

# **THE IMPERATIVE OF ACADEMIC NETWORKING TOWARDS REGIONAL DEVELOPMENT<sup>Ω</sup>**

**by**

**O. A. Bamiro**

Professor of Mechanical Engineering

c/o Faculty of Technology

University of Ibadan

Ibadan, Nigeria

E-mail: [oabamiro@yahoo.com](mailto:oabamiro@yahoo.com)

---

<sup>Ω</sup>Paper presented at the Inaugural Conference of The Association of West Africa Universities (AWAU) at the 2iE Institute, Ouagadougou, Burkina Faso, 4<sup>th</sup>-8<sup>th</sup> November, 2013.

## 1.0 PREAMBLE

First and foremost I would like to express my sincere appreciation to the Association of West Africa Universities (AWAU) for inviting me as a Plenary Speaker at this inaugural conference organized under the theme “*The role of Universities in the integration of the West African sub-region*”. I must really commend the Heads of all the institutions involved in this initiative for finally deeming it fit to come together under this big regional umbrella to create synergy in tackling the development challenges facing our diverse nation states. I am also most delighted to be here again at the 2iE Institute, Ouagadougou, Burkina Faso; an institute that has made its mark through the design and delivery of programmes that have produced an unusually high number of employable and employed graduates in the niche areas defined by the Institute. It is therefore apposite that this inaugural conference is taking place in such an institute from which other institutions have a lot to gain if they are truly concerned with the festering problem of graduate employability. That should be the starting point of our academic networking!

Permit me to also commend the organisers of this Conference for the choice of the theme: “The role of Universities in the integration of the West African sub-region” against which I have been given the relevant title –“The Imperative Of Academic Networking Towards Regional Development”. Implicit in this topic is the assertion that as universities we have important role to play in achieving the goals of our diverse national and regional development initiatives. In other words, we see ourselves as agents of development. But are we such agents by our operations? If we are, then the question arises- What roles, for example, have we been playing in assisting our diverse nation states to achieve the Millennium Development Goals with only two years left to achieve the year 2002 globally-defined targets of development? Unfortunately, the performances of most African countries based on the different performance indicators have been rather dismal. Worse still, some countries do not even have the mechanism in place to measure the various performance indicators.

While leaving you to ponder the answers to these questions and the current situation, I proceed by assuming that we are agents of development exploring synergetic ways to network and tackle development problems in the region. Towards this end, the paper takes off with the need for us to answer the first basic question – what are universities for particularly in the globalising world? This was the question I posed in the Convocation Address I delivered at the University of Lagos titled “The Nigerian University System and the Challenge of Relevance (Bamiro, 2012). Section 2 is therefore an intellectual exercise aimed at identifying the global views of what universities are for. Section 2 helps to set the stage for Section 3 where the diverse development challenges in globalising world economies are presented. The various regional initiatives involving diverse networking of universities in the region and beyond towards addressing various problems bordering on capacity building are then presented in Section 4. The paper is concluded with specific recommendations for the attention of AWAU in its quest for regional relevance as agents of development.

## **2. WHAT ARE UNIVERSITIES FOR?**

In full agreement with the submission of Geoffrey Boulton (2010), Vice Principal of the University of Edinburgh, in his article on the above subject delivered to the European University Association, it is crucial that the true role of universities in the society be understood while evolving various policies targeted at the university system. Otherwise, we may come up with policy prescriptions that may do more damage than good. And in respect of the title of this paper which creates a nexus between universities and development, most especially socio-economic development, there is a need to define unambiguously the basis of such connectivity. Furthermore, networking is only possible if we are coming from a commonly held philosophy of our roles.

There is no doubt that the concept of a university has changed over the centuries from the initial concept by John Cardinal Newman whose century old idea was predicated on universities being seen as enclaves, separate from the everyday world; places where students and academics engaged in platonic dialogues and where the outcome for both was a deeper understanding of the world and their place in it. Newman was adamantly against vocational courses (and research, for that matter). Newman described "practical knowledge" as "a deal of trash". He thought that medicine was too applied to be taught at a real university. I will like to note that Newman's view reflected the long-held label of a university as an 'ivory tower' which could no longer hold today with government using the instrument of funding to challenge universities to play a central role in the innovation process and be huge generators of wealth creation while preparing students for jobs.

For example, under a new budget deal, Scotland's 19 higher education institutions were to receive £1.02 billion of funding in 2012/2013 in order to plug the funding gap between the Scottish and English institutions arising from the higher tuition fees being paid by students in English institutions. However, according to Mark Batho, the Chief Executive of the Scottish Funding Council (SFC) - "*this is a something for something deal. This is not just a closing of the gap. It is an investment by the Scottish government*". Consequently, discussions were held between the SFC and individual universities to draw up agreements on areas such as access, retention, flexible degrees, the employability of students and translating research into more opportunities for Scottish business. But most significantly, Batho said that it was not yet clear what form penalties might take if universities failed to hold to the outcome agreements, but sanctions would have to be part of the process. According to Batho "*If it does not have any teeth it won't be worth the paper it's written on*".

Surely, the Scottish case quoted above is in sharp contrast to the situation in most countries in the region where funding is not closely tied to mutually agreed performance measures and resulting penalties for non-performance. At least I do know that it does not happen in the Nigerian university system. And talking of performance measurement, this is already creating unease in British universities under the "Research Excellence Framework" (REF) which stipulates that "significant additional recognition will be given where researchers build on excellent research to deliver demonstrable benefits to the economy, society, public policy, culture and quality of life. Impacts will be assessed through a case-study approach that will be tested in a pilot exercise." As noted by Boulton (2010):

“ ... Many academics working in the humanities were quick to point out the likely effects on their fields of an economic growth-oriented model of academic funding, in which "impact" is a key criterion. In a petition submitted to No 10, leading researchers urged the reversal of the Research Councils and HEFCE policy to direct funds to projects whose outcomes are determined to have a significant "impact". The arts and humanities do have such an impact, but it is typically difficult if not impossible to judge this in the short term. Academic excellence is the best predictor of impact in the longer term, and it is on academic excellence alone that research should be judged. "Users" who are not academic experts are not fit to judge the academic excellence of research any more than employers are fit to mark student essays. The UK is renowned for its creative industries. But the roots of creativity in the intellectual life of the nation need sustained support, and evaluations based on short-term impact will lead to less impact in the long term ”.

Be that as it may as we continue on our journey towards answering the question – what are universities for? It seems to be globally accepted that universities are established for three purposes: teaching, research and community engagement. But increasingly governments and the business world are now casting each of these purposes in utilitarian terms. As observed by Stephen Schwartz (2008), Vice – Chancellor of Macquarie University, Sydney, Australia -

“Teaching is important because graduates get better jobs, become more productive and make Australia richer. Research is important because it leads to new discoveries, which lead to new products that make Australia richer. Getting in the spirit, *vice-chancellors demonstrate community engagement by hiring consultants to calculate their university's economic impact on the nation*. In other words, community engagement is another way of making Australia richer.”

Schwartz (2008) went further to note that making graduates and the country richer cannot be the purpose of universities because, unless you are a miser, making money is not an end in itself - it is a tool. We need money to achieve our goals, but first it's necessary to have goals. This is why the Dearing inquiry into UK Higher Education in the 1990s identified not three but four purposes for universities. In addition to teaching, research and community engagement, Lord Dearing said universities should also have a social goal. Specifically, universities should "*play a major role in shaping a democratic, civilised, inclusive society*".

The foregoing shows the complexity in arriving at answer (s) to the simply put question – what are universities for? The problem is made more complex by the very notion of universality or the universe in the university which makes it an institution driven by global ideas in which every university, no matter its location, will like to see itself as part of a community strung together by common ideals. In this short paper, permit me to concentrate on a few notions of what universities should be in our developing nation states. In this context, I shall borrow from the following fourpropositions by Boulton (2010) which I consider germane to the subject and a useful precursor to the interrogation of the situation in the region. I now proceed to share Boulton’s propositions with the reader.

*Proposition 1 - Universities play increasingly important roles in modern society.*

In the last two decades, higher education worldwide has moved from the periphery to the centre of governmental agendas in most countries. Universities are now seen as crucial national assets in addressing many policy priorities, and as: sources of new knowledge and innovative thinking; providers of skilled personnel and credible credentials; contributors to innovation; attractors of international talent and business investment; agents of social justice and mobility; contributors to social and cultural vitality; and determinants of health and well-being.

I will like to observe this surely captures the emerging functions of universities under the Triple Helix Partnerships involving government, university and academia. The practical operation of such concept has largely accounted for the success of most rapidly industrializing economies.

*Proposition 2 - Notwithstanding their diversity of functions, governments focus on the presumed direct economic role of universities.*

Whereas people in higher education might be sensitive to these diverse functions, the reality is that in policymaking circles, the discourse about universities tends to be dominated by analyses of how they can best fulfill a direct economic function. The role of universities in creating economically valuable intellectual resources is reflected in the following comments, and is in my mind unquestionable. Michael Porter, of Harvard Business School, commented that: "Skilled human resources and knowledge resources are two of the most important factors for upgrading national competitive advantage." According to André Sapir, of the Breughel Group: "There must be the radical re-ordering of EU priorities to stimulate growth, by concentrating on consolidating capital markets, research and development and higher education."

