



Uganda National Council For Science and Technology

OPEN SCIENCE POLICY

FEBRUARY 2025



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Key Definitions

Citizen Science	Describes the integration of interested members of the public into scientific projects, or having projects fully carried out by them. Their participation can take place on a short-term basis or involve an intensive period of free time.
Creative Commons	A package of standardised licences with which the owners of copyrights can easily grant some rights to the users.
Digital Object Identifier (DOI)	A unique text character sequence that is used to identify digital objects, for example for journal articles, datasets or open-source software versions.
FAIR Data	The word FAIR stands for Findable, Accessible, Interoperable, and Reusable. FAIR data is therefore traceable, accessible, interoperable, and reusable, thereby making knowledge exchange easier.
Open Access	Describes the free and open access to research or scholarly literature other materials (for instance research data) on the internet without financial, legal, or technical barriers.
Open Data	Describes making data freely accessible in an open, free-of-charge way that is free of technical or legal barriers. In the context of Open Research Data.
Open Education	An umbrella term comprising different concepts. It refers to the goal of making education freely available.
Open Science	Encompasses procedures with which the scientific process is opened. In an ideal situation, everything from the initial idea to the final publication is made openly accessible, replicable and reusable via the internet.
Open Research Software	Refers to software developed in research, for example for research data processing, which is free and usually available as Open Source.
Open (Peer) Review	Includes a series of possibilities on how Peer Review models can be brought into line with the aims of Open Science by opening the assessment procedure.
Open Source	When the source code for a piece of software is made available together with an Open-Source licence that allows the reuse, adaption and other dissemination under certain framework conditions (for instance non-commercial and commercial use).
ORCID iD	(Open Researcher and Contributor ID) is a non-profit initiative for establishing and operating a global register of unique identifiers for individual persons, particularly those who perform scientific research, produce collective knowledge, and contribute to this.

Table of Contents

Key Definitions	i
Table of Contents	ii
Abbreviations and Acronyms	iii
Foreword	iv
I INTRODUCTION	I
1.1 Background	
1.2 Policy Guidelines Principles	
1.3 Policy and Legal Environment	
1.3.1 Policy Environment	
1.3.2 Regulatory Environment	
1.3.3 Institutional Environment	
2 POLICY FRAMEWORK FOR OS AT UNCST	4
2.1 UNCST Vision	
2.2 Open Science Vision	
2.3 Policy Goal	
2.4 Policy Outcomes	
2.5 Policy Objectives	
2.6 Scope / Coverage of the UNCST OS Policy	
2.6.1 UNCST Policy Thrusts	
2.7 UNCST Open Science Policy Interventions	
2.7.1 UNCST Open Science Policy Interventions	
2.7.1.1 UNCST OPEN SCIENCE INTERVENTION 1: Establish and maintain robust digital and physical infrastructure to support open access to scientific data, research outputs, and collaborative platforms	
2.7.1.2 UNCST OPEN SCIENCE INTERVENTION 2: Foster a dynamic and inclusive ecosystem that encourages collaboration between academia, industry, government, and the public.	
2.7.1.3 UNCST OPEN SCIENCE INTERVENTION 3: Develop and enhance the skills and competencies of researchers, scientists, and support personnel in the practices of open science.	
2.7.1.4 UNCST OPEN SCIENCE INTERVENTION 4: Create a comprehensive policy framework that encourages and enforces Open Science practices	
2.7.1.5 UNCST OPEN SCIENCE INTERVENTION 5: Secure consistent financial support and investment to sustain Open Science initiatives	
3 IMPLEMENTATION, MONITORING AND EVALUATION	11
3.1 Introduction	
3.2 Results Framework	
3.3 Monitoring and Evaluation Framework for UNCST Open Science Policy.	
4 OPERATIONAL AND FINANCIAL SUSTAINABILITY	19

Abbreviations and Acronyms

ARIPO	African Regional Intellectual Property Organization
ARKs	Archival Resource Keys
AOSP	Africa Open Science Platform
CARE	Collective benefit, Authority to control, Responsibility and Ethics
CC	Creative Commons
CUUL	Consortium of Uganda University Libraries
DMP	Data Management Plan
DOAJ	Directory of Open Access Journals
DOI's	Digital Object Identifiers
DIT	Department of Industrial Training
WIPO	World Intellectual Property Organization
EAC	East African Community
EIFL	Electronic Information for Libraries
FAIR	Findable, Accessible, Interoperable, Reproducible/Reusable
GERA	Gender Equity in Research Alliance
GOU	Government of Uganda
ICT	Information and Communication Technology
IP	Intellectual Property
IPR	Intellectual Property Rights
M&E	Monitoring and Evaluation
MOES	Ministry of Education and Sports
MOOCs	Massive Online Open Courses
MoICT	Ministry of Information, Communication Technologies
NALU	National Library of Uganda
NCHE	National Council for Higher Education
NDP	National Development Plan
NITA-U	National Information Technology Authority of Uganda
NRIMS	National Research Registration Information Management System
NRU	National Research Repository of Uganda
OdeL	Open distance E-learning
OER	Open Educational resources
ORCID	Open Researcher and Contributor Identifi
PPDA	Public Procurement and Disposal Authority
REC	Research Ethics Committees
RENU	Research and Education Network of Uganda
ROR	Research Organisation Registry
RUFORUM	Regional Universities Forum for Capacity Building in Agriculture
SciELO	Scientific Electronic Library Online
SDGs	Sustainable Development Goals
STI	Science, Technology and Innovation
TCC	Training Centre in Communication
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNCST	Uganda National Council for Science and Technology
UNAS	Uganda National Academy of Science
URSB	Uganda Registration Services Bureau

Foreword

It is with great pleasure that I present the Uganda National Council for Science and Technology (UNCST) Open Science Policy. This policy comes at a pivotal time when the global research landscape is evolving towards openness, collaboration, and transparency. Open Science is transforming how research is conducted, shared, and applied, and Uganda cannot afford to be left behind in this transition. The adoption of this policy reflects our commitment to making science more inclusive, accessible, and impactful.

The UNCST Open Science Policy is aligned with Uganda's broader development agenda, particularly Vision 2040, which underscores the importance of science, technology, and innovation (STI) in achieving socio-economic transformation. Open Science, by making research findings more readily available, offers tremendous potential to accelerate innovation, drive economic growth, and address pressing national challenges such as public health, climate change, and food security.

This policy is designed to promote the principles of Open Science, including open access to publications, open data, and open collaboration among researchers. By embracing these principles, we can enhance the quality and impact of research in Uganda, while also increasing transparency, accountability, and public trust in science. Open Science not only supports scientific excellence but also fosters equity by ensuring that all researchers, regardless of their location or institutional affiliation, have the opportunity to contribute to and benefit from scientific knowledge.

The successful implementation of this policy will require the collaboration of a wide range of stakeholders, including government agencies, academic and research institutions, funding bodies, and the private sector. UNCST is committed to working closely with these partners to ensure that the goals of Open Science are realized in Uganda.

I would like to extend my gratitude to all those who have contributed to the development of this policy, including the UNCST Open Science Task Force. Together, we are building a more open, innovative, and inclusive research ecosystem that will not only benefit Uganda but also contribute to the global body of scientific knowledge.



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Martin Ongol (PhD)

Ag. Executive Secretary

UGANDA NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

I Introduction

Open Science combines various movements, practices and actions that aim to make all fields of scientific research accessible to everyone for the benefit not only of scientists but also society. The term “Open Science” refers to **“an inclusive construct that combines various movements and practices aimed at making scientific knowledge openly available, accessible, and reusable for everyone, to increase scientific collaborations and sharing of information for the benefits of science and society, and to open the processes of scientific knowledge creation, evaluation, and communication to societal actors beyond the traditional scientific community”** (UNESCO, 2023). The approach seeks to promote science that is more accessible, inclusive and transparent and furthers the right of everyone to share in scientific advancement and its benefits, as stated in Article 27.1 of the Universal Declaration of Human Rights.

