INTER-UNIVERSITY COUNCIL FOR EAST AFRICA

Research Excellence Framework for Higher Education in East Africa (REFHE-EA)

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Definition of Key Terms

Research refers to a process of investigation leading to new insights, stock of knowledge, innovations or new applications. It includes work of direct relevance to the needs of the society, industry, the public and private sectors; academia and scholarship; as well as creative work facilitating efforts towards socio-economic transformation.

Research Excellence refers to exceptional high-quality research, which contributes to new knowledge and thinking, has high yield of research outputs that are widely recognised, and the findings are of significant influence and/or benefit to the society. Research excellence relates to quality of research process, the output produced by researchers and the impact of research.

Research Impact refers to the real-world effect, influence and/or benefits of research. This includes societal or economic benefits, changes in policy or practice, raised public awareness on an issue, new knowledge and expertise, among others.

Research Productivity refers to what is produced from research by researchers in terms of publications, inventions, patents and other intellectual property assets, innovations, spin-offs, grants awarded, software generated, and other research outputs. It focuses on what the research process has yielded.

Research Quality refers to the rigour in all aspects of research process which entails the application of best practices in research design, methods, data analysis, reporting and dissemination, ethical standards, and supervision standards. It relates to how the research is planned, performed, disseminated, and utilised, as well as the significance of the research.

Research Relevance refers to the extent to which the research addresses the needs, interests, or problems of the intended or potential users or beneficiaries. It is dependent on demand from various stakeholders, engagement of different stakeholders from research design to implementation and dissemination of findings, and on the potential or intended application of the findings.

List of Acronyms

EAC	East African Community
EAHRC	East Africa Health Research Commission
EASTECO	East Africa Science Technology Commission
GCI	Global Competitive Index
HE	Higher Education
HEIs	Higher Education Institutions
IP	Intellectual Property
IUCEA	Inter-University Council for East Africa
M&E	Monitoring and Evaluation
REFHE-EA	Research Excellence Framework for Higher Education in East Africa
R&D	Research and Development
STI	Science, Technology, and Innovation
WIPO	World Intellectual Property Organization

Executive Secretary Foreword

This Research Excellence Framework for Higher Education in East Africa (REFHE-EA) is a guiding document to support East African Community Partner States to strengthen research quality and capacities in higher education and research institutions, and to support research assessment processes for enhanced productivity and impact of research I would like to express my firm support for REFHE-EA, which is a focused intention whose key result areas will be realized through effective implementation

I urge all interested parties and research stakeholders to support in the adoption, dissemination, and implementation of this Framework in the pursuit of research excellence in the East African Community (EAC) Research excellence will significantly impact on the competitiveness and socioeconomic transformation of the region

It is gratifying that the development of the REFHE-EA has taken root during my tenure I am pleased with the contribution of key experts and collaboration with various stakeholders right from the initial development stage of this Framework The collaborative effort of all stakeholders will play a crucial role in the successful adoption and effective implementation of the REFHE-EA at all levels

Implementation of REFHE-EA is the responsibility of diverse actors, who are guided with the specific roles outlined at different levels to ensure its effective and efficient implementation IUCEA will coordinate implementation at regional level in line with its mandate in the EAC In addition, IUCEA anticipates maximum support and participation of various actors in the region in order to achieve the desired research excellence in the region

I would like to most sincerely appreciate the contribution of the regional and international experts who reviewed and provided invaluable input towards the development of this Framework Special acknowledgement goes to DAAD for the support in engagement of international experts My sincere appreciation also goes to all stakeholders who were engaged in the development of this Framework with a special recognition to the Ministries responsible for higher education in the EAC partner states, the national commissions/councils for higher education, the national commissions and councils for research, science, technology and innovation and all other stakeholders for their instrumental contributions

Finally, I do extend my appreciation to the IUCEA team, led by the Prof Idris Rai - Deputy Executive Secretary who oversaw the entire process, Dr Salome Guchu - Principal Innovation and Outreach Officer who coordinated the drafting and engagement with experts and

stakeholders, and the entire technical team comprising of Prof Michael Mawa, Prof Meshack Obonyo, Prof Alex Ndabarushimana, Dr Robert Ayine, Dr Gervais Ndayizeye and Prof Philippe Tunamsifu for their contribution to the document and entire process

It is my expectation that REFHE-EA will be put into good use to promote and support effective implementation, governance, contribution and assessment of research in HEIs for regional research excellence in the EAC.

Prof Gaspard Banyankimbona
EXECUTIVE SECRETARY

SECTION 1: Introduction

1.1 BACKGROUND

Quality research plays a crucial role in the growth of knowledge and in advancing technology and innovation, as well as in effective evidence-based policy and decision-making. Globally, the role of quality research in development of societies is well established in the development agenda. The Sustainable Development Goals (Goal 9.5) articulates the need to enhance scientific research, upgrade technological capabilities of industrial sectors in all countries by 2030. The Goal further encourages innovation and substantial increase of number of research and development workers per 1 million people and increase of public and private research and development spending.

The Africa Agenda 2063 aspires for a prosperous inclusive growth and sustainable development with a fully developed human capital sustained through investments in higher education, science, technology, research and innovation. The agenda further emphasises elimination of gender disparities at all levels of education and a strengthened post-graduate education with world-class infrastructure for learning and research[1]. The Science, Technology and Innovation (STI) Strategy for Africa-2024 underscores the commitment to improve STI status in terms of human capital, technical competence, infrastructure, enabling environment, innovation and entrepreneurial mindset[2]. In addition, the Continental Education Strategy for Africa 2016-2025 calls for revitalization and expansion of tertiary education, research and innovation to address continental challenges and promote global competitiveness[3].

