DRAFT No. 7
18 June 2014

CONCEPT NOTE

For the

SENIOR EXPERTS DIALOGUE

ON

"Science, Technology, and Innovation and the African Transformation Agenda: Making New Technologies work for Africa's Transformation"

21-22 July 2014

Jointly organized by the United Nations Economic Commission for Africa (ECA), Addis Ababa, Ethiopia, the Government of Federal Republic of Nigeria Ministry of Communications Technology (FMCT), and Ministry of Science and Technology (FMST). ECA acknowledges the kind support of the Governments of Norway and Finland

I. Context

African countries have been growing at very impressive rates in the past two decades or more. This sustained growth has resulted in a small but rising share of the continent's contribution to global GDP which in 2012 stood at 3.3%[1]. Some analysts have described this rapid expansion of African economies as "Lions on the move[2]" or "The African Moment[3]." The economic externalities of a growing Africa – a less poor Africa – with millions of new consumers are beginning to be felt and can be seen in the increased interest by multinational corporations in African economies[4]. The continent is less poor than it was about 15 years ago. Economic growth, as indicated earlier, is on a fast clip; driven by commodities and in some countries by increasing diversification[5].

The policy imperative is to deepen and consolidate Africa's recent growth with the careful deployment of science, technology and innovation. Today, both developed and developing economies are focused on innovation because all understand the transformative role of new technologies and innovation and the first-mover competitive advantages that they can confer on successful firms and countries. There is, as a consequence, a raging international competition for talent, resources and market shares (both by firms and nations).

Social and economic transactions are becoming shaped and driven by mobile telephony and the internet. Red biotechnologies have enabled the world to provide new treatment for HIV/AIDS and other diseases[6] and new (green) biotechnologies present hope that the world will soon overcome the scourge of hunger and food security. Technologies and innovation present vast possibilities for enhancing the value of Africa's mineral resources and for taming the adverse consequences of climate change while harnessing its opportunities. Information flows and new technologies, including social media and networks are increasingly rendering national boundaries and identities meaningless in a way that could not have been envisaged a decade ago. And more importantly, new technologies are creating new possibilities for promoting research collaboration, creating new knowledge and for advancing the technology and innovation frontiers.

Africa's leaders have long sought ways to close their technology and innovation deficits. In the 1979 Monrovia Declaration of the former Organization for African Unity (OAU), Africa's leaders committed themselves, individually and collectively "on behalf of (our) government and peoples, to … put science and technology in the service of development by reinforcing autonomous capacity in this field… and… the development of indigenous entrepreneurial technical manpower and

[1] The Conference Board www.conference-board.org/data/globaloutlook.cfm accessed 19 May 2013
[2] McKinsey Report "Lions on the Move: The progress and potential of African economies."
[3] African Monitor, Cape Town, South Africa "Unlocking the African Moment"
[4] Less than a decade ago, neither the BBC nor CNN could have thought of having special programmes focused on African business.
[5] African economies have become more diversified. Services – retail and wholesale trade; telecommunications; real estate, and banking. In Nigeria, for example the contribution of oil to real GDP has fallen from 32% in 2000 to just under 15% in 2011.
[6] See ECA (2002) "Harnessing Technologies for sustainable development in Africa", policy Research Brief

technological capabilities to enable our peoples to assume greater responsibility for the achievement of our individual and collective development goals." More than a third (in terms of the number of pages) of the Lagos Plan of Action was devoted to science and technology and its compelling necessity for Africa's development.

Further, Article 3 of the Constitutive Act of the African Union (AU) underscores the imperative of promoting "research in all fields, particularly science and technology to advance the development of the continent". The NEPAD Coordinating Agency of the AU has developed the Africa Science and Technology Consolidated Plan of Action adopted by the African Union Assembly of Heads of State and Government in 2005[7]. In particular, paragraph 6 of the NEPAD declares that "the resources, including the capital, technology and human skills that are required to launch a global war on poverty and underdevelopment exist in abundance and are within reach.

At the national level, countries such as Nigeria, South Africa, Cape Verde, and Ethiopia for example, are developing their own national science, technology, and innovation policies. International organizations such as ECA and UNESCO are helping countries to develop new frameworks (or modify existing frameworks to meet national needs) for measuring science, technology and innovation as well as developing indicators for preparing national science, technology and innovation profiles and readiness reports. The private sector in Africa, including subsidiaries of transnational corporations is increasingly beginning to invest in technology and innovation in Africa. The time appears auspicious for deliberate policies to deploy technology to accelerate the African transformation agenda.