I.1 Background

The Uganda National Council for Science and Technology (UNCST) derives its mandate from the Constitution of the Republic of Uganda and the UNCST Act (CAP) 209 as updated to (Cap 211). Under the provisions of this Act, the UNCST is the national clearing house for information on research and experimental development taking place in scientific institutions, centres, and other enterprises and on the potential applications of their results. The UNCST works closely with other regulatory agencies in Uganda’s STI eco-system to provide overall regulatory cover for Uganda’s rapidly growing STI environment. As part of its overall research quality assurance mandate, the UNCST regularly prepares and publishes research guidelines which provide a national coordinated framework for research oversight in Uganda.

Structurally, the UNCST operates under Secretariat of the Science, Technology, and Innovation - Office of the President (STI-OP) with the following four cardinal functions:

- a. Regulating all aspects of Science, Technology, and Innovation.
- b. Translating STI policies into regulations and standards to guide the operations of the entire STI system.

- c. Monitoring and evaluation of the STI activities and compliance to STI regulations; and,
- d. Homing of science professional institutions and continuing professional development.

Therefore, the UNCST Open Science Policy reflects these aspirations that have been enshrined in its values. These values recognize the universal importance and duty to make scientific knowledge openly accessible to all actors across Uganda’s growing science system. UNCST is committed to the advancement of science and the wide dissemination of knowledge by embracing and promoting practices that make scientific research more open, collaborative, and responsive to societal changes.

UNCST actively engages with stakeholders and partners in the worldwide scientific community to ensure effective coordination and cooperation to advance open science. UNCST also aims to cultivate a dynamic and evolving ecosystem of initiatives, projects, and interoperable technologies to maximise the global impact of research conducted in Uganda. It is anticipated that UNCST’s open science efforts are prioritized based on their potential impact on society, particularly in support of the UN Sustainable Development Goals, the Uganda Vision 2040 and the Fourth National Development Plan.

As the national regulator and clearing house for research in Uganda, the UNCST has developed frameworks, policies, guidelines, and other regulatory tools to oversee the functioning of research; supported capacity building of researchers in the different universities on different aspects including research ethics, community guidelines and special guidance for other special environments, like COVID-19. In addition, the UNCST has supported the establishment of over 38 Institutional Research Ethics Committees (RECs), Institutional Biosafety Committees (IBCs), Institutional Animal Care and Use Committees (IACUCs), among others. The UNCST has built and established physical research infrastructure in the different universities, including capitalizing laboratories and establishing research collaboration networks. UNCST has also established functional platforms for collaboration with key actors in Uganda’s open science agenda, including memoranda with the National Council for Higher Education (NCHE), the Consortium of

Uganda University Libraries (CUUL), the Research and Education Network of Uganda (RENU), the Department of Industrial Training (DIT), among others. UNCST has also developed new institutions which can become a pathway for strengthening open science integration in the different research institutions, like the Gender Equity in Research Alliance (GERA).

1.2 Policy Guiding Principles

The OS Policy is based on core values such as quality and integrity, diversity, inclusiveness, collective benefit, equity, and fairness. These core values are in line with UNCST core values of Commitment, Integrity, Distinction, Teamwork and Professionalism. The intent of this OS policy is to enhance transparency, accessibility, and inclusivity in research by ensuring that scientific data, publications, and resources are freely available to the public and research community. Aligned with UNESCO's call to action for Open Science, UNCST aims to create an environment where knowledge is openly shared to address pressing national and global challenges, such as climate change, health pandemics, and sustainable development.

UNCST's Open Science policies will be guided by the following principles:

a. Equitable Access - UNCST will ensure that all research outputs funded by public resources are made freely accessible to the public and the global research community.

b. Transparency, Critique and Reproducibility- UNCST fosters openness in scientific research to promote verifiability, open peer review, audit, data sharing and re-use, validity, and reliability, of the findings in a bid to increase transparency in research.

c. Gender and Inclusivity – UNCST will intentionally bridge the knowledge divide by ensuring that both local and marginalized communities have access to scientific knowledge and are engaged in the research process.

d. Collaboration and Capacity Building – UNCST will aim at supporting initiatives that strengthen local research capacity and foster international collaborations to ensure that Uganda actively contributes to and benefits from global scientific advancements.

e. Sustainability - UNCST is focused building long-term practices, services, infrastructure, funding models that will ensure equal participation of scientific producers from less privileged institutions.

1.3 Policy and Legal Environment

1.3.1 Policy Environment

Uganda's aspirations for OS align closely with regional, continental, and global development frameworks, as well as its own national goals. Globally, Uganda is a member of several regional and international organizations including the African Regional Intellectual Property Organization (ARIPO), World Intellectual Property Organization (WIPO) and United Nations Educational, Scientific and Cultural Organization (UNESCO). Aspiration 1 of Agenda 2063, envisions "a prosperous Africa based on inclusive growth and sustainable development." Open Science facilitates access to knowledge and research outputs, helping to drive technological innovation, industrialization, and knowledge-based economies across Africa. The SDG 9 (Industry, Innovation, and Infrastructure) aims to foster open and collaborative research that can stimulate innovation and improve infrastructure while SDG 4 (Quality Education) encourages the sharing of educational resources and scientific knowledge freely, promoting lifelong learning and inclusive education. The EAC's Vision 2050 is the region's Open Science framework for the seamless sharing of research outputs across the region. Uganda's Vision 2040 and The National Development Plans further stress the need for knowledge-driven sectors such as health, agriculture, and ICT, where open access to data and research can significantly accelerate progress. Open Science, by improving access to scientific knowledge and fostering collaboration, supports the achievement of the NDP IV's goal of transitioning Uganda into a middle-income country.

1.3.2 Regulatory Environment

Balancing the open sharing of scientific knowledge with the protection of intellectual property rights is essential for promoting both innovation and equitable access to knowledge. Currently, the legal regime around OS is shaped by existing legal instruments. Uganda's Intellectual Property (IP) regime is primarily

governed by the Industrial Property Act, 2014, the Copyright and Neighbouring Rights Act, 2006, the Trademarks Act, 2010; the Uganda Registration Services Bureau (URSB), Uganda Communications Commission (UCC) Act 2013, National Information Technology Authority-Uganda(NITA-U) Act 2009, the Uganda National Council for Science and Technology Act (Cap 209) as updated to (Cap 211) and the Access to Information Act, 2005, among others. These existing regulations should ensure the right of citizens to access and utilised publicly funded research. Additionally, the Data Protection and Privacy Act, 2019 regulates the ethical use, sharing, and protection of research data while the Computer Misuse Act 2011 and Amendments Electronic Transaction Act, 2011, Electronic Signatures Act,2011, Data Protection and Privacy Regulations (2021), collectively provide a framework for the sharing of information. UNCST Research standards and guidelines emphasize transparency, data sharing, and ethical considerations in research. These legal frameworks collectively support the transition to OS while safeguarding researchers' rights and public interests.