According to Boulton, in a context where governments are principal funders of universities, it implies that a university can be like a pump which, when primed with a little public money, will gush forth the tangible effects of economic prosperity into which that money has been transformed. It assumes that the function of universities is to provide direct in-out benefits for society's economic prosperity. The logic implies that invention in the university, largely in its science laboratories, leads to innovation and economic benefit. The oft-quoted example of this from Silicon Valley and Stanford University is, however, far more subtle and complex than a simple reading allows - but its success, however fleeting, has created a consensus about the potential of the university to be the direct driver of the knowledge-based economy.

That is the consensus that prevails today, as European policymakers look to keep their nations and regions competitive, in face of raging industrial competition from China and India, as well as all-round economic uncertainty. I hasten to note that this may after all be similar to what we also will like to achieve for the West African sub-

region. After all we do have Economic Cooperation of West African Countries (ECOWAS) geared towards evolving measures for mutually reinforcing economic development of the various nation states in the region. As noted by Boulton, in the EU, there is a growing focus on the development of powerful research universities, which have become, over the past few years, something of a holy grail for European research policy. Thus, in almost every region and nation, having at least one research university that performs, as the cliché goes, like MIT, is regarded as a central element in maintaining economic competitiveness.

Equally important are these pertinent questions posed by the EU economic planners: What roles do universities have, in lifting us from the current recession, or depression as it might become? What shall we do to ensure that our universities are ready to perform? And by implication, if companies and jobs aren't being created in sufficient numbers, where are our universities going wrong? What can we fix to make them deliver the goods? If they can't, we'll create a European Institute of Technology to show them how to do it.

I hasten to ask – Was this the thinking that informed the creation by the African Union of the Pan-African University with Hubs in the five regions specializing in diverse areas? I delay an answer till later when such regional initiatives are discussed.

*Proposition 3 - The university's concern is 'useful knowledge', but not merely with the immediately applicable - a university is a resource for an unknown future.*

In this, Boulton was making a case for universities to engage in both basic and applied research. He goes on to warn universities that are totally pre-occupied by immediately applicable research by noting as follows:

One of the roles of the university is to prepare the knowledge that an unpredictable future may need. A university that moulds itself only to present demands is one that is not listening to its historians. Today's preoccupations are inevitably myopic, often ephemeral, giving little thought for tomorrow. History is at its most illuminating when written with the full consciousness of what people wrongly expected to happen. Even in the domain of technology, future developments only a few years away have been shrouded from contemporary eyes. Many, possibly most, have arisen unexpectedly from research with other objectives, and assessments of technological potential have invariably missed the mark.

In respect of this proposition by Boulton, I will like to note that I have canvassed similar position on the type of research to be conducted in our universities to involve both *basic* (not necessarily of immediate application) and *applied* (of immediate application). The main thrust of the above proposition is that universities should engage in both basic and applied research. History is full of basic ideas that were lampooned by the so-called experts at the time of their emergence only to enter the domain of application with considerable and previously unimaginable impacts.

Finally I come to the issue of innovation and the role of universities in the innovation process bearing in mind its importance to industrial competitiveness.

*Proposition 4: Universities are important parts of the modern innovation process, but not as its drivers.*

But what is the role of universities in innovation? Innovation is predominantly a process of business engagement with markets. Universities are not the drivers of these processes, but they do increasingly contribute to the fertility of the environment that innovation needs if it is to flourish. Direct commercialisation activities do not, even in the USA, where university commercialisation is best developed, contribute significantly to GDP. In Silicon Valley, Boston and Cambridge, even high tech companies do not regard the university amongst their principal direct collaborators. *Universities have a different role, which is to help create an environment sympathetic to and supportive of innovation, and particularly where there is internationally-competitive research and excellent graduates.* They produce centers of creativity that attract research-intensive companies and investment into a region, and help catalyze innovation in indigenous businesses. The bedrock for this potential remains, however, the university's commitment to education and the exploration, through research, of the limits of our understanding.

In several lectures that I gave on innovation and the Nigerian university system, I have always posited that innovation is not the exclusive preserve of universities just as universities have lost the pride of place as the only source of knowledge. Several knowledge centers with ICT-enabled access now exist in the information superhighway. Also, significant innovation is taking place outside the university system in the business sector. In other words, innovation that can significantly transform our industrial landscape does not have to emanate from big science or earth-shaking research results. The major driver is an entrepreneur who has imbibed the culture of curiosity and has developed the capability to take bold, imaginative and principled action in the face of an uncertain future, rather than staying coolly in his perceived comfort zone. Of course, global competition has ensured that such comfort zone does not last. This is where, to my mind, the university comes in to help sustain competition through incremental innovation that flows into the industrial space to sustain actors in competition. This is the major driver of the Triple Helix (government-industry-academia collaboration) mode of development of clusters being championed by the Pan-African Competitiveness Forum (PACF), a regional initiative with sub-regional arms such as the PACF ECOWAS. As presented later, this is a veritable platform for networking of our universities as we share experiences in developing innovative clusters in and across the region.

In what follows, we examine the various regional development challenges and the potential roles our universities can play towards the overcoming such challenges and launching our region on a sustainable growth path.

### **3. THE CHALLENGE OF UNIVERSITIES BECOMING AGENTS OF DEVELOPMENT**

I posit herein that our becoming agents of development will be predicated on helping our nation states to become industrially competitive and also being able to achieve the various national and global development initiatives. The challenges from each of these areas are presented below.

### 3.1 Global Competitiveness and Industrial Development

It is a well acknowledged fact that one of the important prerequisites for the economic well-being and prosperity of any nation is the sustainable development of industry. As noted by Ntim (1991), it is industry that provides services to members of a society by making consumer and capital goods, creating new products and processes, generating new companies and opportunities, and providing, in the process, unlimited new jobs for the population. The key to the success of modern industrial development is science, technology, engineering and innovation (SETI). The application of technology to industrial development and maintenance is made possible by SETI professionals (scientists, engineers, technologists, craftsmen, artisans, etc.) whose education and training must, at all times, reflect, at least, the requirements of the economy. Universities, as the producers of some of these key SETI professionals, undoubtedly, have the important responsibility of making sure that they turn out graduates that possess the necessary skills set. According to Machando(2000)

*“... the new industrial revolution will multiply the technology management complexity ten fold. Developing countries' quantitative requirements in terms of number of skilled human resources are certainly astronomical. They will have to satisfy the needs of existing enterprises, of newly created enterprises, of innovation system agents such as R&D centres, consulting enterprises, standards and metrology boards, financial institutions, science and technology policy agents, incubators and many others..”*

As I observed in the West African Research and Innovation Management Association (WARIMA) paper (Bamiro, 2011), this is a situation that calls for a strong university-industry-government partnership (Triple Helix). The need for such partnership is further underscored by the challenges of competition in the industrial place arising from the on-going globalisation of world economies. We can no longer ignore the forces of globalisation as they seek to shape everything – economic, social, cultural, etc. - in ways that are not totally edifying for developing economies such as ours (Bamiro, 2004). The nature and consequences of globalisation are rather unsettling especially for developing economies that are still, by and large, “the globalised” or “captives” from the front lines of what some have characterised as ‘World War III’. As remarked by Korten(1996):

*“It is a very different kind of conflict. There is no clash of competing military forces and the struggle is not defined by national borders. But it does involve an often violent struggle for control of physical resources and territory that is destroying lives and communities at every hand. It is a struggle between the forces and institutions of economic globalisation and the communities that are trying to reclaim control of their economic lives... It is a competition for the control of markets and resources between global corporations and financial markets on the one hand and locally owned businesses serving local markets on the other.”*

Underlined in the above is mine in order to accentuate the nature of competition faced by our productive sector, particularly the micro, small and medium enterprises (MSMEs). The lopsided nature of the competition is epitomized by the imbalance of the world trading system. The imperatives of global competition demand that we reclaim and build our local economies. To diversify and grow the economy as



envisioned by our governments, the partnership engendered in Triple Helix is a must. In charting such directions for future growth and development, worldwide experience dictates that we commit ourselves to the use of the triad of *knowledge, information, and innovation*. The imperative for these strategies is not simply to survive, but to thrive. The triad of knowledge, information, and innovation implies a central role for our universities as eminent members of the knowledge industry. The triad now surpasses most natural resource endowment as strategic economic resources for development. As mentioned in Section 2 – What are universities for – our graduates must be trained as thinkers and problem solvers by bringing intellect into problem solution.

