strategic Objective	Enhancing the Implementation of Existing Policies	Enhancing Coordination	Introduction of New Policies, Laws and Regulations	Innovation	Carryout Awareness Creation/ Sensitization	Mainstreaming within Existing Policies	Amendment of Existing Laws and Regulations	Do Nothing
SO 1: To Develop and Strengthen Computational Infrastructure and Capacity for Effective Data Management								
	• Short-term resource strain on MDA budgets already committed elsewhere. • Diverts technical staff from routine service delivery during rollout.	• Dependence on partner institutions outside the data sector slows delivery. • No single institution is accountable for infrastructure outcomes.	• Retrofit to new standards disrupts institutions mid-cycle. • Institutions unable to comply face reputational and legal exposure.	• High capital outlay risks stranded assets if technology shifts. • Dependence on foreign vendors and proprietary platforms. • Advanced systems exceed the maintenance capacity of many institutions.	• Raises expectations of infrastructure improvement that awareness alone cannot deliver.	• Infrastructure provisions in plans remain unfunded and unenforceable.	• Transitional uncertainty for institutions during the amendment period. • Piecemeal amendment risks leaving residual gaps between statutes.	• Continued data loss and corruption across institutions. • Infrastructure degrades further, compounding future costs. • Uganda falls further behind regional data infrastructure standards.
SO 2: To Build a Highly Skilled and Motivated Workforce for Data Systems Design and Implementation								
	• Intensified training schedules temporarily reduce operational staff availability.	• Curriculum alignment depends on institutions with their own priorities. • Coordination fatigue reduces sustained engagement over time.	• Certification requirements may exclude experienced but uncertified staff.	• Benefits concentrate among already well-resourced institutions. • Newly trained specialists become more attractive to overseas recruiters.	• Risks being mistaken for substantive skills development.	• Skills provisions may be deprioritised against competing plan objectives.	• Limited capacity of amendment to address underlying skills shortages. • Statutory change alone does not build the workforce it presupposes.	• Brain drain accelerates as professionals see no institutional commitment. • Data literacy gaps widen across Government and the population. • Institutional memory continues to be lost with each departure.
SO 3: To Establish a Comprehensive National Data Policy, Standards, and Implementation Guidelines								
	• Effort may be wasted where existing instruments are fundamentally inadequate.	• Diffuse accountability where no institution holds an overarching mandate. • Agreements are voluntary and cannot compel compliance.	• Extended institutional uncertainty during the long development process. • Interim period leaves existing gaps unaddressed while attention shifts.	• Pilots may proliferate without translating into systemic policy change. • Experimentation cannot substitute for the absent statutory framework.	• May create an impression of action while the policy gap remains unaddressed.	• Creates a false impression of progress while the policy gap persists. • Provisions can be quietly dropped at the next planning cycle.	• Prolonged parliamentary process delays relief from conflicting mandates. • Amendment leaves fundamental policy gaps unaddressed.	• Duplication, overlapping mandates and confusion persist indefinitely. • Uganda remains unaligned with AU and AfCFTA frameworks. • The absence of standards entrenches

