



Breaking Through the Barriers for Transforming Higher Education in African Universities: Experiences from Egerton University, Kenya

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ABSTRACT

Higher education training is pivotal for socio-economic development, impacting economic, social, cultural, and political spheres. However, Higher Education Institutions (HEIs) in Africa face challenges including inadequate funding, low enrollment capacities, and rigid organizational structures. Financial constraints hinder innovation and quality education, while the rapid increase in enrollment strains resources. Additionally, disconnect between university curricula and labor market demands results in graduates lacking relevant skills. The objective of this paper was to delve into how Egerton University has attempted to overcome the barriers over time in its efforts to transform lives through quality education. Egerton University has significantly contributed to higher education in Kenya by increasing access to education, generating knowledge through extensive research, mentoring other institutions and enhancing collaborative approaches in conducting demand driven research for societal impact, supporting entrepreneurship aimed at job creation for the young people, among others. Cognizant of the great demand for graduates with requisite skills for the job market, the university has been keen on curriculum review/development and ensuring support structures and policies are in place to maintain its relevance in the education space. Through prioritizing transparency, inclusivity, and academic excellence, the university has created an environment conducive to learning, innovation, and community engagement. Additionally, initiatives in gender and inclusion mainstreaming, revenue diversification, entrepreneurship, and staff capacity building have enabled Egerton University to create an inclusive and sustainable academic environment that fosters growth, innovation, and societal impact. This paper also highlights comprehensive recommendations to other institutions of higher learning aimed at enhancing overall effectiveness, relevance, and impact within their communities and beyond. Since education, research and outreach/community engagement are a key mandate of universities, HEIs should strive training at skilled graduates who meet societal demand in efforts to address youth unemployment in Africa. HEIs should strengthen collaborations with industries in identifying curriculum gaps and review of the same to remain relevant. Capacity building of faculty members is also key to encourage student-centred learning. Innovative approaches in teaching are also required to ensure quality of education is not compromised amidst the expanding enrolment in institutions of higher learning. Embracing technology and improving infrastructure to support inclusive learning is also essential. Equipping students with entrepreneurial skills would potentially empower the youth to be job creators which can be important in contributing to reducing youth unemployment in Africa.

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RÉSUMÉ

La formation dans l'enseignement supérieur joue un rôle clé dans le développement socio-économique, influençant les sphères économique, sociale, culturelle et politique. Cependant, les établissements d'enseignement supérieur (EES) en Afrique font face à des défis tels que le financement insuffisant, la faible capacité d'inscription et des structures organisationnelles rigides. Les contraintes financières entravent l'innovation et la qualité de l'enseignement, tandis que l'augmentation rapide des inscriptions met à rude épreuve les ressources disponibles. De plus, le décalage entre les programmes universitaires et les besoins du marché du travail conduit à des diplômés manquant de compétences pertinentes. L'objectif de cet article est d'explorer comment l'Université Egerton a tenté de surmonter ces obstacles au fil du temps pour transformer des vies grâce à une éducation de qualité. L'Université Egerton a contribué de manière significative à l'enseignement supérieur au Kenya en améliorant l'accès à l'éducation, en générant des connaissances par le biais de recherches approfondies, en encadrant d'autres institutions et en renforçant des approches collaboratives dans la réalisation de recherches orientées vers l'impact sociétal, en soutenant l'entrepreneuriat visant à la création d'emplois pour les jeunes, entre autres. Consciente de la grande demande de diplômés dotés de compétences adaptées au marché du travail, l'université s'est engagée dans la révision et le développement des programmes et dans la mise en place de structures de soutien et de politiques pour maintenir sa pertinence dans le domaine de l'éducation. En mettant l'accent sur la transparence, l'inclusivité et l'excellence académique, l'université a créé un environnement propice à l'apprentissage, à l'innovation et à l'engagement communautaire. En outre, des initiatives de mainstreaming du genre et de l'inclusion, de diversification des revenus, d'entrepreneuriat et de renforcement des capacités du personnel ont permis à l'Université Egerton de créer un environnement académique inclusif et durable qui favorise la croissance, l'innovation et l'impact sociétal. Cet article met également en lumière des recommandations complètes à l'intention d'autres établissements d'enseignement supérieur visant à améliorer leur efficacité, leur pertinence et leur impact au sein de leurs communautés et au-delà. Puisque l'éducation, la recherche et l'engagement communautaire sont des mandats clés des universités, les EES doivent viser à former des diplômés qualifiés répondant aux besoins sociétaux dans le cadre des efforts pour réduire le chômage des jeunes en Afrique. Les EES devraient renforcer les collaborations avec les industries afin d'identifier les lacunes dans les programmes d'études et de les réviser pour rester pertinents. Le renforcement des capacités des membres du corps professoral est également essentiel pour encourager un apprentissage centré sur l'étudiant. Des approches innovantes dans l'enseignement sont également nécessaires pour garantir que la qualité de l'enseignement ne soit pas compromise malgré l'augmentation des inscriptions dans les établissements d'enseignement supérieur. L'adoption de la technologie et l'amélioration des infrastructures pour soutenir un apprentissage inclusif sont également essentielles. Équiper les étudiants de compétences entrepreneuriales pourrait potentiellement habiliter les jeunes à devenir des créateurs d'emplois, ce qui peut contribuer à réduire le chômage des jeunes en Afrique.