II. The Role of Science, Technology and Innovation

New technologies such as mobile telephony, social media, and the internet are changing the ways governments and societies organize themselves. These new technologies and innovations also present new possibilities for addressing and overcoming the enormous development challenges – weak manufacturing sector, lack of industrial competitiveness, youth unemployment, climate change, poverty, etc - that African countries face, enabling them to leapfrog some stages of development.

This belief in the fundamental role of science and technology in achieving development goals is not new. The seminal works of Robert Solow and Edward Dennison on economic growth provided evidence on which policy could be based. But new technologies can be very disruptive. As well, seldom studied in economics though are the possible negative consequences for growth and development of new technologies and innovation. Along with opportunities and new possibilities, new technologies and innovations also present risks which must be managed out. There is tension

[7] AU Summit on Science, Technology and Innovation, 2005. The AU is now developing a Science, Technology and Innovation Strategy for Africa (STISA) to 2024

between using new, productivity enhancing technologies and job creation in a situation of mass youth unemployment. The advent of the internet has resulted in a new type of crime – cyber fraud/cyber-crime which if left unchecked could limit the positive growth effects of reductions in transaction cost arising from e-commerce. While genetically modified organisms and food present hope that food insecurity could be overcome, the long-term health consequences remain unknown. New technologies have also resulted in significant reductions in the cost of committing certain crimes such as terrorism. As well, the long-term social consequences, including on family cohesion and identity formation are still unclear.

In any case, there was optimism in many African countries in the immediate post-independence years of the transformative role that science, technology and innovation could play in their quest for development. This optimism - or faith - was expressed in their national development plans, in the expansion of networks of higher education institutions and specialized agencies, in local content laws and in continental consensus documents such as the Organization for African Unity's (OAU) 1979 Monrovia Declaration and the 1980 Lagos Plan of Action and the Final Act of Lagos.

Unfortunately, the lofty ambitions in regard to science and technology in the Lagos Plan of Action were not realized. Beginning in the early 1980s African governments became seized with the structural adjustment programme, a set of policies pushed by the Bretton Woods institutions designed to address structural imbalances in their economies. Subsequent actions by African governments and their partners in the international community, determined to attenuate the adverse social impact of the retreat of the state (amplified by natural disasters and violent conflicts raging across the continent), ignored and in some cases treated science, technology and innovation as a luxury that could be postponed.

But the world has changed dramatically since the 1980s. Instigated in part by fast paced advances in computers and information and communication technology (ICTs), the view of technology and innovation as a luxury that African countries could postpone began to change in the late 1990s. With the adoption by African leaders of the New Partnership for Africa's Development (NEPAD), science, technology and innovation have fully re-entered the mainstream of African development discourse.

III. The Senior Experts Dialogue

However, it is generally agreed that Africa's growth has been largely commodity driven and that total factor productivity growth (TFPG) remains low or an insignificant contributor. Securing the growth momentum and translating growth into transformation thus require enhancing productivity growth in all sectors of the economy of African countries - from agricultural to manufacturing to services. This requires that science, technology and innovation be deliberately and carefully applied. While many countries and policy makers recognize this imperative, very little has been done or

whatever has been done has been done in a very uncoordinated, haphazard, and ad-hoc manner. Yet the potential return on investment in science, technology and innovations in regard to poverty reduction and wealth creation, industrialization, improvements in health outcomes etc. in Africa is high.

These and other issues discussed elsewhere in this explain the decision by ECA to inaugurate a Senior Experts Dialogue (SED) on "Science, technology and innovation and the African Transformation Agenda". The SED will be a platform that will bring together senior policy makers and experts from across the continent in the areas of science, technology and innovation to discuss and deepen understanding on how technology and innovations can be deliberately and purposefully applied to accelerate the African transformation agenda, improve the life chances of Africans and enhance the competitiveness of Africa's economies.

IV. Objectives and expected outcomes of the Senior Experts Dialogue

Our objective in organizing this SED is to bring together senior policy makers, technology and innovation leaders from academia, the private and public sectors, the international development community and other opinion makers and leaders (from within and outside Africa) to examine collectively the directions in which science, technology and innovation can be carefully and deliberately deployed to support and accelerate the African transformation agenda and contribute to agreed societal priorities.

