

Building the African Network for Learning, Innovation and Competence building Systems (AfricaLics)¹

Globelics Secretariat, Aalborg, March 14, 2014.

1. Why build AfricaLics?

Africa may now be at a turning point in terms of economic growth and development. Six of the world's ten fastest-growing economies during the past decade were in sub-Saharan Africa. Thus, after a long period of sluggish growth, the African continent may now have a real chance to change the pace and follow in the footsteps of the fast-growing Asian continent.

To transform this upswing into sustained and sustainable social and economic progress requires innovation, structural change and new relationships between agriculture, manufacturing and raw material sectors. Sustained growth must be based upon vibrant, more coherent and inclusive systems of production, innovation, and competence building with emphasis upon the effective assimilation and adaptation of technology. This is the background for this Globelics initiative to strengthen research collaboration on innovation and competence-building in Africa.

Much of the recent growth has been spurred by trade with countries outside Africa. The continent of Africa is thus characterised by relatively weak economic integration. When it comes to collaboration within science and technology we see an analogous situation where scholars in Africa collaborate more with scholars and institutions in the West and North than with scholars in other African countries. The imbalance between internal and external scientific collaboration in Africa is problematic for two reasons.

First, it slows down the production, diffusion and use of knowledge on the continent. Always having to make the detour outside Africa when it comes to co-creating knowledge is expensive. Second, it impedes collaborative efforts to frame and address problems common to the continent. In energy, transport, health and agriculture international collaboration on science, technology and innovation within Africa could speed up the production of new insights that could be shared and

¹ This background document has been drafted in collaboration between the Secretariat (Bengt-Åke Lundvall and Rasmus Lema) and Mammo Muchie. We are grateful for inputs from Tomas Kjellqvist, and particularly for the list of organisations provided in the appendix.

promote models and solutions that are relevant in the different African countries. This kind of inter-African collaboration is extremely important in a world where co-invention and parallel innovation is common and it would be complementary to the current collaboration with partners in the North.

The Globelics initiative to build AfricaLics should be seen in this light. AfricaLics offers the possibility both to share external ‘network connections’ and exploit synergies within Africa. The objective of building AfricaLics is to consolidate and strengthen the existing research networks and the knowledge base for policy strategies aiming ultimately at promoting well-being and capability on the basis of science, technology and innovation.

2. Background of the initiative

The Global Network for Economics of Learning, Innovation, and Competence Building Systems (Globelics) is a worldwide, open and diverse community of scholars working on innovation and competence building in the context of economic development. The network provides a global platform of collaboration for researchers, practitioners and policy makers who see innovation and competence building as being at the heart of the economic development process. It has as explicit objective to promote South-South collaboration.

Globelics is organised as a network of networks. It has stimulated the formation of several regional networks. There is already an AsiaLics and a LatinamericaLics as well as networks covering China, Russia and India (CICALics RussianLics and IndiaLics). These are self-organised networks of researchers living and working in these regions. They draw upon expertise within the Global network when they see a need to do so. However, there is not yet an AfricaLics.

Being a network of networks, the ‘ethos’ of Globelics is created and recreated through an on-going interaction between scholars from different parts of the world. The community does not aim at a ‘transfer’ of a given set of ideas to Africa or any other part of the world. While the search for systemic gains is widely relevant, there is no single recipe for achieving these gains. Some of the ideas and concepts within Globelics have been derived mainly from specific experiences in rich countries and cannot be used as universal template models.

In order to make sure that the knowledge produced within the network is relevant for economic development it will engage with knowledge users in society. This requires an interaction with civic organisations, public administrators, private firms and ordinary citizens engaged in innovation and competence-building in Africa. The

research agenda should evolve in such a way that it reflects a balance between the capacity and interest of scholars and the demand for knowledge among users.

3. Window of opportunity for creating an Africa network

The purpose of this initiative is to build a network and to offer a platform where different ideas and actors can meet and where actors within Africa can take new initiatives together that may or may not involve collaboration with partners outside Africa.