Mots clés : Universités africaines, Éducation, Université Egerton, Transformation institutionnelle

Overview of Higher Education Training. In the World Declaration on Higher Education adopted by the World Conference on Higher Education in 1998, higher education was defined as: “all types of studies, training or training for research at the

post-secondary level, provided by universities or other educational establishments that are approved as institutions of higher education by respective state authorities.” Higher education institutions with universities being the most prominent have

three main functions that are intimately intertwined. These main functions are education, research and contributing to society. While research makes a higher level of education possible, education develops the human resources to undertake research. On the other hand, contributions to society have increasingly been demanded of higher education institutions.

Importance of Higher Education Training. Higher education training is crucial for socio-economic development due to its impact on various aspects of society (Bloom *et al.*, 2006). Higher education influences economic, social, cultural and political spheres of development (Volchik *et al.*, 2018). Economically, higher education institutions are instrumental in developing human capital by producing a skilled and knowledgeable workforce that drives productivity, innovation, and growth. These institutions serve as hubs for research and development, fostering technological advancements and entrepreneurship, which are essential for the creation of industrial development and business ventures.

At a social level, higher education plays a significant role in poverty reduction by improving individuals' earning potential and economic mobility, thus breaking the cycle of poverty for disadvantaged communities. It also contributes to better health outcomes by promoting health education and training healthcare professionals, which is critical for addressing public health challenges. Additionally, higher education empowers women, providing them with the skills and knowledge to fully participate in the economy and society, and helps reduce gender disparities in income, employment, and social status.

Politically, higher education fosters informed citizenry and civic participation by promoting critical thinking and awareness of democratic values. It is also a breeding ground for future political leaders and policymakers who can drive socio-economic reforms, as well as community leaders who advocate for local development and

social change. In terms of environmental sustainability, higher education institutions contribute through research in renewable energy, conservation, and sustainable practices, and they play a crucial role in developing evidence-based environmental policies and advocating for sustainable practices at various levels.

Culturally, higher education helps preserve and promote cultural heritage through research and education, facilitating cultural exchange and understanding that promote social cohesion. It also builds social networks that support personal and professional development, fostering collaboration across different sectors and disciplines to drive collective progress. Thus, the transformation of higher education is vital for holistic socio-economic development, encompassing economic growth, social development, political engagement, environmental sustainability, and cultural enrichment.

Challenges Facing Higher Education Institutions in Africa Higher Education Institutions (HEIs) are pivotal in advancing sustainable development by offering education, conducting research, generating and disseminating knowledge, and engaging with communities. These institutions are at the forefront of promoting sustainable practices and principles (Berchin *et al.*, 2021). For HEIs to maintain their relevance and competitiveness, innovation is imperative, encompassing improved teaching and learning methods, effective knowledge dissemination, and the integration of technology (Mazorodze and Mkhize, 2024). However, various social, financial, and technical barriers impede innovation within these institutions (Hasanefendic *et al.*, 2017).

A primary barrier to innovation in HEIs is inadequate funding (Stenius *et al.*, 2016). Many African countries struggle to provide sufficient and sustainable financial support to their HEIs (Lawrence *et al.*, 2020). Inadequate financial support results in numerous challenges, including inadequate human capital, overcrowded

classrooms, outdated infrastructure, and lack of quality learning resources (Omona, 2012; Mbithi *et al.*, 2021). The consequences are far-reaching, affecting academic performance and perpetuating educational inequalities. For instance, Gurgand *et al.* (2023) noted that in South Africa, access to financing significantly impacts higher education enrollment, especially for women, with enrollment gaps attributed to poorer access to credit. Similarly, Owusu and Fourie (2019) emphasized that adequate financing is crucial for enhancing academic engagement, fostering employability, and supporting educational initiatives. Mgaiwa and Ishengoma (2023) highlighted that in Tanzania, increasing access to higher education through student loan financing has, paradoxically, contributed to societal inequality, suggesting that financial aid mechanisms need to be carefully designed to ensure equitable access. Thierry and Emmanuel (2022) underscore the positive impact of financial development on educational enrollment at all levels in Sub-Saharan Africa. Fostering partnerships between HEIs and the industry is crucial in providing additional funding, resources, and opportunities for experiential learning, thus enhancing the overall quality of education and employability of graduates.

In Africa, enrolment in higher education is characterized by historically low participation rates and the challenge of maintaining quality amidst rapid expansion. A few decades ago, enrolment rates were extremely low at between 3% to 5% but has increased to 11% in recent years (Mohamedbhai, 2024). The increase is attributed to the recognition of the importance of higher education for development, and the establishment of numerous new universities totaling to around 1,300 private and public universities in the continent. Despite these efforts, enrolment in Sub-Saharan Africa remains far below the global average of 38% (Mohamedbhai, 2024). While female participation has improved, enrolment in science and technology fields continues to lag. The rapid increase in enrolment without corresponding public funding has threatened the quality of education. To address this, most African countries

have established agencies for quality assurance, achieving notable progress in maintaining educational standards.

Rigid organizational structures within many HEIs is another significant barrier that impedes innovation within these institutions (Teixeira, 2021). Such structures, while providing stability and clear lines of authority, often smother innovation by creating silos and impeding the free flow of information. In such environments, knowledge-sharing can become a cumbersome due to bureaucracy. This delay not only hampers the speed at which institutions can adapt to new challenges but also discourages proactive sharing of insights and ideas among faculty members. Podrug *et al.* (2017) emphasize that timely and appropriate dissemination of knowledge is crucial for enhancing organizational performance. Institutions that foster a culture of continuous learning and knowledge-sharing tend to be more agile and innovative. Where academics regularly share knowledge, they not only enhance their own learning but also contribute to the institution's collective intelligence (Aulawi, 2021). Such collaborative environment would inspires experimentation and the adoption of best practices across various departments. Encouraging an open and inclusive culture where all members feel valued and empowered to share their insights can drive the continuous learning and innovation in institutions of higher learning.