Strategic Objective	Enhancing the Implementation of Existing Policies	Enhancing Coordination	Introduction of New Policies, Laws and Regulations	Innovation	Carryout Awareness Creation/ Sensitization	Mainstreaming within Existing Policies	Amendment of Existing Laws and Regulations	Do Nothing
								fragmentation across sectors.
SO 4: To Strengthen Data Quality Management Systems and Processes								
	• Additional quality checks may temporarily slow data release.	• Consensus-based standards risk being diluted to the lowest common denominator.	• Institutions face significant re-tooling of collection instruments.	• Automated tools may embed undetected bias in processed data. • Reliance on tools may mask rather than resolve collection weaknesses.	• Community goodwill may erode if improved data provision yields no visible benefit.	• Quality commitments in plans lack enforcement mechanisms. • Institutions may report inclusion without changing collection practice.	• Compliance retrofit imposes short-term burden on data controllers. • Institutions unable to meet new statutory standards face exposure.	• Unreliable data continues to misdirect programmes and resources. • Communities lose confidence after repeated fruitless data collection.
SO 5: To Ensure Full Compliance with Data Protection and Privacy Laws								
	• Tighter access controls may initially impede legitimate internal users.	• Information shared across institutions widens the exposure surface.	• Compliance burden falls heavily on smaller controllers and processors.	• New technologies expand the attack surface for cyber threats. • Security tooling may outpace institutional capacity to operate it.	• Heightened privacy awareness without stronger controls may reduce willingness to share data.	• Privacy provisions may be treated as aspirational rather than binding. • Institutions may claim compliance without substantive change.	• Stricter enforcement may initially deter legitimate data sharing. • Smaller institutions face disproportionate compliance costs.	• Data subjects remain exposed to avoidable breaches and misuse. • Non-compliance exposure grows for institutions under existing law. • Public trust in Government data handling continues to erode.
SO 6: To Promote Systems Integration, Coordination, and Data Interoperability								
	• UgHub onboarding causes temporary disruption to existing workflows.	• Coordination without statutory backing leaves data hoarding unresolved. • Multiple reporting lines obscure responsibility for failures.	• Mandatory classification and integration strain legacy institutions.	• Digital-only platforms risk excluding rural and less literate populations. • Parallel innovation may further fragment the systems landscape.	• Publicising datasets that remain practically inaccessible may cause frustration.	• Interoperability language does not compel technical integration.	• Mandated interoperability may strain institutions with legacy systems.	• Siloed systems continue to block evidence from reaching decisions. • Citizens continue to supply the same data repeatedly to different agencies.
SO 7: To Stimulate Demand and Build Support for Evidence-Based Decision-Making								
	• Increased reporting demands add short-term burden on institutions.	• Joint forums may generate discussion without decision.	• New obligations may be resisted by institutions already overstretched.	• Sophisticated outputs may not be understood or trusted by decision-makers.	• Stimulating demand for evidence that institutions cannot yet supply risks disappointment.	• Evidence-use provisions carry no consequence for non-compliance.	• Statutory incentives may be captured by better-resourced institutions.	• Public resources continue to be allocated without supporting evidence.

Strategic Objective	Enhancing the Implementation of Existing Policies	Enhancing Coordination	Introduction of New Policies, Laws and Regulations	Innovation	Carryout Awareness Creation/ Sensitization	Mainstreaming within Existing Policies	Amendment of Existing Laws and Regulations	Do Nothing
Total Entries (Score)	**8**	**11**	**9**	**14**	**7**	**10**	**12**	**17**
Rank	**2**	**5**	**3**	**7**	**1**	**4**	**6**	**8**

ANNEX 2.3.4: EASE OF IMPLEMENTATION/ENFORCEMENT ANALYSIS

Assessment of implementation difficulty under each option across all seven Strategic Objectives. Each SO cell shows a per-SO rank (1 = easiest, 8 = hardest) with justification; Total = sum of the seven per-SO ranks; Final Rank 1 = easiest overall.

Strategic Objective	Enhancing the Implementation of Existing Policies	Enhancing Coordination	Introduction of New Policies, Laws and Regulations	Innovation	Carryout Awareness Creation/ Sensitization	Mainstreaming within Existing Policies	Amendment of Existing Laws and Regulations	Do Nothing
SO 1: To Develop and Strengthen Computational Infrastructure and Capacity for Effective Data Management	**2** — Uses existing NITA-U, UBOS and MDA mandates, so actions can begin at once, though sustained resourcing across many institutions is required.	**4** — Requires negotiated Memoranda of Understanding and joint working groups, but no new legal instrument or parliamentary process.	**3** — Once enacted, a single comprehensive instrument provides one clear implementation vehicle and legal mandate for all institutions, removing the need to align disparate instruments; the preparation stage, though demanding, is a one-off.	**6** — Requires specialised technical capacity, procurement and piloting that few institutions currently possess.	**1** — Deployable immediately through existing Government communication channels with no legal or technical prerequisite.	**5** — Requires alignment with National Development Plan and sector planning cycles across many institutions, with no power to compel action.	**7** — The parliamentary process for amending several separate sector laws is protracted and must be coordinated instrument by instrument.	**8** — Requires no effort, but cannot implement or enforce any improvement whatsoever.
SO 2: To Build a Highly Skilled and Motivated Workforce for Data Systems Design and Implementation	**2** — Uses existing NITA-U, UBOS and MDA mandates, so actions can begin at once, though sustained resourcing across many institutions is required.	**5** — Requires negotiated Memoranda of Understanding and joint working groups, but no new legal instrument or parliamentary process.	**3** — Once enacted, a single comprehensive instrument provides one clear implementation vehicle and legal mandate for all institutions, removing the need to align disparate instruments; the preparation stage, though demanding, is a one-off.	**6** — Requires specialised technical capacity, procurement and piloting that few institutions currently possess.	**1** — Deployable immediately through existing Government communication channels with no legal or technical prerequisite.	**4** — Requires alignment with National Development Plan and sector planning cycles across many institutions, with no power to compel action.	**7** — The parliamentary process for amending several separate sector laws is protracted and must be coordinated instrument by instrument.	**8** — Requires no effort, but cannot implement or enforce any improvement whatsoever.
SO 3: To Establish a Comprehensive National Data Policy, Standards, and Implementation Guidelines	**2** — Uses existing NITA-U, UBOS and MDA mandates, so actions can begin at once, though sustained resourcing across many institutions is required.	**5** — Requires negotiated Memoranda of Understanding and joint working groups, but no new legal instrument or parliamentary process.	**3** — Once enacted, a single comprehensive instrument provides one clear implementation vehicle and legal mandate for all institutions, removing the need to align disparate instruments; the preparation stage, though demanding, is a one-off.	**6** — Requires specialised technical capacity, procurement and piloting that few institutions currently possess.	**1** — Deployable immediately through existing Government communication channels with no legal or technical prerequisite.	**4** — Requires alignment with National Development Plan and sector planning cycles across many institutions, with no power to compel action.	**7** — The parliamentary process for amending several separate sector laws is protracted and must be coordinated instrument by instrument.	**8** — Requires no effort, but cannot implement or enforce any improvement whatsoever.

