

Transforming University Education in Africa: Lessons from Kenya

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ABSTRACT

Kenya has attached great interest in education as a stimulant for economic and social development since 1963. Higher education evolution and transformation in Kenya has been rapid following increased demand and pressure from the public for quality and relevance in university programs, teaching and research to society and industry. This has led to calls for innovative, adaptive and futuristic approach to teaching and learning. Given the progressive growth of the sector, a number of measures have been and continue to be enforced and undertaken to ensure that the universities comply and deliver on their mandates of teaching, training, and research and community engagement. To strengthen and solidify these reforms, the Government of Kenya amended and produced the new universities act. Some of the critical issues addressed in the new act include: Access and equity; Quality and relevance of University Education; Financing Higher Education; Governance and Leadership; Research and Innovation; and Postgraduate Training and Internationalization of Education. In response to this, several universities in Kenya have recently established innovation centers, incubation hubs, and are building sustainable university-industry linkages. It has now been realized that while some changes and transformation can be voluntary, it is important that policy and legal reforms be undertaken to cement and produce lasting changes in this dynamic sector. The Creation of an institution such as the Commission for University Education (CUE), to develop, implement, enforce and monitor regulations, standards and policies is important in keeping momentum and ensuring that targeted results are achieved. This paper discusses recent reforms within the University sector in Kenya, pointing out the challenges experienced and lessons learnt owing to the rapid expansion of the sector and makes recommendations on strategic issues on how to build a resilient, vibrant and sustainable university education sector for the country; with lessons for other countries within the African continent.

Keywords: Competitiveness, education, equity, Kenya, relevance, quality

RÉSUMÉ

Le Kenya a eu un grand intérêt pour l'éducation comme étant le stimulus du développement économique et social, et ce depuis 1963. L'évolution et la transformation de l'enseignement supérieur au Kenya ont été rapides suite aux demandes et pressions croissantes du public pour une qualité et une pertinence des programmes universitaires, des méthodes d'enseignement et des recherches. Ceci a conduit aux appels en faveur d'approches d'enseignement et d'apprentissage innovantes, adaptatives et modernes. Compte tenu de la croissance progressive du secteur, un certain nombre de mesures ont été (et continuent d'être) appliquées pour s'assurer que les universités se conforment à leurs mandats d'enseignement, de formation, de recherche et d'engagement avec les communautés. Pour renforcer et consolider ces réformes, le gouvernement du Kenya a modifié et produit une nouvelle loi sur les universités. Au

nombre des points critiques abordées dans cette nouvelle loi, il y avait: l'accès et l'équité; qualité et pertinence de l'éducation universitaire ; financement de l'enseignement supérieur ; gouvernance et leadership; recherche et innovation; formation des 2ème et 3ème cycles, et internationalisation de l'éducation. En réponse à cela, plusieurs universités au Kenya ont récemment créé des centres d'innovation, d'incubation, et établissent des relations durables avec l'industrie. Il a été réalisé que certains changements et transformations peuvent être volontaires, toutefois, il importe que des réformes politiques et juridiques soient entreprises pour cimenter et produire des changements durables dans ce secteur dynamique. La création d'une institution comme la Commission pour l'éducation universitaire pour élaborer, mettre en œuvre, appliquer et de suivre les règlements, normes et politiques, est importante pour maintenir l'élan et assurer la réalisation des objectifs visés. Le présent document discute des réformes récentes du secteur universitaire au Kenya, soulignant les défis rencontrés et les leçons apprises du fait de l'expansion rapide du secteur; et fait des recommandations par rapport aux questions stratégiques sur comment construire un secteur éducatif universitaire résilient, dynamique et durable pour le pays; avec des leçons d'autres pays sur le continent africain.

