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**SOROTI
UNIVERSITY**
A University of Professionals and Innovators



RESEARCH AND INNOVATIONS AGENDA

2024/2025 - 2029/2030

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Government of the Republic of Uganda	
Government of India	
International Atomic Energy Agency	
Bank of Uganda	
European Union	 European Union
Aga Khan Foundation	 AGA KHAN FOUNDATION
Mbarara University of Science and Technology	
Jena Herbals/Prof. Patrick Ogwang Engeu	
Ministry of ICT and National Guidance	 MINISTRY OF ICT & NATIONAL GUIDANCE A Knowledge and Productive Society driven by ICT & National Ideology
Ministry of Science, Technology, and Innovations	 Ministry of Science, Technology and Innovation

Acronyms

4IR	Fourth Industrial Revolution
COVID-19	Corona Virus Disease 2019
DGSRI	Department of Graduate Studies, Research and Innovations
DVC AA	Deputy Vice Chancellor - Academic Affairs
GSRI	Graduate Studies Research and Innovations
IACUC	Institutional Animal Care and Use Committee
ICT	Information and Communication Technology
MoSTI-OP	Ministry of Science, Technology and Innovations - Office of the President
MoU	Memorandum of Understanding
NDP III	The Third National Development Plan
NRM	National Resistance Movement
RIF	Research and Innovations Fund
SDG 3	The Third Sustainable Development Goal
STI	Science, Technology and Innovations
SUN	Soroti University
SUN-REC	Soroti University Research and Ethics Committee

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1. INTRODUCTION

1.1 Background

Soroti University was established as the 9th Public University by an Act of Parliament under Sections 22 (1), 24(1) and 25 of the Universities and Other Tertiary Institutions Act 2001(as amended). The Parliamentary enactment is contained in the Statutory Instrument No. 34 dated 16th July 2015. The mandate of Soroti University is derived from Section 24(2) of the Universities and Other Tertiary Institutions Act 2001(as amended) which defines the mandate of a Public University, to be:

- a) Provision of higher education, promotion of research and advancement of learning.
- b) Dissemination of knowledge and giving opportunity of acquiring higher education to all persons including persons with disabilities wishing to do so regardless of race, political opinion, colour, creed or sex.
- c) Provision of accessible physical facilities to the users of the Public University.

The Department of Graduate Studies, Research and Innovations (DGSRI) was established on August 3, 2023 when the Ministry of Public Service approved the adjusted structure of Soroti University. The mandate of DGSRI is to coordinate, support and manage graduate studies, research and innovations at university level.

Research, scholarship, and creative works are one of the four strategic focus areas engrained in Soroti University Strategic Plan 2020/2021-2024/2025. Research is an integral function of Soroti University. Both the Strategic Plan and the Research and Grants Management Policy 2020 demand development of Research Agenda to guide investments in this key function of the University. It was therefore imperative for the DGSRI to develop this document. —

1.2 Goal, context and objectives

The goal of this Research Agenda is to position Soroti University to effectively contribute to accelerated socio-economic transformation, prosperity and well-being of Ugandans, and humankind in general, through research and innovations. It guides the direction of focus in research and innovations for the period from 2024/2025 to 2028/2029, puts in place research management framework, research resource mobilization avenues and research monitoring framework.

The objectives are:

- a) To guide overall research planning and research funds allocation in the University;
- b) To inform stakeholders (government, development partners, Soroti University staff and students, the public, etc) on the priority areas of research for Soroti University.
- c) To foster collaboration with national and international partners; and

- d) To delineate priority areas for building capacity of University researchers and innovators.

This Research Agenda envisions to position Soroti University as a research, innovation and creative University that contributes to sustainable socio-economic transformation of Ugandans. It is the intellectual vision and aspiration of staff and students of Soroti University, espousing creative and independent thinking for research and innovations. It contributes to the journey of transforming staff and students from knowledge users and transmitters to knowledge generators. This Research Agenda is a roadmap that guides inquiry towards actualising, in part, the Vision and Mission of Soroti University.

