Positioning Universities as Engines of Innovation for Sustainable Development and Transformation

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Let me begin by thanking CUE and its CEO, Professor Mwenda Ntarangwi, for the singular privilege and honor of inviting me to give this keynote address. I gladly accepted the invitation because the theme of the conference, “Positioning Universities as the nexus of research, innovation and technology transfer for Socioeconomic Transformation” is critical and timely. Also, it speaks to my own interests as a scholar of intellectual history, and as someone who has spent a quarter century as an administrator at six universities in three countries on two continents. Clearly, those of us who studied the humanities and social sciences did not pursue useless subjects as some commentators enamored by vocational and technological education charge; we might have something valuable to say and do about development!

Since my appointment as Vice Chancellor at USIU-Africa, I’ve become more keenly aware that the challenges and opportunities facing the higher education globally have a particular inflection on our countries and institutions that require innovative solutions. Like other industries, higher education around the world is undergoing profound transformations, transitions, disruptions, changes, pick your term, as I note in my book, *The Transformation of Global Higher Education: 1945-2015*, that examines higher education trends and trajectories on every continent over the past 70 years. This is both good and bad news for us in Africa. The bad news is that we can no longer blithely borrow solutions from abroad. The good news is no one has a monopoly on solutions as everyone is striving to devise new ways of organizing and delivering higher education for the extraordinary demands of the 21st century.

We have an unprecedented opportunity to invent the future and contribute to the global search for workable models of higher education through serious, systemic, and strategic reflections. The enduring triple dreams of pan-Africanism—self-determination, development, and democracy—find their current articulations in the African Union’s Agenda 2063, various national visions including Kenya’s Vision 2030, and the United Nations Sustainable Development Goals. These projects seek realization in the context of the youth bulge, the cruelties of climate change, and the convulsions of disruptive technologies, in a world characterized by social and political polarizations spawned by the relentless march and pulverizations of inequitable globalization.

In this presentation, I seek to place our discourses about higher education and development in a comparative global context. I will begin with brief reflections on development. This is an important backdrop to any meaningful discussion about the role of universities as engines of innovation for sustainable development and transformation, the topic of my talk. The bulk of my presentation will focus on the value proposition of university education and the ways in which this is reflected in its products, principally the quality of research and graduates. But to realize and sustain their institutional value, universities need enabling resources, capacities and support from all key internal and external stakeholders.

The Enigma of Development

In 1995, Arturo Escobar reminded us in his influential book, *Encountering Development*, that the vast global development industry emerged after the Second World War out of the West’s discovery of poverty in what was soon christened the Third World as part of the Cold War. Through its modernization theories, whose technocratic thrust barely concealed ideological and cultural imperialism, the American-led Western alliance sought to project its economic, political, and cultural superiority to the emerging postcolonial countries desperately in search of development from decades of colonial underdevelopment. Fifty years later, Africa had little to show for its subjection to the edicts and experiments of developmentalism, as Dambisa Moyo bitterly
proclaimed in her searing indictment, *Dead Aid: Why Aid Makes Things Worse and How There is Another Way for Africa*.

But debates about development persisted: why do some nations develop and others remain underdeveloped? Why are some nations wealthy and others poor? Why do some nations grow and others are stagnant? Needless to say, there is a vast literature on this eternal question on the wealth and poverty of nations. Conventional explanations tend to offer the determinisms of geography, culture, and history. Once race and ethnicity were posited as explanations, but they are no longer politely entertained in the academy. Undoubtedly, geography, culture, and history affect the processes and patterns of development. But they only offer partial explanations at best.

Abundance of natural resources doesn’t guarantee sustainable development. In fact, it may be a curse as it fosters the growth of corrupt rentier states and extractive economies that are structurally anti-development. The rapid growth of some tropical countries in Asia such as Singapore and in Africa such as Botswana undermines geographical determinism. Culture is equally insufficient as an explanation. The same Confucianism held as the secret to Southeast Asia’s economic miracles, was once blamed for the region’s grinding poverty decades ago. History is a more compelling explanation, but formerly colonized countries in the world and in Africa have had different trajectories of development, even those colonized by the same imperial power. Moreover, the historic shift of global power from Euroamerica to Asia punctures the narrative of eternal Eurocentric superiority.