Mots-clés: Compétitivité, éducation, équité, Kenya, pertinence, qualité

INTRODUCTION

University Education yields significant benefits for both young people and society, providing better employment opportunities and job prospects, improved quality of life, and greater economic growth (AAI, 2015). The State of Higher Education in Africa Report of 2015 further indicates that at 21% return on Investment, Africa receives the highest returns in the world from investment in higher education. This is despite the fact that only 6% of the young people in sub-Saharan Africa are enrolled in higher education institutions compared to the global average of 26 percent. The promising news is that universities in many African countries (sub Saharan Africa leading the pace) are experiencing a surge in their enrollment. Between 2000 and 2010, higher education enrollment more than doubled, increasing from 2.3 million to 5.2 million. Overcrowding in lecture halls at some Africa universities is becoming all too common. Statistics show that on average there are 50% more students per professor at African universities compared to the global average (Adeyemi, 2000).

Evidently, private higher education is one of the fastest growing education sectors in Africa (Atal, 1995; Nakayiwa *et al.*, 2016). In 2009, there were around 200 public universities and 468 private higher education institutions on the African

continent. Comparatively, there are 1700 public universities and nearly 2500 private universities (4- and 2-year universities) in the U.S. alone. Kenya has 70 universities, out of which 38 are private, while 32 are public (Mukhwana *et al.*, 2016). A one-year increase in average tertiary education levels would raise annual GDP growth in Africa by 0.39 percentage points, and eventually yield up to a 12 percent increase in GDP (World Bank Report, 2015). The Kenyan Education sector has expanded rapidly in the last 10 years. While there were only 80,000 students at universities in 2007, the number now stands at 539,000 (Mukhwana *et al.*, 2016). With support from the government both in terms of student loans, establishment of new universities, and a favorable policy environment, the sector has experienced phenomenal growth. A recent economic survey indicated that the education sector was among the key sectors that drove the Kenyan economy making a contribution of 5.0% of GDP (KNBS, 2016).

Higher Education in Kenya has gone through a trajectory dating back in 1922 when the then Makerere College in Uganda was established as a small technical college which was then expanded to meet the needs of the three East African countries; Kenya, Uganda and Tanganyika/ Zanzibar, as well as Zambia and Malawi (Nakayiwa, 2016).

In the 1940s and early 50s it was only Makerere college that was providing university education in East Africa (CUE, 2015). This lasted until 1956 when the Royal Technical College was established in Nairobi. In 1963, the Royal Technical College became the University College, Nairobi, following the establishment of the University of East Africa with three colleges (Makerere, Nairobi and Dar es Salam) offering programmes and degrees of the University of London till 1966. In 1970, the University of East Africa was dissolved to create three autonomous universities; University of Nairobi, Dar es Salaam and Makerere. The University of Nairobi was thus established as the first university in Kenya (CUE, 2015).

Four decades later, the sector has expansively grown to a total of seventy (70) universities - thirty eight (38) privately established and thirty two (32) public universities (CUE, 2015), an unmatched growth in the African region besides that of the Republic of South Africa and Nigeria. This has been largely attributed to the liberalization of the higher education industry, the increasing number of secondary school graduates qualifying to join universities annually as well as the growing population. The recognition of the key contribution of Education to attainment of the country's vision (Kenya Vision 2030) has also seen the sector receive commendable and increasing support from the government such as increase in the amount of funds allocated for research as well as the placement of 10,000 government funded students to private universities.

According to a report by Commission for University Education in Kenya, the university student population by the year 2015 stood at 539, 749 (Table 1). Of these about 90% of the students are in public, while 10% are in private universities (Mukhwana *et al.*, 2016). With this expansion, it was realized that while access to university education had been more or less addressed, weaknesses were noted in the area of quality and relevance of programs being offered (Martin and Antony, 2007). Previous legislation for the university sector since 1985 focused on

quality assurance at private universities, under the supervising of the Commission for Higher Education (CHE). Education reforms following promulgation of the Kenya new constitution of 2010, created a new law, the Universities act, and CHE was transformed into CUE, and given more powers to enforce issues of access, quality and relevance in both public and private universities in the country (CUE, 2015). Over the last five years, CUE has worked with universities and other stakeholders to develop regulations, standards and guideline upon which various aspects of university education can be assessed and monitored, using a peer review mechanism. Both internal quality assurance (at the University) and external quality assurance (by CUE, or delegated to relevant professional bodies) are now well institutionalized in the country, although the system still faces many challenges (Mukhwana, 2016).