Over the next four years the Globelics Secretariat located in Aalborg, Denmark, and supported by Sida, Sweden, will implement a ‘Research Capacity Building initiative on Innovation Systems & Economic Development for Africa’. Through this initiative Globelics will support the establishment of meeting places (both real and virtual) for African researchers and practitioners over the next five years (see section 6 below).

Globelics is not an organisation with an inherent research program for Africa nor does Globelics have any research funding capacity. Therefore, the intention is to create the space for collaboration and let the ideas for research emerge out of this interactive learning process. On this basis we hope that consortia can be formed to apply for funding domestically or in international organisations.

There are already a number of existing organisation and networks within Africa working on issues related to innovation and development issues.² Globelics will add to these networks because it is (a) first and foremost a network of academic scholars studying the dynamics of learning, innovation and competence building, (b) essentially a global network and as such it creates opportunities for connecting both inside and outside of Africa and (c) not a network with a particular sector focus.

The expectation is that members of the existing networks and organisations in the area of science, technology and innovation will make use of AfricaLics as a platform and meeting place whenever research agendas and capacity building initiatives overlap. Globelics hope to contribute specifically with the understanding of production, innovation and competence building systems, which could make other efforts to engage, disseminate and innovate more effective. The collaboration with policy networks that organise users of research is especially important since such collaboration will give feed-back to academic research from practical application of ideas.

² Some of these are listed in the appendix to this document.

4. Challenges for African Innovation and Development

The key challenge is to create relevant and coherent learning, innovation and competence building systems and policies in Africa. We anticipate that AfricaLics will provide a suitable platform for relevant research which can address this challenge.

AfricaLics can draw on many advances, approaches and resources in Globelics, but an Africa network also needs reorientation and innovation. The AfricaLics network will need to start from problems and opportunities that appear particularly important in the region. Below we outline some of the themes that we think are important (in no particular order). Naturally, this list is not exhaustive. There are many other relevant themes.

- The complex challenges of forging an integrated Africa open to the knowledge and learning economy, aligning interests and supporting progress locally cannot be grasped without strengthening the political economy dimension of the research. There has been fairly limited research that asks how politics, power and interests influence technology and innovation policy and practice in Africa.
- Little research has focused on the role of donor assistance in promoting and shaping innovation activities and systems. However, this would be an important area for research within AfricaLics given the relatively high share of aid to GDP in many African countries and because aid represents quite a significant share of funds for research in the region. While relatively little aid has been specifically targeted at strengthening and reorienting innovation activities in the past (in the private sector and wider society), there is now a momentum for research created by the increasing attention of donor agencies to innovation issues.
- While much work within Globelics has focused on the role of multinational corporations and global value chains as such, there has not been a lot of work on specific overseas investments coming from China and India. The increasing role of Chinese investments is likely to have an important influence on how learning and innovation unfolds in a range of extractive and infrastructure industries in Africa. Furthermore, the demand of Asia for commodities opens up the prospect of developing technological capacities as new firms and industries seek to provide the required inputs which currently are sourced abroad and whose importation faces daunting costs and time delays.
- Agriculture remains a dominating activity in many African Countries. Understanding how innovation and competence-building may promote the formation of new manufacturing and service activities that contribute to and

reflect the transformation of primary agriculture is a major challenge for innovation studies in Africa.

- A range of natural-resource based sectors are projected to grow rapidly in many African countries in the future. While such resource endowments are sometimes seen as a ‘curse’ (little learning potential), the challenge is to understand how to channel increasing economic activity in these sectors into building innovation capability.
- Traditionally commodity production has been seen as technologically static. However, this has been changing and effective exploration, development and production require enhanced technological capacities to be effective. How can countries “leverage” off these required technological capacities to strengthen their technological capacities and their national systems of innovation?
- Innovation systems may be analysed in relation to a specific sector or a region as well as in relation to a field of technology or a national economy. One especially interesting unit of analysis is the ‘industrial complex’ (Agroindustrial complex, EnergyIndustrial complex etc.) that may include as systemically interlinked primary, secondary and tertiary economic activities. Economic development has to do with the successful formation and consolidation of such complexes and to explain the mechanisms behind the formation is a challenge for AfricaLics. To understand the role of social and political actors that contribute to the formation is important for designing successful development strategies.
- The term inclusive innovation has been widely used in recent years and was a major theme at the Globelics Conference 2011. However, there is still no widely accepted definition of the term and sometimes it seems to be used mainly as normative concept. The challenge is to define policy relevant but researchable questions within this theme. Do sustainable systems of innovation based upon inclusive, equitable distribution of resources, perform better in terms of long run economic development than lop-sided systems with high and growing inequality?
- Much recent innovation-related research on Africa reflects the (justified) focus of many funders on initiatives and circumstances that reduces poverty directly. Much less attention is given to circumstances that reduce poverty indirectly. For example, there has been very little research within Globelics (and beyond) which has engaged explicitly with the hypothesis that ‘industrialization remains vital to African development’ (Lall 2005).
- Certain core technologies such as information technology, biotechnology, pharmaceuticals, energy technologies and green technologies have important

