Research Paper
Impact Factor: 3.567
Peer Reviewed Journal

IJMDRR
E- ISSN –2395-1885
ISSN -2395-1877

STRIFE IN POST GRADUATE RESEARCH TRAINING IN SSA: KENYA'SPOTENTIAL TO ARI

Achoka, JSK

Masinde Muliro University of Science and Technology, Kenya.

Introduction

The Sub-Saharan African (SSA) region hosts about one billion inhabitants with over two hundred public universities and a fast growing number of private universities. Many scholars agree that higher education especially at the university level is most significant for the region's fast development and future sustainability (Sifuna and Sawamura, 2010; Mouton, 2011; Mohamedbhai, 2011 and Friescenhalin, 2014). Hence higher education in Sub-Saharan Africa (SSA) has been expanding since the 1970s, withpost-graduate studies getting focused attention frommany African Governments in the 1990s.

Over 1,500 public and private universities offer graduate programmes. In 1997, post graduate enrolment was 6.9 percent of the total universal enrolment. This figure rose to about 9.3 per cent in 2014 (Hayward and Ncayiyana, 2014).

The underlying understanding in this paradigm shift is that it is at the post-graduate training and research level that one's skills are concretized, further knowledge secured and later applied beyond national boundaries. Thus, enrollment in higher education rose from 200,000 in 1970 to the current about 10 million students (Friescenhalin, 2014). At the African Summit held in Senegal in March, 2015, an Action Plan was drawn calling for "…dramatic increase in higher education" by 50 per cent across Africa in the next 50 years from 8 percent in 2012, compared to 26 percent in Arab states and about 76 per cent in the developed world (UNESCO, 2008). The gist of this call hinges in the understanding that research and training are both the core of post graduate studies, for manpower and national developments in our globalized existence (African Union, 2005).

Any nation or region that produces quality personnel is best suited to thrive in this Sustainable Development Goals (SDGs) and beyond (British Council, 2013). As a subset of the SSA region, Kenya endeavors to achieve effective postgraduate training and research for her internalization processes. However, like any other part of the world, the SSA region's higher education sector is undergoing radical change. Globalization and privatization processes are reshaping universities while mechanization and the internet are altering the industry and employment in new ways uncommon to our history. Yet research training in SSA seemshighly constrained with strife; nay, beset by various challenges that blur its rise to expected excellence. This paper attempts to discuss some of the bottlenecks negating effective postgraduate research training in SSA and Kenya vis-à-vis diversified aspirations for Vision 2030 and Global SDGs. It also provides suggestions for alleviation of noted impediments.

On-Going Strife to Rise in Post Graduate Research Training in SSA

Despite Ph.D. studies being relatively new in SSA they are developing fast. Moreover, the present knowledge society in which we live inconsistently demands reforms in our research and training institutions to stay relevant to the fast changing knowledge demands of today. Increase in the number of universities and enrolment rates add pressure to higher education institutions offering postgraduate studies to realize quality training and research (Bloom, et. al, 2005). This however shall take long to be realized. Presently, the region posts low scientific results and visibilities on a global level developed in the few competitive research centers in SSA (World Bank, 2008; Quintana and Calvet, 2012). For instance, only 35 scientists and engineers per every one million inhabitants in Africa may be cited compared to 168 in Brazil, 2,457 in Europe and 4,103 in the United States of America. Infact, the number of scientific articles published in the African continent (273/year) is comparable with half of the production of the Netherlands (Hook, 2010). Various challenges have made research to almost become a personal objective, which makes competitive research too difficult to achieve (UNESCO, 2008). For example, a large percentage of about 60-70 of the doctoral candidature enroll as part time (non-traditional) students. This makes cumulative learning or a solid knowledge base elusive (Mohamedbhai, 2011). Furthermore, the students are confined to the rush to acquire certification as their zone of operation and acceptance is limited to: family, job and school, see figure 1

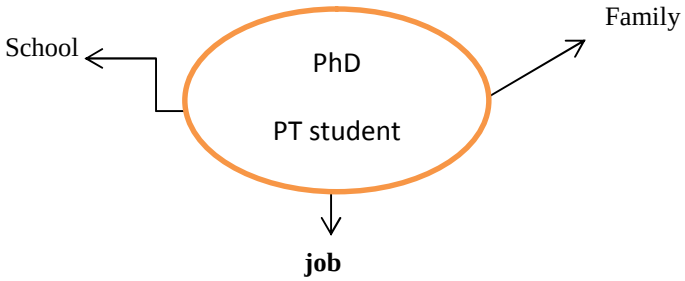

Figure1: Limited PhD part time operations – low quality research findings
Source: Created by author from literature (2016)