Enrolment at Kenyan universities is expected to soar even more and while this is a good reason to cheer, the preparedness of the universities by ensuring that they have qualified lecturers, instructional materials, and supportive infrastructure development have not kept pace with this increasing demand (Basheka, 2008; Gudo *et al.*, 2011; Otara, 2012). Rising enrollment rates have drastically outpaced an increase in education funding, resulting in shortages of instructional materials and supplies, poorly stocked libraries and overuse of school facilities. Indeed, while more students are in university lecture rooms, there is a deeper learning crisis at play: many students are not gaining basic skills while attending university, a fact that has now been made all clear by industry and employers (Mukhwana *et al.*, 2016). Consequently, the graduation rate does not match the high rate of enrolment as many universities experience a high dropout rate, attributed to financial, economic and social problems that face the students (Kiamba, 2004). As seen in Table 2 below, the low graduation figure could be attributed to many factors such availability of funds, students seeking alternative and more fulfilling ways to invest their time and resources and to pursue their purpose in life as the Universities fail to deliver

on their mission of transforming minds and the society through teaching, training, research and community development (Atal, 1995).

Universities in Kenya currently employ about 16,000 academic staff, only about 50% of whom have PhD. The sector is experiencing an acute shortage of teaching and research staff (Mukhwana *et al.*, 2016). As Tables 1 and 2 indicate, the number of PhD students enrolled and graduating from the universities is relatively low, considering that this is where the next generation of academics is expected to be drawn. About new 10,000 staff with PhD are required to serve in the 70 universities currently operating in Kenya. But in a situation where only about 7% are produced annually, there is bound to be a serious shortage of qualified academic staff. This calls for a thorough understanding of the challenges inhibiting successful and improved progression of the PhD students (Cloet and Bunting, 2000). The CUE working with Universities has recently completed a study on the state of postgraduate training in the Country (Mukhwana *et al.*, 2017); and recently developed a national policy on training and examination of postgraduate students (Too *et al.*, 2017).

Like any other country in the world, a number of issues on best practices and ways to ensure a successful university sector are hotly debated. It is difficult to create consensus on what needs to be done to improve student experience, access, quality and relevance of University education in Kenya. Following extensive studies of the sector, the authors hereby share the most pertinent issues and what they think needs to be done to improve University education, with lessons for other African countries.

The following are some key features of the Kenya University sector and the recommendations expected to drive a more competitive and successful university sector:

Access and equity. The Kenya Vision 2030 emphasizes the need to address issues related to access, equity and management. Access to

university education in Kenya has expanded remarkably, providing more choices and varied modes of delivery. Access to university education has been facilitated through government support to students (through the Higher Education Loans Board), registration and establishment of many private and public universities, availability of employment to university graduates in the country and in the region (east Africa, Somalia, South Sudan) and internationally, and a strong national culture that believes that investment in education can help families fight poverty (Kiamba, 2004; Mukhwana *et al.*, 2016). These gains have further been enhanced through introduction of Open, Distance and E-Learning (ODEL) and universities opening large numbers of satellite campuses in the rural areas to provide more study opportunities for prospective students (CUE, 2015). The country also has a policy where students living with disability and those coming from marginalized areas and communities are given preferential treatment during admissions, and join with lower grades than the national average (Kinyanjui, 1994; Ishengoma, 2004).

It has generally been noted however that many universities are now lacking physical and academic facilities to admit the numbers of students that they have; such as lecturer rooms, internet connectivity, libraries, books, laboratories, hostels etc. As such the quality of the learning environment has been deteriorating over time and dropout rates are on the increase (Adeyemi *et al.*, 2000). This has in turn affected the employability of the graduates with employers contending that many students lack technical skills in the areas in which they have been trained. A study in 2015 (Mukhwana *et al.*, 2016) found that students lacked soft skills such as communication, IT, Team work, leadership and writing skills as well. To improve this situation, it is recommending that;

- i. Government partners with development partners to construct and equip both teaching and hostel facilities especially in Public universities;
- ii. Revamp access to internet and online reading resources;

- iii. Develop and institutionalize both internal (at Universities) and external (at CUE and professional bodies) quality assurance mechanisms to ensure that students get quality teaching and learning;
- iv. Involve industry and employers in training, including compulsory attachment and internship for all students so that they develop relevant work skills;
- v. Equip students with both technical and soft skills in order to foster their employability and relevance in the market;
- vi. Ensure that Universities only launch programs for which they have enough academic resources; and
- vii. Strengthen research and develop mechanisms for mitigating high student dropout rates, including guiding and counseling.