1.3 The process of developing the Research Agenda

The process of developing this Research Agenda was consultative, participatory and all-inclusive. Soroti University sourced services of an external facilitator to lead and guide the process. The process involved the following segments:

- a) *Review of documents:* The external facilitator reviewed the following documents, among others: Soroti University Strategic Plan 2020/2021-2024/2025, National Development Plan III, Sustainable Development Goals, NRM manifesto, Vision 2040, the National Fourth Industrial Revolution Strategy, African Union Vision 2063, Policies of the Ministry of Science, Technology and Innovations – Office of the President.
- b) *Consultation of stakeholders:* The external facilitator consulted various internal and external stakeholders of Soroti University through workshops, face-to-face interviews and telephone interviews. They included the Chancellor of Soroti University, Administrative Staff and selected Academic Staff of Soroti University, Soroti Regional Referral Hospital, Kumi Orthopedic Centre, Soroti School of Comprehensive Nursing, East African School of Civil Aviation, Soroti Fruit Factory, Ministry of Energy and Mineral Development, Ministry of Water and Environment, National Planning Authority, The Aids Support Organization, the National Environmental Management Authority, the National Water and Sewerage Corporation and Kyambogo University.
- c) .The draft Research Agenda was presented to the University Top Management for ownership and input, and to the University Senate for further input. After incorporating inputs of the Senate and Top Management, it was presented to the Quality Assurance Committee for the onward submission to the University Council for approval.

Figure 3 illustrates the conceptual framework that was employed in the process of developing the Research Agenda.



Figure 3: The Circle of Research Priorities Setting (UNESCO, 2023)

1.4 Linkage with existing laws and policies

This Research Agenda conforms to relevant laws of the Republic of Uganda, as well as to policies of Soroti University. They include, but not limited to:

- a) National Council for Science and Technology Act 1990.
- b) Universities and Other Tertiary Institutions Act 2001(as amended).
- c) Soroti University Research and Grants Management Policy 2022.
- d) Soroti University Intellectual Property Management Policy 2022.
- e) Soroti University Undergraduate Programme Semester System Policy 2020.
- f) Soroti University Strategic Plan 2020/2021-2024/2025.

Other policies and regulations of Soroti University that support implementation of the Research Agenda shall be developed within the period from 2024/2025 to 2028/2029. Examples are: Open Access Policy, Institutional Repository Policy, Gender Policy, Records Management Policy, Staff Training, Promotion and Establishment Policy, and Visiting Research Scholar Policy.

2. FOCUS PRIORITY AREAS FOR RESEARCH AND INNOVATIONS

The areas of focus for research and innovations herein identified and prioritized by Soroti University for the period from 2024/2025 to 2028/2029 are broad. They are purposed to stimulate and promote transformative inter-disciplinary, multi-disciplinary, and trans-disciplinary research, and also for Soroti University to build research infrastructure capacity in the identified areas. They also reflect the current and projected staff strength and research facilities available at Soroti University in the period from 2024/2025 to 2028/2029.

The areas of focus for research and innovations are in four categories, namely: Health and allied health systems, engineering and technology, institutional development and cross-cutting research areas. For all these categories, research shall transcend, where applicable, from basic to applied through to translational and developmental research.

2.1 Health and allied health systems research

Good health and well-being is the Third Sustainable Development Goal (SDG 3) of the United Nations. The Government of the Republic Uganda also prioritises effective health delivery to all Ugandans. A myriad of health challenges afflicts Ugandans, all demanding a contribution from research and innovations to find solutions to them. Climate change, rapid population growth, environmental pollution, rapid urbanisation, lifestyle changes and fast-paced technological advances have, among others, significantly contributed to a demographic shift and changing epidemiology of infectious and non-communicable diseases and health delivery systems models in Uganda. Worldwide, the One Health approach is now favoured and promoted to tackle emerging and re-emerging public health challenges of the 21st Century. There is, therefore, a pulsating need for Soroti University to prioritize investments in research and innovations in health and allied health systems.

