



Improving the Relevance of University Training to Labour Market Demands in Africa

African Technology Policy Studies Network
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ASSOCIATION OF AFRICAN UNIVERSITIES
ASSOCIATION DES UNIVERSITES AFRICAINES

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About The African Technology Policy Studies Network (ATPS)

The African Technology Policy Studies Network (ATPS) is a trans-disciplinary network of researchers, policymakers, private sector actors and the civil society promoting the generation, dissemination, use and mastery of Science, Technology and Innovations (STI) for African development, environmental sustainability and global inclusion. ATPS has over 1,300 members and 3000 stakeholders in over 51 countries in 5 continents with institutional partnerships worldwide. We implement our programs through members in national chapters established in 30 countries (27 in Africa and 3 Diaspora chapters in the Australia, United States of America, and United Kingdom). In collaboration with like-minded institutions, ATPS provides platforms for regional and international research and knowledge sharing in order to build Africa's capabilities in STI policy research, policymaking and implementation for sustainable development.

About Association of African Universities (AAU)

The Association of African Universities (AAU) is the apex organization and forum for consultation, exchange of information and co-operation among institutions of higher education in Africa. It represents the voice of higher education in Africa on regional and international bodies and supports networking by institutions of higher education in teaching, research, information exchange and dissemination. The AAU mission is to enhance the quality and relevance of higher education in Africa and strengthen its contribution to African development by: supporting the core functions of higher education institutions (HEIs); facilitating and fostering collaboration of African HEIs; and providing a platform for discussions on emerging issues. The AAU envisions itself to be an advocate for higher education in Africa, with the capacity to assist its member organizations in meeting national and continental needs.

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1.0 Introduction

African universities are beginning to introduce innovative competent-based learning models in order to improve the graduates' employability, enhance their capacity to adapt to the constantly evolving working environment and to develop expertise that meets the labour market demands. This education model seeks to redefine the conventional way of imparting theoretical and empirical knowledge in diverse study areas by focusing on the aspect of applicability and action-oriented approach, with the view of applying this knowledge in various contexts and situations. Based on this model, centers of excellence, commercial research offices, and new curricula are being developed in African universities. The goal is to create transformational mind-set and other aptitudes to develop competent professionals that match demand and requirements of the dynamically evolving labour market, which is driven by innovation, emerging technologies and new market trends. Keeping up with this pace of change is a continuing challenge for learning institutions in Africa.

While most countries have seen an unprecedented expansion of university education over the past decades, there is a persistent gap between knowledge and skills requirements of the productive sector and universities. Currently, African universities appear to be under-providing scientific and research products and innovations to the productive sectors such as agriculture, manufacturing, mining, construction, trade services among others. These situations are attributable to lack of effective linkages between university research and productive sector as well as inadequate capacity, knowledge, and skills required to achieve transformative changes. Also becoming a worrisome trend is the lack of innovation outputs and creative skills from universities given that the productive sector is becoming an increasingly dynamic place requiring highly skilled and creative workforce. Such poor showing is gradually putting the competitiveness of many universities across Africa at risk, with several quarters calling into question the quality and adequacy of current academic system and curriculum to meet the capacity and skills requirement of the productive sector.

The move for Africa's transformation towards a knowledge economy largely rests on the capabilities of African universities given that they are mainly responsible for generating and diffusing knowledge into the economy, while creating opportunities for scientific and technological innovations. There is a great potential to achieve this goal if there are strong linkages between universities and the productive sector. By establishing strong linkage across the value chain, universities are placed in a better position to produce enterprising graduates who can innovate and tap into unexploited opportunities that exist in the productive sector.

2.0 Towards a stronger linkage between universities and productive sector

The Africa Commission¹ in 2009 called on African countries, regional organizations and development partners to invest in the creation of better linkages between university education, research and the productive sector across the value chains. In line with this call, and in order to improve the relevance and impact of research and science, African universities are already transforming the way they generate and transmit knowledge for development. We are seeing a paradigm shift from a ‘knowledge pipeline’ approach to ‘innovation web’ model of knowledge generation, transmission and utilization. The new paradigm promotes innovation by improving the flow of technology and knowledge and removing barriers between actors in the value chains. Many countries are experimenting with variants of the innovations model in order to improve the relevance of university research and innovations to the productive sector.

Sub-Saharan Africa (SSA) will be home to the world’s largest workforce by the year 2040, out numbering that of China and India². As the world’s youngest continent, with one-quarter of the world’s under-25 population by 2025, there is an enormous opportunity for economic growth and development or a serious threat to regional stability and peace in sub-Saharan Africa. The youth bulge presents African universities with the opportunity to prepare the next generation of creative and innovative workforce that will transform Africa’s productive sector.

