

# Concept Note



## First Africa Forum on Science, Technology and Innovation (STI) for Youth Employment, Human Capital Development and Inclusive Growth<sup>1</sup>

**Nairobi, Kenya, April 1-3, 2012**

(Experts Meeting, April 1-2<sup>nd</sup> & Ministerial Conference April 3<sup>rd</sup>)

*Hosted by the Government of Kenya and organized by the African Development Bank (AfDB), the African Union Commission (AUC), the United Nations Economic Commission for Africa (UNECA) and the United Nations Educational, Scientific and Cultural Organization (UNESCO), in collaboration with the Association for the Development of Education in Africa (ADEA)*

<sup>1</sup> In this context Inclusive Growth refers to sustainable growth and development processes which meet the socio-economic needs of society particularly, those persons that are usually excluded.



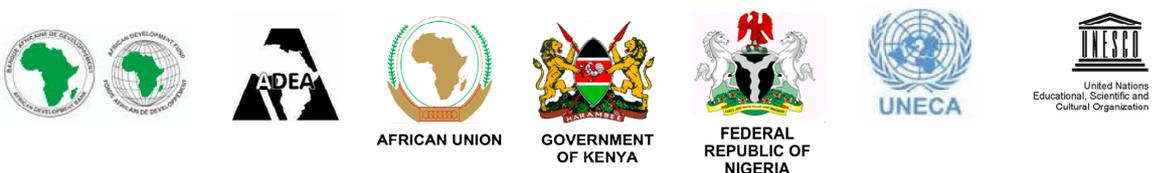
## INTRODUCTION and BACKGROUND

The capacity of countries to compete in the global market depends more and more on their ability to innovate and apply the relevant technology to industries and productive sectors. A country's ability to innovate is often based on the adoption of new technologies from abroad, or the results of local research and development; both scenarios require investments in Science Technology and Innovation (STI). Countries wishing to propel and sustain their development and growth efforts must seriously invest in the generation of knowledge that meets the demands of society (improving access to clean water and safe food, protection from pandemics such as malaria and HIV, and satisfying basic energy needs), fosters stability and sustains growth and development in line with internationally agreed development goals such as the Millennium Development Goals (MDG) and the future commitments of the Rio+ 20 Summit.

A large percentage of the population of a number of African countries survives on informal labour and for some people, particularly the untrained youth; it is difficult to find stable formal employment. The prevalence of the informal sector creates great risk, which can result in economic and political instability. Recent events in some Northern Africa and Arab States have shown some of the implications of failing to address the concerns of the youth, particularly those calling for change. STI policies that are strategically linked to education, economic and industrial policies can be used as a driver to improve the employability of the youth. It can also facilitate and improve access to knowledge-based innovation increasing productivity. The development of STI policy requires a continuous dialogue between scientists, policy and decision-makers and private sector. This dialogue will facilitate the transformation of society through advances of science and sustainable use of natural resources and encourage researchers to contribute actively to the national, regional and global knowledge pool for policy-making processes. This interaction may be accomplished by facilitating a greater interface between science and decision-making processes at the institutional and individual level. This will ensure that STI serves societies and is utilized to attain development and inclusive growth.

A country's education and training system influences its capacity to find innovative solutions to societal problems and needs. It should respond to these needs by fostering the development of adequate technical and cognitive skills that promote new ways of thinking, a productive workforce and inspire entrepreneurship. It should cultivate a sense of social responsibility, social inclusiveness, and enable citizens to make informed decisions. STI thrives on the expansion of higher education systems and its benefits to society in this regard are two fold; it facilitates the production and efficient use of scientific research which can be reinvested for structural improvements in education systems in areas such as Technical and Vocational Education and Training (TVET), and can also be invested in societies as means of building human capital.

