المملكة المغربية

MINISTRY FOR FOREIGN AFFAIRS OF FINLAND

Second Ministerial Forum

on Science, Technology, and Innovation in Africa

October 14-17, 2014

Academy of the Kingdom of Morocco | Rabat, Morocco

Concept Note

UNECA

WORLD BANK

I. Context

Hosted by the Government of the Kingdom of Morocco, the African Development Bank (AfDB) and the Government of Finland will organize the Second Ministerial Forum on Science, Technology and Innovation in Africa. The Forum's key partners include the Association for the Development of Education in Africa (ADEA), African Union Commission (AUC), the United Nations Economic Commission for Africa (UNECA) and the United Nations Educational, Scientific and Cultural Organization (UNESCO). It will convene at the Academy of the Kingdom of Morocco in Rabat, Morocco from October 14-17, 2014.

Developing Science, Technology and Innovation (STI) is high on the agenda of the African Development Bank, African Union (AU) and its New Partnership for Africa's Development (NEPAD) initiative and of UNESCO who has recently launched a Global Initiative for STI in Africa.

Africa's political leadership, through their Agenda 2063, all converge around the need to optimize Africa's resources for the benefit of all Africans. To achieve this feat, it is necessary to build human capital and empower African youth, scientists, researchers, and innovators in order to develop a world class STI ecosystem to support inclusive and green growth.

Building skills, investing in new technologies and creating jobs is considered as the Bank's core operational priorities or rather the backbone which supports the Bank's inclusive and green growth agenda. A central pillar of the AfDB's Strategy 2013-2022 and Human Capital Strategy for 2014-2018 supports interventions in better use of new technologies to improve learning outcomes and teacher training; regional centers of excellence and networks of knowledge to further scientific research and technological development in Africa; programs supporting women in science; and public private partnerships to create a culture of innovation and entrepreneurship in African countries.

The prospects for Africa becoming the 21st Century growth engine are already emerging. Indeed, the continent is undergoing four major tectonic shifts painting a paradox of prosperity and poverty; dynamism of youth and disease. Countering this paradox will require rapid, innovative and high impact interventions.

The four shifts African countries are grappling with:

1) A serious **demographic explosion** where the population is expected to more than double by 2050 (60% of which will be youth under 25 years old); these youth are increasingly educated but the quality and relevance of education they receive often make them unfit for demands of the labor market. Improving the quality and relevance of education systems and creating jobs will be one of the key challenges for African countries in the next 10 years. Failure to do so puts a generation at risk.

2) **Changing investment landscape**. African countries are at the center of the radar of bottom-line driven global investors who are attracted by some countries' newly found mineral wealth, oil, gas as well sustained economic growth. Ensuring that their investments are both inclusive and green will require transparent governance systems and a concerted effort from governments, and NGOs in the design of programs financed by foreign investors.

3) The **rapid advances in technological innovations**. Global technology and telecom companies are present in most African countries to help solve development challenges in education, health, good governance. E-/m- learning programs and E-/m- health programs, internet for all programs are cropping up. MOOCs, POOCs and SPOCs are the new norm making traditional university education pale when it comes to costs and access. However, are these new technologies and new ways of delivering education successful in improving educational outcomes, access to education for all, providing internet for all? The competition among service providers is so wide and fierce. How can African governments make informed decision and ensure that ICT integration in education is relevant and effective?

4) **Adaptation to environmental and natural disasters**. Industrialization in other parts of the world has had negative impacts on the climate and biodiversity. While African countries are still in their early days of facing irreversible damage to the environment, a focus on green growth is critical.

This forum follows the first ministerial conference on Science, Technology and Innovation, hosted by the Government of Kenya in 2012. Designed to raise the political awareness of Science and Technology in Africa, it aimed to promote youth employment, human capital development and inclusive growth. It gathered over 40 Ministers of Higher Education, Science and Technology and successfully put STI at the center of the policy dialogue in Africa. The Nairobi Ministerial Declaration on STI (see annex 1) enabled countries, which had an STI policy to strengthen investments in STI projects and programs and encouraged countries, which did not have a policy to develop a national policy on Science and Technology. It raised the profile of STI in the region and consequently a number of countries are actively involved in developing STI country profiles and policy instruments. The first forum also connected STI efforts in Africa to global sustainable development processes by highlighting some of the main issues faced by the region in the preparations for the Rio+20 summit such as the importance of women in science.

This second forum will focus on 5 broad areas:

1. **Assessing the current state of STI in Africa.** The main indicators by which STI is assessed are the "1% of GDP for R&D goal" and the knowledge economy index. Given the multisectoral nature of STI and the potential development impact it can have beyond R&D it is important to establish a number of indicators (policy and technical) against which progress can be benchmarked.