Consistent with the continental Agenda, the East African Community (EAC) recognizes the key role that research plays in regional development, as articulated in Article 5 of the Treaty on the broad objective for the establishment of the Community[4]. Moreover, the EAC Vision 2050 highlights human capital development as a key enabler for the Vision, underscoring quality and access to Education, and the role of research and innovation in economic transformation and

[1] African Union (2015), Agenda 2063: The Africa we Want, popular version paragraph 14 on the African Aspirations for 2063. https://au.int/sites/default/files/documents/36204-doc-agenda2063_popular_version_en.pdf

[2] AU Science, Technology and Innovation Strategy for Africa 2024 (STISA-2024). https://au.int/sites/default/files/documents/38756-doc-stisa_science_tech_innovation_strategy.pdf

[3] African Union (2016), Continental Education Strategy for Africa, Strategic Objective 9. https://au.int/sites/default/files/documents/29958-doc-cesa_-_english-v9.pdf

[4] The Treaty for the Establishment of the East African Community. https://www.eala.org/uploads/The_Treaty_for_the_Establishment_of_the_East_Africa_Community_2006_1999.pdf

development[5]. The EAC is one of the fastest-growing regional economic blocs with partner state membership rising from five (5) in 2016 to eight (8) in 2023. The higher education landscape in the region is also characterised by significant increase in the number of HEIs in the partner states. However, growth and productivity of research from HEIs in the region is still not proportional to the increasing number of HEIs. There is therefore a need for a regional initiative to guide and support coordination and strengthening of research in HEIs in the region. This is in line with the mandate of the Inter-University Council for East Africa (IUCEA), which is to advise, develop and co-ordinate all matters related to higher education and research in the region.

Over the years, IUCEA has played a crucial role in implementing various initiatives and programmes towards the attainment of EAC Common Higher Education Area, strengthen research and innovation in HEIs in the region, and support regional collaboration and linkages in higher education and research through staff and student mobility programmes. In particular, IUCEA has been developing and disseminating key regional higher education tools and frameworks such as Regional Quality Assurance frameworks, subject benchmarks, Standards & Guidelines for Postgraduate Studies and Regional Higher Education Qualification frameworks, which are part of building blocks to the attainment of Common Higher Education Area.

In pursuit of supporting coordination and strengthening of research in the region, a Research Excellence Framework for Higher Education in East Africa (REFHE-EA) is proposed. Building on other guiding frameworks developed by the IUCEA for HEIs in the region, REFHE-EA is a progressive and overarching guide to support in streamlining processes and promoting research excellence in HEIs and is anchored on fundamental principles, which cut across different research types and endeavours. REFHE-EA is structured as a guiding instrument to support EAC partner states, regulatory bodies, and HEIs in developing systems for research quality, governance, management, self-regulation, and assessment for regional competitiveness. It is envisaged that REFHE-EA will facilitate in inculcating a culture of research quality in the region and support enhancement of productivity and impact of research from HEIs in the region.

1.2 RATIONALE

According to the World Economic Forum Global Competitiveness Report 2019, Sub-Saharan Africa has the lowest Global Competitive Index (GCI) with a median average of 46.3 against a global average of 60.9 out of 100. Among the 12 pillars of GCI is the innovation capability pillar, which has research and development (R&D) as a key component comprised of scientific publications, patent applications per million population, R&D expenditures as % of GDP and

[5] East Africa Community Vision 2050. http://repository.eac.int/bitstream/handle/11671/567/EAC%20Vision%202050%20FINAL%20DRAFT%20OCT-%202015.pdf?sequence=1

research institutions prominence. East Africa countries have a relatively low R&D competitiveness as is evident in the competitiveness scores on R&D component for Democratic Republic of Congo (15.7), Burundi (14.8), Kenya (27.9), Rwanda (23.4), Tanzania (23.3) and Uganda (20.6). This is compared to the R&D scores for South Africa (38.4), Malaysia at (44.0) and Singapore (70.5)[6]. The low competitiveness scores on R&D component are an indication of low research productivity in the East Africa countries and hence minimal contribution to regional competitiveness.

In addition, the World Intellectual Property Organization (WIPO) IP Facts and Figures 2023 shows that the patent applications by Kenya, Rwanda, Tanzania, and Uganda in 2022 were 417, 12, 62, and 11 respectively. This is compared to 13,990 patent applications by South Africa in 2022[7]. The WIPO figures portray low research productivity in East Africa The low research productivity among HEIs in Africa has been associated to various factors including governance, enabling environment, funding, competencies, among others[8]. The low productivity in research is linked to notable gaps and challenges related to research quality, systems and governance at various levels. Among the key gaps and challenges are weak research management capacities, inadequate research capacities and infrastructure, inclusion issues related to demographic characteristics such as gender and age, disengaged and impact-less research, and inadequate research funding. In addition, there is weak research partnerships and collaborations in the region and beyond, which leads to researchers' isolation and missing out on opportunities for multi-disciplinary and cross-border research engagements that are geared towards solving regional challenges.

A regional Research Excellence Framework for HE is therefore proposed to address existing gaps and challenges by enhancing the quality, productivity and impact of research in the region. IUCEA envisages that the intervention will support the promotion, coordination and attainment of research excellence in the region. Further, the Framework will contribute to boosting regional competitiveness.

1.3 PURPOSE OF THE REFHE-EA

The purpose of the REFHE-EA is to provide mechanisms to support effective implementation, governance, contribution and assessment of research in HEIs in the EAC region.

[6] World Economic Forum, The Global Competitiveness Report, 2019. https://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf

[7] World Intellectual Property Organization (2023). IP Facts and Figures 2023. Geneva: WIPO. https://www.wipo.int/edocs/pubdocs/en/wipopub-943-2023-en-wipo-ip-facts-and-figures-2023.pdf

[8] Uwizeye D, Karimi F, Thiong'o C et al. Factors associated with research productivity in higher education institutions in Africa: a systematic review. AAS Open Res 2022, 4:26 https://doi.org/10.12688/aasopenres.13211.2

1.4 OBJECTIVES OF THE REFHE-EA

The objectives of the REFHE-EA are to:

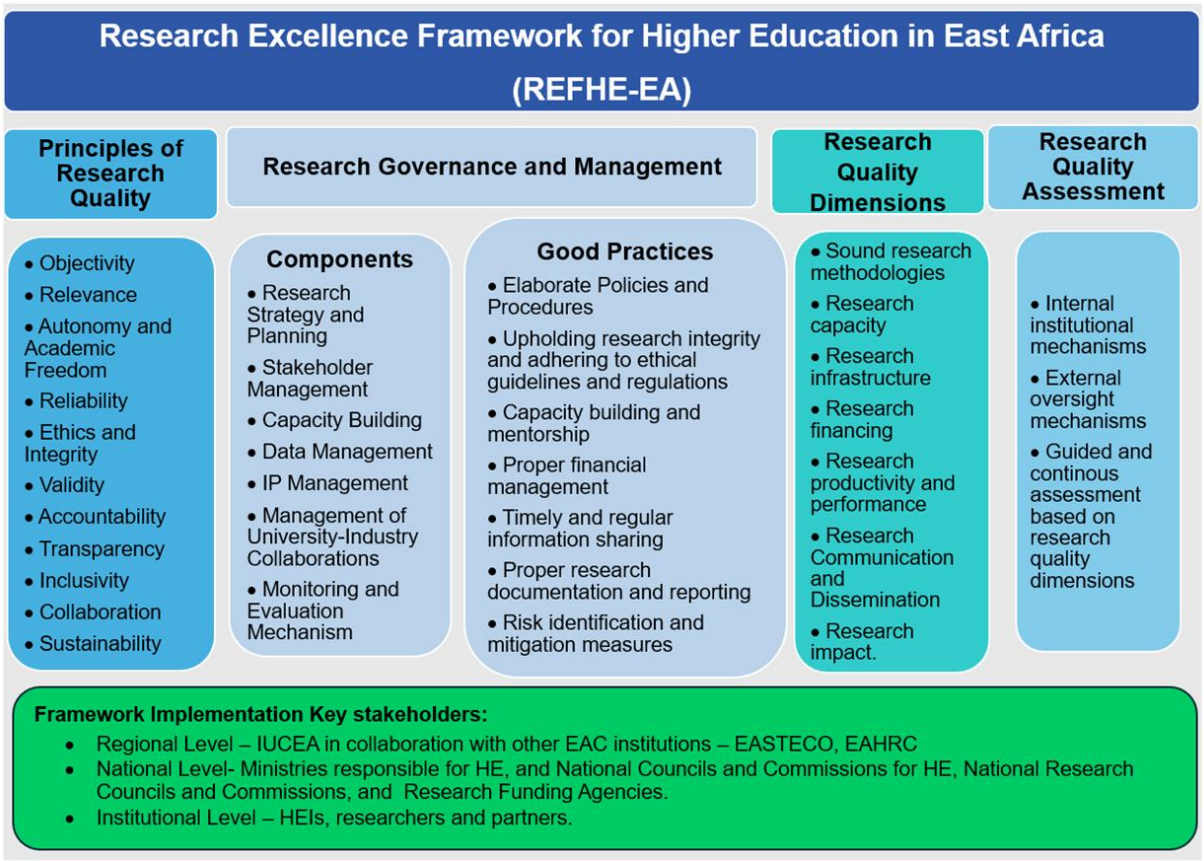
i. Provide a benchmark for research excellence in HEIs in the region.
ii. Stimulate and inculcate a culture of research quality in HEIs in the region.
iii. Promote adherence to the fundamental principles of research quality in HEIs in the region.
iv. Promote harmonisation of research best practices in HEIs in the region.
v. Improve research execution and assessment processes.
vi. Foster increased research collaboration among HEIs and between HEIs and industry in the region and beyond.
vii. Increase the impact of research on regional socio-economic transformation and global competitiveness.

1.5 SCOPE OF THE REFHE-EA

The scope of REFHE-EA is to provide principles, guidelines and good practices that can reasonably be applied to achieve research excellence through effective governance, systems, processes of execution and assessment of research in HEIs in the region. The framework is applicable for use as a reference point nationally and by various institutions, including but not limited to ministries responsible for HE and research, regulatory institutions like the national commissions and councils for HE, commissions/councils for research, research institutions and national research funding agencies.

REFHE-EA is not a rigid prescriptive instrument but rather a guide, reference and a benchmarking tool for adoption to support in development and/or review of national and institutional frameworks for research excellence. The Framework is comprised of components on principles of research quality, research governance and management, research quality dimensions, research quality assessment, and a framework implementation plan. Figure 1 is a schematic representation that illustrates the components of REFHE-EA.

Figure 1: Schematic Representation of the Framework



SECTION 2: Principles of Research Quality

2.1 INTRODUCTION

Research quality is the foundation of research excellence. It relates to the soundness and rigour of the research process from planning, implementation, dissemination and utilisation of findings. It is considered that high research quality contributes to enhanced research productivity and impact, thus contributing to research excellence. In this section, the principles of research quality are described as they form the fundamental components of research excellence.

2.2 PRINCIPLES OF RESEARCH QUALITY

The principles of research quality are the primary components that contribute to the overall research excellence thus ensuring that research contributes to targeted societal benefits, development actions and public policy. The fundamental principles are objectivity, relevance, autonomy and academic freedom, reliability, ethics and integrity, validity, accountability, transparency, inclusivity, collaboration, and sustainability.

These principles are inter-connected and universal in their character, however, the context under which they are applied and adhered to, may vary. Figure 2 illustrates the inter-connectedness of the fundamental principles of research quality.

Figure 2: Principles of Research Quality

2.2.1 Objectivity

Objectivity in research relates to impartiality and freedom from all forms of bias in all aspects of research. Research objectivity is crucial in promoting independence and fairness in design, methods and processes. This safeguards the integrity of research and contributes to the credibility, acceptability, and uptake of research output.

Research objectivity is supported by institutional policies, standards, procedures, and adherence to requirements of oversight bodies. This requires that researchers are neither influenced by personal interest, particular biases and value judgements nor by the interests of any financing body.

In cases where absolute objectivity cannot be achieved, this principle would be expressed in the systematic attempt to reflect all forms of bias, basic assumptions and social embeddedness of the researcher and filter out individual biases, replacing them with intersubjectively established evidence gathered through robust methodology.

2.2.2 Academic Freedom and Autonomy

Research quality is dependent on healthy research environment, which thrives on academic freedom and autonomy. According to the 2019 Global Forum on academic freedom, institutional autonomy, and the future of democracy Declaration, it is recognised that "higher education can only fulfil its mission if faculty, staff and students enjoy academic freedom and institutions are autonomous..."[9].

Academic freedom and autonomy in research relate to the independence of researchers to conduct research, publish and disseminate findings and knowledge, as well as engage with academic peers and stakeholders. In maintaining academic freedom and autonomy in research, HEIs should ensure that:

i. Researchers have the freedom to pursue research and scholarship without undue interference.
ii. There is independence in choosing topics of research in relevant global, regional, national and institutional research agenda.
iii. Researchers have freedom to engage in independent inquiry, free debate and exchange of ideas.
iv. There is freedom of collaborations with other institutions and partners in relevant research areas.