One of the most theoretically sophisticated and historically compelling analyses can be found in Acemgül and Robinson’s voluminous 2012 treatise, *Why Nations Fail: The Origins of Power, Prosperity and Power*. They show that historically development prospects (not just rates of economic growth) have depended on the emergence and expansion of inclusive economic, political, and social institutions. Countries with extractive institutions have not fared as well in achieving sustained growth and development. To the quality of institutions, I would add two other critical factors: the quality of human capital and the quality of the social capital of trust.

Since the first Industrial Revolution in the mid-18th century, all the subsequent revolutions—we are apparently in the fourth—have been dependent on the indestructible link between intellectual inquiry, research, and innovation. This is the hallowed province of the university as society’s premier knowledge producing institution. The university is also the primary engine for producing high quality and innovative human capital. There is a growing body of research that shows a positive correlation between social trust and economic development. There are of course strong connections between university education and the production and reproduction of social capital, and intriguing linkages between university learning and the generation of civic attitudes and engagement.

At best university education goes beyond the provision of vocational, technical, and occupational training. At the heart of university education are the much-maligned liberal arts. They impart flexible and lifelong values, skills, competencies or literacies. In several essays I discuss four intersected values: intrinsic value (the sheer pleasure of learning, asking the big questions, making discoveries, and cultivating lifelong quest for learning); intellectual value (exposure to the vast treasures of human thought, experience, creativity across the expanses of time and space); instrumental value (cultivation of critical thinking, communication, problem solving, and adaptability); and idealistic values (nourishment of ethical reasoning, empathy, and moral and narrative imaginations for civic engagement and enlightened citizenship).

There are also four interconnected literacies that effective university education promises: interdisciplinary literacy (the ability to view phenomena and solve problems from multiple
disciplinary or analytical angles); international literacy (the ability to understand the complex, contradictory and always changing connections among the world’s regions, polities, societies, economies, cultures, movements, and environments); information literacy (the ability to locate, evaluate and use information that continues to explode exponentially); and intercultural literacy (the ability to understand and navigate effectively multicultural realities and relationships).

In short, universities are crucibles for forging the skills, competencies, and literacies that engendered economic development in some societies in the past and will generate sustainable development in the 21st century with its exceedingly complex demands and volatile changes. Insofar as the jobs of the future are yet to be known, our educational systems, must go beyond valorizing vocational and technical skills, but also the enduring values of the liberal arts.

The Value Proposition of African University Education: The Quality of Graduates and Research

In examining the value proposition of African universities, it is important to understand the way the sector has developed. The number and size of universities has grown rapidly in recent years. This leads some to say that Kenya, for example, has too many universities. This is simply incorrect. Kenya and Africa lag behind the rest of the world in the provision of university education.

The number of universities across the continent increased from 170 in 1969 to 446 in 1989. Currently, according to the World Higher Education Database, there are 1,682 universities. Yet, in global terms, Africa has the smallest number of universities of any region, except Oceania. Worldwide there are 18,772 higher education institutions, putting Africa’s share at 8.9%. Asia boasts the largest share at 37%, followed by Europe with 21.9%, North America 20.4%, Latin America and the Caribbean 12%.

Equally revealing is data on enrollments. According to UNESCO data, the total number of students in African higher education institutions in 2017 stood at 14,654,667.7 million, out of 220,704,239.5 worldwide, or 6.6%, which is less than the continent’s share of institutions. To put it more graphically, Indonesia’s has nearly as many students in higher education institutions as the whole of sub-Saharan Africa (7.98 million to 8.03 million). Enrollment ratios tell the story differently. In 2017 the world’s average enrollment ratio was 37.88%, compared to 8.98% in sub-Saharan Africa and 33.75% in Northern Africa. Only Algeria and Mauritius boasted enrollment ratios higher than the world average, 47.72% and 38.84%, respectively. Kenya’s stood at 11.66% in 2016 behind twelve other countries that had data.