2. **Showcasing global best practices**. Given that the demographic explosion alone will double the need for more food security, more jobs, more (and clean) water, energy, and stronger education and health systems, what economic and business models need to be in place to ensure that these challenges are addressed in an inclusive and green way? Increasing investments in R&D in African countries is necessary but it will neither be fast enough nor sufficient to tackle these mounting development challenges. A parallel and consistent effort will need to be made to apply existing R&D from other parts of the world to solve the most urgent development challenges. The forum will also host an innovation exhibition as well as an award competition, whose goal will be to showcase global best practices that can be implemented in African countries.

3. **Applications of ICT**. Few disruptive technologies have actually changed the world. Many disruptive technologies are merely disruptive. African countries are becoming the breeding ground for the piloting of technological innovations from Europe and America that have ripple effects on their policies and investments with little positive outcome. Global technology and telecom companies are flooding African countries to buy their latest innovations. **What can be done to help governments make informed choices about which technology to acquire that will have a development impact? How can we help African countries apply ICT to leapfrog development outcomes? How can we advise governments in the optimal and cost effective use of ICT for development?** The rise of Massive Open Online Courses (MOOCs), Private Open Online Courses (POOCs), Small Private Open Online Courses (SPOCs) have caused a "massification" of higher education systems, open data and knowledge systems, etc. Are we compromising quality for access? Are Africans being shortchanged by MOOCs, POOCs, SPOCs rather than getting all round education? What regulatory systems need to be in place to ensure quality control, protect intellectual property of African scientists and innovators etc.

4. **Skills development, STEM, teaching/learning of reading and maths, & job creation.** Given the tectonic shifts facing African countries what type of skills (scientific, technological and other) will need to be developed to meet the demands of the tomorrow's labor market bearing in mind that different country clusters might need different skills depending on their development status? For instance the East African Community (EAC) will need skills for extractive industries (Oil, Gas and Mining) while North Africa might need skills for the service industries. More generally, how do we address the skill shortage? What type of incentives are private sector companies looking for to continue investing in Africa? Africa has made a lot of progress in access to education at the primary school level but the level of reading and maths are very low and internationally non-competitive. What can we learn from the top 20 countries with the best education systems such as South Korea, Singapore, Finland, about the teaching and learning of reading and mathematics skills at all levels of education?

5. **Strategic partnerships to move the STI agenda forward**. The magnitude and multiplicity of these challenges will require collective action. The African Development Bank is launching a virtual collaborative platform --Africa STI Hub – where forum participants can conglomerate before the forum, exchange views during and continue working together after the forum in order to form strong and lasting partnerships.

II. Expected outputs

While the first Africa STI Forum (Nairobi, 2012) successfully placed STI at the top of the political agenda of African Ministers of Higher Education, Science and Technology, the second forum will have 6 key outcomes.

1. Launch of the first Africa STI Outlook 2014 with the goal of publishing yearly reports documenting the progress on the STI landscape in Africa;
2. Identification of top 10 innovations that can be piloted or scaled up and financed by the AfDB and its development partners;
3. Strengthened aid coordination in STI, fostering bilateral and multilateral agreements in STI (South-South and South-North). Specially, mobilize development partners to set up a multi-donor trust fund (managed by the AfDB) to support regional networks and STI flagship programs;
4. Bring an African perspective on STI to the next World Science Forum in Budapest, Hungary (November 2014)
5. Mobilize Young African Scientists to launch the Africa Chapter of the World Association of Young Scientists (WAYS)
6. Development of an Action Plan for STI following the second STI Forum

III. Participants

The High Level Forum is expected to gather approximately 400-500 participants comprising of:
Ministers and government officials: in charge of Higher education, Science and Technology, Industry, Labor
Academia: technical institutes, universities, research institutes
Parliamentarians involved in STI or related Commissions
Private sector
African Diaspora
Scientists and Innovators
Young Entrepreneurs
Young Scientists, researchers and innovators
Development partners
Civil society

The Bank with its partners will coordinate closely to invite at least 2 representatives from each of the 54 Regional Member Countries (RMCs). Policymakers will include participants from ministries of education, science and technology, labor, and other priority sectors regarded as critical for economic development.

IV. Structure/format of the Forum

The organization of the forum will be nurtured by a 5-month discussion/debate on an online collaborative platform – www.africastihub.org moderated by STI experts in various fields of development.

The forum will be highly interactive allowing an exchange of experience and views among participants. Spread over 4 consecutive days the forum will consist of a pre-forum, 2 day technical meeting and 1 day ministerial meeting.

The sessions will consist of roundtable of ministers, panel sessions, parallel thematic sessions and an innovation exhibition.

Proposed thematic areas include Agriculture, Energy, Water, Climate Change, Gender, Education, and Health.

