AFRICAN UNION

SCIENTIFIC, TECHNICAL AND RESEARCH COMMISSION

UNION AFRICAINE

COMMISSION SCIENTIFIQUE, TECHNIQUE ET DE LA RECHERCHE

Concept Paper
On
The Establishment of the African Union Network of Sciences

1. BACKGROUND:

The African Union network on Sciences is a virtual network that involves a wide range of individuals working together to address the African science and Technology development challenges. It is a platform where African Scientist, Engineers, technology developers, innovators and inventors will be able to interact, cooperate, exchange information/knowledge and complement one another in research and academic work. It is also an innovative way to enhance brain circulation and bridge the African based Scientists and those in the Diaspora to address Africa's Challenges. Africa has shown a growing determination to integrate its Diaspora where the African Union (AU) has formally recognized the African Diaspora as a key player in the development agenda of the continent. In 2003, the AU amended its Charter so as to "… encourage the full participation of the African Diaspora as an important part of the continent in an effort to stem brain drain. Several solutions were offered and tabled but none seems to be working well because of the multifaceted problems that need to be tackled holistically.

The HRST developed a study on the existing networks within Africa and in the Diaspora, the study revealed the existences of a large number of Societies in the continent and also at the regional level. According to Tebeje[1], to date, 41 virtual networks in 30 different countries have been identified. Six of these are African, including the South African Network of Skills Abroad (SANSA) with members in 68 countries. It was also found that most of the existing networks and societies are established by individuals or by a cluster of national societies in the AU member states with the support of international organizations. The study shows also that a large number of these societies have a limited number of membership and only few response actively to their mandates. It is well acknowledged that the small scale of African scientific output is as a result of lack of adequate research infrastructure: laboratories, data processing centers, bio-banks, willingness to share facilities, and other brick-and-mortar facilities needed for research are major constraint. A survey on Africa's cooperation on HIV/AIDS research work shows that only five percent of the articles are produced in collaboration between two or more African countries despite they are most hit by the epidemic[2].

There is no doubt that resources are scarce and building monumental structure for development draws resources beyond our stretch. Development of model cost effect and sustainable structure in the development of science is pertinent to Africa. In consonance to this, there is need to ensure the presence of qualitative and effective network of Sciences, a network that is able to unify, revitalize and integrate our scientific community to respond to our development challenges directed by the STISA 2014-2024. It is imperative for the African Union to set up the African Network for sciences as a part of the African Research and Innovation Council (ARIC). A network that considers all the existing resources/initiatives (Societies/Networks) to avoid any wastage of resources and/or duplication of efforts, this is in unison to complementarities

In the pace of globalization in the 21st Century virtual learning and interaction between scientists of the developed and developing nations is ever increasing than before. There were prediction of development of robust virtual laboratory to be used in research and development in the future. Many studies have found virtual network to be cost effective and efficient, and a viable mechanism to enhance learning and research. In 2001, IOM[3] launched the Migration for the Development of Africa (MIDA) "to develop the potential synergy between African migrants and the demand from countries by facilitating the virtual transfer of skills and resources of the African Diaspora to their countries of origin. On the pretext that human capital mobility through temporary, long-term, and virtual participation, IOM works with African and host countries and Diaspora members. MIDA has launched pilot projects in a number of African countries.

[1] Tebeje A. Brain drain and capacity building in Africa. International Development Research Council (IDRC), 2005.
[2] Solomon NWAKA, Joint Technical Symposium by WIPO/WTO/WHO, June 2013 Thomson Web of Science, UCINET
[3] Mobilizing the African Diasporas for the Development of Africa, International Organization for Migration publication 2004

2. THE NETWORK

The AU is aiming to structure this network in a dynamic form to ensure the full participation of African Scientific Community in the continent and Diaspora in addressing the challenge of building the African knowledge society. The dynamic structure of the network will address the issue of brain drain and will introduce a new dimension of brain circulation. The network is an innovative way to utilize the talent of the African Scientific Community to address each other problems and challenges and allow them to recognize the diversity of Africa and to benefit most. It is also a braking through to introduce the virtual lab, virtual library and open source to the African Scientists.