Strategic Objective	Enhancing the Implementation of Existing Policies	Enhancing Coordination	Introduction of New Policies, Laws and Regulations	Innovation	Carryout Awareness Creation/ Sensitization	Mainstreaming within Existing Policies	Amendment of Existing Laws and Regulations	Do Nothing
SO 4: To Strengthen Data Quality Management Systems and Processes	**2** — Uses existing NITA-U, UBOS and MDA mandates, so actions can begin at once, though sustained resourcing across many institutions is required.	**4** — Requires negotiated Memoranda of Understanding and joint working groups, but no new legal instrument or parliamentary process.	**3** — Once enacted, a single comprehensive instrument provides one clear implementation vehicle and legal mandate for all institutions, removing the need to align disparate instruments; the preparation stage, though demanding, is a one-off.	**7** — Requires specialised technical capacity, procurement and piloting that few institutions currently possess.	**1** — Deployable immediately through existing Government communication channels with no legal or technical prerequisite.	**5** — Requires alignment with National Development Plan and sector planning cycles across many institutions, with no power to compel action.	**6** — The parliamentary process for amending several separate sector laws is protracted and must be coordinated instrument by instrument.	**8** — Requires no effort, but cannot implement or enforce any improvement whatsoever.
SO 5: To Ensure Full Compliance with Data Protection and Privacy Laws	**2** — Uses existing NITA-U, UBOS and MDA mandates, so actions can begin at once, though sustained resourcing across many institutions is required.	**4** — Requires negotiated Memoranda of Understanding and joint working groups, but no new legal instrument or parliamentary process.	**3** — Once enacted, a single comprehensive instrument provides one clear implementation vehicle and legal mandate for all institutions, removing the need to align disparate instruments; the preparation stage, though demanding, is a one-off.	**7** — Requires specialised technical capacity, procurement and piloting that few institutions currently possess.	**1** — Deployable immediately through existing Government communication channels with no legal or technical prerequisite.	**5** — Requires alignment with National Development Plan and sector planning cycles across many institutions, with no power to compel action.	**6** — The parliamentary process for amending several separate sector laws is protracted and must be coordinated instrument by instrument.	**8** — Requires no effort, but cannot implement or enforce any improvement whatsoever.
SO 6: To Promote Systems Integration, Coordination, and Data Interoperability	**2** — Uses existing NITA-U, UBOS and MDA mandates, so actions can begin at once, though sustained resourcing across many institutions is required.	**4** — Requires negotiated Memoranda of Understanding and joint working groups, but no new legal instrument or parliamentary process.	**3** — Once enacted, a single comprehensive instrument provides one clear implementation vehicle and legal mandate for all institutions, removing the need to align disparate instruments; the preparation stage, though demanding, is a one-off.	**6** — Requires specialised technical capacity, procurement and piloting that few institutions currently possess.	**1** — Deployable immediately through existing Government communication channels with no legal or technical prerequisite.	**5** — Requires alignment with National Development Plan and sector planning cycles across many institutions, with no power to compel action.	**7** — The parliamentary process for amending several separate sector laws is protracted and must be coordinated instrument by instrument.	**8** — Requires no effort, but cannot implement or enforce any improvement whatsoever.
SO 7: To Stimulate Demand and Build Support for	**2** — Uses existing NITA-U, UBOS and MDA mandates, so actions can begin at once, though sustained resourcing across many	**4** — Requires negotiated Memoranda of Understanding and joint working groups, but no new legal instrument or	**3** — Once enacted, a single comprehensive instrument provides one clear implementation vehicle and legal mandate for all	**6** — Requires specialised technical capacity, procurement and piloting that few	**1** — Deployable immediately through existing Government communication channels with no legal	**5** — Requires alignment with National Development Plan and sector planning cycles across many institutions,	**7** — The parliamentary process for amending several separate sector laws is protracted and must be coordinated	**8** — Requires no effort, but cannot implement or enforce any improvement whatsoever.