In the period from 2024/2025 to 2028/2029, Soroti University shall focus on research that addresses linkages between health, environment and disease, and how healthy people can be supported to remain healthy in their eco-system. The priority areas for research in health and allied health systems, therefore, are:

- a) Infectious diseases
- b) Non-communicable diseases, including life style diseases, cancers, injuries and mental health.
- c) Nursing/midwifery service provisioning and delivery.
- d) Public health and population education models.
- e) Health services provisioning, including health financing, leadership, governance, and policies.
- f) Rapid diagnostics and forensics.
- g) One Health approach, including antimicrobial resistance, nutraceuticals, food safety

and zoonoses (i.e., those diseases that can be transmitted from animals to humans and vice versa).

- h) Child, adolescent and reproductive health.
- i) Geriatrics.
- j) Physiotherapy.
- k) Indigenous knowledge systems in healthcare, including herbal medicines and traditional animal-derived medicines.
- l) Climate change and health nexus.

2.2 Engineering and technology research

The NRM manifesto emphasizes Science, Technology and Innovation (STI) as a driver for Uganda's socio-economic transformation. Furthermore, the Ministry of Science, Technology and Innovations – Office of the President (MOSTI-OP) works closely with agencies and institutions of higher learning to develop customized technology solutions to support the people of Uganda. In 2020, Uganda launched the National Strategy for the Fourth Industrial Revolution (4IR), with a Mission to transform and accelerate Uganda's development into an innovative, productive and competitive society using 4IR technologies by 2040. The first objective of the 4IR National Strategy is to enhance the deployment and use of 4IR technologies in key economic sectors to drive productivity, value addition and commercialization.

In the period from 2024/2025 to 2028/2029, Soroti University shall prioritize research in engineering and technology that supports knowledge-based economy for industrialization, import substitution, value added exports and acceleration of productivity. The priority areas for research and innovations in engineering and technology, therefore, are:

- a) Artificial intelligence, robotics and machine learning technologies.
- b) Nuclear science and engineering.
- c) Humanitarian engineering.
- d) Design and road works.
- e) Food processing and industrial technology.
- f) Material and packaging science.
- g) Geo-technical and foundation engineering.
- h) Renewable energy.
- i) Precision manufacturing.
- j) Geo-science and space science.
- k) Big data science.

2.3 Management sciences and science education research

2.4 University institutional development research

Most universities, especially in developing countries, are progressively shifting from the ivory tower elitist philosophy to community development and society transformation philosophy. This demands research into new models and approaches of university governance, leadership and service delivery. This is even more pronounced for young universities with evolving and malleable administrative and management systems. Each university is a unique entity guided by its Mission and Vision. In Uganda, hitherto, University administration and management structures of new universities are benchmarked from best practices of older and well-established universities. However, there is no “fit-for-all-sizes” as technology and society are rapidly changing the higher education landscape. Proliferation and availability of artificial intelligence-based learning technologies like ChatGPT to students and educators impact on their individual creativity and critical thinking abilities. Therefore, there is a need and an opportunity for research into new and more effective models of contemporary higher education institutions administration and management systems.

Therefore, in the period from 2024/2025 to 2028/2029, Soroti University shall focus research on the following areas to support higher education institutional development and management:

- a) University governance, administration and leadership models.
- b) University community outreach models.
- c) Data use in university education system.
- d) Education management and education technologies.
- e) Financial inclusivity and diversity in contemporary higher education.
- f) University policies.

2.5 Crosscutting areas of research

Cross-cutting areas for research for the period from 2024/2025 to 2028/2029 are those that are nested in any of the above three categories. They are:

- a) ICT.
- b) Gender.
- c) Knowledge unpackaging and translation models.
- d) Environment.