1.3.3 Institutional Environment

The institutional environment of OS in Uganda is shaped by several entities. These include the Science, Technology and Innovation Secretariat, Office of the President (STI-OP), National Council for Higher Education (NCHE), Research and Education Network for Uganda (RENU), Universities and Research institutions, including specialised aggregators like Regional Universities Forum for Capacity Building in Agriculture (RUFORUM). Other entities include

the National Information Technology Authority of Uganda (NITA-U), Ministry of Education and Sports (MOES), Ministry of ICT (MoICT) and National Guidance, International partners, including UNESCO, EIFL, TCC and the National Research Fund of South Africa. The operationalisation of the policy will also depend on existing partnerships between UNCST and key stakeholders, including Science Professional bodies, Publishers and Journal editors, the Uganda National Academy of Science (UNAS), the Consortium of Uganda University Libraries (CUUL) for electronic resources, the Africa Open Science Platform (AOSP). In addition, different universities and research institutions have research policies that primarily focus on promoting research excellence, ensuring ethical standards, and facilitating the commercialization of research outputs. Some of these institutions have Data Management and Sharing policies that have open access implications while other have guidelines that tackle different aspects of Open Science. A recent survey has shown that about 45% of Ugandan institutions have established digital repositories for theses, dissertations, and research papers. Internationally, the move towards "knowledge commons" and the need to protect the copyright of the author is further reflected in the global OS movement. In Uganda, Open Access regulations, requiring the deposit of published documents with the National Library of Uganda (NALU); the Education Digital Agenda Strategy (2021 – 2025) of the Ministry of Education and Sports MOES); and the Open distance E-learning (OdeL) guidelines by the NCHE have further strengthened the propensity for Open Science in Uganda.

2 Policy Framework for OS at UNCST

2.1 UNCST Vision

A prosperous science and technology led Ugandan Society

2.2 Policy Vision

“A scientific research environment in Uganda that is open, inclusive, collaborative and where research outputs are accessible and beneficial to all.”

2.3 Policy Goal

“Promoting openness in scientific research and innovation through increased access, collaboration, transparency, and reproducibility for social economic development in Uganda”

Specifically, the UNCST Open Science Policy seeks to:

- a. Provide an enabling environment for Open Science at UNCST
- b. Increase Transparency and Reproducibility by improving the transparency of the research process and enhance the reproducibility of scientific studies.
- c. To build the capacity of researchers, institutions, and other stakeholders in Uganda to engage effectively in open science practices, including data management, sharing, and use of open-access platforms.

2.4 Policy Outcomes

- a. Increased accessibility, visibility, and impact of Ugandan research, leading to improved scientific collaboration, innovation, and societal benefits.”
- b. Increased Access to Scientific Knowledge and Research Outputs
- c. Enhanced legal, policy and regulatory environment at national and institutional levels for open science practices across research activities.
- d. Strengthened Open science infrastructures and services
- e. Increased availability of human resources for open science through capacity building, including researcher training.
- f. Reformed research assessment to reward and incentivise quality, impact and openness.

- g. Increased research uptake by industry

2.5 Policy Objectives

- a. To promote Open access, open data sharing, and open peer review practices to ensure transparency, accessibility, and reproducibility of research outputs for the public, researchers, policymakers, and industry.
- b. To strengthen the capacity of UNCST staff, researchers, and institutions, while developing digital infrastructure, internal policies, and guidelines to support and embed Open Science practices.
- c. To encourage national, regional, and international collaboration among academia, industry, and communities to drive innovation, economic growth, and the practical application of research findings.
- d. To strengthen ethical standards and guidelines that protect privacy, security, and intellectual property rights while promoting responsible and reproducible Open Science practices.

2.6 Scope / Coverage of the UNCST OS Policy

The UNCST OS Policy applies to all operations, activities, and research outputs managed or supported by the Uganda National Council for Science and Technology (UNCST). It covers the full spectrum of scientific work within the institution, including the management of research data, publications, methodologies, and collaborative initiatives. The policy is designed to guide UNCST staff, affiliated researchers, and institutional partners in adopting Open Science principles, ensuring that all research outputs generated under UNCST's mandate are accessible, reusable, and transparent. It also governs internal capacity building, infrastructure development, and resource allocation to support the effective implementation of Open Science practices. Additionally, the policy aligns with UNCST's broader role in shaping Uganda's research and innovation landscape, while adhering to national and global ethical and regulatory standards.

2.6.1 UNCST Policy Thrusts

a. Infrastructure: Establishing and maintaining robust digital and physical infrastructure to support open access to scientific data, research outputs, and collaborative platforms.

b. Ecosystem: Fostering a dynamic and inclusive ecosystem that encourages collaboration between academia, industry, government, and the public.

c. Human Capacity Building: Developing and enhancing the skills and competencies of researchers, scientists, and support personnel in the practices of open science.

d. Investment: Securing consistent financial support and investment to sustain open science initiatives.

e. Policy: Creating a comprehensive policy framework that encourages and enforces open science practices.

2.7 UNCST Open Science Policy Interventions

2.7.1 UNCST OPEN SCIENCE INTERVENTION I: Establish and maintain robust digital and physical infrastructure to support open access to scientific data, research outputs, and collaborative platforms.

Policy Statement 2.7.1.1: The UNCST is committed to fostering a facilitatory digital environment that aligns to the principles of Open Science on its existing and future digital systems. This includes the implementation, maintenance, and continuous improvement of the UNCST'S Digital Systems to foster the sharing, collaboration, and reproducibility of STI Outputs.

The UNCST will:

- a. Implement a system of incentives, such as recognition, awards, or grants, for STI practitioners and teams that significantly contribute to Open Science through the development, adoption and utilisation of open digital platforms and systems.
- b. Provide access to open-source digital platforms to support collaborative and transparent research practices, enabling the research community to co-create more effectively.
- c. Support the development of interoperable data-sharing systems across universities, research institutions, and government agencies, ensuring that research infrastructure aligns with international Open Science standards.

Policy Statement 2.7.1.2: UNCST is committed to the development and promotion of open research infrastructure and data policies to emphasize transparency in research processes, including data sharing and management, peer review, publication, and proper attribution of research outputs.

UNCST will:

- a. Establish and maintain open-access repositories where researchers can deposit their publications, datasets, software code, and other STI Outputs. These repositories will comply with the FAIR (Findable, Accessible, Interoperable, Reusable) and CARE principles, ensuring that STI Outputs are easily discoverable, accessible, and reusable.
- b. Implement open data policies, promote open access publishing, and ensure transparency in the peer review processes.
- c. Encourage collaboration among staff to maximize the impact of open research infrastructure by supporting interdisciplinary research, fostering partnerships and knowledge sharing.
- d. Support the different universities and research institutes to establish the necessary infrastructure and services such as open access repositories for publications and data, and open access platforms and journals.
- e. Ensure, where possible, that scientific outputs related to publications (e.g. research data, software, source code, source materials, workflows and protocols) are made openly available in suitable repositories and linked to publications immediately upon publication on the “as open as possible as closed as necessary” principle
- f. Ensure that the infrastructure needed for research, such as high-performance computing facilities, data storage, and high-speed internet, is available to researchers and scientists across Uganda

Policy Statement 2.7.1.3: UNCST prioritises making research infrastructure and data accessible to staff, researchers, and scientists by investing in digital infrastructure and data policies to ensure equitable access and use of open-source technologies.

UNCST shall:

- a. Provide staff with access to the tools and resources needed to conduct high-quality

research and contribute to scientific progress.

b. Invest in building, maintaining, and making accessible open research infrastructure, such as high-performance computing facilities, data centres and systems, and scientific equipment.

c. Invest in secure infrastructure and systems to protect sensitive data from unauthorized access, breaches, and loss. This will ensure that researchers have access to user-friendly data management tools and platforms to facilitate the collection, storage, and sharing of research data.

d. Establish and strengthen data repositories to facilitate storage, sharing, and preservation of research data

2.7.2 UNCST OPEN SCIENCE INTERVENTION 2: Foster a dynamic and inclusive ecosystem that encourages collaboration between academia, industry, government, and the public.

UNCST recognises the principle of open research data. That is, UNCST published articles, evidence-based studies, or other research output should be made available online, without any barriers to access, paywalls, or subscription fees. Open data facilitates equal opportunity of access to research data to enable re-production of published results, and the re-use of publicly funded data to enhance discovery potential and opportunity.