Strategic Objective	Enhancing the Implementation of Existing Policies	Enhancing Coordination	Introduction of New Policies, Laws and Regulations	Innovation	Carryout Awareness Creation/ Sensitization	Mainstreaming within Existing Policies	Amendment of Existing Laws and Regulations	Do Nothing
Evidence-Based Decision-Making	institutions is required.	parliamentary process.	institutions, removing the need to align disparate instruments; the preparation stage, though demanding, is a one-off.	institutions currently possess.	or technical prerequisite.	with no power to compel action.	instrument by instrument.	
Total Ranks	**14**	**30**	**21**	**44**	**7**	**33**	**47**	**56**
Final Rank	**2**	**4**	**3**	**6**	**1**	**5**	**7**	**8**

ANNEX 2.3.5: EASE OF MONITORING AND EVALUATION ANALYSIS

Assessment of monitoring and evaluation difficulty under each option across all seven Strategic Objectives. Each SO cell shows a per-SO rank (1 = easiest, 8 = hardest) with justification; Total = sum of the seven per-SO ranks; Final Rank 1 = easiest overall.

Strategic Objective	Enhancing the Implementation of Existing Policies	Enhancing Coordination	Introduction of New Policies, Laws and Regulations	Innovation	Carryout Awareness Creation/ Sensitization	Mainstreaming within Existing Policies	Amendment of Existing Laws and Regulations	Do Nothing
SO 1: To Develop and Strengthen Computational Infrastructure and Capacity for Effective Data Management	**2** — Progress is trackable through existing institutional performance and budget-execution reports already produced routinely.	**4** — Monitorable through joint secretariat reporting, though multiple reporting lines partially obscure accountability.	**3** — A single enacted instrument yields clear, centrally-defined statutory indicators (adoption rates, standards issued, compliance levels) reported through one accountable framework once operational.	**7** — Hard to monitor: experimental and rapidly evolving technologies resist stable indicators, and pilot success criteria vary.	**1** — Directly measurable through attendance records, media-reach statistics and data-literacy survey data.	**5** — Plan inclusion is easy to verify, but actual implementation of plan provisions is not systematically reported.	**6** — Indicators are measurable once amended provisions take effect, but impact appears slowly and is spread across several separate statutes.	**8** — There is no intervention to monitor or evaluate.
SO 2: To Build a Highly Skilled and Motivated Workforce for Data Systems Design and Implementation	**2** — Progress is trackable through existing institutional performance and budget-execution reports already produced routinely.	**5** — Monitorable through joint secretariat reporting, though multiple reporting lines partially obscure accountability.	**3** — A single enacted instrument yields clear, centrally-defined statutory indicators (adoption rates, standards issued, compliance levels) reported through one accountable framework once operational.	**7** — Hard to monitor: experimental and rapidly evolving technologies resist stable indicators, and pilot success criteria vary.	**1** — Directly measurable through attendance records, media-reach statistics and data-literacy survey data.	**4** — Plan inclusion is easy to verify, but actual implementation of plan provisions is not systematically reported.	**6** — Indicators are measurable once amended provisions take effect, but impact appears slowly and is spread across several separate statutes.	**8** — There is no intervention to monitor or evaluate.
SO 3: To Establish a Comprehensive National Data Policy, Standards, and Implementation Guidelines	**2** — Progress is trackable through existing institutional performance and budget-execution reports already produced routinely.	**5** — Monitorable through joint secretariat reporting, though multiple reporting lines partially obscure accountability.	**3** — A single enacted instrument yields clear, centrally-defined statutory indicators (adoption rates, standards issued, compliance levels) reported through one accountable framework once operational.	**7** — Hard to monitor: experimental and rapidly evolving technologies resist stable indicators, and pilot success criteria vary.	**1** — Directly measurable through attendance records, media-reach statistics and data-literacy survey data.	**4** — Plan inclusion is easy to verify, but actual implementation of plan provisions is not systematically reported.	**6** — Indicators are measurable once amended provisions take effect, but impact appears slowly and is spread across several separate statutes.	**8** — There is no intervention to monitor or evaluate.
SO 4: To Strengthen Data Quality Management Systems and Processes	**2** — Progress is trackable through existing institutional performance and budget-execution	**4** — Monitorable through joint secretariat reporting, though multiple reporting lines	**3** — A single enacted instrument yields clear, centrally-defined statutory indicators (adoption rates, standards issued, compliance	**6** — Hard to monitor: experimental and rapidly evolving technologies resist stable indicators, and	**1** — Directly measurable through attendance records, media-reach statistics and data-literacy survey data.	**5** — Plan inclusion is easy to verify, but actual implementation of plan provisions is not systematically reported.	**7** — Indicators are measurable once amended provisions take effect, but impact appears slowly and is	**8** — There is no intervention to monitor or evaluate.