3. COORDINATION AND MANAGEMENT OF RESEARCH

Research at Soroti University is coordinated and managed at different tiers as illustrated in Figure 4.

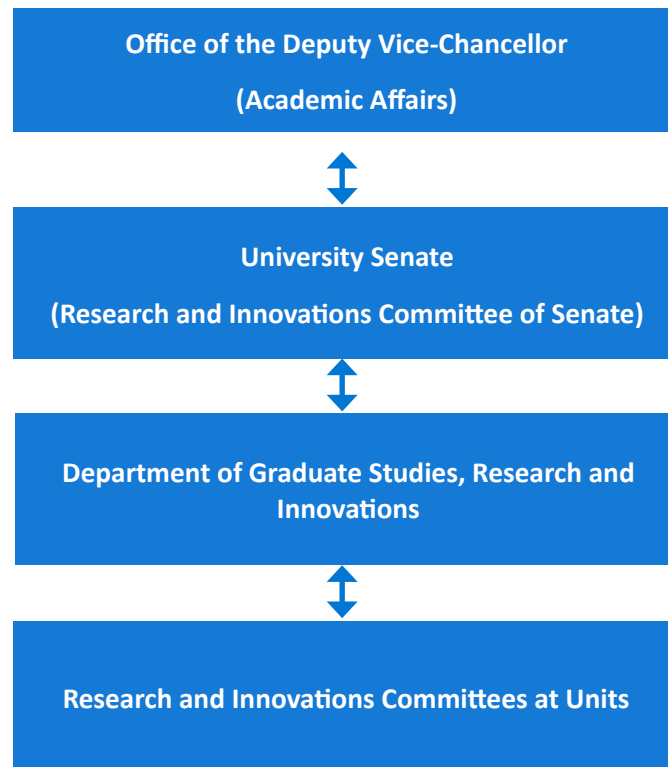


Figure 4: Management and coordination of research and innovations at Soroti University

The Office of Deputy Vice-Chancellor – Academic Affairs (DVC AA) superintends research and innovations engagements of the University. The DVC (AA) chairs the Research and Innovations Committee of Senate. The Academic Registrar is the Secretary to this Committee, assisted by staff assigned to the DGSRI by the Academic Registrar. The Office of Director of DGSRI coordinates and supports Research and Innovations in the University. The Director of DGSRI is in charge of administration, finance, research and innovations, and graduate studies. The DGRI has two Units; Graduate Studies and Research and Innovations Units, each headed by a Deputy Director. Each Unit is assisted by one staff designated from the Office of Academic Registrar. Schools have Research and Innovations Committees, chaired by the respective Deans. The School Committees have a representation of staff from each academic department. Some of the above positions and committees are yet to be filled or shall be established within the period from 2024/2025 to 2028/2028. Where a position is not yet filled, those functions are delegated to other Officers of the University until further notice.

4. RESEARCH INFRASTRUCTURE

The following infrastructure support research and innovations in the University:

- a) Academic staff space and offices.
- b) Student's space and offices.
- c) Seminar space.
- d) Lecture space.
- e) Laboratory space.
- f) Field facilities and space.
- g) Libraries (both physical and electronic).
- h) ICT facilities.

5. RESEARCH CENTERS OF EXCELLENCE, DEMOGRAPHIC SURVEILLANCE SITES/ FIELD STATIONS AND ICT INNOVATION HUBS

In order to galvanise research and service delivery, Soroti University has or hosts or shall establish Research Centres of Excellence, Demographic Surveillance Sites/Field Stations and ICT Innovation Hubs. They constitute important components of the academic, research, and community service functions of Soroti University. They traverse the boundaries of departments and schools, and they play an important role in enabling multi-disciplinary and inter-disciplinary research teams. They are a necessary part of the University's infrastructure. Examples are: National Centre for Nuclear Research, Centre for Tropical Medicine, Centre of Excellence in Artificial Intelligence and Robotics, and the ICT Innovations Hub.