Policy Statement 2.7.2.1: UNCST is committed to developing interoperability standards and guidelines which are critical to the smooth transfer of information between UNCST, its stakeholders and partners. UNCST is committed to developing interoperability standards and guidelines which are critical to the smooth transfer of information between UNCST, its stakeholders and partners.

UNCST shall:

- a. Implement standardized digital formats and protocols (e.g., XML, JSON, RDF) for data and metadata to ensure that STI outputs are compatible across multiple platforms and systems.
- b. Develop and maintain Application Programming Interfaces (APIs) and open interfaces to allow for the easy integration and communication between different digital systems, both within and outside the UNCST.

c. Introduce responsible research and researcher evaluation and assessment practices, which incentivise quality science, recognizing the diversity of research outputs, activities and missions

d. Require publicly funded research outputs to have immediate open access under an open content licence, such as Creative Commons Attribution licence (CC BY) while allowing for necessary exceptions to protect IP and commercialization interests.

e. Require Universities to link approved versions of theses or dissertations to the National Repository of Uganda (NRU) for better access and visibility.

Policy Statement 2.7.2.2: UNCST seeks to ensure discoverable and accessible STI data in line with FAIR Principles and UNCST data management policies. An approach of “as open as possible, as closed as necessary” will be followed. UNCST seeks to ensure discoverable and accessible STI data in line with FAIR Principles and UNCST data management policies. An approach of “as open as possible, as closed as necessary” will be followed. In cases where research data cannot be openly accessible, systems for mediated.

UNCST shall:

- a. Establish a databank (physical and electronic) to facilitate sharing of research outputs with an “as open as possible as closed as necessary” principle.
- b. Support government research agencies, public research funders, universities, and research institutions to follow the principle “as open as possible as closed as necessary” by requiring that research data and other research outputs (such as software or models) are handled according to the CARE and FAIR principles.
- c. Encourage researchers to prepare a Data Management Plans showing how data and other research outputs will be managed through the research process and handled according to the CARE and FAIR data principles and keep it updated throughout the course of the research project.

Policy Statement 2.7.2.3: UNCST seeks to harmonise and integrate STI Knowledge production with National and International Open Science Frameworks whilst aligning with global, continental, and regional Open Science initiatives. UNCST shall:

- a. Ensure that digital systems are compatible with national and international Open Science policies, frameworks, and standards (AOSP).
- b. Foster collaboration with other STI and related institutions to promote shared digital infrastructure and knowledge exchange.
- c. Request the use of Persistent identifiers for UNCST-registered research such as ORCID, Handle/DOIs/ARKs, ROR or others which are free or affordable.
- d. Mainstream gender equality aspects into open sciences policies, strategies and practices.
- e. Enhance the inclusion of community and participatory science as integral parts of UNCST's open science policies and practices. This will inform the design of models that allow co-production of knowledge with communities and establish guidelines to ensure the recognition of such collaborations.

Policy Statement 2.7.2.4: UNCST's partnerships with universities, research institutions, industry, civil society, and international organizations are critical for enhancing collaboration and knowledge exchange through Open Science platforms.

UNCST shall:

- a. Support the establishment of Open Science Working Groups (OSWGs) and communities of practice to ensure that stakeholders across Uganda's research ecosystem engage with and contribute to Open Science initiatives.
- b. Promote open innovation models, enabling the private sector and industry to access and contribute to publicly funded research, thus fostering a knowledge-driven economy.
- c. Ensure that Open Science practices comply with ethical guidelines, particularly concerning sensitive data. Data Privacy. This will include safeguarding personal data in compliance with relevant data protection regulations (e.g. Data Privacy and Protection Act, 2021)
- d. Encourage and support collaborative research initiatives that foster interdisciplinary and global

collaborations among researchers, institutions, stakeholders, and all publics in general, using open communication platforms and tools.

- e. Develop and Support Open communication platforms and tools, including – among others – open access institutional repositories (incl. data repositories), open source journal management systems and third-party preprint platforms.
- f. Promote and support new forms of collaboration and work such as Citizen Science, scientific volunteering, research networks, hackathons, data jams to make the scientific process more inclusive and accessible to the broader inquiring society.
- g. Foster a culture of open collaboration, communication, and transparency across its networks, conferences, workshops, mailing lists, directories such as the African Scientists
- h. Establish partnerships with national and global organisations to promote open science initiatives and collaborations.
- i. Create opportunities for citizens to engage with research data and academics, e.g. during national science forums and institutional science forums. This is to further increase trust in science.

2.7.3 UNCST OPEN SCIENCE INTERVENTION 3: Develop and enhance the skills and competencies of regulators, researchers, scientists, and support personnel in the practices of open science.

UNCST will prioritize the development of a skilled research workforce capable of driving Open Science initiatives.

Policy Statement 2.7.3.1: UNCST is committed to implementing capacity-building programs aimed at training researchers, scientists, and policymakers on Open Science principles, data management, and open-access publishing.

UNCST shall:

- a. Foster the transition to open science by all her units and departments and provide appropriate guidance and training to ensure the implementation of the policy.
- b. Provide systematic and continuous capacity building (seminars, workshops and conferences) on open science practices (at the institutional

and national levels), including technical skills and capacities in digital literacy, digital collaboration practices, data science, and stewardship, curation, long-term preservation and archiving, information and data literacy, web safety, content ownership and sharing, as well as software engineering and computer science.

- c. Actively work with relevant partners to co-develop frameworks of open science competencies aligned with specific disciplines for researchers at different career stages, as well as for actors active in the private and public sectors
- d. Allocate resources for training and awareness-raising on open science. Researchers should have access to appropriate training and support activities on open science on their institutional level.
- e. Promote the use of Open Educational Resources (OER), as an instrument for open science capacity building.
- f. Support science communication accompanying open science practices with a view to the dissemination of scientific knowledge to scholars in other research fields, decision-makers, and the public at large.
- g. Work with universities and research institutions to integrate Open Science practices into higher education curricula, ensuring that future researchers are well-versed in open-access publishing, data sharing, and ethical research practices.
- h. Spearhead resource mobilization for support of researchers to engage in Open Science projects, fostering a new generation of scientists skilled in collaborative, open research methodologies.
- i. Actively participate in AOSP initiatives and collaborate with other African institutions to promote open access to research and foster regional scientific collaboration. UNCST will encourage participation in regional open-access platforms, such as SciELO, and collaborate with other institutions to advance open science practices that address the region's unique challenges.
- j. Promote the recognition of open science through trainings, seminars, exhibitions, and celebration of national open science week.

Policy Statement 2.7.3.2: UNCST aims at supporting open educational resources (for teaching, learning and/or assessing) and implementing OS-derived knowledge platforms.

The UNCST shall:

- a. Promote open science education and training initiatives, providing opportunities for capacity building and awareness-raising among UNCST staff members, stakeholders, the wider scientific community and the public.
- b. Support the dissemination of scientific knowledge and literacy through open educational resources and open access publications, in particular those related to the understanding and use of other openly accessible scientific knowledge, training, and outreach programmes.
- c. Develop and provide training and capacity building programs to enhance digital literacy among the stakeholder community. Such programs may focus on data management (collection, processing, analytics, and dissemination), the adoption and utilisation of open digital tools, and compliance with open science standards.
- d. Establish a support team to assist researchers in using open digital systems, including troubleshooting, system updates, and general guidance.
- e. Promote the utilization of online learning platforms such as moodles and other Massive Online Open Courses (MOOCs) for capacity building on open science

2.7.4 UNCST OPEN SCIENCE INTERVENTION 4: Create a comprehensive policy framework that encourages and enforces Open Science practices.

Policy Statement 2.7.4.1: The UNCST recognizes the importance of open access to STI outputs and aims to develop mechanisms that facilitate knowledge sharing.