Decision-makers face the challenge of mainstreaming the aforementioned processes in national and regional development agendas and the quality of their decision-making is largely contingent on the work done by experts. It is therefore important to create a platform that brings together decision-makers and experts, which allows on the one hand for the presentation of profound, validated analysis, and on the other, an examination of this analysis with a view of exploring its compatibility with decision-making processes. To address this need, the African Development Bank (AfDB), the African Union Commission (AUC), the United Nations Economic Commission for Africa (UNECA) and the United



Nations Educational, Scientific and Cultural Organization (UNESCO), in collaboration with the Association for the Development of Education in Africa (ADEA), are organizing a Forum on STI in Africa. The forum is entitled 'African Forum on Science, Technology and Innovation for Youth Employment, Human Capital Development and Inclusive Growth' and will be hosted by the Kenyan Government in Nairobi, Kenya. It will highlight the role and importance of STI strategies in facilitating and propelling sustainable and inclusive growth and development in Africa. The forum consists of a two day experts meeting which will be held on the 1<sup>st</sup> and 2<sup>nd</sup> of April and a high-level one day Ministerial Conference which will take place on April 3<sup>rd</sup> 2012.

The mission of the forum is to facilitate the sharing of experiences and analysis of best practices in strengthening STI mechanisms, designing policy measures for the promotion of innovation, entrepreneurship, youth employment, harnessing the role of innovation in the informal sector, and increasing the participation of women and youth in STI. The main objectives of the forum are two fold; at the experts level it is hoped that the forum will encourage experts to identify concrete areas for joint programming and/or transfer of knowledge and exchange of experiences, while at the ministerial level, the aim is to engage in a dialogue with experts on the use of and investment in STI for development. It will also encourage ministers to make a political commitment for the integration of STI in National and Regional Development Agendas.

The forum aims to build on the outcomes and experiences gained from previous relevant local and internationally agreed goals and commitments to ensure that decision have sound basis and avoid duplication of efforts. To date, there are at least three important strategic documents with regard to STI in Africa: The African Union's Consolidated Plan of Action (2005), the African Union's Declaration on Science, Technology and Scientific Research for Development (2007) and the Global Forum Action Plan (2009) that identify the importance of innovation and outline important principles for achieving this in Africa. The work of the African Ministerial Council on Science and Technology (AMCOST) will also inform the proceedings of the forum as it is believed that their actions formed the political basis for STI in Africa. In 2010, AMCOST IV issued a powerful statement urging member states to share experiences and best practices, strengthen STI infrastructures, respond to the brain drain, promote informal science education, and to increase the participation of women and youth in science and technology. Some international agreements such as the UNESCO Strategy on African Youth 2009-2013 which stresses the importance of engaging youth in responses to development challenges in Africa as well as the need to strengthen the capacities of, and opportunities for, youth to access the world of work and contribute to social transformation will also be taken into consideration.



## OBJECTIVES OF THE FORUM

The Forum is based on two fundamental premises. The first is that STI are not a luxury reserved for rich countries or aspiring middle-income countries. Rather, it is a necessity for lower income countries that want to develop and implement sustainable solutions to such pressing development challenges as food security, clean energy, clean water, and health care. The second is that even the best designed STI programs will not generate the expected development outcomes unless scientific inventions and discoveries can move swiftly and efficiently from the lab to the intended recipients. This means that a comprehensive STI development strategy must incorporate such seemingly disparate themes as SME development, entrepreneurship and innovation and, if implemented appropriately, could hold the key to generating employment opportunities for the legions of young workers that will be entering the African labour force in the next 10 years.

STI capacity building, food security, clean energy, clean water, effective, efficient health care delivery, innovation, entrepreneurship, youth employment, and human capital development are all inter-linked facets of the same diamond. The challenge is to craft each of these facets into a coherent continental, regional, and national science, technology and innovation system. All too often, however, each of these facets is developed in isolation. This silo approach fails to exploit the inherent synergy.

The African STI Forum will showcase the best proven practical solutions from Africa and around the world for addressing these issues and it will explore how similar programs can be designed, developed and implemented in Africa by African public, private, NGO, science and university officials. The objective is to find practical solutions to practical problems that can be financed by Development Banks and Agencies.