Their work is largely directed by the urge to acquire certification and not necessarily a solution to an impending problem. Moreover, many doctoral studies tend to perpetuate individual research paths, short term calendar, little impact on large region and little, if any direct impact on industry (UNESCO, 2008; IAU, 2010). Not surprisingly, hardly is there much meaningful internationalization of doctoral programmes and exchange of students in SSA. The results of these bottlenecks include lack of innovative practices and strategies at international levels to give a positive impact on the quality of training and research not to mention also a lack of greater integration of research findings (UNESCO, 2008). Moreover, a lack of high rate of collaboration and cooperation processes between and or among universities greatly hampers quality research findings at institutional, national and SSA at large. Coupled with the difficulty to access information about doctoral programmes in each SSA university/nation, one is highly disabled in the quest to share visions, knowledge and achievements. This consequently, results in near duplication of research findings, making some doctoral students highly vulnerable to plagiarism. This is a global issue and real problem for SSA that is struggling to develop a niche in the world of research training.

Another petal that blurs the image of research and training in SSA is poor research infrastructure (Mouton, 2011). The lack of, for example, well equipped laboratories; libraries; adequate information storage retrieval and utilization systems, appropriate management systems; lecture halls/rooms; common rooms and policies that facilitate and support the research enterprise including incentives that recognize and reward high caliber research and institutional culture that is supportive of research and inquiry, contribute to meager research and training at the postgraduate level in SSA (Shaban, 1996). In many countries, physical planning in public universities does not commensurate with their rate of growth and expansion as more students are enrolled.

This issue leads to an overstretching of available facilities, inadvertentlydisadvantaging the postgraduate doctoral students the most. It is more deplorable in the science and technology disciplines (Sifuna andSawamura, 2010) making the lack of distinctive research training in information communication and technology (ICTs) to be better housed by the private sector than universities. It is in these ICT hubs that innovative research in sprouting and flourishing faster than in the universities (Azcona, 2008).

Policy encumbrances pose another issue in post graduate research training in SSA. For a university to gain and sustain its stature, it must have clear legal frameworks that link its management; research trainings as well as the doctoral students. Moreover, strong national and political goodwill yielding supportive policies for competitive research findings is imperative. Such policies should cut across political boundaries allowing a permeable research training membrane for exchange of scientific findings at the post graduate level. For these matters the International Association of Universities (IAU) and the African Union (AU) are commended for spearheading such breakthroughs for the SSA region.

However, policies in some countries limit their respective universities autonomy leading to negative impact on research training (Adams, et al 2010). In other cases, research training in identified priority areas does not always hold strategic position in university agenda (UNESCO, 2008; IAU, 2010). Unfortunately, such studies can only be taken in universities; few university strategic plans define and elaborate medium and long-term objectives for doctoral studies and identify priority research areas (UNESCO, 2008). Furthermore, a clear policy framework linking postgraduate research training to industry is not easily located (Materu, 2007). This scenario reflects poor guidance from universities in SSA and deficient strategic steering through national policies.

Inadequate academic staff, especially professors,to effectively teach and mentor postgraduate students in SSA universities hinder faster development of scientific competitive research training. The few senior professors available for graduate supervision are overworked and this impacts poorly on their work outputs. The clear absence of senior scholars designated

research professors in most universities coupled with indifferent research support staff reflect low priority attached to research training in SSA. This situation does not encourage serious training in research and specialization in knowledge skills and attitudes – perpetuating absence of competitive research and development of competencies.

Moreover, heavy teaching loads with the benefit of modern teaching aids or even the traditional support of teaching assistants, poor incentive systems, low promotions arising partly from the limited access to publishing outlets and international conferences and seminars/workshops due to financial constraints and now the requirement to have raised millions of money in the case of Kenya specifically; add to the disheartening of many senior scholars at the universities leading to low and poor scientific research and training.

Poor handling of research methodology produces shallow knowledge and understanding by students, especially those in science-based subjects requiring analytical methodologies that use computer technologies. Thus many postgraduate students leave universities without having accomplished innovative or imaginative rigor to produce new ideas for present practice (Njuguna and Itegi, 2013).