Quality and relevance of University Education. The current unprecedented expansion of universities, though welcomed, has somewhat compromised the quality of education as many of them are experiencing acute shortage of staff and resources to support them (Martin and Antony, 2007). Through regulations, standards and guidelines that were developed based on the new universities act of 2012, the country is now in a good place to implement both internal and external quality assurance systems within the sector, but the culture for this is still largely missing.

Recommendations

- i. The universities need to address quality problem by instituting a variety of measures which include: planned expansion; boosting the quality of the teaching staff by recruiting only those with PhD; broadening student assessment mechanisms; embedding students' appraisal of academic staff and adopting inquiry rather than expository delivery methods;
- ii. There should be rationalization of programmes to avoid

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Table 1. Student enrolment by gender in public and private universities

| Universities | Postgraduate Diploma | | Bachelor | | Master | | PhD | | Grand Total |
|----------------------|----------------------|--------|----------|---------|--------|--------|-------|--------|-------------|
| | Male | Female | Male | Female | Male | Female | Male | Female | |
| Public Universities | 668 | 300 | 245,849 | 163,373 | 27,407 | 18,164 | 4,231 | 1828 | 461,820 |
| Private Universities | 272 | 152 | 32,663 | 33,865 | 5,505 | 4,385 | 684 | 403 | 77,929 |
| Total | 940 | 452 | 278,512 | 197,238 | 32,912 | 22,549 | 4,915 | 2,231 | 539,749 |

Source: (Mukhwana *et al.*, 2016, pp 30)

Table 2. Graduation rates in public and private universities (2012 – 2015)

| Programme Levels | 2012 | | 2013 | | 2014 | | 2015 | | Total | | Grand Total |
|------------------|--------|--------|--------|--------|--------|--------|--------|--------|---------|--------|-------------|
| | Male | Female | Male | Female | Male | Female | Male | Female | Male | Female | |
| Bachelor | 17,412 | 14,311 | 21,537 | 18,628 | 28,986 | 23,783 | 32,995 | 27,866 | 100,930 | 84,588 | 185,518 |
| PGD | 336 | 244 | 507 | 304 | 1282 | 853 | 858 | 568 | 2983 | 1,969 | 4,952 |
| Masters | 2,415 | 1,932 | 2,949 | 2,340 | 4,022 | 3,248 | 4,865 | 3,726 | 14,251 | 11,246 | 25,497 |
| PhD | 134 | 63 | 167 | 102 | 268 | 159 | 295 | 174 | 864 | 498 | 1,362 |
| Total | 20,297 | 16,550 | 25,160 | 21,374 | 34,558 | 28,043 | 39,013 | 32,334 | 119,028 | 98,301 | 217,329 |

Source: (Mukhwana *et al.*, 2016, pp 75); PGD= Postgraduate diploma

- duplication and those that do not attract students should be reviewed and discontinued. Fragmenting courses into very thin disciplines should be avoided;
- iii. Regular quality audits (institutional, programme and accreditation) should be undertaken and benchmarked with international standards; and
 - v. Provide comfortable office space; availability of computers and internet facilities; adequate teaching facilities such as lecture theatres, laboratories and libraries.