The misalignment between the skills taught in universities and those demanded by the labor market has created disconnect between what employers need and what graduates offer. Rapid advancements in technology and changing industry demands can make certain skills obsolete. Without collaboration with industries, higher education institutions may fail to understand the specific skills and qualifications employers are looking for. This can result in graduates who are not adequately prepared for the job market. Nason (2019) further noted that poor planning leads to the mismatch between the rate at which education institutions churn out graduates and economic growth. In Kenya, for example, UNESCO's 2019 statistics reveal that the completion rate from universities

stood at 74.1%, which is 11.6% higher than the average for Sub-Saharan Africa (62.5%). This indicates a high number of young individuals entering the labor market annually, far outstripping the economy's capacity to provide suitable employment opportunities.

To address these challenges, a multifaceted approach is necessary. Universities need to ensure the curricula are aligned more closely with market demands. This includes incorporating experiential learning, internships, and partnerships with industries to ensure that students gain hands-on experience before they are released to the job market. Additionally, there should be a greater emphasis on vocational and technical training, which can equip students with specific skills that are in high demand. Furthermore, career counseling and mentorship programs should be integrated into the education system to help students understand the job market better and make informed decisions about their career paths. Lifelong learning opportunities and continuous professional development need be promoted to ensure that the workforce can adapt to changing job requirements.

Overcoming the Barriers Facing Higher Education Institutions in Africa: Experiences from Egerton University

Egerton University and its relevance in Education Space. Egerton University, the oldest institution of higher learning in Kenya, plays a key role in the country's educational and agricultural development. The university's history dates back to 1939, when it was founded as a Farm School by Lord Maurice Egerton of Tatton, a British national who had settled in Kenya during the 1920s. In 1950, the Farm School was upgraded to an Agricultural College, offering diploma programs. This transformation marked a significant milestone due to admission of students from diverse backgrounds thereby broadening its impact on the agricultural sector in region. The college's reputation grew over the years, leading to its recognition as a constituent college of the University of Nairobi in 1986. A year later, in 1987, Egerton University was formally established through an Act of Parliament, setting its status as a

fully-fledged university. Since then, Egerton University has been at the forefront of higher education training in Kenya, especially in the field of agriculture. It has contributed significantly to the country's development by mentoring three other institutions to the status of fully fledged universities.

Egerton University has made substantial contributions to higher education training in Kenya and beyond. It has been instrumental in increasing access to higher education and generating knowledge through sustained research initiatives. The university is currently engaged in over 90 research and capacity-building projects, emphasizing its commitment to advancing knowledge and practical skills in its bid to transform lives through quality education. The University is working with international organizations including the Mastercard Foundation, Regional Universities Forum for capacity building in Agriculture (RUFORUM), the World Bank, Austria's Agency for Education and Internationalization, Swedish International Development Cooperation Agency, Michigan State University, United States Agency for International Development, Bowie State University, International Fund for Agriculture, Africa-uniNet, Alliance for African Partnerships, Erasmus-European Education and Culture Executive Agency (EACEA), among others, which have been instrumental in contributing towards the University's drive towards achieving its goals.

One of the notable initiatives is the "Transforming African Agricultural Universities to meaningfully contribute to Africa's Growth and Development (TAGDev)," a program supported by the Mastercard Foundation through RUFORUM. The TAGDev program aimed to transform agricultural education by connecting tertiary agricultural education to rural communities. It sought to expand the understanding of tertiary agricultural education and influence higher agricultural education policies at both national and continental levels. The program was anchored on 3 pillars namely experiential learning, community engagement and entrepreneurship that brought about transformation at individual, institutional and community level

contributing to sustainable development. Some of the key achievements included enhancing access to higher education to 188 bright but economically disadvantaged students from 14 African countries; facilitated curricula review and development aimed at producing skilled graduates who meet the market demand, improving farmers' access to quality seed potato and cassava planting materials through the community action research projects; engaged over 10,000 smallholder farmers on various aspects of improving agricultural productivity in the effort to enhance the shift from subsistence agriculture to farming as a business; engaged over 1,300 actors in the agricultural sector in national fora and policy dialogues aimed at streamlining key barriers in delivery of transformative education and effective community engagement for agricultural transformation.

Egerton University's journey from a small farm school to a leading university in agriculture is an indication of its enduring commitment to education and development. Through implementation of several initiatives, the institution has learnt valuable lessons in its efforts to transform higher education. Leveraging technological advancements, fostering international collaborations, and aligning education with market needs are among the crucial steps towards realizing the potential of higher education in Africa.

Towards Transformative Educations: Initiatives at Egerton University This section of the paper highlights some of the major initiatives that Egerton University has embarked on in its bid to deliver transformative education and remain relevant in the education sector. In discussing the initiatives made by the university, emphasis has been made on effective governance, supportive policies, structure and infrastructure, delivery of quality education, diversification of revenue streams, inclusion and equity, and community transformation. Emerging lessons result in recommendations to other institutions of learning that can be adopted in overcoming the barriers in higher education

Diversifying Revenue Streams. Amidst the challenges of inadequate funding from the government, Universities have been called upon to

transform their operational models to ensure sustainability and growth. The establishment of the Directorate of Income Generating Units (IGU) under the Deputy Vice-Chancellor (Administration, Finance and Planning (DVC AFP) is a strategic move towards this goal. This Directorate is dedicated to enhancing the University's ability to sustain itself beyond traditional government and research funding. By providing strategic guidance, the Directorate empowers various university departments to generate income through innovations and services.