2.2.3 Relevance

Research relevance relates to usefulness and significance of research and the potential for impact. This is dependent on how well research questions and proposed interventions address contemporary issues and are aligned to the local context in which research interventions are proposed. Factors that influence research relevance include demand, engagement, and application. Demand refers to the priorities or gaps identified by stakeholders, such as funders, partners, users, or policymakers. Engagement refers to involving stakeholders in the design, implementation, or dissemination of the research and fostering dialogue and collaboration. Application refers to production of research outputs that are accessible, usable, or adaptable by stakeholders and can inform or influence their decisions or actions.

Institutions and researchers should ensure that research undertaken in the region addresses national, regional and global concerns in a clear and focused approach. This calls for:

i. Clarity on societal challenges and on the respective development agenda at local, national, regional and global levels as well as on their interdependence.

[9] Global Forum (2019), "Global Forum on Academic Freedom, Institutional Autonomy, and the Future of Democracy Declaration", available at https://rm.coe.int/global-forum-declaration-global-forum-final-21-06-19-003-/16809523e5, accessed 16 May 2024.

ii. Well-articulated scope and purpose of research that deals with the multifaceted determinants of societal and development concerns.
iii. Robust research anchored on and addressing pertinent issues in a multi- and inter-disciplinary approach.
iv. Practicality and adaptability of research to changing circumstances, new information and emerging issues.
v. Clarity of recommendations that are adoptable for action by different stakeholders.

2.2.4 Ethics and Integrity

Ethics and integrity are the bedrock of research quality, which ensure good and responsible practices from research design, conduct, data generation, dissemination and utilisation of findings. Ethics and integrity ensure that research is conducted according to the highest standards of practice, and with the minimal risk of adverse or harmful outcomes or consequences. Conducting research ethically and with integrity contributes to protecting and strengthening institutional and individual reputation, ensuring authenticity of the research outcomes, attracting relevant and diverse partners for collaborations, as well as enhancing opportunities for resource mobilisation.

Maintenance of high standards of ethics and integrity in research requires:

i. Compliance with legal and policy frameworks, professional obligations and relevant standards as required by statutory and regulatory authorities, funders and other relevant stakeholders.
ii. Having in place an institutional code of conduct and ethics for researchers applicable to all research activity conducted within or outside the institution, irrespective of the funding source.
iii. Capacity building of researchers, staff and students on diverse aspects of research ethics and integrity, including compliance, codes of conduct, data handling and management practices, etc.
iv. Establishment of offices for coordination of research ethics and integrity, including institutional research ethics committee, data management office, etc.
v. Mechanisms for upholding best practices in research ethics and integrity, including appropriate handling of instances of research misconduct.
vi. Mechanisms for monitoring, evaluating and learning from events and occurrences in research.

2.2.5 Reliability

Research reliability refers to robustness of methods and the consistency of results. Reliable research implies that it is dependable, reproducible and consistent. Reliability relies on the focus

of the research and having appropriate systems and rigorous processes for data collection, processing and analysis to ensure integrity of the data.

Research reliability requires institutions and researchers to ensure that:

i. Research is based on sound research methods and approaches that are well proven and replicable.
ii. Research methods and approaches are guided by a clear purpose.
iii. Standardised conditions and adequate quality management systems that guarantee precise and reproducible results.
iv. Research recommendations follow logically and unquestionably from the research findings to stimulate implementation efforts.

2.2.6 Validity

Research validity refers to the extent to which findings relate to the research objectives as well as how they correspond to characteristics and variations in the real world. Research validity is crucial in supporting application for and acquisition of intellectual property rights such as patents for new discoveries or inventions.

For research validity, institutions and researchers should:

i. Ensure that the research objectives relate to the hypothesis or problem statement.
ii. Ensure that research methods are coherent with the relevant theories and latest knowledge of research concept.
iii. Have clear research implementation plans and fair inclusion criteria in research sampling methods.
iv. Have structured programs for dissemination of research findings and exchange of information.

2.2.7 Accountability

Accountability in research relates to responsibility of researchers and institutions in the conduct of research as well as the use of resources for research. Accountability builds trust among different research stakeholders and contributes to legitimacy, credibility and acceptability of research output.

Accountability in research requires researchers and institutions to be:

i. Accountable on how resources are spent in the research process and how such expenditures contribute to the intended objective and development agenda.
ii. Knowledgeable on the expectations of various stakeholders in relation to their research processes and outputs.
iii. Honest in presenting individual and institutional research information.

iv. Answerable to stakeholders who justly hold them responsible in their research processes and outputs.
v. Open and receptive to feedback and input from diverse stakeholders who are affected and/or impacted by the research actions or inactions.
vi. Willing to anticipate on possible externalities of recommended actions.
vii. Open and willing to share experiences and expertise with the next generation of researchers to sustain research excellence.

2.2.8 Transparency

Research transparency relates to openness and clarity in processes, findings, conclusions, and recommendations from research. Transparency enhances research integrity and credibility by supporting verification and replication to build on the research results.

Research transparency facilitates proper interpretation of results and reinforces objectivity in decision-making, especially in cases of conflicting ideas or observations. In addition, transparency promotes open dissemination of research and equitable access to scientific knowledge thus providing open opportunities for research stakeholders to collaborate through access to information and to enable evidence-based policy debates, public discourse, decision-making and informed citizenship.

Transparency in research requires institutions and researchers to ensure appropriate documentation and communication of processes and outcomes. This can be supported by suitable plans, procedures, protocols, datasets, reports and other recordings including visual and audio.

2.2.9 Inclusivity and Diversity of Perspectives

Inclusivity in research relates to bias free approaches. It seeks the involvement of diverse stakeholders and perspectives taking into consideration marginalisation based on age, gender, and ethnicity, among others. Inclusion is recognised as a good practice, which contributes to the incorporation, respect and fair treatment of diverse perspectives. Such diversity of perspectives relates to all disciplines and may enhance the innovative capacity of research.