Relevance

There is need for universities in the country to keep pace with the current dynamic global trends particularly in the labour market in order to maintain their relevance (Banya and Elu, 2001). Kenya is not producing enough human resource in STEM as currently only 13% of graduates from Universities are from STEM courses as indicated in Table 3. Currently, while there is an acute shortage of manpower in the engineering and medical fields, Universities are training students (more than needed) in Business, Education (arts) and Arts and humanities, who constitute 74% of all students enrolled (Mukhwana *et al.*, 2016). Yet the Kenya Vision 2030 blue print puts emphasis on medicine, pharmacy, engineering and technical-based programmes (STEM) and strives to ensure that Kenya becomes a newly industrialized middle income country by 2030. The prevailing situation in which the Humanity programs dominate the total student enrolment at universities and suck in huge national resources is holding back the achievement of the vision, a case true for several countries in Africa (Nakayiwa, 2016; Ochuodho, 2016; Sam-Amoah *et al.*, 2016; Shibu *et al.*, 2016; Valeta *et al.*, 2016).

Recommendations

- i. There should be a balance in enrolment in Science, Technology, Engineering and Mathematics (STEM) and Arts courses; and
- ii. There is need to align higher education to national development goals and develop a human resource that is relevant to the needs of

industry.

Financing Higher Education

Increased access and the introduction of new programmes in universities has called for a re-evaluation of the ways in which university programmes and students are funded. Rather than funding universities solely on the basis of the number of students enrolled, a new funding strategy should take into account the actual cost of educating students in specific programmes in order to ensure the survival of disciplines that are more expensive to teach such as medicine, architecture, engineering and veterinary (Banya and Elu, 2001). The increase in demand for higher education without a corresponding increase in finances from government has led to universities' resources being stretched (Kinanjui and Mburugu, 1997; Kiamba, 2004). This has forced universities to seek other ways of raising revenue to support their activities such as opening numerous satellite campuses without the supporting resources.

Recommendations

- i. A differentiated unit cost method of sharing resources provides a more effective and efficient approach to financing Higher Education;
- ii. Universities need to develop programs which are in line with government development goals and global trends, hence fit into the exchequer matrix. This will engender a complimentary development model of advancing the government's development while supporting University programmes;
- iii. Building effective partnership between National Research Fund (NRF) and universities to support especially training at the master's and doctoral levels;
- iv. There is need to interest the industry to support universities. This can only be achieved when universities tailor their training and research to suit the needs of the industry;
- v. There is need to strictly control and regulate the opening and operations of satellite campuses in order to maintain quality and enhance life long learning; and

Table 3. Graduation trends per cluster in public and private universities in Kenya