The IGUs, which include Tatton Farm, Guilford Dairy Plant, the Gift Shop, Bookshop, University Press, Knitting and Tailoring, Catering, Halls of Accommodation, Medical Services, and the Funeral Home, among others, are pivotal in this transformation. These units are not only designed to be self-sufficient but also to contribute to the university's overall financial health. Through updated business plans, each IGU is positioned to maximize its income-generating potential to support the University financially.

One of the Directorate's notable initiatives is the development of a mini-market at the University's main gate. This mini-market is envisioned as a hub of innovation, providing a variety of products and services to the public. It serves as a one-stop shop for all IGUs to sell Egerton University-branded products and services, as well as offer information about the University's programs. This initiative exemplifies the proactive steps being taken to ensure the University's financial independence and to create a sustainable model for future growth amidst low capitation by the government.

Remaining relevant through aligning education with market needs. To ensure that her graduates are well-prepared for the job market, Egerton University has aligned its curriculum with industry needs. Regular consultations with industry stakeholders and feedback from alumni through tracer studies have been instrumental in identifying skill gaps and updating curriculum and course content accordingly. For instance, a tracer study by [Mshenga et al. \(2019\)](#) provided recommendations on curriculum review for social and pure sciences to enhance entrepreneurial attitude and abilities of

such non-business students. Development or a review of curriculum of academic programmes to address current and future workforce demands, has been reported to influence employability of graduates (Sassi and Mshenga, 2024). Wambugu *et al.* (2022) noted that employers consider communication skills, teamwork and creative thinking as major non-technical skills at 99.2%, 97.7% and 97.1%, respectively, while entrepreneurial skills at 94.8% and technical knowledge at 94.8% were highly rated among major technical skills desired by the job market. This highlights the importance of ensuring graduates are equipped with both technical and non-technical skills which greatly impact their employability, promotion and self-employment. Moreover, the university has established strong linkages with the private sector, creating opportunities for co-creation in curriculum delivery, internships, apprenticeships, and job placements. These partnerships provide students with valuable work experience and help them build professional networks, facilitating a smoother transition from academia to the workplace. Core to this function is the Directorate of Undergraduate studies (DUGS) and the Directorate of Postgraduate Studies (DPGS) at Egerton University. The Directorates plays a key role in realizing the University's strategic objective of providing quality higher education and training by ensuring that the programmes offered are competitive and aligned to market needs as well as coordinating timely review and development of demand-driven quality academic programmes.

To enhance experiential learning and community engagement, DUGS focuses on increasing linkages and collaborations with institutions and industry through field/industrial attachment (FA) and teaching practice (TP). These initiatives are critical in equipping students with practical skills and attitudes that meet the demands of the labor market. field/industrial attachment which entails, a minimum eight-week engagement with industry, provides students with essential workplace experience. Teaching practice conducted for one whole school term by education students after completing the Methods of Teaching Courses, enhances professionalism and fosters collaborative

and interpersonal skills. Field/Industrial attachment and teaching practice are undertaken after three or four years of study for degree programmes, and after two years for diploma programmes. Specifically for agriculture-related programmes, DUGS has implemented the Farm Attachment Programme (FAP), where students are attached to farms for a period of eight weeks. This programme allows students to work closely with farmers, gaining hands-on skills and implementing relevant projects. Impacts and benefits of the programme include increased productivity at the farm level, increased awareness and utilization of agricultural technologies by farmers and students, lessons and experiences that point out the need for curriculum review, as well as need for prompt, reliable and unbiased agricultural information, and ethnic integration (Mungai *et al.*, 2016).

The Directorate of Undergraduate Studies also coordinates a partnership with the Arava International Agricultural Training Centre (AICAT) in Israel where students go to Israel for internship. This 11-month internship programme exposes students to hands-on skills and technology transfer by attaching them to farms and farmer organizations in the Arava region of Israel. Students work on farms five days a week and attend classes at AICAT one day a week. Alumni of this programme have significantly influenced young university graduates' interest in agricultural enterprises, with many establishing successful farming ventures.

Since 2016, Egerton University has been piloting a new model of agricultural education that integrates experiential learning, community engagement and entrepreneurship to produce change agents for Africa. This has been through the 'Transforming African Agricultural Universities to meaningfully contribute to Africa's growth and Development (TAGDev) Program, which is a partnership program between the Regional Universities Forum for Capacity Building in Agriculture (RUFORUM), Mastercard Foundation, Egerton University - Kenya and Gulu University - Uganda. Through the eight years of program implementation, the program has contributed to institutional transformation through facilitation of

curriculum review and development. The focus has been to enhance experiential learning among students and staff, enhance university-community engagement and foster entrepreneurial mindset among students and staff. The program has also been supportive in linking students with industry through supporting academic trips in relevant industries. This has provided students with exposure to the real world with some of them creating networks for internship and job opportunities. In the last eight years the program has supported 219 students on farm/field attachment and 148 on internship program has supported over 150 students. Supporting students for internship allows them to showcase their competences in the job market which has yielded fruits in having over 10 students retained in internship host organizations as employees in the last two years. Others have networked for job opportunities in various organizations while others have gained entrepreneurial skills and are running their own businesses.