Inclusive and interdisciplinary research promotes diverse perspectives, which uncovers awareness of a broad spectrum of scientific and policy viewpoints. Inclusivity provides the opportunity to foster equity, promote truth, and mitigate bias. It further protects, connects with, uplifts dignity and empowers the marginalised groups. Inclusivity requires institutions to ensure diversification of the composition of research teams, engagement of various stakeholders, and having in place inclusivity policies. Researchers should always be sensitive to diverse opinions and perspectives of different stakeholders.

2.2.10 Collaboration

Collaboration involves seeking out, connecting and engaging with various research disciplines and external stakeholders. Collaboration establishes a culture of open communication, cooperation and respect for diverse ideas. These open opportunities for interdisciplinary, multidisciplinary, and transdisciplinary research and promote and maintain research rigour and ethical conducts. Collaboration further increases economies of scale and critical mass by enabling research clusters building on complementary specialisations and expands pools of research experts.

To build and sustain research collaboration, institutions and researchers require to:

i Have and adhere to the agreed guiding framework of engagement.

ii. Ensure open communication, mutual trust and respect among partners.

iii. Establish mechanisms for addressing any grievances.

iv. Ensure fairness and openness in sharing benefits accruing from research collaboration.

2.2.11 Sustainability

Sustainability is a crucial aspect of research orientation, processes and resources which involves ensuring that research is conducted to meet the present needs without compromising the ability of future generations to meet their own needs. The principle of sustainability in research is guided by social responsibility, and stewardship to reduce waste and conserve resources.

Sustainability requires adherence to ethical practices, co-production with various stakeholders to ensure that research is relevant and useful to the broader community, and systematic thinking to consider the long-term impacts of research activities.

SECTION 3: Research Governance And Management

3.1 INTRODUCTION

Well-coordinated and effective governance and management systems are critical for research to thrive. Such research governance and management systems include structures, principles, standards and guidelines that ensure research is conducted in an ethical, legally acceptable, and quality manner to attain the intended objectives. Good research governance and management helps to maintain high standards in research programs, increase the reliability of research results, and ensure that research findings and outputs are acceptable to all stakeholders.

Research governance makes provision for structured institutional approvals, internal reviews and controls, as well as considerations for emerging trends such as open science principles, artificial intelligence, etc. Good research management has inbuilt best practices, including proper planning, clarity in research agenda, accountability for research resources, mechanisms for quality control and assurance, capacity building, monitoring, evaluation and learning.

This section provides the key components of effective research governance and management, including research strategy and plan, stakeholder management, capacity building, data management, and monitoring and evaluation mechanisms. In addition, the section has also elucidated the good practices for effective research governance and management systems.

3.2 COMPONENTS OF RESEARCH GOVERNANCE AND MANAGEMENT

3.2.1 Research Strategy and Planning

This entails a clarification of strategic research orientation in light of institutional mission, vision and research priorities, and in line with national, regional and global development goals. Institutional research strategy and plan outlines where an institution intends to get, how it will get there and the requisite resource it needs to achieve these strategic priorities within a given time frame.

3.2.2 Stakeholder Management

Stakeholder management involves having a clear strategy to engage individuals, groups and/or institutions with interest in the research process, outputs and outcomes. For effective research governance and management, stakeholder participation facilitates harnessing of diverse

perspectives, ownership, and ensuring research is conducted based on agreed principles. Good stakeholder management empowers stakeholders to take part in the research process and helps the researcher to win local support, build trust, and provides an opportunity for obtaining feedback and an avenue for improvement and respond to changing circumstances and concerns that arise in research implementation.

Stakeholder management requires:

i. Identification of diverse stakeholders, including funders, researchers, graduate students, policy makers, community, regulatory agencies and government bodies.
ii. Classification based on their needs and expectations.
iii. Development of engagement strategy for two-way information sharing.

3.2.3 Capacity Building

Capacity building is a key component of implementation and governance of research. Good training provides a platform through which research excellence can be attained. Continuous training of researchers, research managers and technical support staff is required to provide up to date skills for implementation, management and coordination of research. The trainings should include but not limited to effective communication, research methodologies, data management ethical principles, and leadership in research, among others.

3.2.4 Data Management

Data management practices in research are critical to uphold the integrity, security, ethics, and standards of findings. Good data management practices help inspire confidence among stakeholders in the research process and give an opportunity for review, transparent and independent verification, follow-up, quality assurance and audits.

Institutions and individuals should be accountable for the integrity, validity, accuracy, confidentiality, security, storage and retrieval of research information. Effective data management requires institutions and individuals to be aware of and compliant with existing laws, regulations and best practices of data handling such as security, access and privacy of data.

3.2.5 Intellectual Property Management

Research generates various forms of intellectual Property (IP), including patents, copyrights, industrial designs, software, datasets, among others. Researchers require support to navigate the process of filing for IP protection, understand the costs and benefits involved, and understand the available opportunities of exploiting the IP and commercialisation of innovations.

Effective IP management requires institutions to have guiding IP policies that are well understood by researchers, managers and all stakeholders. Institutional IP managers should also be empowered to advise researchers, manage patent portfolios, and negotiate for commercialisation pathways including IP licensing deals. This will ensure effective identification, protection, and exploitation of research outputs. This will further foster innovation and technology transfer, commercialisation of research outputs, and facilitate knowledge sharing and collaborations.

3.2.6 Management of University-Industry Collaborations

University-industry collaborations are crucial for knowledge exchange, technology transfer, skills development, resource mobilisation and improved student opportunities. Successful university-industry collaborations require sound management to effectively drive innovation, enhance technology transfer, develop future talent, and strengthen research endeavours. Institutions should therefore provide a conducive environment with dedicated personnel that foster and manage dynamic industry collaborations, streamline procedures and processes, as well as ensure timely communication to build trust with industry partners.

3.2.7 Monitoring and Evaluation Mechanism

Research management should have in place comprehensive monitoring and evaluation (M&E) mechanism to support research quality and governance processes. Robust M&E system should be able to inform management of future perspectives, which requires:

i. Linkage to research goals and objectives.
ii. Alignment of research indicators with deliverables.
iii. Allocation of resources for M&E at the onset of the project.
iv. Thorough planning for quality data collection, analysis and reporting and dissemination.
v. Embedded feedback and learning mechanism.