The UNCST shall:

- a. Establish clear guidelines for data management, sharing, protection and access, specifying which data should be openly available and which may require restricted access due to proprietary, ethical, legal, and privacy considerations.
- b. Promote the use of open licenses (e.g.,

Creative Commons, Open Data Commons) for digital content to clarify usage rights and enable the broad reuse of STI outputs.

- c. Facilitate the integration of Open Science principles into national Science, Technology, and Innovation (STI) policies, ensuring alignment with global standards and best practices.
- d. Regularly review and update this Open Science policy to reflect advancements in digital technologies, data management, and international Open Science frameworks

Policy Statement 2.7.4.2: UNCST seeks to promote ethical and responsible research practices for protection of data privacy, intellectual property rights, research integrity, accessibility, and sustainability.

UNCST shall:

- a. Strengthen institutional Research Ethics Committees (RECs) to integrate Open Science principles within research proposals and ensure compliance with existing ethical guidelines.
- b. Implement regular monitoring and evaluation mechanisms to assess adherence to ethical standards and identify areas for improvement.
- c. Monitor ethical practices in research, including reporting and investigating research misconduct, plagiarism, data fabrication, and falsification.
- d. Align Open Science practices with the provisions in UNCST's IPR frameworks.
- e. Encourage researchers registering at UNCST to publish in open-access journals and repositories, and explore partnerships with other partners,

Policy Statement 2.7.4.3: UNCST seeks to profile researchers and ensure long term preservation of research outputs.

UNCST shall:

- a. Promote the development of identifiers in the form of digital object identifiers (DOIs or handles) for digital research objects/items (research outputs and data sets),
- b. Develop Open Researcher and Contributor Identifiers (ORCIDiDs) for individual researchers, and open persistent identifiers for research organisations (through the Research Organisation

Registry (ROR)), will be incorporated as UNCST's requirement.

- c. Establish national guidelines on Open Science practices, ensuring that all research funded or regulated by the government adheres to principles of openness, transparency, and inclusivity.
- d. Integrate Open Science in its grants management systems and other research quality assurance mechanisms to ensure that all key stakeholders are aware of ongoing reforms within the global knowledge system to mainstream these good practices within their own institutional systems.
- e. Host, backup and migrate information on researchers and research outputs for long term preservation.

**2.7.5 UNCST OPEN SCIENCE
INTERVENTION 5: Secure consistent financial support and investment to sustain Open Science initiatives.**

To drive Open Science, strategic investments are required to sustain research initiatives and promote innovation. UNCST will incorporate into the assessment criteria for Researcher Projects and Collaborative and Knowledge-building Projects on open science practice. The "Open Grants" initiative within UNCST's Open Science policy aims to ensure that the principles of openness, transparency, and accessibility are deeply embedded in the grant-making process.

Policy Statement 2.7.5.1: Research grant applicants are required to provide mandatory open access to all research outputs.

UNCST shall:

- a. Ensure that UNCST grants are made openly accessible in accordance with recognized open access principles.
- b. Ensure Grant applicants outline how they will incorporate Open Science into their projects, with specific plans for data sharing, open-access publishing, and collaborative research. By fostering an environment where knowledge is shared freely, the Open Grants initiative enhances the impact, reproducibility, and innovation potential of research funded by or through UNCST.
- c. Ensure that Grant recipients of funding from

Government of Uganda (GOU) are required to deposit their research data, along with metadata, in an approved open-access repository as soon as the data is validated.

d. Ensure Compliance with Open Science requirements will be monitored throughout the grant lifecycle. Grant recipients must report on their Open Science activities and outcomes in periodic and final reports. Non-compliance may result in penalties or affect future funding eligibility.

e. Ensure that Grant proposals that prioritize collaboration, especially across institutions and borders, and that incorporate robust Open Science practices, will be given preferential consideration during the evaluation process.

f. Integrate Open Science principles in its research grants management system including dissemination of outputs from research grants through publications and reports.

Policy Statement 2.7.5.2: UNCST advocates for increased public and private sector investment in Open Science initiatives, focusing on critical areas like infrastructure, technology, and capacity-building.

UNCST shall:

- a. Invest in establishing open-access digital systems that facilitate the management, sharing, and discovery of STI outputs – products and services
 - b. Foster equitable public-private partnerships for open science and engage the private sector in open science.
 - c. Invest in technical and digital infrastructures and related services, including their long-term maintenance. These investments should include both financial and human resources.
 - d. Collaborate for adequate investment in reliable Internet connectivity and bandwidth for use by scientists and science users across the country, with interconnectivity to the region and the world; and in non-commercial open science infrastructures and services, including high-performance computing, cloud computing, research data and publications repositories, open access journals and other open science areas.
-

3. Implementation, Monitoring and Evaluation

3.1 Introduction

UNCST will continuously monitor and evaluate the implementation and impact of this policy, and evaluate its impact on scientific progress, collaboration, and innovation in consultation with its Members, partners, and stakeholders. The effectiveness of Open Digital Systems will be regularly assessed to ensure alignment with the goals of the Open Science Policy. The UNCST is expected to conduct periodic evaluations of the usability, accessibility, and impact of open digital systems and establish feedback loops from researchers and other stakeholders to identify and address challenges or gaps in the digital systems.

3.2 Results Framework

- M&E Framework: Mechanisms to track the implementation and impact of the OS Policy
- Performance Indicators: Metrics to assess progress, such as the percentage of open access publications or data shared.

Table 1: UNCST Open Science Policy Results Framework (2025–2030)

Interventions	Indicators	Means of Verification	UNCST Function	Participating Institutions	Responsible Office	Timeline
Priority Area 1: Infrastructure						
Policy Objective: To strengthen UNCST’s internal capacity and infrastructure to support and manage open science initiatives, ensuring that the organization leads by example in providing efficient, secure, and sustainable platforms for data sharing, collaboration, and research management.						
Invest in open-access digital systems for STI outputs	<ul style="list-style-type: none"> Digital systems established and functional 	<ul style="list-style-type: none"> Digital systems established and functional 	<ul style="list-style-type: none"> Research Regulation Policy Translation 	<ul style="list-style-type: none"> Universities, Research Institutes, Private Sector 	<ul style="list-style-type: none"> IT and Infrastructure Unit 	2025–2026
Establish and maintain open-access repositories	<ul style="list-style-type: none"> Repositories established, FAIR/CARE compliance 	<ul style="list-style-type: none"> Repositories established, FAIR/CARE compliance 	<ul style="list-style-type: none"> Research Regulation 	<ul style="list-style-type: none"> Universities, Research Institutes, International Agencies 	<ul style="list-style-type: none"> Data Management Unit 	2025–2027
Provide access to open-source platforms	<ul style="list-style-type: none"> Number of platforms accessed by researchers 	<ul style="list-style-type: none"> Number of platforms accessed by researchers 	<ul style="list-style-type: none"> Research Regulation Policy Translation 	<ul style="list-style-type: none"> Universities, Research Institutes, Tech Companies 	<ul style="list-style-type: none"> IT and Infrastructure Unit 	2025–2026
Support open data-sharing systems across institutions	<ul style="list-style-type: none"> Interoperable systems developed and operational 	<ul style="list-style-type: none"> Interoperable systems developed and operational 	<ul style="list-style-type: none"> Monitoring & Evaluation 	<ul style="list-style-type: none"> Universities, Government Agencies 	<ul style="list-style-type: none"> IT and Infrastructure Unit 	2026–2027
Ensure high-performance computing and data storage facilities	<ul style="list-style-type: none"> Availability and usage of HPC and storage facilities 	<ul style="list-style-type: none"> Availability and usage of HPC and storage facilities 	<ul style="list-style-type: none"> Research Regulation Homing of Scientists 	<ul style="list-style-type: none"> Government, Universities, Private Sector 	<ul style="list-style-type: none"> IT and Infrastructure Unit 	2025–2028