The word “innovation” requires definition because it can be subjected to different interpretations. In developing economies it is customary to see innovation as the end product of the process that runs from invention through development to commercialisation and diffusion of invention. In this context, innovation is associated with the activities of individuals or firms at the frontier of knowledge. Such a definition is rather restrictive. Innovation is defined in the broad sense to mean "the process by which firms master and implement the design and production of goods and services that are new to them, irrespective of whether or not they are new to their competitors - domestic or foreign". Thus, innovation can operationally be defined as “*the introduction into a market (economic or social) of new or improved products, processes or services*”.

Thus, the concept of innovation brings to the fore the importance of markets to the extent that programme of research or technological change designed to promote innovation must take due cognisance of the constraints imposed by the market into which the innovation is to be introduced. In other words, research policies and implementation in our university system must give applied research responding to the needs of industry a pride of place. As mentioned earlier, our universities must engage in both types of research – basic and applied. However, as discussed below, our universities face greater urgency for applied research and innovation leading to industrial competitiveness than their counterparts in the developed economies. Unfortunately, our governments are still to come to grip with how best to involve universities in the implementation of the various industrial and development initiatives.

Where are our countries on the scale of global industrial competitiveness? Towards answering this question, reference is made to the planned, but aborted, Conference of African Ministers of Industry (CAMI) which was to have been held in March 2011 under the theme “*Enhancing the Competitiveness of African Industries through increased and improved value addition*”<sup>Φ</sup>. Of relevance are the following observations by the organisers of CAMI:

“Competitiveness of African Industries continues to be very low despite some positive economic expansion achieved between 2004 and 2008, which in effect, has to some extent, been negated by the recent global economic crisis. The crisis has affected developing countries through multiple channels covering reduced trade flows, decline in commodity prices, reduced liquidity and tightening of credit markets affecting both the private and public sectors,

---

<sup>Φ</sup> The Conference did not hold the due to the political upheavals in North Africa.

reduced flows of remittances, a drop in Foreign Direct Investment (FDI), exchange rate depreciation and uncertainty, and declining flows of Official Development Assistance (ODA).

According to the 2009 Africa Competitiveness Report, 23 African countries out of the 31 that were surveyed remain at the most basic stage of the competitiveness index of a *factor-driven* economy (that is, one whose ability to compete is based on unskilled labour and natural resources). Only five countries – Algeria, Mauritius, Namibia, South Africa and Tunisia - have reached the second stage of competitiveness – the *efficiency driven* stage (which is driven by efficient goods, sophisticated labour and financial markets, a large market size and the ability to utilize technology effectively). No African country has reached the *innovation-driven* stage, that is, a stage based on an ability to compete with new and unique products, and the use of sophisticated production driven competition.”

Based on the above, it can be seen that most African Countries, of course, including those in our Region, are still at the basic stage of competitiveness, with ability to compete based mainly on unskilled labour and natural resources, which, in most cases, are agro- and mineral-based. This is accentuated by the fact that while 98 percent of agricultural production in high-income countries undergoes industrial processing, in developing countries, barely 30 percent is processed. Yet, the latter’s agro-processing industries generate 40 to 60 percent of manufacturing value added and agro-industrial products account for half of all exports from most developing countries. Noted further is the following submission of the CAMI planners, and I quote:

“The industrial processing of mineral resources can serve as a trigger for industrial diversification of the economic basis of Member States. This will trigger a carry-over effect on the development of technology, well-trained labour and managerial methods. Industrialization based on mineral processing can have as objective, the creation of a regional industrial base, geared towards producing intermediate products to meet national and regional needs and the export of a part of those products to meet foreign demand. The key drivers for these include having, among others:

- ✚ A significant entrepreneurial base looking at opportunities to service local, regional and export markets;
- ✚ Competitive production (high productivity, low costs compared to competitors);
- ✚ **Craftsmanship and specific skills;**
- ✚ Access to markets (domestic and foreign);
- ✚ Good market intelligence; and
- ✚ **Research and development.**

I hasten to note that the agricultural sector is providing challenges for the research and innovation systems in our countries in the form of research-driven incremental innovation to achieve the necessary value-addition.

### 3.2 African Development Initiatives and SETI

It is also pertinent to examine some of our development initiatives and the expected role of our university system as agents of development through research and innovation. Notable projects, programmes, declarations etc. addressing issues of development with which African countries are engaged are: the Millennium Development Goals (MDGs), aimed at poverty reduction over a stipulated period of time with globally defined measurable indicators of progress; the World Summit on Sustainable Development (WSSD); the Blair Commission Report for Africa; and the New Partnership for African Development (NEPAD) targeted at re-positioning Africa in the world economy. The Johannesburg Plan of Implementation (JPOI) of WSSD identified during the Summit process, the three pillars of sustainable development as the *economic, environmental, and social pillars*, and emphasized the fact that ‘science and technology must be placed at the heart of policies to promote sustainable development’. Each of these initiatives is discussed briefly below.

### *The Millennium Development Goals (MDGs)*

In 2000, world leaders agreed on a vision for the future – a world with less poverty, hunger and disease, greater survival prospects for mothers and their infants, better educated children, equal opportunities for women, and a healthier environment; a world in which developed and developing countries work in partnership for the betterment of all. As noted by Zarki (2006), “this is an ambitious vision of development; a vision that has human development at its core to sustain social and economic progress”. Eight goals, eighteen targets, and forty-eight indicators were accepted as a framework for measuring development progress. They aim to cut extreme poverty by half, ensure every child has the chance to go to school and live a long and healthy life, and bring discrimination against women to an end. The risks of dying as a result of childbirth are to be dramatically reduced, deadly diseases brought under control, the environment better managed, and the benefits of progress more equally shared by all the nations of the world. Together, the aspirations of the MDGs and their associated targets and indicators represent a powerful framework for action. The goals are to be achieved not later than 2015.

More than twelve years into the implementation of the MDGS, only a handful of African countries have come close in any way to achieving the anticipated progress measured against the various performance indicators. For example, in Nigeria, the National Economic Empowerment Development Strategy (NEEDS) document clearly states, “if present trend continues, the country is not likely to meet the Millennium Development Goals.”

Insight into the policies and practices of developing economies making steady progress to achieving the MDGs was provided by the United Nations. In January 2005, the UN Secretary-General launched the UN Millennium Project’s report entitled “*Investing in Development: A Practical Plan to Achieve the Millennium Development Goals.*” The report was an ambitious effort to outline practical measures for implementing the MDGs. It represented the most comprehensive effort to address poverty and economic growth in the developing world ever mounted by the international community. The report focused on the practical approaches to meeting the MDGs. Worthy of note is the following submission of the report:

*“All nations, whether industrialized or developing, face a broad array of challenges that will require the application of up-to-date scientific knowledge*

*and technology. Such challenges include stimulating economic growth, mitigating environmental problems, safely adopting new technologies, and quickly responding to sudden outbreaks of new diseases. No nation can now afford to be without access to a credible, independent science and technology research capacity that would help it to develop informed policies and take effective actions in these and other areas.*

International organizations, governments, and private sector groups have all coordinated their development work around the MDGs. The resulting increased cooperation is expected to produce significant development gains. In this context, *research universities constitute a natural fourth pillar of such MDGs 'alliance',* (Zarki, 2006). I dare say that most of our governments are still to define any specific roles for our universities.

#### The Blair Commission report

The Report identified professional skills and leadership as key to achieving development while highlighting the problems confronting African countries in this respect. According to the Report, and I quote extensively:

*“Qualified professional staffs are essential to all forms of development. The delivery of health, education and other services depends on them. They are crucial for collecting and managing data, and debating and developing good policies, based on the evidence of what works and what does not. They are essential to implementing those policies and to monitoring how they are put into effect. Scientifically and technically proficient staffs are needed to identify opportunities arising from innovation and scientific discoveries and to develop effective policy in areas such as science, trade and resource management. Especially in the private sector, these particular skills are key to performance and innovation. Africa has been lacking skilled men and women in all these spheres and fundamental to this shortage is the loss of much of Africa’s pool of skills to the developed world. Around 70 per cent of Ghanaian medical officers trained in the 1990s have left and it has been estimated that there are more African scientists and engineers working in the USA than in the whole of Africa. This shortage starts with higher education, which ought to be the breeding ground for the skilled individuals whom the continent needs. ...But many of Africa’s higher education institutions are still in a state of crisis. They lack physical infrastructure, such as internet access, libraries, textbooks, equipment, laboratories and classroom space... demand for higher education is increasing: in 2000, Nigeria had the capacity to accept only 12 per cent of qualified candidates. Hit by these pressures and a lack of funding, the research capacity of Africa’s institutes has declined. The capacity that does exist is not being used efficiently, as there is limited collaboration, and human and financial resources are spread thinly...The science gap between Africa and the rest of the world is widening and under business-as-usual this gap will continue to grow.”*

Towards alleviating the identified problem, the Report recommended in 2005 that the international community should commit US\$500 million per annum over ten years to

revitalise Africa's institutions of higher education. On top of this, the Report recommended specific action for strengthening science, engineering and technology capacity to: one, enable countries to find their own solutions to their own problems; two, bring about step-changes in areas from health, water supply, sanitation and energy to the new challenges of urbanisation and climate change; and three, critically, accelerate economic growth, and enter the global economy.