3.3 GOOD PRACTICES FOR RESEARCH GOVERNANCE AND MANAGEMENT

Adherence to good practices in research governance and management is vital to research excellence. Therefore, the good practices for effective research governance and management include:

i. Elaborate policies and procedures to promote research and support researchers.
ii. Robust systems that maintain research integrity and adhere to ethical guidelines and regulations.
iii. Capacity building, support and mentoring of young researchers.
iv. Timely engagement and regular information sharing with all stakeholders.

v. Proper financial management regime to identify, utilise and secure and account for diverse sources of financing for research such as grants, contracts, institutional funds, or external funding.
vi. Comprehensive risk identification and mitigation measures that cover legal, ethical, financial and safety of the research.
vii. Proper research documentation and reporting, which includes archiving data and documenting lessons learned for future research endeavors.
viii. Coordinated monitoring and evaluation mechanisms.

SECTION 4: Research Quality Dimensions

4.1 INTRODUCTION

Research quality dimensions are viewed in various perspectives focusing on inputs, processes and outputs. In this framework, research quality is approached in seven (7) dimensions, namely;

i. Sound research methodologies,
ii. Research capacity,
iii. Research infrastructure,
iv. Research financing,
v. Research productivity and performance,
vi. Research communication and dissemination
vii. Research impact.

4.2 SOUND RESEARCH METHODOLOGIES

Research methodologies dimension relates to attributes of the technically sound research procedures and processes. These attributes include accuracy, coherency, consistency, reliability, validity, methodological integrity, completeness, timeliness and appropriateness of research.

4.3 RESEARCH CAPACITY

Research capacity dimension is attributed to qualified staff and tangible and intangible resources that support processes and delivery of research objectives and results. Capacity building through training, hiring and retention of top-notch researchers are key ingredients of research quality development.

The key attributes for research capacity are research personnels, policies, resources, capacity building programmes, equipment, structures for research management and technology transfer, partnerships and collaborations. These are considered to be critical enablers that enhance productivity and performance of research.

4.4 RESEARCH INFRASTRUCTURE

Research excellence requires adequate infrastructure that facilitates high level productivity. Research infrastructure applies to facilities, resources and related services that are used to conduct or facilitate the conduct of research and foster innovation in various fields. Key infrastructures include laboratories, scientific equipment, libraries, knowledge-based resources for scientific information; Information and Communications Technology-based infrastructures and other entities. These are essential to achieving excellence in research.

4.5 RESEARCH FINANCING

Research excellence requires appropriate and adequate financing of research. The financing should be from both public and private sources, aligned with global, regional and national development goals. Adequate and reliable funding of research requires strong collaborations among HEIs, researchers, private sector players, governments and funding bodies. Institutions should endeavour to enhance research financing through budget allocations to research, joint and collaborative research initiatives with industry partners and government, engagement with external research funders, including philanthropists, angel investors and international partners.

4.6 RESEARCH PRODUCTIVITY AND PERFORMANCE

Research productivity and performance dimension focuses on the output, which includes research graduates, publications & citations, Intellectual Property (IP) assets, products and innovations. Research productivity and performance also considers the volume of research outputs in terms of quantities, turnover and resources.

The number of active and effective university-industry collaborations that have been enabled by research are indications of research productivity and performance. In addition, all forms of technology transfers emanating from the research, including technology licensing, spin-offs and joint ventures represent the productivity and performance of research.

4.7 RESEARCH COMMUNICATION AND DISSEMINATION

Research communication and dissemination are integral components of research excellence, which bridge the gap between research findings and their practical application, ensuring that knowledge is shared, understood, and utilized effectively. Effective research communication and dissemination ensure that:

i. Research findings are presented in a clear, concise, and understandable manner to different stakeholders.
ii. Key research findings relevant for community applications are translated into local languages.
iii. Research results are accessible to diverse stakeholders, including policymakers, practitioners, funders, and the general public.
iv. Communication is tailored to different target audience, addressing their specific needs and interests through various channels and avoiding technical jargon and terms that may be unfamiliar to non-researchers and are not relevant in utilisation of research outputs.

Research communication and dissemination dimension focus on channels of communication and dissemination, the target audience reached out to, and the level of engagement with wide range

of stakeholders. This is instrumental in effective sharing of information, raising awareness, fostering capacity building and in enhancing utilisation of research outputs.

4.8 RESEARCH IMPACT

Research impact dimension focuses on the outcomes of research, derived insights, societal transformation and the long-term benefits of research on the quality of life, public policy and services. Research impact relates to research translation, uptake, diffusion, utilisation, valorisation, benefits and outcomes. Research impact can be assessed through various attributes, which include behaviour change, policy change, improved practices, adoption of innovative technologies, creation of start-ups, spin offs, business or public sector innovations and enhanced sustainability measures.

SECTION 5: Research Quality Assessment

5.1 INTRODUCTION

Research quality assessment is a systematic evaluation process that evaluates the research environment, processes, outputs, researchers' performance, research training and the socio-economic impact of the research. Effective assessment is accomplished through internal institutional mechanisms and external oversight mechanisms. In this framework, the assessment of research quality based on the six (6) research quality dimensions presented in Section 4 and a model research quality assessment tool provided.

5.2 RESEARCH QUALITY ASSESSMENT TOOL

The research quality assessment tool is based on both qualitative and quantitative variables in respect to the role and contribution of researchers and institutions. In this framework, a comprehensive appraisal of research quality is aligned with six (6) vital research quality dimensions. The basic criteria that constitute a model research quality assessment tool are outlined in Table 1.

Table 1: Model research quality assessment tool

DIMENSION	CRITERIA
Sound research methodologies	**Relevance** • Is the research design/method appropriate in relation to the problem being addressed or for answering the research question?
	Ethics and integrity • Does the research process align with the ethics requirement and methodological integrity? • Are the research findings authentic?
	Intended outcome and impact • Does the research clearly identify its main intended outcomes and how they are expected to be realized and to contribute to the long-term impacts?