fields of application in Africa. There is a need for research on how resources can be pooled for building capacity in those more or less scale-intensive technologies and on how to build institutional settings that link them to user sectors including agriculture and the informal sector.

- Education systems foster new generations that are more successful in operating in a context with innovation but the demand for their skills may be weak in absence of innovation. Competence-building takes place also in daily activities and linking formal education to practical experience may be a key to prepare students for the labour market and it may also help stimulating the demand for knowledge in society. Analysing how people work and learn in everyday activities in the formal and the informal sector is a way to understand ‘learning systems’ that encompass more than formal education and that are fundamental for innovation.
- What institutional and organisational settings promote successful combinations of indigenous local knowledge and learning by doing with modern scientific knowledge? How to combine the promotion of broad based learning with advanced knowledge platforms with high tech content to create synergies and syntheses?
- Measurement problems related to competence building and innovation are universal, but AfricaLics will be faced with particular challenges of defining ‘metrics’. Researchers within the network will need to engage in conceptual and methodological advances (for example metrics for science, technology and innovation (STI) and metrics for doing, using and interacting (DUI) modes of learning and innovation) and adapt methods to different sectors in society (e.g. formal and informal sector and flows between the two). Can an African wide innovation indicator data base through innovation surveys and other schemes be generated? How to design indicators so that they make systematic assessment to estimate the contribution from public policy?
- A major problem in the least developed countries is weak demand for knowledge, including academic knowledge. One challenge for AfricaLics is systematically to develop methods that allow interactive learning between research on innovation and competence-building on the one hand and those who apply such knowledge in different sectors of society (local, national and regional authorities, private enterprises, NGOs and other civic organisations). This may require a combination of research, experimentation and new methods of assessment.

The list above is meant to stimulate the discussion on future research needs at the Tanzania Seminar. We expect that other research themes will emerge during the

workshop in Tanzania, and over the coming years as the network evolves and takes roots among individuals and institutions.

5. Some concrete steps for strengthening research on LICS in Africa

Below we outline a number of possible initiatives and steps for the future. They constitute a vision for building an African network and have increasing levels of ambition.

A. Mapping research and research institutions

1. Review the existing work on science, technology and innovation for development in Africa. Identify the key contributors and stakeholders.
2. Identify research centres outside our core networks that are actively involved in research on science, technology and innovation for development in the continent.

B. Setting up and strengthening networks

1. Set up the African Network for LICS with resources to run it for 5 years, with an annual conference as a recurring event.
2. Establish AfricaLics Academy offering research training and recruiting master students and Ph.D.-students studying innovation and competence-building.
3. Establish a Science, Technology Innovation Policy Training Schools for stakeholders engaged in the public and private sectors

C. Initiating big umbrella research programmes

1. Create programme with projects on sectoral patterns of capability building and innovation and in Africa. Identifying important sectors such as: solar energy, software, ICT infrastructure, nanotechnology and materials, biotechnology and agriculture, water, health, mining, oil, biofuels etc.
2. Create programme for surveying STI-activities in all regions of Africa at various levels of analysis on STI to create a complete data bank.

3. Create programme for exploring the opportunity of building systems of innovation and policy learning initiatives on the basis of the current African Union, the NEPAD and the regional economic communities.

Some of the initial steps may require seed funding to get the network going. In the longer run, these steps will require ‘core’ funding. This funding should preferably come from within Africa.