Clearly, we have a long way to go. In 2017, South Korea, whose level of development in 1960 was comparable to some African countries had an enrollment ratio of 93.78, and China, the emerging colossus of the world economy had a ratio 51.01%. Put simply, not enough Africans are going to university. The continent needs to build more universities. The city of Boston alone has half the number of higher education institutions as Kenya.

But the challenge is not simply to grow the number of universities, which is essential for our countries need to meet the pressures of the youth bulge, the fastest growing in the world, but to grow in a smart and sustainable way. Much of the growth in Africa’s higher education sector has been haphazard. Thus has predictably led to declining educational quality. A critical measure of quality is the employability of university graduates. Reports on graduate employability show that there are glaring mismatches between what universities are producing and what the economy needs, resulting in graduates spending years “tarmacking,” unemployed and underemployed.

University News quotes a survey by the Federation of Kenya Employers lamenting that “at least 70% of entry-level recruits require a refresher course in order to start to deliver in their new jobs.” Further, it notes that a study by the Inter-University Council for East Africa, “shows that Uganda has the worst record, with at least 63% of graduates found to lack job market skills. It is followed closely by Tanzania, where 61% of graduates were ill prepared. In Burundi and Rwanda, 55% and 52% of graduates respectively were perceived to not be competent. In Kenya, 51% of graduates were believed to be unfit for jobs.”

As I noted in a recent essay, employability entails the acquisition of knowledge, skills, and attributes, in short, capabilities for gainful employment and self-employment. Essential employability qualities (EEQ) go beyond subject knowledge and technical competence. Acquisition of soft skills is paramount. Graduates with EEQ are good communicators, critical thinkers and problem solvers, inquirers and researchers, collaborators, adaptable, principled and ethical, responsible and professional, and continuous learners. Ironically, therefore, it is the much-derided liberal arts disciplines that can equip graduates with employability skills. That is why enlightened advocates of Science, Technology, Engineering, and Mathematics (STEM) education talk of STEAM, Science, Technology, Engineering, Arts, and Mathematics.

Cultivation of employability skills raises questions about curriculum design, assessment, and teaching methods. It entails the intersection of the classroom, campus, and community as learning spaces for a holistic educational experience. The classroom requires a transforming pedagogy, adequate learning resources, curricular relevance, balance between theory and practice, passionate and enthusiastic teachers with high expectations, and motivated students. The campus needs robust career services, extra-curricular activities, student engagement, employer involvement, and innovation incubators. And the community contributes through the provision of internships and service learning opportunities.

In short, experiential learning, undergraduate research, and common learning experiences through a core curriculum and learning communities are among high impact pedagogical practices that can foster learning and acquisition of employability skills. To what extent are they embedded in our institutions? What opportunities do we provide our faculty for training and continuous improvement in teaching? How effective are faculty teaching evaluations? How seriously do we take course and program assessments beyond obligatory genuflections to CUE inspection visits? How adequately do we measure learning over the rote memorization of examinations? How prepared are we to meet the disruptions of the 4th industrial revolution of artificial intelligence, the internet of things, and robotics? How are we preparing our students for this brave new world of the 21st century when many of today’s jobs will disappear and the jobs of tomorrow are unknown? How do we provide what Robert Aoun calls a robot-proof education? In his view the new literacies of this education include data literacy, technological literacy, and human literacy encompassing the humanities, communication and design.

Equally critical is the question of research, the other key product of higher education institution. According to UNESCO data, in 2013 gross domestic expenditure on research and development as a percentage of GDP in Africa was 0.5%, compared to a world average of 1.7%, and 2.7% for North America, 1.8% for Europe and 1.6% for Asia. Africa accounted for a mere 1.3% of global R&D. Global spending on R&D has now reached US$1.7 trillion, 80% of which is accounted for by only ten countries.