Specific objectives of the Forum include:

- Taking stock of the implementation of the Consolidated Plan of Action (CPA) (taking into account emerging areas and contributions of STI to the achievement of the Millennium Development Goals (MDG))
- Building on the experiences and lessons learned with regard to training and education for innovation for inclusive development;
- Promoting the role of policy measures including financing in promoting innovation and innovation related research;
- Encouraging the role of research and development in public and private entities in promoting technical innovation;
- Exploring the role of innovation in the informal sector (including local knowledge) and the possibilities of harnessing its role for the promotion of economic growth;
- Examining the international migration of science and scientists, and technologies and technicians
- Designing possible response to the needs in Africa regarding biodiversity, water, energy



### **Seminal background documents for the Africa STI Forum include:**

- The UNESCO Strategy on African Youth (2009-2013)
- AfDB/AUC/UNECA/ILO Youth employment initiative (2011)
- The recommendations of the 7<sup>th</sup> UNESCO Youth Forum (October 2011)
- Synthesis Report of the ADEA 2012 Triennale (sub-theme 3)
- The African Ministerial Council on Science and Technology (AMCOST), AMCOST IV 2010 statement
- UNESCO's Science Report (2010)
- The September 2009 Global Forum Action Plan
- The African Development Bank's Higher Education, Science and Technology strategy (2008)
- The African Union's Declaration on Science, Technology and Scientific Research for Development (2007)
- Africa's Science and Technology Consolidated Plan of Action (2005)
- The Global Innovation Summit Background Document and Frequently Asked Questions (FAQ)
- World Youth Report (2011), the UN Department of Economic and Social Affairs (DESA)
- Proceedings of "Science with Africa" Conference, UNECA (2010)
- Concept Note on Innovative Mechanisms for a Comprehensive Enhancement of Higher Education and Research in Africa (2012)
- Final Communiqué of the World Conference on Higher Education (2009)

### **There will be two keynote presentations and a background paper prepared for the Ministerial Conference:**

- Keynote presentation on the Integration of STI policies into development agendas
- Keynote presentation on financing mechanisms and investments for the development of Africa; opportunities, mechanisms and policy instruments for STI related investments.
- Background paper for the conference on the importance of STI for socio-economic development and social transformation

### **FORMAT OF THE FORUM**

The Experts forum will include plenary discussions on four main themes: Science, Technology, Engineering and Maths (STEM) Education and Labor Markets in Africa; Strengthening Scientific Research: A New Deal for African Science; STI in Action and From Science and Technology (S&T) to Innovation and Entrepreneurship: Promoting innovation and entrepreneurship to move ideas from the lab to the market. A number of parallel sessions will also be organized to allow for more in depth discussions in smaller groups on the role of STI in various areas such as; *Water and Sanitation; ICT; Health; Agriculture and Food Security; Renewable Energy and Climate Change and Youth Employment*. Considerations relating to the transition of young women and men to the world of work and the impact of STI policies on them should be mainstreamed within each thematic area discussed at the different panels and sessions of the meeting.



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The Ministerial Conference will address two roundtable discussions for ministers: one on **the Challenges and Opportunities for STI in Africa and The integration of STI policies in national/ (sub) regional development and the other on financing mechanisms and investments for the development of Africa; opportunities, mechanisms and policy instruments for STI.**

“Africa on the Move” – an innovation **exhibition** will also be organized to provide members of the private sector with the opportunity to display innovations made in Africa which have been replicated worldwide and to provide a platform for sharing information with the stakeholders especially the youth and the media.