*The New Partnership for Africa's Development (NEPAD)*

The African Heads of States, in designing the action plan for the implementation of New Partnership for Africa's Development (NEPAD), noted the continuing marginalisation of Africa in every aspect and committed themselves 'to putting Africa back firmly on the world's development agenda, and on the path to irreversible and sustainable development, so that Africa truly claims this millennium'. Consequently, our Heads of State and Government adopted NEPAD as the socio-economic framework for regional integration, eradication of poverty and sustainable development while also taking due cognizance of other supportive initiatives, such as the Millennium Development Goals and the Plan of Implementation of the World Summit on Sustainable Development.

At their inaugural conference within the framework of NEPAD held November 2003 in Johannesburg, South Africa, the Ministers responsible for science and technology in African countries emphasised the fact that the ability of our countries to create, diffuse and utilize scientific and technical knowledge would be a major determinant of our capacity to take advantage of international trade and effectively compete in the global economy as well as improve the quality of life of our people. This was based on their conviction that scientific advances and technological innovations are driving forces for economic growth and sustainable development. Guided further by the deliberations and outcome of the Regional Workshop on "Developing a shared Platform for Science and Technology" held in February 2003 in Johannesburg, South Africa as well as the preparatory meeting of the conference held in October 2003 in Nairobi, Kenya, the Ministerial Conference expressed their commitments to, among others:

- ✚ finding ways and means of strengthening, individually and collectively, science, technology and innovation systems of our countries to attain sustainable development and integration into the global economy;
- ✚ promoting within our countries scientific research and technological innovations and their applications, particularly in the eradication of poverty; seeking solutions to food insecurity, malnutrition, homelessness, unemployment, lack of affordable energy and the fight against disease, especially HIV/AIDS, tuberculosis and malaria.
- ✚ establishing appropriate enabling conditions for scientific and technological advancement of our countries and the continent;
- ✚ pursuing all measures possible to increase public expenditure on research and development to at least 1 per cent of GDP per annum;
- ✚ establishing networks of centres of excellence in science and technology within the framework of NEPAD;

- ✚ adopting common sets of indicators to benchmark our national and regional systems of innovation.

It can readily be seen from the above underlined that our nation states appreciate the need for networking to tackle the development problems of the region. Also, the different development initiatives recognized the important role of the key elements of science, technology, engineering and innovation to achieve our development goals. It can also be seen that our universities are expected to produce not only products with the requisite skills set to drive the economy, but, also, most importantly, to engage in research and innovation for socio-economic development.

In what follows we take a cursory look at the various existing regional initiatives to achieve the development of the region.

#### 4. REGIONAL INITIATIVES TO ACHIEVE REGIONAL AND NATIONAL DEVELOPMENT

As noted by Jane Knight (2011)

“... Regionalization occurs in concert with internationalization of higher education activities. International cooperation, whether it is intra-regional or inter-regional is not a zero sum situation. The current reality is that regional cooperation and alignment of systems is becoming increasingly important but not to the exclusion of other international relationships. History will likely show that regionalization and internationalization have a symbiotic relationship. They co-exist, can be complementary or competitive, and each will have prominence at different stages of international cooperation”

Knight (2011) further identified three inter-related approaches - the *functional* approach, the *organizational* approach and the *political* approach – as constituting the core of the proposed framework for interrogating the different forms of regional cooperation. The three approaches are not mutually exclusive as they work in unison complementing and reinforcing each other. Of interest in this paper are the elements of the three regional approaches as presented in Table 1 in line with Knight (2011).

The first approach takes a *functional* perspective of regionalization and focuses on the practical activities of higher education institutions and systems. Knight (2011) has put the functional approach into two distinct groups. The first group relates to strategies which facilitate closer alignment or in some cases harmonization among national/sub-regional higher education systems. The second category includes programmes like student mobility schemes, cross-border collaborative education programmes, pan-regional universities and centres of excellence. The relationship between these two groups is critical as the systems/policies in Group 1 are needed to facilitate and expedite the programmes in Group 2. For instance, compatibility among quality assurance systems and academic credit systems will help student mobility programmes within a region. Generally, it is a more complex and serious undertaking

to align national systems within a region than to establish multi-lateral academic activities (Knight, 2011).

**Table 1: Generic examples of three regionalization approaches**

<b>Approach</b>	<b>Generic Examples</b>
<b>Functional</b>	<p data-bbox="715 488 1254 521"><i>Alignment of Higher Education Systems</i></p> <ul style="list-style-type: none"> <li data-bbox="767 551 1273 584">➤ Quality assurance and accreditation</li> <li data-bbox="767 613 1123 647">➤ Academic credit system</li> <li data-bbox="767 676 1177 710">➤ Degree levels and structures</li> <li data-bbox="767 739 1315 772">➤ Recognition of qualifications and titles</li> <li data-bbox="767 801 1350 835">➤ Academic calendar – years and semesters</li> <li data-bbox="767 864 1145 898">➤ Qualification frameworks</li> <li data-bbox="767 927 995 960">➤ ITC platforms</li> <li data-bbox="767 990 1114 1023">➤ Research citation index</li> <li data-bbox="767 1052 1145 1086">➤ Inter-library loan systems</li> </ul> <p data-bbox="715 1182 1212 1216"><i>Collaborative Academic Programmes</i></p> <ul style="list-style-type: none"> <li data-bbox="767 1245 1311 1317">➤ Academic mobility schemes- students, professors, scholars</li> <li data-bbox="767 1346 1347 1379">➤ Research networks, clusters, and projects</li> <li data-bbox="767 1408 1455 1480">➤ Cross-border programmes- double, joint, twining, branch campus</li> <li data-bbox="767 1509 1209 1543">➤ Regional centres of excellence</li> <li data-bbox="767 1572 1305 1644">➤ Institutional agreements- bilateral and multilateral</li> <li data-bbox="767 1673 1445 1744">➤ Open Education Resources (OER) and Open and Distance Learning (ODL)</li> <li data-bbox="767 1774 1114 1807">➤ Pan-regional university</li> </ul>
<b>Organizational</b>	<p data-bbox="715 1904 1091 1937"><i>Organizational Architecture</i></p> <ul style="list-style-type: none"> <li data-bbox="767 1966 1184 2000">➤ Networks and Organizations</li> </ul>

	<ul style="list-style-type: none"> <li>➤ Foundations</li> <li>➤ Governmental/non-governmental agencies</li> <li>➤ Frameworks</li> <li>➤ Levels: pan-regional, regional, sub-regional</li> </ul>
<b>Political</b>	<p><i>Political will</i></p> <ul style="list-style-type: none"> <li>➤ Declarations</li> <li>➤ Agreements/ Conventions/Treaties</li> <li>➤ Summits/Task Forces/ Dialogues</li> </ul>

Source: Knight (2011)

The *organizational* architecture involves the frameworks, structures, agencies that are necessary to help establish and oversee regional level and intra-regional initiatives. It involves a diversity of networks and organizations, which include government and non-government bodies, professional organizations, foundations, and networks. These entities assume a variety of responsibilities - policymaking, funding, research, capacity building, regulation, and advocacy among others.

According to Knight, the third approach involves the *political* will and strategies that put higher education initiatives on the agenda of decision-making bodies. The political approach helps to launch major programmes or funding schemes and to formalize initiatives. Declarations of intent, binding conventions, treaties, agreements, and special meetings like summits or policy dialogues are instruments for generating political support and visibility in order to make regionalization of higher education a priority. This approach can be characterized as having more of a top down, formal and intentional orientation.

The above conceptual framework has been adopted in this paper to examine the existing diverse regional initiatives for the attention of AWAU in its journey towards evolving workable platforms for synergetic collaboration among its member institutions in their resolution to tackle the development challenges of the region. Table 2 has emanated from a cursory survey of existing regional initiatives in the African region targeted at solving diverse problems confronting the region. Although it is by no means exhaustive, the table does serve to illustrate the nature of these initiatives and the roles of universities in their implementation.