Embracing Technology. Egerton University has embraced technology to enhance the quality of education and increase accessibility. In 2015, the university launched E-Learning platform which has been at the forefront of revolutionizing access to higher education through technological innovation. Five-degree programmes were piloted but over time, this initiative has evolved significantly, expanding to include additional five full undergraduate degree programmes and six full postgraduate degree programmes beside individual units in a number of programmes especially those offered as university common units. The university also offers several short-course modules on the e-platform. This technological advancement not only underscores Egerton University's commitment to enhancing educational accessibility but also signifies its proactiveness in leveraging digital platforms to empower learners with flexible and quality-driven academic opportunities. The E-learning programme provides flexible learning schedules that accommodate working students and those with other commitments hence promoting life-long learning. The university through its E-Campus has also facilitated digitization of academic programmes and course units for the

non-virtual programmes. This provides flexibility in the mode of course delivery amidst situations that limit face to face teaching such as the COVID 19 pandemic. The TAGDev program in its focus on institutional transformation has facilitated digitization of three (3) academic programs and 172 course units that benefit over 2,000 students.

In the dynamic landscape of higher education, Egerton University has embraced a pivotal role in fostering internationalization through its support of oral examinations for student theses and proposals. This initiative marks a significant stride towards transforming traditional academic practices and enriching the educational experience on a global scale. International students do not need to travel back to campus for oral examination. This has also opened opportunities for inviting international scholars and experts to participate in examination facilitating exchange of ideas, methodologies, and insights that transcend geographical boundaries. This collaborative approach not only enhances the rigor and validity of academic research but also broadens students' horizons, exposing them to diverse viewpoints and methodologies that enrich their intellectual growth, essential in today's competitive job market and academic arena.

Infrastructural Improvement. Infrastructural development has been a priority for Egerton University to provide a conducive and inclusive learning environment. The university has implemented campus-wide Wi-Fi, ensuring that students and staff have reliable access to online resources. This connectivity has been particularly crucial in supporting remote learning and online collaboration. Additionally, the university has invested in modern classrooms, laboratories, and libraries equipped with the modern technology, university farm, Agro-science Park, business incubation and community engagement hub, centers of excellence equipped with state-of-the art facilities among others. These facilities support high-quality teaching and learning, research activities, community engagement and linkages with industry.

The adoption of modern teaching laboratories has enriched the learning experience and, research and development at Egerton University. For instance,

the Safe Foods Reference Laboratory (SAF-LAB), funded by the National Research Fund (NRF), represents a significant stride towards achieving Sustainable Development Goal 2 on Food Security. This state-of-the-art facility serves as a pivotal hub enhancing both research capacity and practical applications in food, feed, and water safety. Primarily, SAF-LAB empowers academic and technical staff by enhancing their research capabilities. It provides a platform for cutting-edge research into critical issues such as antibiotics residues, aflatoxin contamination, and pesticide residues in food crops. These efforts are crucial not only for domestic food security but also for meeting international food safety standards necessary for export markets. Beyond research, SAF-LAB plays a vital role in consultancy services, offering expertise in food safety that supports the standardization of control procedures. This function not only benefits academic pursuits but also directly complements the endeavors of key regulatory bodies like the Ministry of Agriculture, Livestock and Fisheries, Kenya Bureau of Standards (KEBS), Pest Control Products Board, and the Government Chemist Department. In essence, SAF-LAB at Egerton University stands as a beacon of technological advancement and research excellence, addressing crucial food security concerns beyond mere production levels. Further, students are provided with hands on experience thereby bridging the gap between theoretical knowledge and practical application, and fostering a culture of scientific inquiry.

In its further pursuit for excellence in agricultural education and research, Egerton University has also invested in infrastructure that supports comprehensive policy development. This has been achieved through the establishment and growth of the Tegemeo Institute of Agricultural Policy and Development. This policy research institute operates under the Directorate of Research and Extension at Egerton University. Its primary objective is to conduct rigorous research and analysis on policies affecting agriculture, rural development, natural resources, and the environment. This is critical in impacting agricultural communities for the sustainable growth and development of Kenya's agricultural

sector. The university also has a well-established Dryland Research Training and Ecotourism Centre (DRTEC) in Chemeron, Baringo County of Kenya which serves as an interdisciplinary research and coordination center, seamlessly aligning with the University's strategic plan. It coordinates the implementation and scientific steering of dryland research projects encompassing agriculture, horticulture, soil and water conservation, livestock keeping, beekeeping, rangeland management, climate change, and ecotourism. In addressing the unique challenges of dryland environments, DRTEC is instrumental in developing techniques and strategies tailored to such areas' specific needs. Dryland regions, particularly vulnerable to climate change, benefit from the University's research contributions, which focus on mitigating impacts of climate change and adapting to changing environmental conditions. This ensures resilience for both ecosystems and human communities. Efforts of the DRTEC ensure sustainable agricultural practices and food production in arid and semi-arid regions, protecting diverse plant and animal species adapted to dryland ecosystems, and preserving biodiversity. Innovations in agriculture, livestock keeping, and beekeeping provide new income sources for local communities in such areas, leading to improved livelihoods and economic development in rural areas.

Research and Innovations for community transformation and sustainable development.

At Egerton University, the Directorate of Research and Extension is a cornerstone in overcoming the challenges faced by higher education in bringing about meaningful transformation. The Directorate is responsible for the administration and oversight of both internally and externally funded projects, providing essential supportive services to researchers, students, and staff engaged in these projects. By coordinating consultancy, extension, and outreach activities within the country and beyond, the Directorate ensures that innovative solutions and knowledge reach diverse communities. The commitment to delivering the best services to researchers and other stakeholders is evident in the Directorate's core functions. These include the coordination and development of relevant policy documents in the areas of research

and innovation, extension and outreach services, consultancy services, vocational training, documentation and publication, and information dissemination. This approach enables Egerton University to foster an environment where research and innovation can thrive and make a tangible impact on society. Through its dedicated efforts, the Directorate not only supports individual research projects but also drives the university's mission of community transformation. By empowering researchers and innovators, facilitating practical training, and ensuring the widespread dissemination of knowledge, Egerton University exemplifies how higher education institutions can overcome obstacles and lead the way in creating positive change. There are various ongoing extension and outreach programs where the communities engaged benefit from the innovations and technical knowledge of the experts involved from Egerton University. These outreach programs go a long way in creating a cordial relationship with the local community for the mutual benefit of both the University and the community at large.