More precisely, the SED will:

a. Surface the leading issues hindering the development, transfer and diffusion of technologies in Africa to identify short term, medium term and long-term actions to address them;
b. Contribute to a deeper understanding of how new technologies and innovation can contribute much more effectively to the transformation of Africa's economies and the impediments to harnessing technologies and innovation for Africa's development;
c. Facilitate dialogue between African policy makers, researchers and leading academics, the private sector and stakeholders working on STI on the pathways and modalities to accelerate the transfer to, and development and diffusion of technologies in Africa;
d. to build sustainable partnerships among participants to advance STI policy making in Africa in general and the promotion of the application of technology to deal with Africa's multifarious challenges;
e. Propose a set of ideas and issues that will guide and inform ECA's future programme of work; and
f. Result in a set of recommendations for consideration and adoption by African countries, their regional organizations and institutions, development partners and the international community.

V. Structure and organization of the SED

There will be eight sessions over the two days. The SED will be declared opened by a senior official of the host government with the Deputy Executive Secretary of ECA and representatives from the AUC making welcoming remarks). There will be 8 panels/sessions. Each panel will consist of 5 panelists and be a moderated dialogue among the panelists and a moderated dialogue between the panelists and the audience. At the end of the Dialogue, the major policy implications will be distilled into a report and subsequently submitted to ECA oversight bodies, African governments, the AUC and RECs and disseminated to policy makers and other stake-holders in African development.

The following sessions and panelists are proposed:

Opening Session:

- Address by ECA DES
- Welcome Address by Nigeria Government Representative
- Remarks AUC
- Opening/keynote – TBD

Session 1: Technology and Innovation in the African Union's Agenda 2063

African leaders have in various fora and through several actions committed themselves to effect the long-term development and technological transformation of their economies and of the continent. An on-going effort to realize these commitments is The African Union's Agenda 2063; a long-term perspective plan or "global vision to optimize use of Africa's resources for the benefit of all Africans"[8]. Technological transformation is the elemental undergird of this Agenda. This session will broadly discuss Agenda 2063 and the ST&I requirements for achieving it in the context of sustainable development.

Proposed panelists*:*

- AUC
- ECA
- AfDB
- ECOWAS
- COMESA
- SADC

[8] http://agenda2063.au.int/en/about

Session 2: Africa, the UN post-2015 development agenda and the role of science, technology and innovation

The international community, through the United Nations, is seized with discussion/debate on the framework of an international development agenda that will succeed the Millennium Development Goals (MDG), post its end date of 2015. This debate is framed by the outcomes of the 2012 UN Summit on Sustainable Development (Rio+20) against a backdrop of a deeper understanding of the drivers of climate change and of the tension between policies to attenuate, adapt to and mitigate climate change impacts and economic growth. It is also informed by the realization that the failure to explicitly take account of science, technology, and innovations in the MDGs was a major shortcoming. This session will explore the technology/innovation readiness of African countries to implement a UN post-2015 development agenda that will rely enormously on the deliberate application of science, technology and innovation to meet its objectives/goals.

Proposed panelists:

- UNDP
- AUC Department for Rural Economy and Agriculture
- AUC Department of Economic Affairs
- UNIDO / UN-Energy
- TBD

Session 3: ICT and Sustainable Development

Space is a barrier to economic and social transactions and market failures arising from it abound in Africa. It is argued that in many African countries, new ICT technologies are enabling consumers to circumvent the growth-limiting effects of space and rampant market failures. It is asserted that the rapid penetration of ICTs in African economies is a factor explaining Africa's recent positive growth performance insofar as it has helped to attenuate the constraints of space. References are often made to ICT-based/derived innovations in Africa such as Kenya's M-PESA and Nigeria's adoption of a "cashless economy" policy for example. This Session will, against the backdrop of an assessment of ICTs contribution to Africa's recent growth performance, discuss ICT and innovation in ICT in Africa.