V. Background documents:

- Nairobi Declaration on Science, Technology and Innovation – STI Forum 2012 (annex 1)
- ICT in Education Conference 2014
- AUC Agenda 2063
- UNESCO Science Report
- **Recommendations of the Third International Congress on TVET**, UNESCO 2012
- World Conference on Higher Education Report
- Communiqué UNESCO 2009
- Africa STI Outlook 2014 (forthcoming)
- The African Development Bank's Ten Year Strategy 2013-2022
- The African Development Bank's Human Capital Strategy 2014-2018
- The African Development Bank's **2013-2017 - Private Sector Development Strategy**
- The African Development Bank's **Climate Change Action Plan (CCAP) 2011-2015**
- The African Development Bank's **2014-2018 - Bank Group Gender Strategy**

ANNEX 1

NAIROBI MINISTERIAL DECLARATION

1. *We, Africa Ministers in charge of Science, Technology and Innovation (STI), Finance and Planning, and Education, meeting at the African Forum on STI for Youth Employment, Human Capital Development and Inclusive Growth, in Nairobi, Kenya on the 3rd day of April 2012;*

2.Guided *by the Act establishing the African Union, and the declaration of the Summit of the Heads of State and Governments (Assembly/AU/Decl.5) of January 2007, which underscores the role of STI in socio-economic development and* in the achievement of the internationally agreed development goals, including the Millennium Development Goals;

3.Further Guided *by the Commitment of African Union (AU) Heads of State and Governments for devoting at least 1% of GDP for Research and Development (R&D);*

4.Acknowledging *the* commitment and the role of AUC and the regional, multilateral and international organizations namely, AfDB, ADEA, UNECA, and UNESCO, among others in advancing STI and youth development in Africa;

5.Recognising *the importance of* Higher Education, Science, Technology, Engineering and Mathematics (STEM) for socio-economic development;

6.Supporting and promoting economic and entrepreneurial opportunities in Africa;

HEREBY AGREE TO:

7. Strive individually and collectively towards the development, review and implementation of STI policies, law, strategies, programmes and action plans at regional and national levels for enhancing STI for youth Employment , Human capital Development and Inclusive Growth.

8. **Enhance the linkage between (STEM) Education and Labour Markets in Africa, by *implementing* specific actions at the national and regional levels,** to support the improvement of STEM education in both contents and skills; strengthen linkages between knowledge generation and enterprise development and put the necessary measures in place to encourage African youth to pursue studies in the sciences, technology including ICT, engineering and mathematics;

9. Strengthen Scientific Research in Africa by promoting and increasing investment in collaborative research at national, regional and intra-regional levels; and support institutional and human capacity building in Research for Development (R&D);

10. **Harness STI for Sustainable development by** ensuring STI is used to solve societal problems, such as water, health, ICT, energy and agriculture to improve the well-being of our people;

11. Put in place the adequate mechanisms, to facilitate knowledge production and technology transfer between countries through the strengthening of regional networks, South –South and North-South cooperation, and developing appropriate financial instruments for this; 2
The Nairobi Declaration on STI

12. **Promote STI as a driver for inclusive growth and youth employment with a focus on entrepreneurship, by:**

- **supporting** Innovation and entrepreneurship programs for youth skills development and empowerment;
- **integrating** STI into national and regional sustainable development agenda at all levels;
- **giving** priority and streamlining specific national programs that focus on close interaction between governments, academia and SMEs;
- **supporting** the improvement of rural development and informal economy.

COMMIT TO:

13. Strengthen Higher Education and Research Institutions, including Research Infrastructure, to increase Human capital in STEM as well as knowledge production and dissemination**;**

14. *Contribute* to the initiatives aimed at promoting STI for development in Africa, namely AMCOST, UNECA's Science with Africa Conference, the AfDB-AUC-ECA-ILO Youth employment Initiative, UNESCO and ILO Youth and STI and engineering focused initiatives among others;

15. Support the full establishment and management of the Pan African University (PAU), the African Observatory for Science, Technology and Innovation (AOSTI), and AU's research grants;

16. *Support* the Consolidated Plan of Action (CPA) in Science review process;

17. Enhance collaboration *with* among others, AUC, UNESCO, UNECA, and AfDB on the development of national and regional STI policy instruments; the reform of national STI systems, and the promotion STI indicators;

18. Call upon AUC to monitor effective implementation and agree to establish mechanisms at national and regional levels to support oversight of this declaration.

APPRECIATION

19. We express our gratitude to His Excellency Honorable Mwai Kibaki, CGH. MP., President and The Commander in Chief of Defense Forces and the People of the Republic of Kenya for their warm hospitality and for the hosting of The First African Forum on Science, Technology and Innovation (STI) for Youth Employment, Human Capital Development and Inclusive Growth.