The petals of insufficient funding and brain drain are combined in presentation due to the intertwined nature and effects. True to say, in the last few decades, the development of research training in SSA has been boosted through investment in Science, technology and innovation (Gast, 2005). However, the global financial crunch has not spared the SSA region; severe shortage of funding in every nation forces research and training to compete with all other sectors of the economy (Njuguna and Itegi, 2013). It is noted that SSA spends less than 0.5% of her GDP on researchtraining, posing a challenge to the development of advanced research (Hyward and Ncayiyana, 2014). Among the young African scientists surveyed by the Global Young Academy for their perception of research training, 70.3 percent noted that poor or scarce funding opportunities were among their most severe career obstacles (Friesenhahn and Beaudry, 2014). Accordingly, the serious issue of brain drain sets in to further destabilize serious research and training in SSA. Qualified academic staff move on to pursue more attractive opportunities in research and training outside the universities and or country. For instance, about 10 percent of every cohort of Sub-Saharan Africans with graduate degrees emigrates leaving low number of personnel behind (Friesenhahn and Beaudry, 2014). In countries such as Nigeria, Ethiopia, Uganda and Zambia, there are about 0-500 research scientists in every one million inhabitants. This figure compares poorly with those of developed countries like Canada, Germany, France, Australia, and the United Kingdom where there are 5,000 – 8,000 research scientists (UNESCO, 2012).

Stiff competition for funding has forced sponsors to limit most of their donations to short term research projects. Yet, research training is long term undertakings (World Bank, 2008; Gast, 2005). This picture leaves governments and universities unable to train researchers who would in turn train and mentor their postgraduate students to internationally competitive standards. Paradoxically, many governments of the SSA regions sacrifice to pay for individuals to train abroad but are unable to absorb them after graduation. Financial squeeze notwithstanding, perhaps our governments have not yet fully appreciated the contributions of competitive research findings to national and regional development; therefore do not prioritize funds for research and training in all disciplines.

Kenya's Standing in the Strife Vis-à-vis Vision 2030 and SDGs

As one of the nations within SSA region, Kenya suffers all the shortfalls discussed herein: policy encumbrances; inadequate academic staff; infrastructure; insufficient funding and brain drain; and, inadequate education quality epitomized in part – time doctoral training. Of course, bottlenecks do not disqualify one but awaken those concerned into a positive disposition. Thus, as Kenya positions herself to achieve vision 2030 in less than 14 years, she is obliged to delve into competitive research training for tangible findings and practical implementation. Kenya cannot escape this obligation; she is duty bound to ensure that her blue print vision 2030 is actualized, transforming her into a "newly industrialized, middle income country providing a high quality of life to all citizen in a clean and secure environment (GoK, 2013). This means that Kenya focuses and improves reforms for the development of the eight key sectors on her agenda, see figure 2.

1.	Macroeconomic stability
2.	Continuity in governance reforms
3.	Enhanced equity and wealth creation
4.	Infrastructure
5.	Energy
6.	Science, Technology and innovation
7.	Land reform
8.	HRD, Security and timely justice

Figure 2: 8 key sectors for emphasis in vision 2030., **Source:** Developed by author from the literature (2016).

These sectors form the three pillars: Economic, Social and Political upon which vision 2030 is anchored see figure 3.

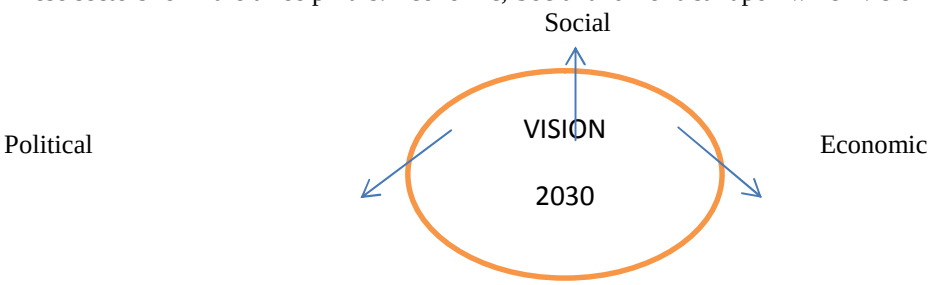

Figure 3: 3 pillars anchoring vision 2030
Source: Developed by author from the literature (2016)

Incidentally, the year Kenya hopes to achieve her Vision 2030 is the same year the Globe hopes to realize her Sustainable Development Goals (SDGs). This means that Kenya has to aggressively double her efforts to appear like a hunter in the forest aiming at two birds with one stone! Kenya therefore must strive to train her human resources not only excellently but also speedily in order to also achieve the 17 SDGs, see figure 4.