Interventions	Indicators	Means of Verification	UNCST Function	Participating Institutions	Responsible Office	Timeline
Priority Area 2: Open Science Ecosystem						
Policy Objective: To enhance UNCST's internal capacity, governance, and operational frameworks in order to effectively lead, support, and coordinate the development of Uganda's Open Science ecosystem.						
Implement standardized digital formats for data interoperability	<ul style="list-style-type: none"> Standards developed and implemented 	<ul style="list-style-type: none"> System integration reports 	<ul style="list-style-type: none"> Policy Translation Research Regulation 	<ul style="list-style-type: none"> Universities, Research Institutes, Tech Partners 	<ul style="list-style-type: none"> IT and Data Management Units 	2025–2026
Establish a national databank for research outputs	<ul style="list-style-type: none"> Databank established, number of research outputs shared 	<ul style="list-style-type: none"> Usage reports, databank records 	<ul style="list-style-type: none"> Research Regulation of Homing of Scientists 	<ul style="list-style-type: none"> Universities, Government Agencies, International Donors 	<ul style="list-style-type: none"> Data Management Unit 	2026–2027
Require public research to have immediate open access	<ul style="list-style-type: none"> Percentage of publicly funded research available openly 	<ul style="list-style-type: none"> Monitoring of publications, repository checks 	<ul style="list-style-type: none"> Research Regulation 	<ul style="list-style-type: none"> Universities, Research Institutes, Journals 	<ul style="list-style-type: none"> Policy and Legal Affairs Unit 	2025–2028
Foster collaboration through Open Science platforms	<ul style="list-style-type: none"> Number of collaborations initiated and maintained 	<ul style="list-style-type: none"> Partnership agreements, platform usage statistics 	<ul style="list-style-type: none"> Homing of Scientists 	<ul style="list-style-type: none"> International Bodies, Private Sector, Universities 	<ul style="list-style-type: none"> Collaborative Research Unit 	2025–2028
Support interdisciplinary and global collaborations in research	<ul style="list-style-type: none"> Number of international research projects 	<ul style="list-style-type: none"> Partnership records, project reports 	<ul style="list-style-type: none"> Homing of Scientists 	<ul style="list-style-type: none"> International Research Bodies, Government, Universities 	<ul style="list-style-type: none"> International Relations Office 	2025–2028

Interventions	Indicators	Means of Verification	UNCST Function	Participating Institutions	Responsible Office	Timeline
Priority Area 3: Human Capital Development						
Policy Objective: To enhance UNCST's internal capacity to lead and coordinate efforts in developing Uganda's human resource capabilities for Open Science.						
Provide capacity-building programs on Open Science principles	<ul style="list-style-type: none"> ● Number of training programs conducted 	<ul style="list-style-type: none"> ● Training reports, participant feedback 	<ul style="list-style-type: none"> ● Homing of Scientists, Policy Translation 	<ul style="list-style-type: none"> ● Universities, Private Sector, Development Partners 	<ul style="list-style-type: none"> ● Training & Development Unit 	2025–2027
Develop Open Science competencies aligned with specific disciplines	<ul style="list-style-type: none"> ● Competency frameworks developed 	<ul style="list-style-type: none"> ● Framework documents, adoption reports 	<ul style="list-style-type: none"> ● Policy Translation 	<ul style="list-style-type: none"> ● Universities, Research Institutions, Private Sector 	<ul style="list-style-type: none"> ● Academic Affairs Unit 	2025–2026
Promote Open Educational Resources (OER)	<ul style="list-style-type: none"> ● Number of OER resources developed and used 	<ul style="list-style-type: none"> ● Usage statistics, feedback from users 	<ul style="list-style-type: none"> ● Homing of Scientists 	<ul style="list-style-type: none"> ● Educational Institutions, Research Bodies 	<ul style="list-style-type: none"> ● Training & Development Unit 	2025–2028
Provide funding and support for early-career researchers in Open Science	<ul style="list-style-type: none"> ● Number of funded projects, early-career researcher participation 	<ul style="list-style-type: none"> ● Grant reports, project outputs 	<ul style="list-style-type: none"> ● Homing of Scientists 	<ul style="list-style-type: none"> ● Universities, Research Institutes, International Agencies 	<ul style="list-style-type: none"> ● Grants Management Unit 	2025–2028
Integrate Open Science practices into higher education curricula	<ul style="list-style-type: none"> ● Number of institutions with Open Science integrated into curricula 	<ul style="list-style-type: none"> ● Curriculum review reports, university records 	<ul style="list-style-type: none"> ● Policy Translation 	<ul style="list-style-type: none"> ● Universities, Academic Institutions 	<ul style="list-style-type: none"> ● Academic Affairs Unit 	2026–2028

Interventions	Indicators	Means of Verification	UNCST Function	Participating Institutions	Responsible Office	Timeline
Priority Area 4: Policy and Governance						
Policy Objective 4: To strengthen UNCST's internal capacity for developing, coordinating, and overseeing national policies and governance frameworks that advance Open Science in Uganda.						
Develop Open Science guidelines for data management and access	<ul style="list-style-type: none"> Guidelines developed and disseminated 	<ul style="list-style-type: none"> Policy documents, stakeholder feedback 	<ul style="list-style-type: none"> Research Regulation 	<ul style="list-style-type: none"> Government, Universities, Research Institutes 	<ul style="list-style-type: none"> Policy and Legal Affairs Unit 	2025
Strengthen research ethics in Open Science	<ul style="list-style-type: none"> Number of ethics reviews completed 	<ul style="list-style-type: none"> Monitoring reports, compliance checks 	<ul style="list-style-type: none"> Monitoring & Evaluation 	<ul style="list-style-type: none"> Ethics Committees, Universities, Research Institutions 	<ul style="list-style-type: none"> Ethics & Compliance Unit 	2025–2028
Encourage open access publication by UNCST-registered researchers	<ul style="list-style-type: none"> Percentage of open-access publications 	<ul style="list-style-type: none"> Publication reports, compliance audits 	<ul style="list-style-type: none"> Research Regulation 	<ul style="list-style-type: none"> Universities, Research Institutes, Journals 	<ul style="list-style-type: none"> Research Support Office 	2025–2028
Regularly review and update Open Science policies	<ul style="list-style-type: none"> Number of policy updates completed 	<ul style="list-style-type: none"> Policy documents, stakeholder feedback 	<ul style="list-style-type: none"> Policy Translation 	<ul style="list-style-type: none"> Government, Universities, Research Institutes 	<ul style="list-style-type: none"> Policy and Legal Affairs Unit 	2025–2028
Align UNCST policies with international Open Science frameworks	<ul style="list-style-type: none"> Alignment with global frameworks (AOSP, EOOSC) 	<ul style="list-style-type: none"> Policy documents, compliance checks 	<ul style="list-style-type: none"> Policy Translation 	<ul style="list-style-type: none"> International Bodies, Government, Research Institutions 	<ul style="list-style-type: none"> International Relations Office 	2025–2027