	Inclusivity • Are there specific inclusion/exclusion criteria used in the research? • Is the inclusion of diverse actors in the research process clearly defined? • Are diverse disciplinary and stakeholder perspectives considered in the research?
	Accuracy • Are the objectives or qualitative and/or quantitative research questions clear? • Does the collected data allow the research questions or objectives to be addressed? • Are the research methods suited to generate and analyse the data, and verify or falsify the research claims?
	Ethical and regulatory compliance • Do the research processes and activities comply with relevant ethical guidelines, safety regulations, and legal requirements?
	Timeliness • Is the research accomplished within an acceptable time? • Are the findings made available within an appropriate time for significant use?
Research capacity	**Research policies** • Are there clear and supportive research policies in place? • Are the existing research policies implemented/ adhered to?
	Researchers and team capacity • Are the skills and competencies of the researchers and research support team sufficient? • Is the composition of research teams in appropriate balance? • Is the supervisory and research environment appropriate? • Is the proportion of time spent by core researchers at the institution adequate? • Number of junior academic staff mentored by Senior academic staff through learning-by-doing on-the-job training in research.

	Effective Collaboration • Is the relationship among researchers, the institution and external partners as well as diverse stakeholders favourable to meet research objectives? • Are there clear roles and responsibilities among research team members?
Research infrastructure	**Adequate and relevant Infrastructure** • Are the research facilities appropriate and sufficient to carry out research and achieve objectives? • Does the institution have necessary knowledge-based resource facilities to support research? • Does the institution have adequate and up-to-date equipment, including digital resources? • Do the researchers have access to research infrastructure and facilities? • Are the existing research facilities adaptable to address emerging issue?
Research financing	**Adequate research funding and resource mobilisation** • Are the research resources sufficient to meet stated research objectives? • Are the research resources sufficiently resilient to adapt to unexpected opportunities and challenges during the research process? • Does research lead to acquisition of external research funds? • Is there accountability and prudent utilization of research funds? • Does the institution have an elaborate resource mobilisation strategy? • Are there dedicated personnel responsible for resource mobilisation, fund and grants management?
Research productivity and performance	**Research Outputs** • Number of Publications (peer-reviewed journal articles, policy briefs, book chapters etc) • Number of registered Patents and other IP Assets • Innovations, products and spin-offs, emanating from research

	Applicability • Did the research produce a suitable solution (s) to any existing societal challenge? • Did the research inform policy development?
	University-Industry Collaborations and Technology Transfer • Has the research enabled active university-industry collaborations? • Are there any form of technology transfers from the research, including technology licensing, spin-offs, Joint ventures?
Research Communication and Dissemination	**Channels for communication and dissemination** • What are the channels used to disseminate the research findings with wide range of audience? (Peer-Reviewed Journals; conferences and workshops; policy briefs; online platforms such as webinars, blogs, and social media; books and monographs; and popular media, among others). • Is the communication appropriately tailored to be understood for use by different target audience including policymakers, practitioners, funders, and the general public?
	Accessibility • Are the disseminated research results accessible for use by the diverse stakeholders?
Research impact	**Capacity building** • Has the research contributed to knowledge creation in academic and social realms? • To what extent does the research inform and improve teaching, learning and service to the community? • Number of students graduated with post-graduate degrees in a timely manner. • Has the research contributed to Personal Growth and Development of the researchers? • Has the research contributed to mentorship of upcoming/ young Researchers?
	Policy intervention • Did the research findings contribute to influencing policy change? • Type and list of policy interventions.

	Cultural or behaviour change • Did the knowledge from the research contribute to behaviour change in individuals or groups?
	New Knowledge and expertise • Is there new knowledge derived from the research? • Has the research developed new expertise?
	Entrepreneurship, job creation and generation of resources • Are there innovations, spin offs and establishment of business enterprises resulting from the research outputs? • Amount and value of resources generated as a result of research outputs. • Number of joint academia-industry collaborative research projects.

SECTION 6: Implementation of The Framework

6.1 INTRODUCTION

The implementation of the Research Excellence Framework for Higher Education in East Africa will be the responsibility of the various players and stakeholders taking into consideration their mandates at regional, national and institutional levels. Primarily, the implementation of REFHE-EA will be coordinated and implemented at regional, national and institutional level. The role played by various stakeholders at different levels are as outlined.

The key players in the implementation of REFHE-EA will be IUCEA, Ministries responsible for HE, National Councils and Commissions for HE, National Research Councils and Commissions, Research Funding Agencies, the HEIs and Individual researchers.

6.2 REGIONAL LEVEL

The overall regional implementation role of this framework will be undertaken by IUCEA based on the regional mandate. IUCEA will coordinate the implementation and monitoring of the framework in accordance with its defined functions. In its role, IUCEA will involve other EAC institutions, including East Africa Science Technology Commission (EASTECO) and East Africa Health Research Commission (EAHRC).

More specifically, IUCEA will do the following:

i. Ensure oversight of the implementation and review of the Framework by the Executive Board through coordinated efforts of its Research and Innovation Standing Committee.
ii. Disseminate the Framework to different stakeholders using various channels of dissemination including printed and soft copies, webinars, workshops and meetings.
iii. Advocate for the adoption and use of the Framework in all Partner States and in higher education institutions in the region.
iv. Build capacity and engage various partners to support capacity building programmes for research quality, management and governance.
v. Resource mobilization and facilitation of key initiatives for achievement of research excellence in the region.
vi. Monitor the implementation of the Framework at regional level to ensure continuous improvement.
vii. Regularly collect data on research quality and engage experts to conduct periodic peer assessments on implementation of the Framework.
viii. Prepare periodic reports on the implementation of the Framework, highlighting achievements, challenges and areas for improvement.

ix. Organise regional forums, including workshops, conferences, seminars and webinars, to facilitate dissemination of research findings and sharing of knowledge and best practices, as well as provide platform for networking and building collaboration among researchers, HEIs, policy makers and industry players.

6.3 NATIONAL LEVEL

The Ministries responsible for HE, relevant national authorities including National Councils/Commissions for higher or university education and Councils for science and technology among others shall play a critical role in promoting and supporting research excellence at the national level.