Egerton University recognizes the transformative power of education in driving community development. A number of academic programmes have institutionalized community engagement as a mandatory component before students graduate (Mulu-Mutuku *et al.*, 2017). The institution has been actively involved in community-based projects that promote sustainable development and social change. Community engagement activities are facilitated through curriculum delivery, trainings, workshops, conferences, exposure to actors in various sectors done through field visits, field days, demonstrations, exhibitions and national fora among others. Through partnerships with various organizations and government agencies, the university implements initiatives that address critical issues such as food security, poverty, health, and environmental sustainability among others.

By leveraging its expertise in agriculture and other fields, Egerton University contributes to the development of innovative solutions that improve the livelihoods of community members and the

country at large. These efforts not only enhance the University's impact but also provide students with real-world experiences that enrich their academic journey. For instance, the Community Action Research projects on Cassava and Potato Value Chain supported by RUFORUM have been in the forefront in realizing community transformation since 2017. The two projects have been able to reach out to over 10,000 smallholder farmers in Kenya, enhancing their access to quality planting material, skilling them on good agricultural practices, post-harvest management and value addition of the two commodities hence promoting agriculture as a business. Further, the projects have engaged over 1,500 students from Egerton University and Tertiary and Vocational Education Training (TVETs) institutions. Students have been trained jointly with industry creating an opportunity to gain hands on experiences in crop production, management, postharvest handling, value addition, marketing and engagement of stakeholders in the various nodes of the value chains. The initiatives further enable the students to appreciate the linkage with industry, some of whom have benefitted from, attachment/internship and job opportunities. This highlights the importance of transformative education in meeting the skills demand of the job market.

Mainstreaming Gender and Inclusion. In recent years, global trends have demonstrated a steadfast commitment to incorporating gender equity at all levels of society. This shift is driven by the belief that gender equity fosters efficiency, accountability, transparency, and good governance. Many funding agencies now use gender representation as a critical criterion, often denying funds to institutions that fail to achieve balanced representation. Recognizing the importance of addressing gender inequality in higher education, Egerton University established the Institute of Women, Gender, and Development Studies (originally named the Centre for Women Studies and Gender Analysis) in 1991. The Centre aimed to tackle the challenges that hindered female students' academic excellence. Formally launched in May 1992, it was initially overseen by an Advisory Committee with representation from student's body, the Senate, and various Faculties.

As its role expanded, Egerton University approved the Centre to conduct research, training, and outreach programs under the Division of Research and Extension. Eventually, it was upgraded to the Institute of Women, Gender, and Development Studies, gaining a full mandate to offer academic programs in Gender and Development Studies, and was placed under the Deputy Vice Chancellor Academic Affairs, now known as the Division of Academics, Research, and Extension.

The Institute of Women, Gender, and Development Studies at Egerton University is a pioneering gender entity in Kenya, inspiring similar initiatives in other Universities both public and private. Over the past two decades, the Institute has evolved into a dynamic institution with both national and international recognition. It stands as a center of excellence in teaching, research, and advocacy in gender issues, utilizing a comprehensive strategy encompassing teaching, research, publications, outreach, mentorship, leadership training, networking, linkages, collaborations, advocacy, and gender mainstreaming. Currently, two policies exist namely [Gender Policy \(2021\)](#) that was developed to provide a roadmap for the operationalization of the University commitments in gender matters. The second one “Policy and Procedures for Gender Based Violence and Sexual Harassment Prevention” endeavors to eliminate sex and Gender- Based violence and create an enabling environment for all in the University. The policy guides gender equality actions for the University in implementing global commitments on gender equity in order to narrow the gender gap between females and males in view of the Sustainable Development Goals 5.

One of the Institute's innovative initiatives is the Coffee Hour Social Forum, where students and staff come together to identify, discuss, and propose solutions to issues affecting both female and male students on campus. This forum aims to enhance student-staff relationships and foster a supportive campus environment. The discussions and outcomes of these forums are disseminated through a magazine publication, which also serves as a training ground for students with journalistic aspirations. Additionally, the Institute supports

outreach activities to high school students and the surrounding community, hence promoting gender equality and the importance of education as a tool for empowerment, a healthy society and environment as well as promoting entrepreneurship.

Egerton University also prioritizes the needs of persons with disabilities (PWDs) through its Disability Mainstreaming Department (DMD). The DMD aims to create an enabling environment where PWDs can fully exploit their potential. Its disability mainstreaming policy ensures that PWDs receive the necessary support for a smooth learning experience and campus life. The DMD resource center is equipped with assistive devices such as crutches, white canes, braille machines, embossers, wheelchairs, and binoculars. Additionally, university buildings feature ramp provisions, and the university has a van dedicated for enhancing mobility for PWDs. In recruitment, Egerton University recognizes the diverse talents and academic achievements of PWDs. The application process is adjusted to accommodate their needs, offering large print or braille application forms. The university collaborates with the National Council for Persons with Disabilities in Kenya to ensure application calls are accessible in various formats. The Dean of Students' office plays a vital role in providing psychosocial support and mentorship, hence safeguarding the mental health of all students. This comprehensive support system underscores Egerton University's commitment to inclusivity, ensuring that all students have the opportunity to succeed, regardless of their background, gender, or physical abilities.