What is remarkable is that among the top 15 R&D spenders expenditure by the business sector is the most important source, ranging from 56% in the Netherlands to 71.5% in the United
States. In contrast, for the 14 African countries that UNESCO has data, business as a source of R&D is more than 30% in three countries led by South Africa with 38.90% and is less than 1% in four countries. In most countries the biggest contributor of R&D is either government or the outside world. Higher education and private non-profit hardly featured.

Not surprisingly, other research indicators are no less troubling. In 2013, Africa as a whole accounted for 2.4% of world researchers, compared to 42.8% for Asia, 31.0% for Europe, 22.2% for the Americas and 1.6% for Oceania. Equally low is the continent’s share of scientific publications, which stood at 2.6% in 2014, compared to 39.5% for Asia, 39.3% for Europe, 32.9% for the Americas and 4.2% for Oceania. The only area Africa claims dubious distinction is in the proportion of publications with international authors. While the world average was 24.9%, for Africa it was 64.6%, compared to 26.1% for Asia, 42.1% for Europe, 38.2% for the Americas and 55.7% for Oceania. Thus, like our dependent economies, African scholarship suffers from epistemic extraversion.

In short, the project for intellectual decolonization remains as pressing as ever. Complicating the task are two key developments. First, is the emergence of global rankings which reproduce and sanctify the geographies and hierarchies of the international division of intellectual labor. African universities are at the bottom of global rankings. The second is the explosion of predatory journals and conferences that ensnare uncompetitive and desperate academics. African academics are particularly vulnerable.

_Fostering Enabling Capacities and Conditions_

Clearly, if African universities are to thrive, not just survive, a social compact needs to be forged between all the key stakeholders, namely, governments, private sector, civil society, and the universities themselves. The object must be to position universities as engines of high quality learning, rigorous research, and innovation for sustainable development and socio-economic transformation, the theme of this conference. Advancing such a transformational agenda requires universities to address the pressing capacity challenges they face.

Specifically, the potential and promise of African universities is compromised by the persistent deficits in financial, infrastructural, human, and leadership resources. Ever since the neoliberal turn in the 1980s, in many parts of the world the state has progressively withdrawn from being the sole funder of higher education, as the latter came to be seen as a private good rather than a public good. The privatization craze manifested itself in the explosion of private universities, the growing privatization of public institutions, and emergence of the for-profit institutions. Worldwide the proportion of private universities grew from 40.6% in 1969 to 57.5% in 2015. During the same period the number of private universities in Africa grew from 35 in 1969 to 972. Thus the majority of African universities are now private and this trend will continue.

UNESCO data shows that between 2000-2013 government expenditure on education as a percentage of GDP fell in 39 countries, 12 of them in Africa. Expenditure on tertiary education as a percentage of total government expenditure fell in 34 countries, 11 in Africa. In the meantime, expenditure on tertiary education as a percentage of government expenditure on education fell in 33 countries, 12 in Africa, while government expenditure per tertiary student fell in 37 countries, 16 of them in Africa.

Thus, many parts of the world were gripped by what has been called ‘higher education austerity’. This is variously reflected in the deterioration of instructional resources and facilities, loss of secure faculty positions and declining morale, and rising student debt loads. To address the
austerity pressures, higher education institutions were increasingly forced to adopt various strategies to reign in costs and raise alternative sources of revenue. The former included “enlarging class sizes and teaching loads, deferring maintenance, substituting lower-cost part-time faculty for higher-cost full-time faculty, dropping low-priority programs and cutting or freezing financial assistance.” On the revenue side, solutions included “instituting tuition fees (or rapidly raising them), encouraging faculty and institutional entrepreneurship, promoting philanthropy, and allowing or encouraging a demand-absorbing private sector.”