The national bodies will, in particular, play the following roles:

i. Disseminate and promote awareness of REFHE-EA to all higher education institutions, research institutions and to other stakeholders at the national level.
ii. Developing or reviewing national policies to enhance research excellence.
iii. Facilitate the development or review of national frameworks for research excellence that are aligned to the regional research Excellence framework.
iv. Financing initiatives and programmes for national research excellence.
v. Support the implementation of capacity building initiatives to ensure the promotion of research quality and enhancement of research management in the Partner State.
vi. Actively engage stakeholders, including universities and research institutions to gather feedback and recommendations for improving the implementation of the REFHE-EA.
vii. Conduct regular audits and assessments of research quality at the national level based on the REFHE-EA standards.
viii. Ensure that universities and research institutions comply with the Research Excellence Framework requirements for accreditation and recognition.
ix. Establish national recognition and award initiatives for research Excellence.
x. Monitor, evaluate, document and report on the state of research quality in the country.

6.4 INSTITUTIONAL LEVEL

The higher education institutions and other research institutions have a core governance and management responsibility of ensuring research excellence. This include promoting and ensuring adherence to fundamental principles of research quality and good practices, as well as provision of supportive environment and structures.

Institutions should therefore:

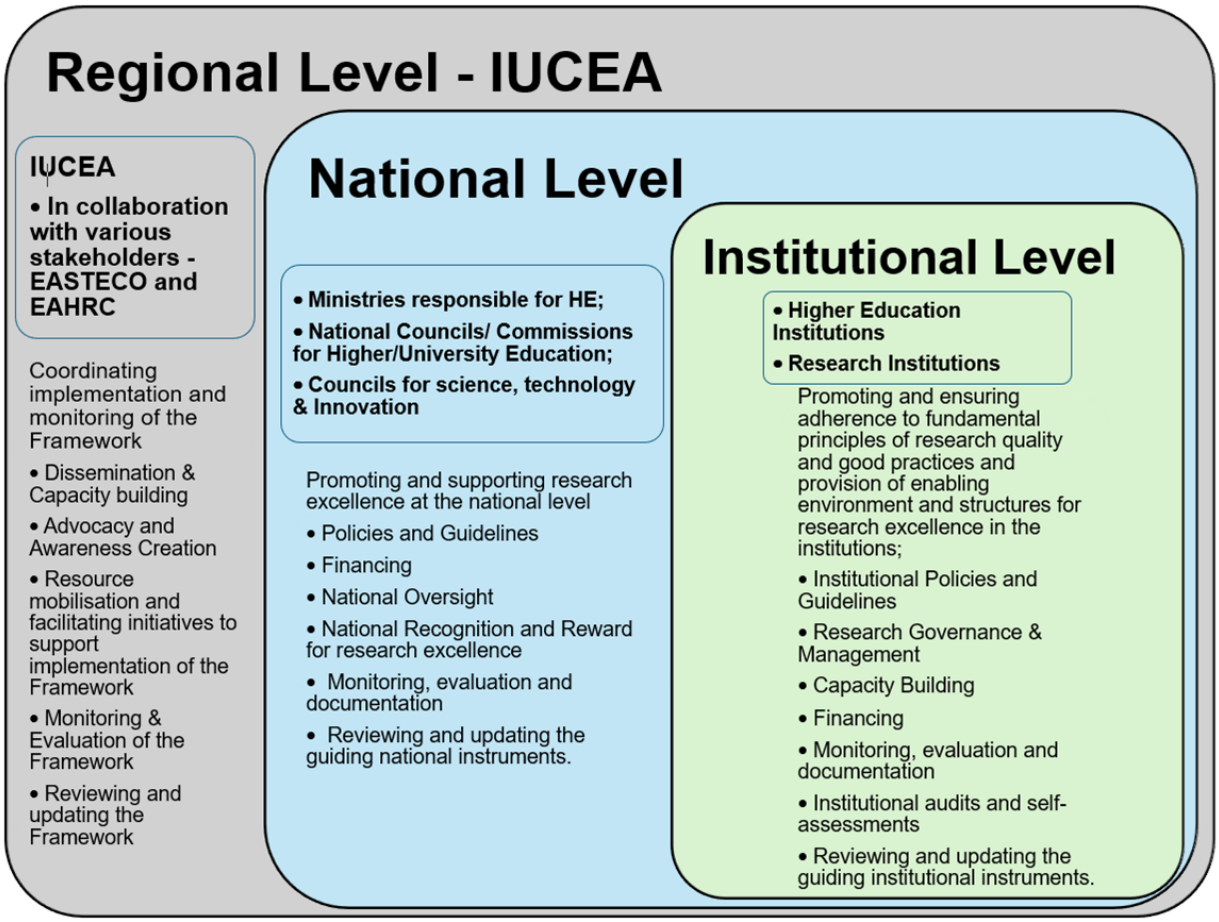
i. Develop and/or review relevant institutional policies, standards and guidelines that create enabling environment and promote research excellence taking into consideration the regional and national Frameworks to guide all researchers and research managers.
ii. Establish appropriate institutional governance and management structures including research and ethics committees, research management units, IP management units and university-industry collaboration to facilitate implementation of research excellence policies and guidelines.
iii. Have in place robust capacity building programmes for researchers, research supervisors and research managers, as well as mentorship programmes for junior researchers.
iv. Disseminate all relevant instruments for research excellence to all researchers in the institution and should form part of onboarding and staff development programmes.
v. Allocate research resources including funds, staff and facilities to support research quality improvement efforts.
vi. Conduct regular research quality audits and reviews including internal and external assessments for continuous improvement.
vii. Ensure regular reporting on the implementation of research excellence frameworks highlighting achievements, challenges and improvement plans.

6.5 INDIVIDUAL RESEARCHER LEVEL

The primary responsibilities of research excellence lie with an individual researcher. These are embedded on the awareness and adherence to the principles of research quality. Researchers therefore have the following roles and responsibilities in the implementation of the framework:

i. Participation in training programmes to enhance their research skills, ethical conduct and compliance with the established research quality standards.
ii. Adherence to ethical principles and guidelines in research.
iii. Complying with ethical review processes and obtaining ethical approvals from ethics committees and such relevant bodies as required.
iv. Conducting self-assessments of their research practices and work, reflecting their compliance to research quality standards
v. Reporting through publications and other forms of dissemination their research outcomes and products transparently and accurately, acknowledging funding sources, collaborators and conflicts of interest
vi. Engaging in knowledge transfer to ensure that the findings of their research reach diverse audiences.
vii. Actively engaging in continuous professional development to stay updated on research quality best practices and emerging standards.

Figure 3: Schematic Representation of the Implementation of REFHE-EA



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