6. Current Initiatives in Globelics

In the Globelics secretariat we have established a number of initiatives for setting up and strengthening networks through our grant from Sida. It is worthwhile outlining these since these can provide a basis for moving through A, B and C above and consolidate these activities locally. Our initiative can be divided into five components.

6.1. Travel Grants

The aim of this component is to provide travel support to participation in conferences and academies in a way that links up scholars in Africa with the rest of the global network and enables possible South-South dialogue. In 2011, 15 scholars from Africa were supported, for the annual conference in Argentina, six of whom were from South Africa. There were only three papers accepted from Low Income Countries in Africa and four from African Lower Middle Income Countries.³ In total, 249 papers were accepted for the Argentine conference. So we start from a low base. We hope to increase the volume of submissions by creating better awareness of the conference and travel support opportunities through the Africalics network.

6.2 Author support

Globelics seeks to raise the number of paper submissions from Africa, but also to contribute to initiatives that can raise the quality of submitted papers. One way of doing this is to introduce elements of ‘mentorship’ and interaction into the selection process in order to raise the quality of papers from the low income country participants so that they increasingly can reach the threshold level and become accepted. In 2011 we initiated this initiative with a pilot ‘review service’ provided to 13 authors of rejected papers (reviews conducted by members of the Globelics Scientific Board and Secretariat). We expect to scale this initiative up from next year (2012). We also expect that an Africa Academy will open up a ‘food chain’ for feeding quality submissions forward.

³ Submissions from Low Income Countries in Africa were: Burkina Faso (1), Kenya (1), Mozambique (1), Tanzania, (2), Uganda (1), Zimbabwe (1). From Lower Middle Income Countries in Africa they were: Cameroon (2), Ivory Coast (2), Senegal, (1) and Nigeria (23, most submissions from Nigeria in the field of medicine and outside the core themes of our community).

6.3. Journals and knowledge diffusion

This component supports efforts of new journals to give better access both to publishing and to publications for academics in Africa. The initiative seeks to create new activities or reshape existing activities that help to meet this objective. We are currently in the upstart phase of our collaboration with five journals: (1) Innovation and Development (2), African Journal of Science, Technology, Innovation & Development, (3) International Journal of Technological Learning, Innovation and Development, (4) International Journal of Institutions and Economies and (5) the Ethiopian e-Journal for Research and Innovation Foresight. We hope to increase access to journals through establishing open access, e-journals and preferential subscription rates. We hope to increase access to publishing in journals through establishing channels for author support and language/editing services and creation of special issues around themes relevant to audiences and scholars on the continent. Under this heading we are also working on (a) recreating the Globelics website and (b) producing an annual thematic report – this year on innovation and inclusive development – on the basis of conference inputs and (c) undertaking a bibliometrical study of publications on innovation issues in Africa.

6.4. Globelics Academy in Africa

We are considering a new model for research training where we at each training course combine an innovation studies perspective with a specific technological field such as ICT, energy, agro-business, education or cluster-formation. We are also considering training events open both for Ph.D. and Master Students studying science, technology and innovation.

We are currently working on setting up two AfricaLics Academy research training courses in Africa. The first is planned to take place in Nairobi 2012. It is expected that The Communication and Information Department of Nairobi University will host the event together with Globelics (<http://agda.uonbi.ac.ke>).

The second Globelics Academy will take place in Algiers 2013 and there is a preparatory seminar for this academy already in April 2012. The Academies are expected to bring together 30-40 PhD and Master students for a 10-days research training session. The overall aim is to increase the success rate of Master- and PhD-students in Africa in the field of innovation and development.

6.5 Globelics Annual Conferences in Africa

The 2014 Annual Globelics Conference will synthesize the above efforts foster work that is ultimately aimed at strengthening innovation and development in Africa. Two conferences have already taken place in Africa. The conference in low-income Senegal was important mobilising innovation scholars from Senegal other parts of Africa and it helped the global community of innovation scholars to understand the

specific challenges for innovation and learning in a poor country. The selection of the local site for the 2014 conference will be done by the Globelics Board after a process where African Universities have been invited to propose themselves as hosts for the event. A key criterion for the selection will be the possibility to maximise the lasting effect in terms of mobilising a robust community of scholars working on learning and innovation.