Five forms of cost sharing emerged. First, the introduction or imposition of sharp increases in tuition fees; second, establishment of dual-track tuition fees for different groups of students as in the parallel programs of East Africa; third, the imposition of user-charges for services that were previously free or heavily subsidized; fourth, the reduction in the value of student loans, grants, and other stipends; and fifth, the diminution in the size of the public sector and official encouragement of the expansion of tuition-dependent private institutions, both non-profit and for-profit. To its proponents cost sharing was justified in terms of social equity, efficiency, and needs of universities, while its critics attacked it for undermining access and equity for the poor.

The adoption of tuition fees was often accompanied by the development of student assistance schemes, many of them sponsored or subsidized by governments. Student financial assistance from governments took the form of grants, loans, and through indirect family assistance programs and tax credits and deductions. Many countries used multiple student assistance programs to meet the needs of different groups of students and their families. In Africa, several countries, such as Ghana and Tanzania in 2005, established market-oriented loan trust funds or loan boards in the early 2000s. Generally, the grant or loan programs were means-tested, merit based, or universal. In addition to government supported financial aid schemes, in some countries both public and private institutions provided student financial aid.

The challenges of financing higher education are daunting. Even in the United States, many universities and colleges are facing financial and demographic peril and some are not expected to survive over the next decade. Moody’s, the ratings agency, has given negative outlooks for the higher education for several years including in 2017 and 2018. Student debt surpassed credit card debt years ago and reached $1.5 million in 2018. Thus African countries are not alone in trying to devise more effective and sustainable models for financing higher education.

How can university funding be improved through increased government support and an enabling policy environment? The former can include providing full tuition for fewer and mostly needy students, and allowing universities to charge the difference between government scholarships and the full cost of education. The state can also provide tax incentives to facilitate philanthropic support for universities.

As for the private sector and high net worth individuals (HNIs) how can they be mobilized and motivated to increase support for higher education institutions through research funding, student scholarships, and endowed programs and faculty positions? According to the 2018 Africa Wealth Report, there “are approximately 148,000 HNWIs living in Africa, each with net assets of US$1 million or more” whose collective wealth is $920 billion. How many of them invest in the African higher education sector as do their counterparts in the global North that have helped build the enormous endowments of their alma maters. Harvard’s endowment of $39 billion is more than half Kenya’s GDP and the GDP of 39 African countries!

But securing adequate financial resources is only part of the story. The other is prudent financial management. How robust are the budgeting models and processes we use in our institutions? How prudent are we in our expenditures, in combining cost containment with growth
in strategic areas, in focusing relentlessly on our core business of teaching and learning, research and scholarship? How immune are we from the rampant corruption that scars many of our economies and politics?

Time does not allow me to comment on the three other capacity challenges we need to address if universities are to contribute to the African renaissance. Massive investments are required to improve the physical and electronic infrastructures of many African universities. For some of the continent’s older universities, deferred maintenance has turned them into depressing reflections of their golden years, while some of the newer fly-by-night universities can be worse than middling secondary schools. As for electronic infrastructure, which in today’s world is an essential institutional utility like water and power, not only do many our universities awfully ill-equipped but the continent lags behind. One example will suffice.

As noted earlier, the world is in the middle of an economic revolution, and this revolution is largely digital. The catalyst for this revolution is the ability to process, and analyze the unprecedented and current explosion of data. “Data is the new oil” headlines abound and countries that can harness this data to extract value will have a significant competitive advantage. High Performance Computing (HPC) is critical to harnessing big data, which is indispensable for research and innovation. Regrettably, Africa boasts a measly 0.2% of global HPC capacity, while Asia has 42.4%, followed by the Americas at 35.4%, and Europe with 21%.

To this end, at USIU-Africa we have implemented a continent-wide citizen science organisation that will employ HPC and big data analytics to solve African problems. It therefore gives me great pleasure to invite you to collaborate with other like-minded organizations in a partnership that will help raise awareness and work towards setting up a Pan-African platform that will lead to the utilization and application of high performance computing in industry, research, academia, government and non-governmental organizations.