3.0 Factors militating against successful engagement of universities and productive sector in Africa

While a good level of success has been achieved in the area of university education and research, the aspect of university’s engagement with the productive sector still lags behind. There are a number of factors militating against the successful engagement between universities and the productive sector in Africa. Some of these factors include:

- **Higher education laws and policies in African countries:** Prevailing legislation and policies may potentially facilitate or hamper efforts to improve teaching quality and promote collaboration between universities and other sectors of the economy in Africa. In some countries, the autonomy of

¹ African Commission Report (2009) Realising the Potential of Africa’s Youth. Report of the African Union Commission

² World Bank (2010) Accelerating catch-up: Tertiary education for growth in Sub-Saharan Africa. Washington DC: The World Bank

universities may be severely breached by highly centralized policy making on higher education, thus subverting the learning experience in response to political objectives³. Policy centralization limits universities in their response to changes in knowledge, the labour market, and economic development⁴. For example, in countries such as Benin, Cameroon, Madagascar, and Tanzania, governments play a supervisory role in several aspects of universities' operations. In Benin and Tanzania, the government appoints top university managers. In Cameroon, the Minister of Education retains supervisory authority over universities while the Ministry of Education in Madagascar appoints all faculty members, sets salaries, and determines working conditions, which links faculty members closely to the political system.

- **Lack of requisite skills and knowledge by lecturers in the universities:** Researchers and lecturers in most universities and other tertiary institutions in Africa do not have adequate qualification, skills and practical training to successfully address the challenges of the productive sector in their countries. This has a major effect on the quality of graduate that are produced in African universities. Graduates from most African universities lack the required practical, entrepreneurial and innovation skills to integrate directly into the productive sector.
- **Inadequate infrastructure to support research in African universities:** Lack of infrastructure is one of the major challenges facing universities in Africa. Universities in Africa cannot compete in a fast moving world of research and development due to lack of basic infrastructure⁵. This has led to mass exodus of scientist and researchers with special skills to the developed world where their skills can be maximized.
- **Lack of dynamic leadership :** The leadership structures in universities play a critical role in initiating and enhancing collaboration with the productive sector. Many universities lack dynamic leadership that understands the trend in a changing world and can provide leadership that will guide their institutions to maximize existing opportunities.
- **Under-funding in most universities:** Public universities in Africa are grossly underfunded. The lack of effective linkage with the productive constrains funding support for research and development in universities. In developed societies, the productive sector plays a crucial role in funding research and development from universities.

In spite of the numerous limitations in capacity and resources, African universities produce majority of knowledge outputs on research and innovations in most

³ Oni, S. (ed) (2013) Challenges And Prospects In African Education Systems. Trafford Publishing. USA

⁴ Bloom, D. E., Canning, D., & Chan, K. (2006) Higher education and economic development in Africa (Vol. 102). Washington, DC: World Bank.

⁵ Atuahene, F. (2011) "Re-thinking the Missing Mission of Higher Education: An Anatomy of the Research Challenge of African Universities" in Journal of Asian and African Studies, Vol. 46 (4), 321-341.

African countries than other higher education institutions. It is no coincidence that there is a growing demand for more universities and the upgrade of polytechnics and colleges into technical universities in African countries⁶.

4.0 Existing opportunities for partnerships and collaboration between universities and the productive sector in Africa

In advanced countries, there is an effective partnership and collaboration between universities and the productive sector. Universities receive substantial funding from the productive sector to develop their research infrastructure and to produce innovative research output for the productive sector. For cost-effectiveness, industries can outsource research and consultancies to universities rather than building research infrastructure to carry out their own research. From a technical and economic point of view, industries have abundant resources and infrastructure, which can offer universities the platform to undertake research and training.

African universities can leverage on relevant R&D budget of companies and organizations to support their research activities. In this way, industries get the opportunity to tap into the knowledge and innovative outputs that are produced by the universities. Through market awareness, the productive sector offers universities the opportunity to broaden the scope and develop an innovative market approach as well as enrich their training programs based on market driven trends and current practices in the productive sector. The productive sector offers universities access to world-class and important problems in which universities can create novel ideas and business opportunities, and establish themselves as the source of knowledge and innovative research outputs. Universities can effectively capitalize on the opportunities provided by the productive sector for internship and work placements to consolidate partnerships and collaboration.