Demographic Surveillance Sites/Field Research Stations are (or shall be) located off-campus to serve specific research programmes and community outreach engagements of Soroti University. Examples are: Akampala Demographic Surveillance Site in Kaberamaido District, Kachumbala-Butebo Demographic Surveillance Site in Bukedea and Butebo Districts, Katakwi Field Research and Community Outreach Station in Katakwi District and Pian Upe Field Research Station in Nakapiripirit District.

The Regional ICT Innovations Hub launched at Soroti University on March 20, 2024 by Hon.

Dr. Chris Baryomunsi, the Minister of ICT and National Guidance, provides a platform for incubation of young talent in ICT in Soroti University and elsewhere to carry out research, develop and test their ideas; from the stage of ideation through to commercialisation.

6. FUNDING OF RESEARCH AND INNOVATIONS

Research and innovations in Soroti University is funded through multiple streams, including:

- a) Government of Uganda subventions, including the Research and Innovations Fund (RIF).
- b) Government and privately sponsored undergraduate student's research funds as set by Senate.
- c) Internally generated funds.
- d) Administrative overheads of externally funded projects as stipulated in the Research and Grants Management Policy 2022.
- e) Private sector and industry.
- f) National and international research funding agencies.
- g) Contractual research.
- h) Donations and charities.
- i) Endowments.

Broad strategies for directly or indirectly mobilizing funds and other resources for research and innovations include:

- a) Advocating for enabling and researcher-friendly policies and regulations at the University.
- b) Building capacity of researchers to write winning grant proposals.
- c) Advocating for enabling research infrastructure and culture.
- d) Convening annual national donor mapping breakfast meetings.
- e) Strengthening the capacity of the Department of Graduate Studies, Research and Innovations to coordinate and manage research.
- f) Annually recognising and rewarding the best researchers from each School and Administration.
- g) Strengthening collaboration and partnerships with external stakeholders including, other universities, funding agencies, central government, industry, local government authorities, among others.
- h) Operationalising Soroti University Research Ethics Committee (SUN-REC) for research dealing with live human subjects, and Institutional Animal Care and Use Committee (IACUC) for research dealing with use of live vertebrate animals.

7. MANAGEMENT OF RESEARCH FUNDS

Unless explicitly stated by the funding agency, all research funds shall be managed as per the established Soroti University finance management procedures and guidelines.

8. MONITORING RESEARCH AND INNOVATION OUTPUTS

Research and innovations outputs of Soroti University shall be measured directly or indirectly by the:

- a) Number of research projects undertaken and concluded.
- b) Number of grant proposals written and funded.
- c) Number of staff trained in grant writing and research management.
- d) Number of MoUs and collaborative engagements signed with national and international partners.
- e) Number of papers published in refereed journals and conference proceedings.
- f) Number of books and book chapters written with an International Standards Book Number (ISBN).
- g) Number of patents registered.
- h) Number of patents registered.
- i) Number of policy and research briefs written and disseminated.
- j) Number of staff engaged by national and international think tanks and consultancy assignments.
- k) H-index and i10-index of staff.
- l) Number of research and innovations commercialized.
- m) Number of collaborative research teams formed.
- n) Ranking in Webometrics, EduRank and other higher educations ranking schemes.

9. COLLABORATIONS AND PARTNERSHIPS

Soroti University shall enter into Memoranda of Understanding and Agreements with national, regional and international partners and research institutions for effective implementation of research activities.

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PICTORIAL OUTLOOK OF SOROTI UNIVERSITY'S UPCOMING PROJECTS TO SUPPORT RESEARCH/TEACHING



THE PROPOSED UNIVERSITY TOWER AT THE



THE PROPOSED UNIVERSITY LIBRARY



THE PROPOSED SCHOOL OF ENGINEERING AND TECHNOLOGY



ABOVE IS THE PROPOSED SOROTI UNIVERSITY SPORTS COMPLEX



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SOROTI UNIVERSITY MAIN GATE

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