**Table 2: Regionalization of Higher Education in Africa**

<b>Approach</b>	<b>Examples from The African Region</b>
<b>Functional</b>	<i>Alignment of Higher Education Systems</i>



	<ul style="list-style-type: none"> <li>✓ The African Council for Distance Education (ACDE) Quality Assurance and Accreditation Agency (ACDE-QAAA)</li> </ul> <p><b><i>Collaborative Programmes</i></b></p> <ul style="list-style-type: none"> <li>✓ The African Economic Research Consortium (AERC), Nairobi</li> <li>✓ The Consortium for Advanced Research Training in Africa (CARTA)</li> <li>✓ The Pan African University (PAU) of the African Union</li> <li>✓ Regional Initiative in Science and Education (RISE)</li> <li>✓ African University of Science and Technology (AUST), Abuja</li> <li>✓ Centre for Sustainable Development (CESDEV), Ibadan, Nigeria</li> <li>✓ Centre for Petroleum Energy Economics and Law (CPEEL), Ibadan, Nigeria</li> </ul>
<b>Organizational</b>	<p><b><i>Organizational architecture</i></b></p> <ul style="list-style-type: none"> <li>✓ Pan-African Competitiveness forum (PACF), Addis, Ababa, Ethiopia</li> <li>✓ West African Research and Innovation Management (WARIMA)</li> <li>✓ Ministers of Education of the African Union</li> <li>✓ The African Council for Distance Education (ACDE)</li> <li>✓ African Network for Internationalisation of Education (ANIE) <a href="http://www.anienetwork.org">www.anienetwork.org</a></li> <li>✓ The Partnership for Higher Education in Africa (PHEA)</li> </ul>
<b>Political</b>	<p><b><i>Déclarations, Conventions</i></b></p> <ul style="list-style-type: none"> <li>✓ Constitutive Act of the Pan-African University</li> </ul>

In what follows we briefly discuss each of these regional initiatives as they relate to the desire for academic networking among AWAU.

#### **4.1.1 Functional Approach: *Alignment of Higher Education Systems***

*The African Council for Distance Education (ACDE) Quality Assurance and Accreditation Agency (ACDE-QAAA)*

The African Council for Distance Education (ACDE) established in 2009 the ACDE Quality Assurance and Accreditation Agency (ACDE-QAAA). The National Open University of Nigeria (NOUN), Lagos, Nigeria, is now hosting the Agency. The ACDE-QAAA, as an organ of ACDE, is specifically charged to develop and enforce relevant regulatory frameworks for distance and online education and ensure that the best and acceptable practices in QA are embedded in every activity of ODL Institutions in Africa with the goal of positioning African ODL in global perspective.

#### **4.1.2 Functional Approach: *Collaborative Programmes***

The African Economic Research Consortium (AERC) [www.aercafrica.org](http://www.aercafrica.org)

The African Economic Research Consortium (AERC) is a not-for-profit corporation established in 1988. It is based in Nairobi, Kenya, where it is recognized as an international organization through a Host Country Agreement concluded with the Government of Kenya. Its principal objective is to strengthen local capacity for conducting independent, rigorous inquiry into problems pertinent to the management of economies in sub-Saharan Africa (SSA). Its work is based on two premises: first, that development is more likely to occur where there is sustained sound management of the economy and, second, that such management is more likely where there is an active, well-informed group of locally based professional economists to conduct policy-relevant research. Hence, the mandate of AERC is threefold: enhancing the capacity of locally based researchers to conduct policy-relevant economic inquiry; promoting the retention of such capacity; and encouraging its application in the policy context.

AERC supports a research programme and a postgraduate training programme.

The Research Programme involves two categories of research:

- ❖ Small grants to groups of individuals from both academia and policy institutions to conduct research on a set of pertinent themes. The Consortium supports researchers through peer review, methodology workshops and literature. The researchers present their proposals, draft reports and final papers to resource persons and to their peers at biannual thematic research workshops that provide the opportunity for ongoing monitoring of the quality of research. The resource persons, both African and international, assist the researchers in drawing out the policy relevance of their work.
- ❖ Collaborative Research Projects carried out by teams of African researchers and their counterparts elsewhere on mutually agreed themes. Such research gives rise to new, high quality research output and literature of interest to the African academic and policy communities.

The Training Programme involves two main programmes:

- A Collaborative Master's Programme (CMAP) (for Anglophone Africa except Nigeria and South Africa) in Economics in partnership with 21 universities in 17 SSA countries. The universities that offer CMAP jointly enforce standards through annual evaluations and assessments by external examiners. They develop a common curriculum and teaching materials, and share a joint facility for teaching elective courses. As of 2004, seven of the universities have been able to offer core courses that meet the jointly determined standards.
- A Collaborative PhD Programme (CPP) in Economics launched in 2002 with eight SSA universities. This programme operates on the same principles as the Collaborative Master's Programme.

The Training Programme brings together a network of 27 universities in 20 countries in a collaborative approach to both master's and PhD training. For the CMAP there are two categories of universities: Category B universities are regarded as the hosting universities while the category A universities are those who send their students to the category B universities. The approach rationalizes the use of limited teaching capacity, attains a critical mass of students, offers a larger menu of electives and jointly enforces high standards. At the master's level similar initiatives in the francophone countries and in Nigeria, both originating from AERC studies, are based on the same concept. Networking - the linking of individuals and institutions in a knowledge sharing, experience sharing framework - is the key strategic instrument being used to implement AERC's activities.

AERC, comprising a network of funders sustainably supporting its activities, has been highly successful judging by the quality and quantity of research outputs as well as the high number of graduates of its CMAP spread over SSA. One of the key success factors is the long-term sustainable funding by the funders, which allows the Centre to do short- and long-term planning of its activities. It is surely a good model for capacity building leveraging on available capacities dispersed in the continent.

#### The Consortium for Advanced Research Training in Africa (CARTA)

The Consortium for Advanced Research Training in Africa (CARTA) is an initiative of the following nine African universities, four African research institutes, and selected northern partners:

- African Universities: Makerere University, Uganda; Moi University, Kenya; National University of Rwanda; University of Dar es Salaam, Tanzania; University of Ibadan, Nigeria; University of Malawi; University of Nairobi, Kenya; University of the Wits, South Africa; and University of Ghana.
- Research Organizations: African Population & Health Research Center (APHRC); Ifakara Health & Development Research Centre, Tanzania; KEMRI/Wellcome Trust Research Program, Kenya; and Agincourt Population and Health Unit, South Africa.
- Northern Partners: WHO Special Program for Training and Research in Tropical Diseases (TDR); Swiss Tropical Institute, Switzerland; University of Colorado, USA; University of Warwick, UK

The formation of CARTA was motivated by the great need facing graduate level training in Africa. In consequence of the above, CARTA aims to develop and deliver an innovative model for doctoral training in sub-Saharan Africa and to strengthen the capacity of participating institutions to conduct and lead internationally competitive research. Over the medium-term, CARTA aims to produce a critical mass of high-quality graduates trained to address the complex issues surrounding health and development in Africa, and to retain these researchers and scholars in the region by providing them with a vibrant intellectual environment, and viable and challenging research and training opportunities. Towards this end it has been noted that students in graduate programmes on the continent face a number of challenges including poor quality supervision; limited exposure to current methods and debates; weak academic and research environments; and lack of role models/ mentors, strong academic and research networks, opportunities to participate in international conferences, and funding. These factors, coupled with weak Master's degree programmes and PhD by-thesis-only, undermine the technical competence and quality of graduates of African doctoral programmes.

Following from the above, the objectives and goals of CARTA are:

- ✓ Strengthen doctoral training programmes in Africa to enhance local production of well-trained researchers and scholars. This will be achieved through the creation of a regional trans-disciplinary training and supervisory program involving several African and non-African universities and research centers of excellence.
- ✓ Support institutional capacity of participating African universities to conduct high quality research through the development of a coherent research agenda, post-doctoral opportunities, improvement of research infrastructure to support research undertakings, and enhancement of research management, administration and supervision skills of university staff; and
- ✓ Build and retain cohorts of African researchers who are networked together, are able to work in multidisciplinary research environments, and who have complementary research skills.