Interventions	Indicators	Means of Verification	UNCST Function	Participating Institutions	Responsible Office	Timeline
Priority Area 5: Investment and Funding						
Policy Objective 5: To strengthen UNCST's internal capacity to effectively mobilize, manage, and coordinate investment and funding for Open Science initiatives in Uganda.						
Incorporate Open Science in grants management systems	<ul style="list-style-type: none"> Number of grants incorporating Open Science principles 	<ul style="list-style-type: none"> Grant reports, compliance checks 	<ul style="list-style-type: none"> Research Regulation, Monitoring & Evaluation 	<ul style="list-style-type: none"> Universities, Private Sector, Research Institutions 	<ul style="list-style-type: none"> Grants Management Unit 	2025–2028
Prioritize funding for Open Science-aligned research projects	<ul style="list-style-type: none"> Percentage of funded projects adhering to Open Science principles 	<ul style="list-style-type: none"> Grant allocation reports, project evaluations 	<ul style="list-style-type: none"> Research Regulation 	<ul style="list-style-type: none"> Government, Universities, Private Sector, International Donors 	<ul style="list-style-type: none"> Grants Management Unit 	2025–2028
Foster public-private partnerships for Open Science investments	<ul style="list-style-type: none"> Number of partnerships formed 	<ul style="list-style-type: none"> Partnership agreements, project reports 	<ul style="list-style-type: none"> Policy Translation 	<ul style="list-style-type: none"> Private Sector, Development Agencies, Government 	<ul style="list-style-type: none"> Public-Private Partnership Office 	2025–2028
Resource-mobilize for Open Science infrastructure	<ul style="list-style-type: none"> Amount of funding secured for infrastructure 	<ul style="list-style-type: none"> Financial reports, project documents 	<ul style="list-style-type: none"> Homing of Scientists 	<ul style="list-style-type: none"> Development Partners, Government, Universities 	<ul style="list-style-type: none"> Resource Mobilization Office 	2025–2028
Develop guidelines for ethical use of open data in research	<ul style="list-style-type: none"> Guidelines developed and adopted 	<ul style="list-style-type: none"> Policy documents, compliance audits 	<ul style="list-style-type: none"> Monitoring & Evaluation 	<ul style="list-style-type: none"> Universities, Research Institutions, Ethics Committees 	<ul style="list-style-type: none"> Ethics & Compliance Unit 	2025–2026

3.3 Monitoring and Evaluation (M&E) Framework for UNCST Open Science Policy (2025–2028)

This Monitoring and Evaluation (M&E) Framework aligns with the previously developed Results Framework for the UNCST Open Science Policy. It outlines the indicators, frequency of monitoring, responsible offices, means of verification, and other key elements necessary for effective tracking of the policy's implementation and impact over the three-year period.

Table 2: Key Monitoring and Evaluation Highlights of UNCST Open Science Policy Results

Priority Area	Key Indicators	Frequency of Monitoring	Means of Verification	Responsible Office	Evaluation Method
Infrastructure	● Number of open-access digital systems established	● Quarterly	● System usage reports	● IT and Infrastructure Unit	● Performance audits, system reviews
	● Number of open-access repositories developed	● Semi-Annually	● Repository logs, compliance reports	● Data Management Unit	● Technical assessments, compliance reviews
	● Usage of high-performance computing and data storage	● Quarterly	● System reports, researcher surveys	● IT and Infrastructure Unit	● Data analytics, user feedback
	● Interoperable systems for data-sharing operational	● Annually	● Interoperability audits	● IT and Infrastructure Unit	● System integration assessments
	● User satisfaction with open-source platforms	● Biannually	● User feedback, surveys	● IT and Infrastructure Unit	● User experience analysis, satisfaction surveys
Open Science Ecosystems	● Implement standardized digital formats for data interoperability	● Standards developed and implemented	● System integration reports	● Policy Translation ● Research Regulation	● Universities, Research Institutes, Tech Partners
	● Establish a national databank for research outputs	● Databank established, number of research outputs shared	● Usage reports, databank records	● Research Regulation ● Homing of Scientists	● Universities, Government Agencies, International Donors
	● Require public research to have immediate open access	● Percentage of publicly funded research available openly	● Monitoring of publications, repository checks	● Research Regulation	● Universities, Research Institutes, Journals
	● Foster collaboration through Open Science platforms	● Number of collaborations initiated and maintained	● Partnership agreements, platform usage statistics	● Homing of Scientists	● International Bodies, Private Sector, Universities
	● Support interdisciplinary and global collaborations in research	● Number of international research projects	● Partnership records, project reports	● Homing of Scientists	● International Research Bodies, Government, Universities
Human Capital Development	● Number of capacity-building programs on Open Science principles conducted.	● Quarterly	● Training attendance sheets. ● Training content/materials.	● Office of Talent Management & Capacity Development	● Post-training evaluations. ● Knowledge tests.
	● Number of early-career researchers funded for Open Science projects.	● Annually	● Grant award records. ● Research reports from grant recipients.	● Research Grants Office	● Research project outcome reviews. ● Grant reports.
	● Percentage of universities integrating Open Science in their curricula.	● Annually	● University curriculum reviews. ● Interviews with university administrators.	● Higher Education Collaboration Office	● Curriculum evaluations. ● Stakeholder interviews.
Policy and Governance	● Number of Open Science guidelines developed	● Annually	● Policy documents, stakeholder feedback	● Policy and Legal Affairs Unit	● Policy document analysis, compliance reviews
	● Number of ethics reviews conducted for Open Science projects	● Quarterly	● Monitoring reports, compliance checks	● Ethics & Compliance Unit	● Ethics audit, project evaluations
	Percentage of publications in open-access journals and repositories	● Biannually	● Publication reports, repository checks	● Research Support Office	● Compliance monitoring, content audits

	● Frequency of policy reviews and updates	● Annually	● Policy documents, stakeholder consultations	● Policy and Legal Affairs Unit	● Policy evaluation, stakeholder surveys
	● Alignment with international Open Science frameworks	● Annually	● Alignment reports, compliance checks	● International Relations Office	● Gap analysis, alignment evaluations
Investment and Funding	● Number of grants incorporating Open Science principles	● Quarterly	● Grant reports, compliance audits	● Grants Management Unit	● Grant review, project evaluation
	● Percentage of funding allocated to Open Science projects	● Annually	● Financial reports, project documents	● Grants Management Unit	● Financial audits, impact evaluations
	● Number of public-private partnerships for Open Science	● Annually	● Partnership agreements, project reports	● Public-Private Partnership Office	● Partnership impact assessments, agreement reviews
	● Amount of funding secured for infrastructure development	● Biannually	● Financial reports, infrastructure updates	● Resource Mobilization Office	● Funding evaluations, project tracking
	● Development and adoption of ethical data usage guidelines	● Annually	● Policy documents, compliance audits	● Ethics & Compliance Unit	● Policy evaluation, stakeholder feedback

4. Operational and Financial Sustainability

UNCST will establish a sustainable framework for its Open Science Policy, ensuring the long-term viability and effectiveness of its practices, services, infrastructures, and funding models in support of the broader scientific community, following the key strategies below:

- a. **Long-Term Planning and Vision:** UNCST will develop a comprehensive long-term plan and vision for open science that outlines the objectives, goals, and desired outcomes of the policy, as part of its strategic planning. This plan will consider evolving trends and technological advancements in the field of open science to ensure the policy remains relevant and effective over time.
- b. **Capacity Building and Training:** UNCST will invest in training and capacity-building initiatives to equip its staff with the necessary skills and knowledge for effective implementation and adherence to open science practices. This includes attending workshops, seminars, and utilizing online resources to foster a culture of open science within the organization.
- c. **Collaboration and Partnerships:** UNCST will continue to collaborate with research institutions, funding agencies, and governmental organizations to share resources, best practices, and infrastructure. These partnerships will amplify the impact and reach of UNCST'S Open Science Policy.
- d. **Diversification of Funding Sources:** UNCST will explore and secure diverse funding sources to sustain its open science practices.
- e. **Continuous Evaluation and Improvement:** UNCST will regularly assess the effectiveness and impact of its Open Science Policy through

performance metrics, stakeholder feedback, and comprehensive evaluations. Based on these assessments, UNCST will make necessary adjustments to ensure the policy's long-term sustainability and relevance.