Final Remark

The Globelics community has already made a number of contributions to our knowledge about innovation and learning in Africa, many of them challenging and going beyond the stereotypes of defining Africa by crises alone. We hope that more focused and organised internal and external networks will help to foster original and high quality research. We hope that the AfricaLics network will contribute both to the creation of new research and to finding practicable ways of turning research results and knowledge into innovation for improving the African economic landscape. With this document we hope to gain feedback on our activities and strengthen the engagement of interested academics and practitioners. We hope it can be a useful input for fostering a productive seminar in Tanzania.

Appendix: Mapping research, research institutions, policy institutions and practitioner networks in the area of Science, technology and Innovation in Africa

This is a work-in-progress list of regional networks. It will be finalised later and extended to include national networks and organisations. At the same time a separate list is being prepared which seeks to map university people working on STI/LICS.⁴

AU-African Union, Department of Human Resources, Sciences and Technology

<http://au.int/en/dp/hrst/>

“The African Union Commission (AUC) is committed to ensure that science and technology in Africa contributes to its sustainable development efforts. The Act establishing the Union recognizes the need for Africa to embark on an ambitious strategic science and technology development programme, aimed at contributing to the wellbeing and improved quality of life for the African citizens. To this end the establishment of the AU in 2002 was accompanied by the setting up the AUC with a special Department of Human Resources, Science and Technology to drive this strategic programme.”

AMCOST - African Ministerial Council of Science and Technology,

www.nepadst.org

“The African Ministerial Council on Science and Technology (AMCOST) was established in November 2003 under the auspices of the New Partnership for Africa’s Development (NEPAD) and the African Union (AU). It is a high-level platform for developing policies and setting priorities on science, technology and innovation for African development. AMCOST provides political and policy leadership for the implementation of Africa’s Science and Technology Consolidated Plan of Action (CPA).”

AERC – African Economic Research Consortium,

<http://www.aercafrica.org/about/index.asp>

“The African Economic Research Consortium (AERC), established in 1988 is a public not-for-profit organization devoted to the advancement of economic policy research and training. AERC's mission is to strengthen local capacity for conducting independent, rigorous inquiry into the problems facing the management of economies in sub-Saharan Africa.”

⁴ Being prepared by Watu Wamae and Erika Kraemer-Mbula

ATPS – African Technology Policy Studies Network

<http://www.atpsnet.org/>

“The ATPS is a multi-disciplinary network of researchers, practitioners and policy makers that promotes science, technology and innovation (STI) policy research, dialogue and practice, for African Development. With a regional secretariat in Nairobi, it operates through national chapters in 29 countries with an expansion plan in place to cover the entire sub-Saharan Africa.”

Bio-innovate Africa,

<http://bioinnovate-africa.org/>

“The Bio-resources Innovations Network for Eastern Africa Development (Bio-Innovate) Program was established in 2010 to finance multi-disciplinary biosciences and product oriented innovation activities in the Eastern Africa countries of Burundi, Ethiopia, Kenya, Rwanda, Tanzania and Uganda. Currently, the program is comprised of 9 innovation and policy projects consortia and 57 institutions drawn from the 6 countries, with collaboration from institutions outside the region.”

CODESRIA - Council for the Development of Social Science Research in Africa,

<http://www.codesria.org/?lang=en>

“It was established in 1973 as an independent pan-African research organisation primarily focusing on social sciences research in Africa. It is recognised not only as the pioneer African social research organisation but also as the apex non-governmental centre of social knowledge production on the continent.”

The Journal of Higher Education in Africa (ISSN 0851-7762) publishes analysis, information, and critique on contemporary issues of higher education in the continent with special emphasis on research and policy matters.

Africa Development (ISSN 0850 3907) is the quarterly bilingual journal of CODESRIA published since 1976. It is a social science journal whose major focus is on issues which are central to the development of society.