The challenges of human capital are especially evident when it comes to faculty. The rapid growth in the number of universities has outstripped the supply of faculty. While in several parts of the Global North such as the United States, there are more people with terminal degrees than there are academic jobs, across Africa there is a severe shortage of qualified faculty. In Kenya, for example, according to data from the Commission for University Education, in 2018 there were 18,005 faculty in the country’s 74 universities and colleges, but only 34% had doctoral degrees.

Finally, many African universities suffer from problems of governance and leadership that undermine their effectiveness and capacities to contribute meaningfully to national development. All too often despite the liberalization of the sector and declining state investment political interference especially in the appointment of university leaders remains rampant. Also, there are hardly opportunities for training and development for university leaders. This is another area we need to develop shared capacities. I am pleased to announce that at USIU-Africa we are setting up an Institute for Higher Education Leadership Development in collaboration with various partners to cater for this need locally, in the region, and beyond.

Conclusion

In March 2015, the first African Higher Education Summit was held in Dakar, Senegal to plan for the future of higher education on the continent to realize the ambitions of the AU’s Agenda 2063. I was privileged to write the Framing Paper for the Summit. I laid out six key issues for deliberation. First, moving from growth to quality massification; second, improving institutional financing and management; third, promoting articulation, harmonization, and quality assurance in African higher education systems; fourth, ensuring institutional autonomy and shared governance;
fifth, enhancing research and innovation; and finally, strengthening internationalization and diaspora mobilization. Time doesn’t allow me to elaborate.

Let me just address the third and final challenges and opportunities. African countries need well-articulated, diversified, and differentiated higher education systems combining flagship research-intensive and primarily graduate universities that train for the rest of the system and are globally competitive, and other universities that are primarily undergraduate and focused on high quality teaching. As for internationalization and diaspora mobilization, we need to position some of our top universities to become serious players in the lucrative international student market. Out of the 5.09 million internationally mobile students Africa accounted for a mere 4.39% of inbound students, but 10.26 of outbound students.

African institutions need to develop multiple and innovative forms of internationalization in addition to traditional student and staff exchanges. This includes the creative use of information and communication technologies in the provision and expansion of distance and learning and open educational resources. African higher education institutions must make regional and continental student and faculty exchanges and institutional collaboration in academic programs and research a priority. The establishment or expansion of regional learning centers and research networks is a critical part of internationalization.

The African academic diaspora must have a special place in the internationalization of African universities. The historic and new diasporas constitute the continent’s biggest international resource. They possess huge economic, political, social, cultural capital ready for harnessing. Economically, the new diasporas are Africa’s biggest donor. In 2017, diaspora remittances to the continent reached $67.4 billion., and accounted for a significant portion of the GDP of several countries, including Kenya where the diaspora remitted $1.8 billion (2.4% of GDP).

As universities, we need to tap what I call the diaspora’s intellectual capital. The Carnegie African Diaspora Fellowship Program, whose secretariat is currently based at USIU-Africa, has tried to do so. Since 2013 when the program was established out of a research project I conducted to date we’ve sponsored nearly 400 African-born academics in Canada and the United States to work with universities in six countries—Ghana, Nigeria, Uganda, Kenya, Tanzania and South Africa. We are planning to scale up the program to sponsor at least 1,000 Diaspora academics each year for the next ten years. We are calling it the 10/10 program. It will be launched here in Nairobi in June, and I extend an invitation to all of you.

Undoubtedly, our universities face many challenges, but the flip side of every challenge is opportunity. Let us turn our challenges into opportunities by working together, always focused on the singular project of positioning our universities as engines of the African renaissance, in pursuit of the enduring Pan-African struggle to create integrated, inclusive, innovative, developmental and democratic states and societies that will bring the peoples of this continent well-being and make its diasporas truly proud. Thank you!