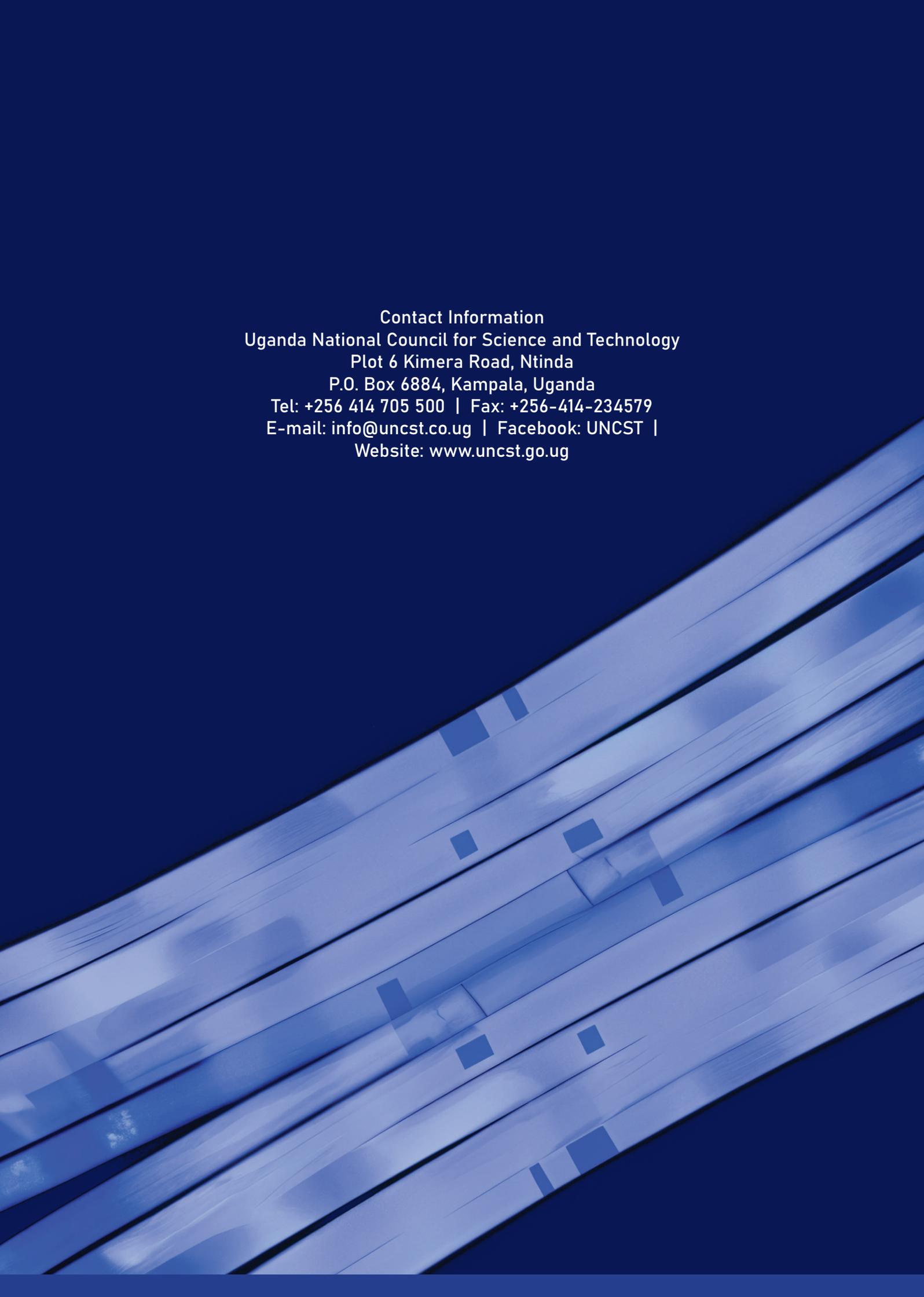
- f. **Infrastructure Development and Maintenance:** UNCST will continue to invest in the development and maintenance of robust infrastructures, including the National Repository for Research. Regular maintenance and updates of these platforms will be crucial to their long-term sustainability and efficiency in supporting the storage, sharing, and dissemination of research data and outputs.

This integrated Operational and Financial Sustainability Framework provides a comprehensive approach to ensuring the success of UNCST's Open Science Policy. By leveraging diverse funding sources, fostering partnerships, and implementing robust financial and operational strategies, UNCST can achieve sustainable Open Science practices and enhance Uganda's research ecosystem over the three-year policy period (2025–2028). The success of these initiatives will be measured through clear indicators and will be supported by strategic financial planning and resource mobilization.

The provisions of this policy are enshrined in the UNCST core functions for which Government of Uganda is committed to support its implementation for national development and socio-economic transformation.

Table 3: Operational and Financial Sustainability Framework (2025–2028)

Core Function	Operational Strategies	Financial Strategies	Source of Funds & Resource Mobilization Opportunities	Key Indicators	Timeline	Responsible Office
1. Research Regulation	<ul style="list-style-type: none"> ● Implement open digital platforms for data sharing and publishing under regulatory frameworks. ● Monitor compliance with Open Science policies and ethical use of open data. 	<ul style="list-style-type: none"> ● Generate revenue through Open Science certification services (e.g., FAIR compliance). ● Apply for grants supporting regulatory frameworks for Open Science. 	<ul style="list-style-type: none"> ● Government of Uganda funding. ● Fees from compliance certification services. 	<ul style="list-style-type: none"> ● Percentage of research outputs meeting Open Science regulatory standards. ● Number of certifications issued. ● Revenue generated from certifications. 	Year 1–3	● Research Registration
2. STI Policy Translation	<ul style="list-style-type: none"> ● Develop Open Science policy guidelines and disseminate them through national workshops. ● Provide capacity-building programs for integrating Open Science into national policies. 	<ul style="list-style-type: none"> ● Secure funds through regional bodies (AU, EAC). ● Charge for specialized Open Science policy training. 	<ul style="list-style-type: none"> ● Regional and global grants (AU, EASTECO). ● Capacity-building initiatives funded by multilateral bodies. ● Fees from training programs. 	<ul style="list-style-type: none"> ● Number of Open Science policies adopted nationally. ● Number of partnerships on policy development. ● Revenue from training programs. 	Year 1–3	● Policy Coordination
3. STI System Monitoring	<ul style="list-style-type: none"> ● Establish a digital system to track Open Science practices across institutions. ● Evaluate the impact of Open Science on the national research ecosystem. 	<ul style="list-style-type: none"> ● Secure funding for system development through partnerships. ● Monetize monitoring services through collaborations with academic institutions. 	<ul style="list-style-type: none"> ● International funding for monitoring systems ● Partnerships with local academic institutions for service provision. 	<ul style="list-style-type: none"> ● Percentage of research outputs tracked on Open Science platforms. ● Funding secured for monitoring. ● Number of system performance reports. 	Year 2–3	● Monitoring and Evaluation Office
4. Homing of Scientists	<ul style="list-style-type: none"> ● Facilitate return of Ugandan scientists for Open Science research. ● Provide grants to early-career scientists engaged in Open Science. 	<ul style="list-style-type: none"> ● Secure funds through diaspora-focused initiatives. ● Co-fund with private sector partners (IT, telecom companies). 	<ul style="list-style-type: none"> ● Diaspora fellowship programs. ● Public-private partnerships with private sector firms. ● International development grants. 	<ul style="list-style-type: none"> ● Number of scientists engaged through homing programs. ● Total value of grants awarded. ● Number of private sector partnerships established. 	Year 1–3	● Office of Talent Management and Homing
Funding Source	Resource Mobilization Opportunities					
Government of Uganda	Core funding for Open Science initiatives.					
Public-Private Partnerships	Joint funding mechanisms with private sector (IT and telecommunications companies).					
Revenue from Certification and Training	Fees from compliance certification (e.g., FAIR) and specialized Open Science policy training programs.					
Diaspora and International Collaborations	Support through diaspora fellowship programs and international Open Science research projects					

The background is a deep blue gradient with several diagonal lines of varying thicknesses and shades of blue. Scattered across these lines are small, semi-transparent squares in various shades of blue, creating a sense of depth and movement.

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