| Clusters | Public Universities | | | Private Universities | | | Total | | | Proportion |
|-------------------------------------|---------------------|--------|---------|----------------------|--------|--------|---------|--------|---------|------------|
| | M | F | T | M | F | T | M | F | T | |
| Agriculture, Forestry and Fisheries | 3,339 | 2,042 | 5,381 | 265 | 131 | 396 | 3,604 | 2,173 | 5,777 | 2.7% |
| Architecture | 926 | 357 | 1,283 | 0 | 0 | 0 | 926 | 357 | 1,283 | 0.6% |
| Business and administration | 22,748 | 16,669 | 39,417 | 13,175 | 14,827 | 28,002 | 35,923 | 31,496 | 67,419 | 31.0% |
| Computing | 4,255 | 1,527 | 5,782 | 3,730 | 1,912 | 5,642 | 7,985 | 3,439 | 11,424 | 5.3% |
| Education (Arts) | 12,826 | 11,309 | 24,135 | 6,388 | 8,594 | 14,982 | 19,214 | 19,903 | 39,117 | 18.0% |
| Education (Science) | 3,950 | 2,183 | 6,133 | 1,630 | 994 | 2,624 | 5,580 | 3,177 | 8,757 | 4.0% |
| Engineering | 6,209 | 1,364 | 7,573 | 31 | 6 | 37 | 6,240 | 1,370 | 7,610 | 3.5% |
| Environment | 1,978 | 1,253 | 3,231 | 40 | 66 | 106 | 2,018 | 1,319 | 3,337 | 1.5% |
| Health and Welfare | 4,397 | 3,909 | 8,306 | 2,221 | 2,465 | 4,686 | 6,618 | 6,374 | 12,992 | 6.0% |
| Humanities and Arts | 6,877 | 6,926 | 13,803 | 2,502 | 1,641 | 4,143 | 9,379 | 8,567 | 17,946 | 8.3% |
| Journalism and Information | 1,626 | 1,687 | 3,313 | 633 | 1,433 | 2,066 | 2,259 | 3,120 | 5,379 | 2.5% |
| Law | 1,642 | 1,564 | 3,206 | 858 | 990 | 1,848 | 2,500 | 2,554 | 5,054 | 2.3% |
| Life Science and Physical Science | 4,968 | 3,054 | 8,022 | 25 | 46 | 71 | 4,993 | 3,100 | 8,093 | 3.7% |
| Manufacturing | 221 | 58 | 279 | 0 | 0 | 0 | 221 | 58 | 279 | 0.1% |
| Mathematics and Statistics | 2,336 | 1,239 | 3,575 | 89 | 122 | 211 | 2,425 | 1,361 | 3,786 | 1.7% |
| Security and Conflict Resolution | 1,354 | 584 | 1,938 | 109 | 100 | 209 | 1,463 | 684 | 2,147 | 1.0% |
| Services | 743 | 862 | 1,605 | 65 | 139 | 204 | 808 | 1,001 | 1,809 | 0.8% |
| Social and Behavioral Science | 2,373 | 1,949 | 4,322 | 1,053 | 2,214 | 3,267 | 3,426 | 4,163 | 7,589 | 3.5% |
| Teacher Training | 812 | 930 | 1,742 | 817 | 1,527 | 2,344 | 1,629 | 2,457 | 4,086 | 1.9% |
| Veterinary | 146 | 56 | 202 | 0 | 0 | 0 | 146 | 56 | 202 | 0.1% |
| Other | 10 | 4 | 14 | 1,661 | 1,568 | 3,229 | 1,671 | 1,572 | 3,243 | 1.5% |
| Total | 83,736 | 59,526 | 143,262 | 35,292 | 38,775 | 74,067 | 119,028 | 98,301 | 217,329 | 100.0% |

Source: (Mukhwana *et al.*, 2016, pp 83)

- vi. Endowed personalities, families and firms should be motivated to support universities and research and in return be given the privilege of naming/branding and/or given tax waivers or rebates.
- ii. The competitive recruitment process of the Vice Chancellors and their deputies should be done by independent human resource firms;
- iii. There is need for all universities to have strategic management documents, mission and visions that are widely shared with the institutions to guide growth and management;
- iv. There is need to have in place succession management plans for all universities in order to manage conflicts and ensure smooth transfer of power; and
- v. Time has come to start separating university management and academic excellence of university managers and the confusion between the two have led to devastating results.

Governance and Leadership

There has been a move towards greater autonomy of the universities in the management of their internal affairs, which is the best practice globally (Fielden, 2008). With all universities now governed by the Universities Act, operations of the sector have been harmonized. The competitive recruitment process of council members, the Vice Chancellors and their deputies currently in place is quite commendable and should be protected as it is transparent, accountable and meritocratic. These measures have had a positive impact in the University sector. However, Higher Education Institutions should remain vigilant against external forces and patronage which often negate the gains made so far. Often too much valuable time and energy is spent by the Ministry of Education sorting out conflicts which arise in the appointment of top management officers in the sector - particularly in the Universities.

Another challenge which has bedeviled the sector has been the process of appointing Members of the Councils/Boards of these institutions. For quite a while, there were no clear guidelines for this process as it was left to the discretion of the Minister of Education and the Head of State. This created a lacuna where the political elite and others with vested interests nominated their cronies. The result was appointment of persons without any idea about governance into university management. This has led to the instability and confusion which have been witnessed in a number of institutions.

Recommendations

- i. The new legislation which stipulates that Council members should be holders of Master's Degree and above and be appointed through a competitive process should be implemented and enforced;

Research and Innovation

The research output in Kenya is quite low compared to other countries in Africa, such as South Africa. Most of the research done in higher Institutions is basic research which is largely academic and does not benefit the end user. Students need guidance in identifying areas that are strategic and of value to the development agenda.