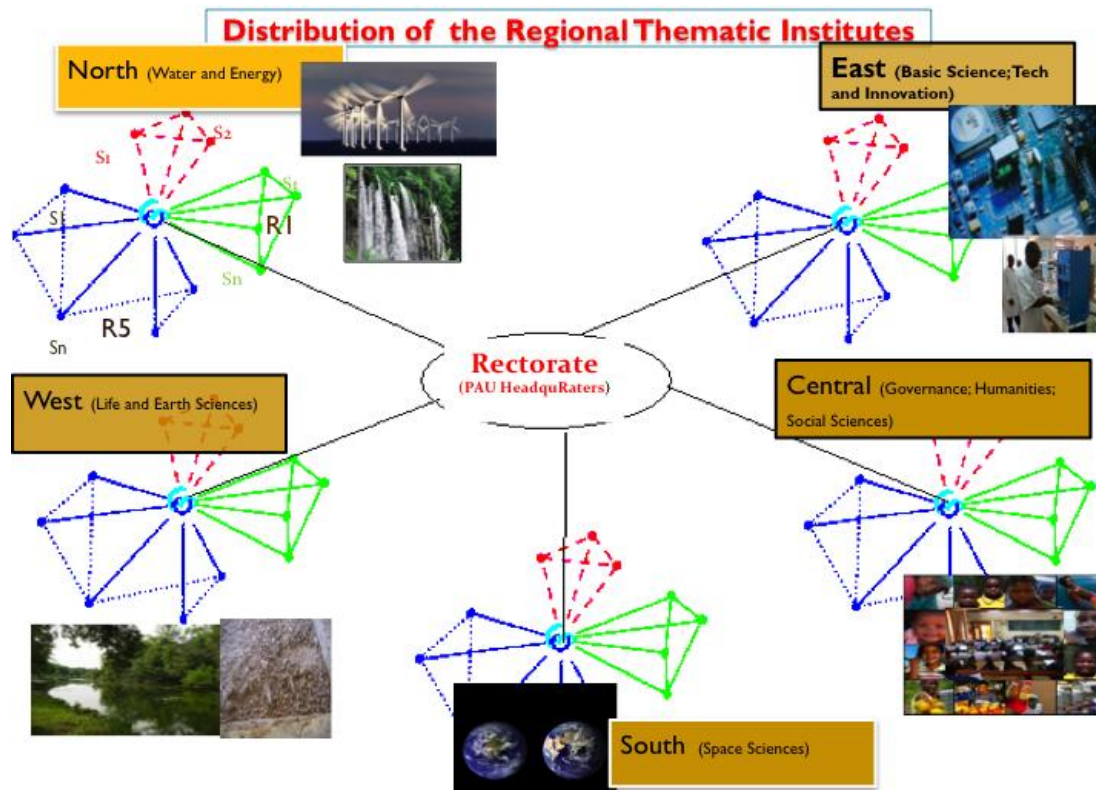
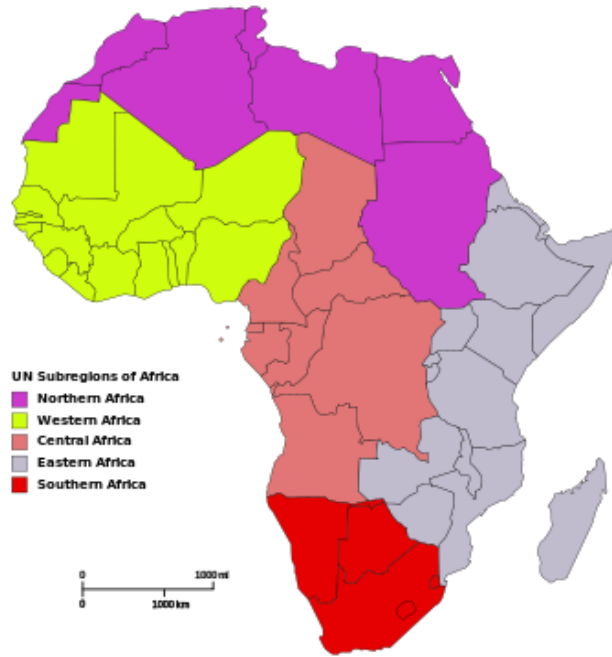
CARTA has already taken off under the coordination of the African Population & Health Research Center (APHRC) ( [www.aphrc.org](http://www.aphrc.org)) based in Nairobi, Kenya.

### The Pan African University of the African Union

The vision of the African Union is to "build an integrated, prosperous and peaceful Africa, an Africa driven and managed by its own citizens and representing a dynamic force in the international area". There is general appreciation of education as most important tool for equipping African peoples with the necessary knowledge, skills and attitude to be able to drive this vision. Quality Higher education in particular is recognized as imperative if Africa is to attain this vision, generate home-grown solutions to African challenges according to the NEPAD philosophy; and participate fully in the global knowledge economy. Unfortunately, during the decades

of the 80's and 90's, support for education in Africa was focused at primary and secondary levels, thus negating some of the gains that had been made in the late 60's and 70's in African higher education. Consequently, investments in the higher education sector have not been commensurate with the increasing enrollment, leading to many challenges especially in quality. Furthermore, higher education has been hard hit by the endemic phenomenon of brain drain, which has been depriving the continent of its finest intellectuals. Unfortunately, as pointed out in the African Union Strategic Vision document, universities and other educational and research institutions do not frequently exchange students or academic staff within the continent. Moreover, collaborative projects are often driven by external donors, and usually focused on problems which are of limited relevance to the continent. The last decade has seen a net increase in the mobility of lecturers between African universities, but this has been restricted to linguistic or geographic sub regions.

To address the above problems facing higher education sector, the African Union Commission proposed in 2008 the creation of the Pan African University (PAU). The PAU concept involves the promotion, networking and developments of programmes and research centers within some existing excellent universities in the five geographic sub-regions, namely Northern, Western, Eastern, Central Northern and Southern Africa (See Figs.1a & b). Each sub-region is hosting a thematic component of the PAU, which will be committed to select a node or thematic Instituteneetworking with high quality centers (designated by  $S_i \dots S_n$  in Fig. 1b) and developing similar programmes. Table 3 shows the different thematic areas of specialization as well as the institutions that are serving as the nodes with connection to other centres located in each region. Of course, the centres are also universities committed to the delivery of the collaboratively-designed programmes in the assigned thematic area. This will surely generate greater collaboration and mobility of scientists and students amongst African universities. This is to be achieved through capitalizing on the experience and intellectual resources of the best African universities and research centers and using them to create regional knowledge Institutes. PAU has already actively taken off in some of the nodes



**Table 3: Thematic Areas of Specialization and the Hubs of PAU**

Region	Thematic Area of Specialization	Host Institution serving
--------	---------------------------------	--------------------------

		<b>as the Hub</b>
Southern Africa	Space Science	University of Stellenbosch, South Africa
North Africa	Water and Energy, including climate change	Algeria
East Africa	Basic Sciences, Technology and Innovation	Jomo Kenyatta University of Agriculture and Technology, Kenya
West Africa	Earth and Life sciences, including agriculture	University of Ibadan, Ibadan, Nigeria
Central Africa	Governance, Humanities and Social Sciences	University of Yaoundé, Cameroon

### Regional Initiative in Science and Education (RISE)

The Carnegie-IAS Regional Initiative in Science and Education (RISE) is aimed at strengthening higher education in sub-Saharan Africa by increasing the population of qualified faculty teaching in Africa's universities. RISE is to prepare PhD- and MSc-level scientists and engineers through university-based research and training networks in selected disciplines. RISE was established in response to the request by university heads across Africa at the University Leaders' Forum in Cape Town in November 2006 for faculty development which was recognized as the single most pressing need in higher education in their countries. RISE networks are to provide comprehensive graduate training programmes, where students and faculty seeking advanced degrees can take advantage of the complementary instruction and research opportunities available at each institution within the network. Networks also will enable researchers from multiple universities to use specialized scientific instrumentation that may be available at only one of the sites, or to pool resources to obtain new equipment. Basically, the driving principle is to exploit the respective strengths of individual partner institutions for the collective benefit to build capacity. This has a lot in common with the AU's Pan African University initiative presented above.

One of the five networks under RISE – *The African Materials Science and Engineering Network (AMSEN)* - is aimed at developing skills in materials science and engineering so as to add value to the extensive mineral deposits of the Southern region. It involves in addition the DST/NRF Centre of Excellence in Strong Materials, University of the Witwatersrand, Johannesburg, South Africa, University of Nairobi, Kenya, University of Namibia, Federal University of Technology, Akure, Nigeria and University of Botswana.

African University of Science and Technology (AUST), Abuja [www.aust-abuja.org](http://www.aust-abuja.org)

The African University of Science and Technology (AUST) is a private, pan-African, coeducational, research university located in Abuja, Nigeria with sponsorship and partnership involving:

- The Nigerian Government
- Nelson Mandela Foundation
- Auburn University
- The University of Bristol
- Abuja Investments Company Limited
- The African Capacity Building Foundation
- Gulf of Guinea Institute
- African Development Bank Group
- GLO Telecoms
- Guaranty Trust Bank, Nigeria
- United Nations University
- Petroleum Technology Development Fund (PTDF)
- Zenith Bank
- Phase 3 Telecom

The mission of AUST is to advance knowledge and educate students in science, technology, and other areas of scholarship that will best serve the African continent in the 21st century. AUST is designed to provide rigorous academic study at the postgraduate level in science and engineering. Masters degree programmes have since 2008 been offered in:

- Computer Science
- Materials Science & Engineering
- Petroleum Engineering
- Pure and Applied mathematics
- Theoretical & Applied Physics
- Business and Innovation
- Energy and Environment

The different programmes are built around two complementary elements:

- a high-level scientific training, focused on a given discipline, with strong emphasis on modeling, simulation and possibly experimental validation; and
- the capacity to become familiar with technical tools relevant to a given discipline, thereby allowing an application of the acquired knowledge directly in the workplace or in a research environment.

Admissions are open to Pan-African students, who have at the minimum an honours Bachelor's degree or equivalent.

#### Centre for Sustainable Development (CESDEV), Ibadan, Nigeria

In an effort to bolster the leadership and training of development practitioners, the Earth Institute convened a group of 20 eminent scholars and practitioners, from a variety of disciplines, in a year-long *International Commission on Education for Sustainable Development Practice*. Launched in early 2007 and supported by the John



D. and Catherine T. MacArthur Foundation, the Commission aimed to identify practical initiatives to support an emerging field of cross-disciplinary “sustainable development practice”. This gave rise to the establishment of the Global Master’s in Development Practice (MDP), an interdisciplinary graduate degree program to prepares students to better identify and address the challenges of sustainable development. MDP programmes generally consist of two years of coursework in four intersecting disciplines—health, natural, social, and management sciences--combined with cross-sectoral field training. With such a background, the products of the programme are better able to speak the different “languages” of specialists in, for example, health, agronomy, and economics, enabling them to better understand the root causes of extreme poverty and to address the challenges of sustainable development.