Figure 4: 17 Global Goals for SD
Source: Developed by author from the literature (2016)

Achievement of the goals above shall be made possible through competitive research training especially at the postgraduate level.
The anticipated realization of the above aspirations therefore calls for heavy financial and personnel investments into quality research and training as well as turning the findings into practical knowledge for implementation and achievements.

Conclusions
The SSA region is honestly striving to reach competitive standards globally in research training. The number of students enrolled at the postgraduate level is rising since the 1970s. From the 1990s, national governments began to pay more attention to training at the postgraduate level, because this sector added value to national development. Insufficient funding

for postgraduate programmes contributes to brain drain, which in turn increases pressure on inadequately qualified staff to Ensure quality research and training. Moreover, limited funding perpetuates a lack of sufficient infrastructure; critical if the region aimsat achievement of global standards. It is therefore reiterated that, postgraduate research training in SSA region remainsthe most suitable conduit for the transfer, adaptation and dissemination of information in our current knowledge based economies.The major challenge is alleviation of the bottlenecks/petals for full blossom of globally competitive research training.

Suggestions for way forward

Various suggestions are provided for our way forward:

Increased funding for postgraduate research training may be found in encouraging development of policy frameworks that provide for the formation of research teams linked to industry, technology development and grant programmes for postgraduate students. Resulting research findings should then be tailored towards regional and national development.

Development of national policies to allow designation of specific universities 'specialization in particular disciplines. This approach shall enable emergence of more centers of excellence for better utilization of resources, enhancement of development of skills, competencies and attitudes for concrete research findings for dissemination and application.

A need exists to develop research professors, improve academic staff remuneration, nurture talent and award scholarship. These approaches may deter brain drain and concurrently motivate academic staff to input maximally in research training.

References

1. Adams, J. King, C and Hook, D (2010). Africa Global Research Reoprt. Evidence Ltd and Thompson Reuters, Leeds
2. African Union (2005). Africa's Science and Technology Consolidated Plan of Action. African Union.
3. Azcona, G (2008). Harvesting the Future: The Case for Tertiary Education in Sub-Saharan Africa. The Maxwell School of Syracuse University.
4. Bloom, D; Canning, D.I and Chan, K (2005). Higher Education and Development in Africa. Harvard University Research Commissioned by World Bank.
5. British Council (2013). Why the UN must include Higher Education in the Post Millennium Goals Agenda Friescenhahn, I (2014). Marking Higher Education Work for Africa. Facts and Figures.
6. Friescenhahn, I and Beaudry, C (2014).The Global State of Young Scientists. Young Academy.
7. Gast, J.W (2005). The Visions Policies and Programmes of a Sample of Northern Donors Regarding their Support for Higher Education. Development in the south.Paper for Nuffic Conference.
8. Government of Kenya (2013). Vision 2030. NBI: GoK.
9. Hayward, F and Ncayiyana, D (2014). Confronting the Challenges of Graduate Education in SSA and Prospects for future.Chronicles of African Higher Education.
10. International Association of Universities (2010). Changing Nature of Doctoral Studies in SSA. Challenges and Policy Development Opportunities.
11. Materu, P (2007). Higher Education Quality Assurance in SSA: Status, and Promising Practices. A World Bank Working Paper No. 124. Washington DC
12. Mohamedbhai, G. (2011). Strengthening the Research Component of the space of Higher Education in Africa. AaU Conference of Rectors, Vice Chancellors and Presidents. Stollenboech.
13. Mouton, J. (2011). The State of Doctoral Training in SSA: Statistics Analysis and Challenges. AAU Conference of Rectors, Vice Chancellors and Presidents.Stollenboech.
14. Njuguna, F and Itegi, F (2013). European Scientific Journal Vol 1. PP. 352 – 361.
15. Quintana, I and Calvet, A (2012). Current Situation and Future Challenges of PhD Studies in Sub_Saharan Africa. Barcelona: African Spanish Higher Education Platform.
16. Shaban, J. (1996). Research Management in African Universities. Accra: Ghana: Association of African Universities. Unpublished Paper.
17. Sifuna, D.N and Sawamura, N. (2010). Challenges of Quality Education in Sub-Saharan African Countries Nova Science Publishers.
18. UNESCO (2008). Draft Regional Report on SSA. Study on National Research Systems. UNESCO, Paris.
19. UNESCO (2012). Institute for Statistics Fact Sheet, No. 21
20. World Bank (2008). Accelerating Catch up: Tertiary Education Growth in SSA. World Bank, Washington DC.