Lack of funds is the common excuse for not conducting research in Kenya (Kiamba, 2004). However, funds are available but are scattered in different silos which are unknown to those in need. This may be the cause of the low uptake of funds available in government agencies. The National Council for Science, Technology and Innovation (NACOSTI), has been receiving funds to the tune of 0.9% of GDP from the exchequer for research activities but the absorption has been low.

Linked with research is Innovation. The current situation in higher education is worrying as little has been done to tap the latent pool of creative initiatives and research outputs for economic use to transform lives. There is an abysmal dearth of knowledge on how to use research findings to catalyze innovation to make life easier or mitigate everyday life problems. Related to this is the issue of Intellectual Property Rights. Most players in the Higher Education sector have no idea of how to

have their products evaluated and secured through patents. A lot needs to be done to sensitize the stakeholders in the sector.

Recommendations:

- i. There is need for a paradigm shift from doing routine research for the sake of it - to more targeted research which addresses the needs of the communities. Research training and research studies should be strategic and aligned to the needs of the country.
- ii. Universities need to conduct research that informs policy, law and national dialogue e.g. fertility preservation, genetic engineering, euthanasia, political polls etc.
- iii. Kenya needs a commercialization policy that will help in research uptake and ensure that research ideas move up the value chain and create wealth for the country.
- iv. There is need to coordinate policies and legislation to support research as well as strengthen inter-agency links to sustain research in Higher Education.
- v. There is need to harmonize the bodies dealing with research (NACOSTI, KENIA and NRF) to avoid duplication of duties.
- vi. Funding from international partners should be appraised to ensure that they address the local needs and is not tied to the priorities of other countries/funding bodies.
- vii. The research must also get to the end user. There is need to device ways that can disseminate research to ensure that it reaches the end user. Universities should lead the way in using research outputs by directly engaging with communities.
- viii. As more resources are put in research, renown Professors should get more involved in research work, demonstrate academic leadership and mentor upcoming scholars.
- ix. Each university needs to establish a knowledge transfer center which is easily accessible to the end users.
- x. The commercialization of research and technology transfer needs support after publication. A lot of work needs to be done in publicity, patenting and copy writing.

Linkages with TVET and Industry

TVET Institutions play a crucial role in producing practical human resource for the economy. However, the TVET sector has experienced many challenges, which include: low enrolment of students, negative perception about TVET by parents of potential students and an apparent bias for degree programmes (Sector Performance Standards 2015, 2nd Ed). For a long while, there has been no clear career path in the TVET sector. This has tended to discourage many potential students and made universities to usurp the mandate of TVET institutions by mounting their programmes.

The absence of strong government support, lack of leading TVET champions and apparent apathy from the general public led to a number TVET institutions being turned into Universities. A rather comical scenario emerged where universities without the technical know-how were duplicating the work of TVET institutions and TVET institutions attempting to do what universities do. Yet most of these TVET institutions have a lot of resources and well equipped laboratories but lack students to study. The result is that a lot of resources in TVET institutions are wasting away as the country produces many low quality graduates who will remain unemployed for many years.

Recommendations

- i. There is need for intensive campaign to promote TVET and attract students to enroll in them. Equally, parents and others with a negative perception about TVET should also be targeted to change their attitude.
- ii. Intensify and sustain reforms being undertaken in the TVET sector covering the curriculum and progression path of students to degree level. Currently being addressed are staff needs encompassing training and terms of service.
- iii. Linking TVETs with industry by ensuring they work with Industry through getting occupational standards from industry that will inform their standards and programmes

- offered.
- iv. An understanding between Universities and technical institutes should be defined so that they do not trespass their boundaries but engender a mutual way of working together and linking with industry.
 - v. Strengthening linkages between universities, TVET Institutions and research centers. This can be achieved by promoting collaboration in training and research as well as strengthening regional and international linkages by funding collaborative teaching and research programmes. This would elevate the profile of higher education sector a great deal.
 - vi. Advise government on policy matters of TVET, promote the development of strategic skills to support vision 2030, coordination and management of TVET (both public and private institutions), and assure quality by undertaking institutional, programme and trainer accreditation. Currently, there is a lot of uncoordinated activities in the TVET sub- sector. All the existing TVET institutions should seek fresh accreditation
 - vii. The ministry of Education should give more incentives in support of TVET. To address issues of low uptake there is need to focus on attitude change of both parents and students.
 - viii. Comprehensive education reforms being implemented should ensure that TVET institutions develop skills that will support the achievement of Vision 2030.