After an intense competition among more than one hundred institutions spread over the world, about 20 institutions were finally selected worldwide to run the MDP programme, which now belongs to a global network of universities and collaborating organizations. The University of Ibadan, Nigeria and University of Botswana, Botswana were selected for the African sub-region. The Centre for Sustainable Development (CESDEV) houses the program at the University of Ibadan with students’ enrollment cutting across the West Africa sub-region. The MDP is designed for:

- **generalist development practitioners**, to deepen their knowledge in diverse but related disciplines, enabling them to better coordinate and implement the insights of specialists;
- **specialist development practitioners**, to round out their knowledge base, enabling them to contribute more effectively to interdisciplinary policy teams;
- **policy administrators and policy professionals**, to equip them to pursue effective strategies for sustainable development practice;
- **private-sector professionals**, to prepare them for decision-making and problem-solving roles in matters relating to sustainable development practice;
- **educators**, to help them better address in their curricula the wide range of issues in sustainable development practice.

Worthy of note is the concept of Global Classroom in connecting the institutions in the network. Global Classroom was initiated at the Earth Institute, Columbia University, in 2008 by the members of the MacArthur Foundation-supported International Commission on Education for Sustainable Development Practice (Fantom, 2008). The Commission brought together 20 leading experts from around the world to consider new types of interdisciplinary educational programmes to address the practical challenges of sustainable development. All course materials, including the syllabus, readings, and assignment questions, are available on a common course website. Students from around the world are assigned the same readings and then join their classmates for live weekly on-camera sessions with global experts. This is surely a veritable platform for effecting networking in any chosen area among AWAU institutions, assuming the availability of effective information and communication technology (ICT) infrastructure in the various institutions.

Centre for Petroleum Energy Economics and Law (CPEEL), Ibadan, Nigeria  
[www.cpeel.ui.edu.ng](http://www.cpeel.ui.edu.ng)

Several low-income countries, especially in Africa, have embarked on significant economic and energy sector reforms in their quest to break away from the vicious cycle of low energy consumption, unstable economic growth and low economic development. These countries have and are committing enormous financial resources to upgrade and expand existing infrastructure in the energy sector. In most cases, these countries lacked the human capacity to handle the rather complex energy sector in the form of planning, engineering, management, energy law, etc.

Even though the skills gap and shortage of skilled personnel in the energy sector are huge, there is no training and research institution in Africa that focuses specifically on this need. Given that energy studies are multidisciplinary and span the social sciences, law, natural and applied sciences, engineering, and information technology, the need to establish a Centre that will approach energy studies from a holistic point of view is self-evident and long overdue. Indeed, it is this compelling need to meet this challenge in Nigeria and the African region that the Centre for Petroleum, Energy Economics and Law (CPEEL) was established at the University of Ibadan through the support and encouragement of the MacArthur Foundation. CPEEL is designed to provide a multi-disciplinary and innovative platform for the sound training of policy makers and energy professionals, as well as equip existing labour force in the industry with modern tools for managing energy reforms and environmental challenges in the country, the Africa region and beyond.

CPEEL, which has since taken off, has been attracting students from Nigeria and countries in the African sub-region. Some of the resource persons in the programme are drawn from outside Nigeria. Partners and Collaborators for the Centre include:

- Various institutions in the oil and gas, energy, banking, regulatory agencies, etc. in Nigeria
- International organisations - United Nations Agencies, ECOWAS, World Bank, African Development Bank, USAID, UNIDO, DFID, IDRC and GTZ

#### **4.2 Organizational Approach: Organizational Architecture**

Pan-African Competitiveness forum (PACF), Addis, Ababa, Ethiopia

The Pan African Competitiveness Forum (PACF) was established in response to the need for Africa to be relevant in the contemporary globalized economy. It was launched in Addis Ababa, Ethiopia in April 2008 and has the blessing and support of the African Union as well as the Swedish International Development Agency (SIDA) in collaboration with The Competitiveness Institute (TCI). The forum is designed to be an action centre which aims at putting in place the requisite modalities that would create cooperation and partnership among African nations with a view to evolving strategies that would make Africa to be relevant in the global market.

The major strategy adopted by PACF in this regard is to develop the means of infusing innovation and competitiveness in Micro, Small and Medium Enterprises

(MSME) clusters to enhance their capacities for producing competitive products and services. This is expected to be achieved through the triple helix concept approach that aims at linking the *government* (for the provision of enabling environment and policy framework for Research and Development as well as business activities to thrive), the *academia* (for innovative research and development geared towards enhancing industrial competitiveness) and the *private sector* (to drive the business enterprises). The triple helix concept initiative is therefore for the purpose of transforming existing “cluster clumps” into “innovative clusters.” Through this means, it is envisioned that the sustainable development of Africa and achievement of the objectives of the Millennium Development Goals (MDGs) and the New Partnerships for African Development (NEPAD) in the continent would be realized within the shortest possible time.

One of the means by which the PACF is addressing the challenge of evolving innovative clusters is through the institution of the Annual Continental Conference of the PACF. The conference provides a forum for various actors in the triple helix to come together to strategize on the modalities for achieving set objectives in innovative cluster development. Usually, experts in cluster development from around the world are invited as resource persons under the auspices of The Competitiveness Institute (TCI) and the Swedish International Development Agency (SIDA) to present papers as well as participate at the conferences. It also provides a means for exchange of ideas and establishment of collaboration and networking among the participants from Africa and with those from other parts of the world. Four such conferences have since been held – Addis Ababa (2008), Elmina, Ghana (2010), Entebbe, Uganda (2011), and Abuja, Nigeria (2012). The 5<sup>th</sup> Conference is to be held in November 2013 at Maputo, Mozambique under the theme – “*Innovative Clusters and Innovation Systems Contributions to the Generation and Application of the Necessary Know-How for Accelerated Industrial Development in Africa*”.

Regional chapters such as the PACF ECOWAS, PACF East Africa have been formed with active participation of some universities in these regions. Universities are expected to network in knowledge sharing on cluster mapping and development in their different countries. National chapters have also been formed in Nigeria, Ghana, Gambia, Senegal, etc. The PACF Gambia Chapter recently held a 2-day meeting with participants drawn from Ghana, Gambia, Nigeria and Senegal.

#### West African Research and Innovation Management (WARIMA)

The Association of Commonwealth Universities (ACU) has been actively involved with the development of higher education in the commonwealth countries and beyond. The interventions, particularly in Africa, ranged from scholarships and fellowships for staff and students tenable in institutions in the various commonwealth countries to the current involvement with capacity building in research management in the various institutions in the continent. It has encouraged the establishment of the West African Research and Innovation Management Association (WARIMA) as platform for the development of this much-needed capacity in the West African institutions. WARIMA, with headquarters at the University of Ibadan, Nigeria has since been organising regional workshops for capacity building. The main thrust of WARIMA is the encouragement of universities in the region to take research management seriously

through the establishment of Research Management Offices to be managed by professionals with capacity to assist researchers in the writing of grant-winning research proposals and the management of research fund.

### Ministers of Education of the African Union

The Conference of Ministers of Education of the African Union (COMEDAF) is regularly convened once every two years to review and discuss issues of focus for the Plan of Action (POA) for the Second Decade of Education for Africa (2006-2015). The Fourth Ordinary Session of the Conference of Ministers of Education of the African Union (COMEDAF IV) convened in Nairobi, Kenya from 11th to 13th May, 2011. The theme of the conference was: Preparation for launching the Pan African University. It was at the Conference that major decisions leading to the setup of PAU were made. Thus, COMEDAF is a platform for addressing key issues facing education in Africa.

### The African Council for Distance Education (ACDE) [www.acde-africa.org](http://www.acde-africa.org)

The African Union (AU) vision document of “The 2<sup>nd</sup> Decade of Education for Africa: 2006-2015 Plan of Action”, emphasized the expected role of African Universities in human resource development in the continent. However, it was realized that the African vision of expanding access to higher education would not be realized through only the traditional face-to-face mode of delivery. Consequently, the role, importance, challenges and potential contributions of open and distance learning (ODL) to Africa’s sustainable development was recognized and highlighted at first ever All African Ministers of Education Conference on ODL in 2004 and the inaugural ACDE Conference and General Assembly in 2005. The Ministers conference identified the critical importance of access and quality in distance education provision. The adopted strategy was building a common understanding on quality in distance education through broad consultation, collaboration and partnership in developing and introducing quality assurance mechanisms for institutional audits and programme accreditation against sound criteria and internationally accepted best practices.