Strategic Objective	Enhancing the Implementation of Existing Policies	Enhancing Coordination	Introduction of New Policies, Laws and Regulations	Innovation	Carryout Awareness Creation/ Sensitization	Mainstreaming within Existing Policies	Amendment of Existing Laws and Regulations	Do Nothing
	reports already produced routinely.	partially obscure accountability.	levels) reported through one accountable framework once operational.	pilot success criteria vary.			spread across several separate statutes.	
SO 5: To Ensure Full Compliance with Data Protection and Privacy Laws	**2** — Progress is trackable through existing institutional performance and budget-execution reports already produced routinely.	**4** — Monitorable through joint secretariat reporting, though multiple reporting lines partially obscure accountability.	**3** — A single enacted instrument yields clear, centrally-defined statutory indicators (adoption rates, standards issued, compliance levels) reported through one accountable framework once operational.	**6** — Hard to monitor: experimental and rapidly evolving technologies resist stable indicators, and pilot success criteria vary.	**1** — Directly measurable through attendance records, media-reach statistics and data-literacy survey data.	**5** — Plan inclusion is easy to verify, but actual implementation of plan provisions is not systematically reported.	**7** — Indicators are measurable once amended provisions take effect, but impact appears slowly and is spread across several separate statutes.	**8** — There is no intervention to monitor or evaluate.
SO 6: To Promote Systems Integration, Coordination, and Data Interoperability	**2** — Progress is trackable through existing institutional performance and budget-execution reports already produced routinely.	**4** — Monitorable through joint secretariat reporting, though multiple reporting lines partially obscure accountability.	**3** — A single enacted instrument yields clear, centrally-defined statutory indicators (adoption rates, standards issued, compliance levels) reported through one accountable framework once operational.	**7** — Hard to monitor: experimental and rapidly evolving technologies resist stable indicators, and pilot success criteria vary.	**1** — Directly measurable through attendance records, media-reach statistics and data-literacy survey data.	**5** — Plan inclusion is easy to verify, but actual implementation of plan provisions is not systematically reported.	**6** — Indicators are measurable once amended provisions take effect, but impact appears slowly and is spread across several separate statutes.	**8** — There is no intervention to monitor or evaluate.
SO 7: To Stimulate Demand and Build Support for Evidence-Based Decision-Making	**2** — Progress is trackable through existing institutional performance and budget-execution reports already produced routinely.	**4** — Monitorable through joint secretariat reporting, though multiple reporting lines partially obscure accountability.	**3** — A single enacted instrument yields clear, centrally-defined statutory indicators (adoption rates, standards issued, compliance levels) reported through one accountable framework once operational.	**7** — Hard to monitor: experimental and rapidly evolving technologies resist stable indicators, and pilot success criteria vary.	**1** — Directly measurable through attendance records, media-reach statistics and data-literacy survey data.	**5** — Plan inclusion is easy to verify, but actual implementation of plan provisions is not systematically reported.	**6** — Indicators are measurable once amended provisions take effect, but impact appears slowly and is spread across several separate statutes.	**8** — There is no intervention to monitor or evaluate.
Total Ranks	**14**	**30**	**21**	**47**	**7**	**33**	**44**	**56**
Final Rank	**2**	**4**	**3**	**7**	**1**	**5**	**6**	**8**