### Themes of the Experts meeting

#### **Science, Technology, Engineering and Maths (STEM) Education and Labour Markets in Africa**

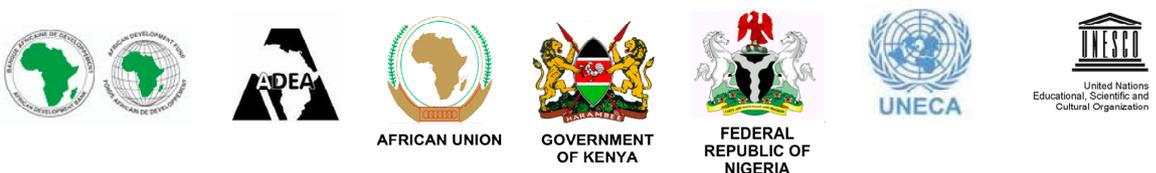
This session will address two distinct, but related problems: (i) Demand for STEM education is growing exponentially, but faculty rosters are often not keeping pace and, in many cases, are actually declining. What can Africa do to meet the demand for quality STEM education in Higher Education Institutions? What promising models can be supported? (ii) How can we ensure that STEM graduates have the skills required by prospective private (and public) sector employees? How have Asia and Latin American countries tackled these issues and what can Africa learn from the successes and failures of these models?

#### **Strengthening Scientific Research: A New Deal for African Science**

Many African research centres are trapped in a vicious circle in which low funding levels lead to low quality research with low social and economic relevance. How a new deal can for African R&D, supported and financed by banks and development agencies, provide increase in funding for African science in exchange for enhanced quality and relevance? How can inter-disciplinary Pan-African and international partnerships support this process without diluting the focus on Africa’s problems as defined by Africans?

#### **STI in Action**

How can a strengthened STI system promote clean drinking water, renewable energy, effective health care, jobs, and economic development? STI systems facilitate interconnections between knowledge, values, socio-economic environments, society and institutions. Science policy harnesses the full potential of STI, along with human and institutional capacities, including universities and research centres, while emphasizing interdisciplinary linkages between the natural, social and human sciences to achieve sustainable development. Through this process society benefits from the knowledge and advances of STI as a whole and the value added of using it to efficiently address societal problems and needs. This utility, positions STI at the core of efforts to eradicate poverty, foster social inclusion and sustainable development. Consequently, fostering STI policies is a necessary condition for sustaining the development and growth of Africa. STI, through science education and the use of new engineering applications provide practical examples of how capacity can be built to address concerns in water management, renewable energy and healthcare. UNESCO’s actions and competencies in the field of water management, renewable energy; ecological sciences and biodiversity may provide some insight in practically addressing these issues.



## **From Science and Technology (S&T) to Innovation and Entrepreneurship: Promoting innovation and entrepreneurship to move ideas from the lab to the market.**

This session will also focus on two distinct but related problems: (i) S&T does not generate economic or social benefits unless the results of that Research and Development (R&D) are converted into new goods and services. This entails moving from R&D and S&T to innovation and entrepreneurship. How can Africa cultivate a dynamic national, regional, and continental innovation eco-system? What lessons can be learned from Silicon Valley and other innovation hot spots and how can they be applied to support and finance fledgling entrepreneurs? (ii) Innovation and entrepreneurship do not have to be limited to the R&D outputs of African scientists. A vast stockpile of existing inventions and innovations generated outside Africa can be applied to solving Africa's problems. A critical challenge, however, is developing the skills and know-how in Africa to find, adapt, and adopt this existing knowledge. How can this be done? What models exist in Asia and Latin America?

### **The Ministerial Conference**

#### **The integration of STI policies in national/ (sub) regional development**

During this panel session, participants will explore the costs and benefits of integrating STI policies into national and regional developmental policies. Ministers will be encouraged to explore and share their experiences and best practices with the view of building a compilation of policy tools and practices that can be shared and used regionally. The discussion will focus on the use of STI as a tool for driving sustainable development. This will provide ministers with the opportunity to share ways in which they have been able to mobilize and efficiently invest in STI in their countries.