2.1 NETWORK VISION

The Network Vision:

Shaping the future of Intra-Africa collaborative Research and Innovation

2.2 NETWORK MISSION

The network mission is to create conducive platform for African scientists to interact, discuss and share knowledge.

2.3 GOALS AND OBJECTIVES

The network will have the ultimate goals: (a) to enrich the African knowledge Society and to post the African Research and Innovation outputs and to uplift the intra Africa cooperation in Science, Technology and Research; and (b) improve the quality and the application of science, technology and innovation through promoting and sharing experiences and virtual learning for development.

This will be achieved via the following objectives:

- Facilitate access to accurate and up-to-date information;
- Foster knowledge production and sharing;
- Update the scientific knowledge in Africa;
- Create forums for discussion and interaction;
- Enhance intra-Africa research;
- Bridge the African scientists in Diaspora and at home by introducing a new dimension of brain circulation;
- Enable the environment/tool for the friends of Africa to contribute to Africa's socio-economic development; and
- Promote publication sharing and open access.

2.4 STRUCTURE

The network will be structured into 6 clusters. The proposed clusters were determined after consulting the existing international classification of Sciences such as the Revised Field of Science and Technology (FOS) classification in the Frascati Manual[4] and the Revision of the International

[4] Revised field of Science and Technology (FOS) classification in the Frascati Manual; organisation for economic co-operation and development 2007.

Standard Classification of Education: Fields Of Education And Training (ISCED-F) (UNESCO; 2012[5] and 2013[6]).

Thy Network Clusters	*Main fields (sub-clusters)*
1. Natural Sciences	1.1 Mathematics 1.2 computer sciences and information sciences 1.3 Physical sciences 1.4 Chemical sciences 1.5 Earth and related environmental sciences 1.6 Biological sciences 1.7 Other natural sciences
2. Engineering and Technology	2.1 Civil engineering 2.2 Electrical engineering, electronic engineering, information engineering 2.3 Mechanical engineering 2.4 Chemical engineering 2.5 Materials engineering 2.6 Medical engineering 2.7 Environmental engineering 2.8 Environmental biotechnology 2.9 Industrial Biotechnology 2.10 Nano-technology 2.11 Other engineering and technologies
3. Medical and Health Sciences	3.1 Basic medicine 3.2 Clinical medicine 3.3 Health sciences 3.4 Health biotechnology 3.5 Other medical sciences
4. Agricultural Sciences	4.1 Agriculture, forestry, fisheries 4.2 Animal and dairy science 4.3 Veterinary science 4.4 Agricultural biotechnology 4.5 Other agricultural sciences
5. Social Sciences	5.1 Psychology 5.2 Economics and business 5.3 Educational sciences 5.3 Sociology 5.5 Law 5.6 Political Science 5.7 Social and economic geography 5.8 Media and communications 5.7 Other social sciences
6. Humanities	6.1 History and archaeology 6.2 Languages and literature 6.3 Philosophy, ethics and religion 6.4 Art (arts, history of arts, performing arts, music) 6.5 Other humanities

2.5 Network implementation Phases

The network will be implemented on three Phases by the end of which the network will be functional; these phases are:

- Phase one will be to develop a survey on the existing Scientific network Virtual/physical and to request for their members information and lists;
- Phase two is manly to develop the Network portal, modules, data base and digital library;
- Phase three will focus on functionalization and publicity of the Network; and
- Phase four is continuous improvement and sustainability of the network.

[5] International Standard Classification of Education ISCED 2011; UNESCO Institute for Statistics 2012

[6] Revision of The International Standard Classification Of Education: Fields Of Education and Training (ISCED-F); UNESCO 37th session, Paris, 2013