Entrepreneurship for Job creation. Egerton University is cognizant of the fact that youth unemployment is a threat to development and stability in Africa ([Mbaye et al., 2019](#)). For example, the unemployment rate in Kenya is at 10% of the total population, estimated at 47.6 million as per the Kenya National Bureau of Statistics ([KNBS, 2020](#)). According to the Federation of Kenya Employers, over one million young people enter into the labour market annually without any skills, some having either dropped out of school or completed school and not enrolled in

any college. In the last survey by the Kenya National Bureau of Statistics, [KNBS \(2020\)](#), a total of 520,000, 762,200 and 846,300 new jobs were created in Kenya in 2017, 2018 and 2019, respectively. The new jobs created however, fall way below the annual release of young women and men to the labour market.

Egerton University has identified entrepreneurship as a major pathway to creating jobs for the young people. The university has supportive entrepreneurship structures through the Department of Agricultural Economics and Agribusiness Management, and incubation centres/hubs such as TAGDev Business incubation and Community engagement Hub, Centre of Excellence in Livestock, Innovation and Business (CoELIB), Centre of Excellence in Sustainable Agriculture and Agribusiness Management (CESAAM) and Agro-science Park. These initiatives work towards enhancing entrepreneurship among students, staff and the community for improved livelihoods. Innovative ideas are incubated and the entrepreneurs receive mentorship and capacity building to allow business growth. Through the incubation process, students are provided with networking opportunities with industry professionals, investors, and alumni, helping them build valuable connections for their future careers. Entrepreneurship trainings foster critical skills such as problem-solving, creativity, leadership, and resilience. These skills are valuable not only for starting businesses but also for success in any career. Encouraging entrepreneurship helps in translating research results and ideas into real-world applications, driving economic growth and job creation. Entrepreneurship training instill a mindset that embraces change and sees opportunities where others see challenges. The entrepreneurship initiatives in the university have incubated over 3,600 start-ups in the past decade, 70% of which are in the agricultural sector, trained and mentored over 7,500 entrepreneurs, supported over 18,000 farmers and reached out to over 14,000 youth in Kenya.

Realizing the need to embrace entrepreneurship and research that address societal need, the University through the Directorate of Research and Extension established the Agro-science Park in

2011, which has been focal in creating new business opportunities and value addition. The overall mandate of the Agro-science Park is promotion of innovations, products and services to be commercialized and linking university with industry for uptake of these products. The park therefore creates a platform for bringing together academia, farmers, graduate students, business, agro-processors and manufacturers in one stop-shop to share information and innovative ideas, commercialization of innovations and wealth creation. The park thus spurs rapid national development in fulfilment of Kenya's Vision 2030 agenda. Major activities of the park include providing infrastructure for incubating agro-innovations; encouraging and facilitating strategic partnerships in the agro-value chains development; providing an environment that enhances a culture of innovation, creativity and quality; commercialization of innovations in partnership with the Industry; facilitating the creation of new businesses via incubation and spin-off mechanisms, and accelerating the growth of small and medium size companies focusing on companies and research institutions as well as on people.

Over the last 13 years, the Agro-science Park has made notable achievements that include; (1) Release and commercialization of high yielding crop varieties of beans ([Chelalang](#), [Tasha](#) and [Ciankui](#)), groundnuts (Nyota and Mwangaza), Sorghum (EUS1), finger millets (Snapping green), chickpeas (Saina ka1) and pigeon peas (Egerton Mbazi M1, Mbaazi M4 and Mbaazi M3) for farmers in Kenya through Kenya Plant Health Inspectorate services (KEPHIS) and the seed industry. These varieties are recommended for farmers in low and medium altitude areas in Kenya. 2) Commercialization of Egerton University Organic Honey and Yoghurt with Kenya Industrial Property Institute (KIPI), and processing of Kenya Bureau of Standards (KEBS) Standardization Mark of Quality Certificate for Egerton University – HONEY through Agro-Food Industry and Nutritional Products Centre (AFINPC) from Dairy plant of Dairy and Food Science Department; 3) Establishment of Fingerlings production Unit for the supply

of fingerlings to farmers thus enhancing fish farming in Kenya; and 4) Enhancing mechanization by fabrication of cereal shellers and motorized small machines to ease post-harvest processing of cereals including threshing/shelling and winnowing. To support knowledge sharing and experiential learning, the park offers short courses to students and community on seed production and handling, fish production and feed formulation, organic honey processing and packaging, yoghurt production and packaging, mushroom spawn production, commercialization of mushroom and proper packaging and handling of product. Further, students benefit from field attachment, internship and linkages with industry for jobs.

Staff Capacity Building for effective service delivery. Egerton University has proactively addressed the challenge of remaining relevant amidst low staffing and growing student population by enhancing staff capacity through various initiatives aimed at effective service delivery. Central to this effort is the TAGDev program, which has organized various retooling workshops focusing on experiential learning, community engagement, entrepreneurship, graduate students' supervision among others. These workshops conducted between 2017 and 2024, have equipped staff with innovative teaching methodologies, entrepreneurial skills and, supervision skills, significantly improving their ability to deliver student-centered education and fostering timely completion of graduate studies. In addition to the workshops, the university's senior officials participated in a leadership and accountability seminar facilitated by EARTH University – Costa Rica and a Finance for non-finance officers training facilitated by the Kenya National Treasury. This has contributed to strengthening the administrative capabilities of the institution.

Effective Governance, Sound Policies and structures. Egerton University's commitment to effective governance, sound policies and supportive structures has been instrumental in overcoming barriers to higher education. The university has established transparent and accountable management structures, promoting a

culture of integrity and ethical conduct. Regular audits and evaluations ensure that resources are utilized efficiently which has contributed positively to building trust with development partners that are supporting various research projects. Further, strategic planning processes guide the institution's long-term development. Moreover, Egerton University has implemented policies that promote academic freedom, inclusivity, and equity. These policies create an environment where all members of the university community can thrive and contribute to the institution's mission.