In response to these challenges, the ACDE, as a continental educational organisation committed to expanding access to quality education through ODL including e-learning, designed two programmes that seek to:

- foster continental collaboration among ODL Institutions for the design, development and delivery of ODL programmes and materials; and
- develop and implement mechanisms for continental ODL quality assurance and accreditation (QAA) through the establishment of a continental QA Agency.

Thus the ACDE in 2009 established the ACDE Quality Assurance and Accreditation Agency (ACDE-QAAA), as presented earlier.

### African Network for Internationalisation of Education (ANIE) [www.anienetwork.org](http://www.anienetwork.org)

The Ford Foundation and Carnegie Corporation of New York sponsored the project - Higher Education in Africa: The International Dimension - that undertook a comparative analysis of the current issues and emerging trends related to internationalization of higher education in Africa. This led to the establishment of the African Network for Internationalization of Education (ANIE) in 2008. ANIE is an independent, non-profit making, non-governmental African network committed to the advancement of high quality research, capacity building and advocacy on internationalization of higher education with prime focus on Africa. ANIE, with the Secretariat at Moi University, Eldoret, Kenya, is a membership based association serving its members, their institutions and organizations, and others engaged in understanding internationalization. The network has been pursuing the following main objectives:

- To contribute to the development and understanding of internationalization of higher education in Africa through high impact research projects and publications.
- To inform policy decisions related to the international dimension of higher education in Africa with high quality research evidence.
- To build/strengthen and sustain Africa's research capacity on internationalization of higher education

ANIE has since been actively involved with advocacy, capacity building, organization of conferences and networking with strong supports through partnerships with various organisations, institutions, foundation from within and outside Africa.

#### The Partnership for Higher Education in Africa (PHEA)

The Partnership for Higher Education in Africa (PHEA) was launched in 2000 under the leadership of four foundation presidents—Susan Berresford (Ford Foundation), Gordon Conway (Rockefeller Foundation), Jonathan Fanton (2008) (John D. and Catherine T. MacArthur Foundation), and Vartan Gregorian (Carnegie Corporation of New York). It grew to encompass three additional foundations: the William and Flora Hewlett Foundation, the Andrew W. Mellon Foundation, and the Kresge Foundation. The Partnership, which closed in 2010, operated in the following focal areas:

- Information and Communications Technologies (ICT) and Higher Education
- Regional Approaches to Postgraduate Training and Research
- Higher Education Research and Analysis
- Developing and Retaining the Next Generation of Academics

Worthy of note was its bandwidth project. PHEA identified the cost of bandwidth as being too high across Africa thereby militating against access to Internet facilities and the information superhighway. To achieve economy of scale, a number of universities/institutions across Africa were brought together with linkage to the Virtual University, Nairobi, Kenya as the provider. Through the project intervention, the average cost of bandwidth to African HEIs at an average of US\$5.46/Kbps, roughly equivalent to fifty times what a typical university in the United States of America would pay for the same quantity of bandwidth, was reduced to US\$2.33/Kbps.

This is a classical example of the advantage derivable from institutions in the region coming together to tackle common problems. A readily identifiable area is the need to gain critical understanding of the problems being faced by our universities in respect of development and retaining of academic staff involving the production and nurturing of the next generation of academics. This will entail serious commitments to the implementation of the diverse capacity building programmes presented earlier. In this, AWAU has an important role to play.

The PHEA approach to addressing the problem of generation of future academics in Africa is highly recommended to AWAU. To address the problem, PHEA organized The University Leaders' Forum on Developing and Retaining the Next Generation of Academics. It was held at Accra, Ghana, November 2008. It attracted Vice-Chancellors from across African universities as well as funding agencies. The issues involved were thoroughly discussed as a precursor to fashioning possible regional projects to address the identified common problems.

### **4.3 The Political Approach: Declarations, Conventions**

Captured below are the declarations of the African Union expressing the commitment of the member nations as well as the mode of operation of the Pan-African University (PAU). The opening statement of the Statute of PAU reads as follows:

We, the Heads of State and Government of the Member States of the African Union,

**CONSIDERING** the provisions of the Constitutive Act of the Pan African University establishing the Pan African University;

**BEING AWARE** of the central role that Higher education and scientific and technological research play as the cornerstone of social integration, economic development and competitiveness;

**ACKNOWLEDGING** that investments in the higher education sector have not been adequate and that out of the 53 member states of the African Union, only two have reached the 1% threshold of GDP allocation to science and technology;

**ACKNOWLEDGING FURTHER** that among the 500 universities ranked globally, only five are in Africa

**NOTING** that Universities and other educational and research institutions do not frequently exchange students or academic staff within the continent and that there are poor linkages between higher education and industry and the private sector;

**INSPIRED** by the framework documents of the African Union particularly the Strategic Plan of the Commission « Horizon 2015 », the Plan of Action for the Second Decade of Education for Africa 2006-2015 and the Consolidated Plan of Action for Science and Technology 2008-2013.....

After the above declarations, the AU went ahead to prescribe fourteen articles of operation of PAU from funding mechanism to the organizational structure of the University.

## **5. CONCLUDING REMARKS**

From the foregoing, it can readily be seen that there exist several networking initiatives in the African higher education system geared towards the development of the region. The suggested starting point for AWAU in the quest to create workable networking of universities in the region is to undertake a critical evaluation of the state of the existing diverse regional initiatives towards strengthening them to achieve their diverse goals. It is clear that the various national and regional development initiatives call for collaborative efforts among the institutions in the region to achieve their defined goals; and surely, AWAU is a veritable platform to effect the necessary networking. It is important to note that such networking in AWAU does not in any way stand in the way of individual institution's international engagement. There is an overriding need to move from the present ad-hoc and half-hearted cooperation to a more purposeful and planned engagement.

As noted by Knight (2011):

“... It is understood that regionalization occurs in concert with internationalization of higher education activities. International cooperation, whether it is intra-regional or inter-regional is not a zero sum situation. The current reality is that regional cooperation and alignment of systems is becoming increasingly important but not to the exclusion of other international relationships. History will likely show that regionalization and internationalization have a symbiotic relationship. They co-exist, can be complementary or competitive, and each will have prominence at different stages of international cooperation.”

## **REFERENCES**

1. Bamiro, O. A. (2000), *Imperatives of Infrastructure for Micro Small and Medium enterprises in a competitive World*, Paper presented at the 3<sup>rd</sup> NASME International Conference and Exhibition on Globalization and the Challenges of SMEs Development in Africa, Abuja, Nigeria 14<sup>th</sup>-16<sup>th</sup>, November, 2000.
2. Bamiro, O. A. (2004) *University-Industry Partnership in the Innovation Process: Cases from Nigeria and Ghana*, Published in the Proceedings of the Regional Conference on Innovation Systems and Innovative Clusters in Africa, Dar-es-Salaam/Bagamoyo, Tanzania, Feb 18-20, 2004 (pages 341-366)

3. Bamiro, O. A. (2011), “*Research Institutions as Agents of Development: The Challenges of Conducting Research in African Universities*”, WARIMA Workshop, held at Obafemi Awolowo University, Ile-Ife, Nigeria, May 25-27, 2011.
4. Bamiro, O.A. (2012), “*The Nigerian University System and the Challenge of Relevance*”, Convocation Lecture, University of Lagos, Lagos, Nigeria, Jan 2012.
5. Geoffery Boulton, *What are universities for*, ([www.newstateman.com](http://www.newstateman.com); [www.universityworldnews.com](http://www.universityworldnews.com))
6. Jonathan F. Fanton (2008), *Foundations and Civil Society*, Volumes One and Two, The John D. and Catherine MacArthur Foundation, Chicago, USA.
7. Jane Knight (2011), Excerpts sent to the author by Jane Knight from her paper on “Understanding Regionalization of Higher Education in Asia” presented at East west Centre Senior Seminar, Hong Kong, May 4-6, 2011.
8. Korten David C. (1996), *The truth about global competition: The Economic Myths behind Globalisation*, Development and Cooperation, No. 3, May-June 1996.
9. Ntim B. A. (1991), *UNESCO’s Role in Promoting Interaction between Engineering Schools and Industry’ in Engineering Education and Industry Interaction*, A report of the Inter-Regional Seminar held at University of science and Technology, Kumasi, Ghana, 29<sup>th</sup> -31<sup>st</sup> July, 1991.
10. Machando, A (2000), “*Developing Technological capabilities for MSMEs for Global Competitiveness: Some Perspectives*”. Paper presented as the UNIDO Representative at the 3<sup>rd</sup> NASME International Conference and Exhibition on Globalization and the Challenges of SMEs Development in Africa, Abuja, Nigeria 14<sup>th</sup>-16<sup>th</sup>, November, 2000.
11. Zarki, A. H. (2006), “*Research Universities in the 21<sup>st</sup> Century: Global Challenges and local implications*”, Global Keynote Scenario at the UNESCO Forum on Higher Education, Research and Knowledge: Colloquium on Research and Higher Education Policy, November 29 – December 1, 2006, Paris.