⁶ <http://www.myjoyonline.com/news/2014/July-14th/turning-polytechnics-into-universities-takes-off-in-2016.php#sthash.qPwm7s0B.dpuf>

5.0 Benefits derived from strengthening linkages between universities and productive sector in Africa

Creating more strategic university-productive sector relationship would substantially improve Africa's climate for knowledge sharing, collaborative research and innovation. Through this linkage, African universities can improve the quality of graduate and academic staff through benefits from alternate funding from the productive sector for research, scholarship, workforce training, and to build state-of-the-art infrastructure. The productive sector provides a platform for university students to gain valuable experience, enhanced employment prospects and information by which theories can be propounded. Universities offer a pool of expertise and consultants for the productive sector to tap into the innovations and solutions they produced. The emergence of strong collaborative structures between universities and the productive sectors is nurturing successful partnerships. For example, in Kenya, Safaricom, the country's largest telecommunication company has partnered with the Strathmore University to establish the -Safaricom Academy - which provides entrepreneurial talent with certified qualifications and experiential training for students.

6.0 Reforms for efficient and sustainable linkages between universities and the productive sector in Africa

In establishing a strong engagement between universities and the productive sectors, it is necessary to undertake certain reforms. Universities must begin to transform their academic curricula and programs to reflect the needs and practices of the productive sector. There is a need for transformation in university leadership in order to break down barriers inside universities and to embrace novel approach to social and organizational learning and research. Aligning university's curricula and programs to the demands of the productive sector presents universities with better chance of securing funding and undertaking collaborative projects.

Government funding support universities may not be adequate to forge stronger university-productive sector linkage, but the establishment of laws regulations and policies that legally define the framework for collaboration may strengthen partnerships between universities and the productive sector. Sound policies and laws such as the provision of tax breaks and incentives for companies to allocate funding to research funds for universities, among others can alleviate the funding deprivation of universities.

In African universities, outputs in the form of innovations, patents and products have often been considerably low not only because of low investment in research and development, but the absence of Center of Excellence and innovations. In the developed world, Center of Excellence and innovations in universities have served as important channels for university research funding and collaboration with the productive sector. The establishment of such infrastructure can open up spaces for university-industry collaborations and strengthen the relevance of universities as knowledge and innovation hubs for both public and private sector consultations.

7.0 The role of government in fostering university-productive sector linkage in Africa

African governments have an important role to play in fostering effective collaboration and partnerships between universities and the productive sector. Government regulations, procedures and processes have often created bureaucracies, which constrain independent decision-making and mutual relationships between universities and the productive sector. Government scrutiny and political influences in the management of public university affairs can potentially create dissatisfaction and uneasiness for closer partnership among universities and the productive sector.

Governments in African countries are obligated to facilitate effective partnerships between universities and the productive sector by restructuring procedures, policies and regulations to remove barriers to collaborative programs and project development. To achieve success in this partnership, government must spearhead an interdependent process to configure the appropriate collaborative system that identifies a common ground, empower each stakeholder and clearly define the rights and obligations of the universities and stakeholders in the productive sector.

8.0 Conclusion

This policy brief aims to inform policymakers, universities and the productive sector in African countries best policy practices and reforms that would strengthen the relationship between universities and the productive sector, while re-echoing the relevance of universities to the productive sector and for national socio-economic development. Universities in Africa have a crucial role to play in producing knowledge, innovations and graduates to meet the demands of

the productive sector and to address emerging socio-economic challenges facing Africa. However, efforts to establish universities as dominant knowledge and innovation hubs for the productive sector is being hampered by a number of critical factors, which include: low investment in research and development (R&D); lack of centers for excellence, and innovations in African universities; lack of internship and mentorship opportunities for students in the productive sector; and poor networking between the productive sector and the knowledge sector. It is very clear that, establishing strong linkages between universities and the productive sector has enormous mutual benefits and holds the potential to propel capacity development as well as social economic development. There is a growing need for African universities to understand the dynamics and need of the evolving Africa society and adjust its curricula, research priorities and operations to meet the need of the productive sector in the 21st century.

9.0 Policy Recommendations

- Governments in African countries must create a conducive environment and incentives for a prosperous university relationship with the productive sector, providing policy frameworks for entrepreneurial strategies, appropriate legislation for intellectual property rights, and funding of research and development.
- Universities must strengthen their relevance by aligning their training and research to address national and regional challenges and fit developmental policies such as the recently adopted African Union's Science Technology and Innovation Strategy for Africa (STISA-2024).
- Strong leadership is critical in the establishment of effective partnership with the productive sector. In the current era of networking and social learning, leaders of African universities must make industry-university partnerships a priority.
- There is the need for sustained and continuous investment in research and development. African universities need a larger base of continuing, long-range academic research programs in areas that interface with the needs and priorities of the productive sector.
- African universities must endeavour to undertake reforms necessary to enhance relevance of university education to the labour market in Africa. These reforms include enhanced communication between universities and the productive sector; development of programs that build/strengthen institutional capacity in universities and the productive sector; industry relevant research and educational system; and improving university curricula to make it more relevant and demand-driven by the productive sector.

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