Proposed panelists:

- Ministry of Communication Technology, Federal Republic of Nigeria
- Ministry of National Planning, Federal Republic of Nigeria
- Google
- MTN
- Private sector, TBD

Session 4: Enabling national environment for science, technology, and innovation policies – (discussion of country experiences)

Many countries of the continent are developing, updating or revising their national science, technology and innovation policies. Some have undertaken a complete mapping of their national system of innovation. Among these countries are South Africa, Nigeria, Cape Verde and Ethiopia. It is unclear whether these new policies are fit-for-purpose. Panelist is this session will discuss the national STI policies of selected countries and lessons that can be learned from them.

Proposed panelists:

- Ministry of Science and Technology – Federal Republic of Nigeria
- Ministry of Higher Education, Science and Innovation, Republic of Cape Verde
- Ministry of Science and Technology , Republic of South Africa
- Ministry of Science, Technology and Innovation Republic of Brazil
- Ministry of Scientific Research, Arab Republic of Egypt
- Ministry of Science and Technology, People's Republic of China
- Ministry of Higher Education, Scientific Research and Communication Technologies, Republic of Tunisia

Session 5: Technology, innovations and governance: Open government, open government data, and open data

Social innovations and innovations in how governments conduct the business of the electorate matter for economic and social transformation. One such innovation is open government - the proposition that effective public oversight of governments depends not only on elections but also on the citizens' access to government documents and proceedings. A corollary of this is open government data (data produced or commissioned by government) and the much broader open data. These are innovations that are still poorly understood in Africa. Panelist in this session will explore the scope, possibilities, opportunities, risks of open government, open government data and open data in for promoting technological development and innovation.

Proposed panelists:

- McKinsey and Associates
- DFID/World Bank
- Department of Public Service Administration, Republic of South Africa
- Department of Information Communications and Technology, Republic of Seychelles
- TBD

Session 6: Better measurement: R&D Data for decision making

To effectively develop, science technology and innovation policies, African countries need data. There are international efforts to generate STI data. These include NEPAD/AOSTI annual African

Science Technology and Innovation (ASTI) surveys, UNESCO Institutes of Statistics surveys. However, in many African countries STI-specific data do not exist and/or are not collected on a systematic basis. The Panel will discuss Africa's STI data needs and recommend policies for developing STI data collection on the continent.

Proposed panelists:

- ECA DES
- NEPAD Agency Head
- OECD
- World Economic Forum
- World Bank
- UNESCO Stats
- UN-DESA / UNSD
- AUC Department for Human Resources, Science and Technology

Session 7: Urbanization - Enhancing the efficiency of African Cities as centres of innovation

A major social development process changing the face of Africa is urbanization (whether rapid or slow). In a way, urbanization can be a synonym for economic development. The economic (and social) effects of agglomeration and external scale economies are now well understood. Urban centres (clustering of firms) result in increased not only increased output and productivity but also in efficiencies in scientific research, technological development and innovation. Panelists in this session will explore how suited Africa cities are as centres of innovation and technology development and what can be done to improve their efficiency in this regard.

Proposed panelists:

- UN-Habitat
- Ministry of Land, Housing and Urban Development, Republic of Kenya
- Ministry of Infrastructure, Science and Technology, Republic of Botswana
- Ministry of Federal Capital Territory, Abuja, Nigeria
- Ministry of Housing, Utilities and Urban Development, Arab Republic of Egypt
- Prof. Olufemi Bamiro

Session 8: Youth and Innovation - Realizing the African transformation agenda

In addition to the rapid rate of urbanization, another social development process changing the face of Africa is the large population of young people (the youth bulge), many of who are unemployed. Young people represent an untapped or under-utilized resource. Africa must leverage to the fullest this resource if the goal of economic and social transformation is to be achieved. Technologies can help. Youth can drive innovation. Panelists will explore the "youth problem", technologies available

and the possibilities for promoting innovation among African youth as a means to address the problem of youth income poverty as well as promote economic growth.

Proposed panelists:

- Olusegun Obasanjo Foundation
- UNESCO
- ECA
- World Intellectual Property Organization
- Ministry of Youth Development, Federal Republic of Nigeria
- Ministry of Women, Youth and Children's Affairs, Federal Democratic Republic of Ethiopia
- Ministry of Sport, Youth and Child Development, Republic of Zambia
- Microsoft 4Africa
- Juliana Rotich, Ushahidi
- Simdul Shagaya, Konga Online

Closing Session

- AUC
- Nigeria Government Representative
- ECA DES

VIII Contacts

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