Postgraduate Training

The country is not producing enough PhD's who are the future leaders in academia. Many of the students enrolled in post graduate training do not graduate resulting in very low completion rates and high dropout rates. About 10,000 PhDs are required to serve in the 70 universities currently operating in Kenya. But in a situation where only about 7% are produced annually, then there is every reason to worry. Kenya needs to address this issues and enhance the training of PhD students.

Recommendations

- i. Universities need to rethink how they examine their PhD and shift from examination of Thesis to focus on the publications by the student.
- ii. Universities need to be aware of the fact that the policy that requires that all teaching staff in Universities must be holders of PhD's by November, 2018 is still in force.
- iii. School based model of training PhD needs to be examined as it does not meet the minimum standards as per University Regulations 2014 since the school vacations have become as short as two weeks.
- iv. Post graduate students, especially PhD, need special and intensive training on how to write winning proposals and also development of their leadership and management skills.
- v. Higher Education Loans Board (HELB) should increase the allocation of funds to Postgraduate students. Similarly, the government should request for more postgraduate scholarships in bilateral agreements signed with development partners.

Internationalization of Education

Graduates from Kenya are regarded in high esteem in many countries as evidenced by many graduates who have been absorbed outside the country doing extremely well. However, the country does not attract a lot of foreign students - most international students come from Eastern Africa (i.e., Rwanda, Uganda, Tanzania, Somalia and South Sudan). There is need to broaden the pool of international scholars in Kenya.

Recommendations

- i. There is need to have a global perspective of education, i.e., use the slogan "train for the world". Areas that need to be strengthened to internationalize Kenya institutions are: having vibrant student exchange and collaborations with other universities, among others
- ii. A lot needs to be done in Kenyan institutions

- such as improving infrastructure, better accommodation facilities and setting up international offices in the universities.
- iii. Collaborative research involving institutions from outside the country would expose students to the international arena and sharpen their skills.

Centers of Excellence/Identity

There are many examples of universities in Africa, America, Europe and other parts of the world which are highly reputed as Centers of Excellence. Examples of these include: University of Cape Town, University of Pretoria, University of Alexandria (in Africa); Harvard, Massachusetts Institute of Technology (MIT) in the US; Oxford in the UK etc. The same can be achieved in Kenya if there is a will and commitment by the stakeholders to invest in strengthening selected institutions.

Recommendations

- i. There is need to create centers of excellence in Kenyan universities. The Centers of Excellence should be hubs where they can be utilized by different universities with no individual university claiming ownership.
- ii. Universities should brand themselves as Centers of excellence and create a niche that is unique.
- iii. Similarly research in universities must define their niche areas and use government to fund these areas to solve problems in the country.
- iv. There is need to benchmark and harmonize Standards with other countries who are leading in this area.

CONCLUSION AND WAY FORWARD

Many nations are investing in university education, because the higher level skills of graduates and the social and economic benefits of research are central to an advanced 21st century society. The Kenyan University sector, like any other globally, must work tirelessly to obtain and maintain its international standing and contribution in the knowledge economy. While the enrolment trend

continues to go up, the universities will require a sustainable strategy to ensure that as the world becomes more technological, the institutions evolve to provide the right education and training for jobs in today's workforce in readiness for the future expectations (Basheka, 2008). Thus, to meet the demands of competitiveness in the 21st century and of the future, universities must work in smarter and more innovative ways. The University sector of the future must be agile enough to embrace the multiplicity of the dynamics in the sector – This is an absolute operational priority.

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STATEMENT OF NO CONFLICT OF INTEREST

The authors declare that there is no conflict of interest in this paper.

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