#### **Financing mechanisms and investments for the development of Africa; opportunities, mechanisms and policy instruments for STI**

This panel will explore innovative and unconventional means of mobilizing and sustaining investment for STI that are locally applicable. It will also look at how to provide opportunities to attract new and emerging investors and explore innovative ways of encouraging the private sector to invest in STI not only for profit making but also for the benefit of the society. This provides ministers with the opportunity to share ways in which they have been able to mobilize and efficiently invest STI in their countries.

### **The Exhibition**

#### **'Africa on the move- Showcasing Africa's innovations' Exhibition**

Africa's economic transformation and sustainable development can be accelerated through harnessing its latent youth potential in science technology and innovation and creating opportunities for budding private sector/enterprises to venture into the global competitive markets. The combination of such dynamism and good strategic policies has led to the emergence of some of Africa's world class innovations like mobile banking (M-pesa). Innovation, such as this, which is a great success, is being replicated worldwide and serves as Africa's contribution to knowledge exchange. 'Africa on the move exhibition' will showcase some of these innovations which can be replicated continent-wide and it will provide a platform for sharing knowledge with stakeholders especially the youth and the media who will communicate this to the public.



## PARTNERS of the FORUM

- Academy of Sciences for the Developing World (TWAS)
- KEPSA/LIWA – Kenya Private Sector Alliance
- Government of Kenya
- Global Innovation Summit
- Global Knowledge Initiative
- T2 Venture Capital
- World Association of Young Scientists (WAYS)
- World Intellectual Property Organisation (WIPO)

## PARTICIPANTS

The Forum is expected to gather approximately 200 participants comprising of:

- Ministers of Science, Technology and Innovation, Education and Finance and Planning in Africa
- Senior officials from Regional Economic Communities (RECs)
- Policymakers and senior technical staff from Ministries of education, science and technology, and labour Representatives from Centers of Excellence
- Students and Youth (Civil Society Organizations, youth organizations)
- Practitioners from the Higher Education, Science, Technology and Innovation and skills development fields (technical institutes, universities, research institutes)
- Participants from both the public and private sectors in areas that include ICT, telecom, health, climate change, environment, agriculture, industry, and finance as well as entrepreneurship support organizations, and venture capitalists
- Regional and international experts involved in the establishment and implementation of STI policies (development agencies, Regional Economic Communities (RECs))
- Members of the African diaspora who have distinguished themselves in the field of STI
- African Science Laureates

## OUTCOMES

The outcomes and recommendations of the Forum are expected to fit into the forthcoming STI initiatives, including the AMCOST Conference in May 2012, the “Science with Africa” in June 2012, the AfDB Annual Meeting in May 2012 and inform UNESCO’s preparations for the Rio+20 summit.

- Assist African countries with putting their STI policies in action and encourage those who do not yet have an STI policy to develop one;
- Propose policies and programs to implement the AUC, ECA, ADEA, AfDB’s and UNESCO’s strategies to support inclusive growth, employment opportunities, and sustainable development in Africa;
- Create Global networks of Development Innovators and Problem Solvers
- Reinforce North-South and South-South collaborations in STI;
- Strengthen public-private partnerships between governments, industry and technology companies;



- Establish a knowledge-sharing platform to assist entrepreneurs and innovators with networking in the areas of STI and finding the information they need to develop and implement their ideas
- Showcase African innovations through exhibits “Africa on the move”

## RESULTS

- Operationalization of the AfDB/AUC/UNECA/ILO Youth Employment Initiative
- Contribute to the implementation of the UNESCO Strategy on African Youth (2009-2013);
- Forum publication including a compilation of speeches /presentations delivered at the forum and innovation expo presentations;
- Synthesis of best practices in STI across sectors in Africa;
- STI benchmarking tool for Africa;
- Guidelines for mainstreaming STI into national development strategies;
- Practical proposals to promote public-private partnerships and
- Declaration of the Ministerial Conference

## LANGUAGES

The Forum will be conducted in English and French with simultaneous interpretation provided.

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