FARA – Forum for Agricultural Research in Africa,

<http://www.fara-africa.org/>

“FARA is the Forum for Agricultural Research in Africa, an umbrella organization bringing together and forming coalitions of major stakeholders in agricultural research and development in Africa. FARA complements the innovative activities of national, international and sub-regional research institutions to deliver more responsive and effective services to its stakeholders. It plays advocacy and coordination roles for agricultural research for development, while the national agricultural research systems (NARS), advanced research institutions (ARIs) and international agricultural research centres (IARCs) develop improved technologies

along the research-to-development continuum in their respective countries and coverage areas. “

IUCEA, Inter University Council of East Africa,

<http://www.iucea.org/>

“Main Objectives

Facilitate networking among universities in East Africa, and with universities outside the region; Provide a forum for discussion on a wide range of academic and other matters relating to higher education in East Africa; and Facilitate maintenance of internationally comparable education standards in East Africa so as to promote the region's competitiveness in higher education.

Main Roles and Functions

Coordinate inter-university cooperation in East Africa; Facilitate the strategic development of member universities; and Promote internationally comparable higher education standards and systems for sustainable regional development.”

NEPAD, Office of Science and Technology

Has now become AMCOST

Ossrea, Organisation for social science research in Africa

<http://www.ossrea.net/>

“The Organization for Social Science Research in Eastern and Southern Africa (OSSREA) is a regional membership-based and donor-supported research and capacity-building organization whose mission is to promote dialogue and interaction between researchers and policy-makers in Eastern and Southern Africa with a view to enhancing the impact of research on policy-making and development planning. Its headquarter is based in Addis Ababa, Ethiopia.”

“The EASSRR is a bi-annual journal that serves as a forum for scholarly discourse on the social, economic, political and environmental aspects of Eastern and Southern Africa. The journal first appeared in January 1985 and has since been coming out regularly twice a year. Each issue is printed in 200 copies. Several institutions both in Africa and outside subscribe the Review.”

PACF – Pan African Competitiveness Forum,

<http://www.pacfnetwork.com>

“The Pan African Competitiveness Forum (PACF) was established in response to the need for Africa to be relevant in the contemporary globalized economy. PACF 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 relevant in the global market.”

SARUA, Southern African regional Universities Association,

<http://www.sarua.org/>

“SARUA was established to assist in the revitalisation and development of the leadership and institutions of higher education in the southern African region, thus enabling the regional higher education sector to meaningfully respond to the developmental challenges facing the region.”

UNECA – UN Economic Commission for Africa,

<http://www.uneca.org/>

“The ICT, Science and Technology Division (ISTD) is responsible for the Harnessing Information for Development work of the Economic Commission for Africa (ECA). ISTD is an integrated information service and resource center for Africa, making quality information on African development globally accessible and assisting ECA member States to build national capacities in the use of information and communication technologies (ICTs) for accelerated and sustainable development. To strengthen the capacity for the development and the use of information and knowledge systems, such as spatial databases as support tools for decision-making and for socio-economic development at the local, national and sub-regional and regional levels. The Division’s major role in this effort is portrayed in the work undertaken by the three teams as follows:

Promoting Information and Communications Technologies (ICTs) for Development and implementing the African Information Society Initiative (AIS); Utilizing Science and Technology for Development; Strengthening Geographic Information for Sustainable Development “

WIOMSA, Western Indian Ocean Marine Sciences Association,

<http://www.wiomsa.org/>

“Western Indian Ocean Marine Science Association (WIOMSA) is a regional professional, non-governmental, non-profit, membership organization, registered in Zanzibar, Tanzania. The organization is dedicated to promoting the educational, scientific and technological development of all aspects of marine sciences throughout the region of Western Indian Ocean with a view toward sustaining the use and conservation of its marine resources. The Association has about 1000 individual members as well as about 50 institutional members from within and outside the region.

The organization's inter-disciplinary membership consists of marine scientists, coastal practitioners, and institutions involved in the advancement of marine science research and development. The Association: (1) provides a forum for communication and

exchange of information amongst its members that promotes and fosters inter-institutional linkages within and beyond the region; (2) supports marine research by offering research grants; (3) implements programs to build the capacity of marine scientists and coastal management practitioners; and (4) works to promote policy dialogue on key topics by organizing meetings and seminars on the findings and policy implications of science.”