Egerton University like many other African Universities has experienced significant expansion, increasing the number of academic programs and student enrollment. This growth necessitated a review of the University's structures in terms of systems and policy to come up with formal mechanisms of ensuring that academic standards are not only maintained but also enhanced. This informed the establishment of the Directorate of Quality Assurance (DQA) at Egerton University in June 2005. The DQA is tasked with maintaining and enhancing the quality of academic and research provisions to uphold the integrity of the University's academic awards. Key functions of the DQA include programmes evaluation, analysis of external examiners' reports conducting satisfaction surveys and academic audits, as well as providing advice and guidance on any other quality-related matters.

Programme evaluation involves self-assessments based on the Inter-University Council for East Africa (IUCEA) approved handbooks, with reports generated, discussed, and validated by external peer reviewers. Course evaluation involves annual assessments of every course and lecturer using teaching effectiveness and practical instruction evaluation questionnaires, with feedback provided to lecturers. The DQA also analyzes reports from external examiners, synthesizes them, and presents recommendations to the Senate for implementation by Faculties and Departments. Satisfaction surveys are conducted to assess stakeholder satisfaction with university services. Data for such surveys are collected from students, staff, alumni, and

employers, usually by an independent consultant. Findings and recommendations made are incorporated into the University's annual performance contract workplan to ensure continuous improvement. Academic audits ensure compliance with statutory and University standards. The academic audits are conducted by trained teams which report their findings to the DQA and the Senate. The DQA also provides essential advice and guidance on quality matters and serves as the initial contact point for stakeholders interested in academic and research quality. Overall, the DQA plays a crucial role in safeguarding and enhancing the quality and standards of academic and research activities at Egerton University, ensuring continuous improvement and integrity in its educational offerings.

Egerton University aims to be Kenya's leading university with a reputation for excellence in scholarship, learning and student experience. Central to this ambition is the effective management of risks, which is crucial in safeguarding the achievement of the university's strategic priorities and goals. These efforts are aligned with the University's Vision as outlined in the Egerton University Statutes (2023). By implementing effective policies such as risk management policy, anti-corruption policy, extension and outreach policy, university policy of collaboration, gender policy, Gender Based Violence and Sexual Harassment Prevention procedures among others, Egerton University seeks to transform higher education and maintain its esteemed reputation.

CONCLUSION

Egerton University exemplifies how HEIs in Africa can address challenges through strategic initiatives aimed at enhancing education quality, accessibility, and relevance. By leveraging technology, aligning education with market needs, and fostering international collaborations for research and development, the university has made significant strides in demonstrating the potential of higher education institutions in contributing to

sustainable development. Through prioritizing transparency, inclusivity, and academic excellence, the university has created an environment conducive to learning, innovation, and community engagement. Moreover, initiatives in gender and inclusion mainstreaming, revenue diversification, entrepreneurship, and staff capacity building have enabled Egerton University to create inclusive and sustainable academic environment that fosters growth, innovation and societal impact. This underscores the importance of innovation, community engagement, and continuous learning in overcoming barriers and achieving sustainable development.

RECOMMENDATIONS

Egerton University offers comprehensive recommendations to other institutions of higher learning aimed at enhancing overall effectiveness, relevance, and impact within their communities and beyond. In terms of enhancing academic excellence, institutions are encouraged to expand the role of their quality assurance mechanisms and continually undertake evaluation of academic programmes and audits. Increasing collaboration with industries ensures identification of gaps in the curricula that informs review or development of new curricula. Institutions should work towards producing skilled graduates who meets societal demand in efforts to address youth unemployment in Africa. This is important in upholding institutions' relevance in meeting market needs and future workforce demands. Promoting continuous professional development among faculty members is also key to encourage student-centred learning. Expanded enrolment in institutions of higher learning calls for innovative approaches to ensure quality of education is not compromised. To this end, embracing technology and improving infrastructure to support learning becomes essential. There is increasing need for enhancing e-learning capabilities and supporting blended learning models. Further, modernizing and maintaining classrooms, laboratories, and libraries would create an optimal learning environment, alongside ensuring reliable internet connectivity to support learning and online collaborations.

Promoting inclusivity and community engagement calls for strengthening specialized studies institutes, such as those focused on women, gender, and development, to foster gender equity and address related challenges. Enhancing support systems for persons with disabilities through targeted policies and accessible infrastructure will ensure inclusivity and enhance access to higher education. Expanding community-based projects and outreach programs will provide students with practical experiences that will help address local development issues and strengthen university-community linkages. Institutions should also ensure that they conduct cutting-edge research that address pressing needs of the community.

Embracing entrepreneurship as a pathway for graduates' transition is important since it cultivates a mindset of innovativeness among students, hence empowering them to create job opportunities rather than solely seeking such opportunities. Such entrepreneurial mindset would not only enhance the graduates' employability but also equip them to adapt to dynamic market conditions and contribute meaningfully to economic growth. By engaging in entrepreneurial activities, graduates will learn to identify gaps in the market and develop innovative solutions to address them. This ability to innovate is highly valued in today's rapidly evolving industry sector, where the capacity to think outside the box can lead to breakthrough and competitive advantages. Entrepreneurs are able to carve out their own career paths, pursue their passions, and create sustainable ventures that align with their values and aspirations.

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STATEMENT OF COMPETING INTERESTS

The authors declare that there is no conflict of interest

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