# Strengthening innovation and development-research capacity in African universities

## The case of AfricaLics

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### 1 Context

Innovation is increasingly recognized as a catalyst for economic and social development in Africa. Universities are key actors both to promote innovation, creativity, and entrepreneurship through the curricula, and to promote innovation through research and development (e.g., spinoff companies). This approach is often framed within the context of university–industry links and entrepreneurial universities. Universities can also promote innovation more broadly and for the specific benefit of society. Universities in Africa often struggle to develop viable spinoffs, sustained industry partnerships, or train graduates effectively so that they are employable. Many universities in Africa still face major deficiencies in infrastructure, increasing class sizes, and the loss of their best academic staff to other countries attracted by higher salaries and research funding.

Discussions about Africa's development tend to focus on the role of innovation and how it can accelerate development to reduce poverty and increase job creation. There is also increasing recognition that innovation, particularly in the African context, is not only the domain of universities but often of existing firms. Just as in developed countries, innovation in developing countries is determined by the interactions and capabilities of public and private actors and formal and informal institutions and is a

powerful driver of economic growth. Of course, the role of universities in producing higher labour productivity cannot be underestimated. In addition to developing human capital (skilled workers), universities are expected to undertake research and play a role in research exploitation or commercialization (entrepreneurial universities).

So-called *developmental universities*carry out training and research activities in response not only to the demands of local industries but also to the needs of marginalized and less-empowered sections of society. They recognize the need to generate new and relevant knowledge and innovations that respond to local needs but also the need to build the capability of communities to absorb this new knowledge. African universities are increasingly asked to play generative and developmental roles to ensure economic development. However in most cases, university–government–industry links are absent or highly fragmented. Furthermore, despite numerous efforts to improve the contribution of Africa's education systems to meaningful economic development, there are multiple challenges that remain to be tackled.

The focus of much training is misaligned with the needs of employers and society. Despite several efforts to build research capacity within universities in Africa, there are still insufficient efforts focused on : building a wider research culture beyond science, technology, engineering, and mathematics (STEM) ; increasing the number of employable graduates ; and focusing attention on the wider developmental role of universities through enabling graduates to become better critical thinkers and innovators.

**The AfricaLics project : building research capacity on innovation in Africa** — The African Network for Economics, Learning and Competence Building (AfricaLics) was set up in 2012 to increase training in a neglected area of research in social science, specifically innovation studies. This project tackles some of the wider capacity-building issues that dominate debates about the role of universities in development and how capacity building of universities should take place. The project provides training for PhD students and PhD supervisors, and supports a visiting fellows program. It promotes high-quality research and networking through conference opportunities, small collaborative research grants, and online forums, and new curricula development in the area of innovation and development. AfricaLics is based on two key elements — it adopts a low-cost approach and focuses on the analysis of innovation activities.

## 2 Empirical Approach and Main Findings

This study is based on an internal review of project documents. This was supplemented by a survey of 15 key AfricaLics network members at various stages of their career (PhD students, junior researchers, and more established researchers). The survey asked six qualitative questions to assessment the impact that their participation in the AfricaLics network on their own capacity development and on their ability to influence policy.

An initial baseline survey of the STI research community in Africa highlighted a number of surprising facts about the state of research and training in the area of STI

in Africa. This survey found that despite encouraging trends, the field of innovation and development has not sufficiently established itself in African institutions. Very little research and teaching are being done specifically in the area of innovation studies or on the links between innovation and development. The study found there were very few PhD holders or lecturers in innovation studies, few programs were being taught, and few dedicated research grants were available.

**Achievements** — Since 2013, AfricaLics has provided : short-term research training to nearly 80 PhD students studying ; support to 11 PhD students through a visiting fellow's scheme ; training and exchange workshops for over 40 PhD supervisors working ; help to expand curricula in the area of innovation and development ; and seed funding for collaborative research activities across universities and countries in neglected areas of innovation and development research. Reports on individual activities show that there is generally a high level of satisfaction with the opportunities provided through the network.

Survey respondents were asked about the knowledge they had acquired in the area of innovation and development from their participation in AfricaLics. All respondents reported that the knowledge they had acquired increased their research and research-reporting capabilities, such as writing skills. On average, respondents had published two articles each in the area of innovation and development as a result of AfricaLics activities over the last three years. Virtually all (93%) respondents reported that their participation in AfricaLics activities built their international research networks, particularly, but not exclusively, the Global Network for Economics of Learning, Innovation, and Competence Building Systems (Globelics). All respondents reported they had played some role in raising awareness of innovation and development at their host institution. These roles included : efforts to establish postgraduate training in innovation and development ; paper presentations in seminar series on innovation issues ; lectures and informal chats to students and staff on innovation and development ; and publicizing AfricaLics and Globelics activities. The respondents have facilitated co-supervision of PhD and Masters theses and launched multidisciplinary research projects. In addition, 40% the survey participants indicated that their experiences with AfricaLics research capacity-building events had helped them change the direction of research within their university. Nearly half (47%) of respondents also reported that the knowledge they had gained from AfricaLics had influenced knowledge flow from their institution to society and industry by linking university agencies to farmers and small-scale businesses, engaging with community-based organizations, and providing consultancy services.

These observations are generally consistent with the results of an external evaluation of Globelics and AfricaLics activities commissioned by the Globelics Secretariat. This external evaluation reported that the AfricaLics network had promoted understanding of innovation and learning in the context of Africa fairly well. A similar level of achievement was reported in the case of capacity building in terms of research related to innovation and learning. Overall, respondents were confident that they could make a long-term impact over time, especially through teaching and research.

## 3 Main messages for policy and practice

AfricaLics's activities show signs of what appears to work and what can be scaled up or considered elsewhere. Notably, the experiences of AfricaLics highlight the contribution of shorter-term PhD and Masters training activities to building both individual and institutional capacity. Overall, four key lessons that appear to demonstrate success.

**You do not have to focus on traditional full PhD and Masters training activities to add value.** AfricaLics Phase 1 did not provide sponsorship for full PhD or Masters level training. Instead, it focused on augmenting the skills and opportunities for students by providing additional support that was lacking in the students' home universities. This was done in collaboration with home universities, and individual discussions between students and supervisors were necessary to ensure support was targeted where it was needed most. The result was the ability to target a wider number of students, focus on competence building at both the individual and institutional level, and build stronger networks across institutions through increased opportunities for collaboration.

Emphasizing institutional capacity building and buy-in is a key to successful individual capacity building. The AfricaLics project activities highlighted the importance of building institutional-level capacity within individual universities. It also acknowledged the importance of networks of partnerships among universities in Africa and between the North and South. Buy-in from senior academic and institutional support was needed, and involvement of active research staff accounted for the program's contribution to individual capacity building.

Over the first 3 years, the focus has been on working to build one-to-one relationships with senior administration members of partner universities, and a set of PhD supervisors from different universities across the continent. These relationships worked to strengthen the emphasis placed on innovation and development training within institutions, and to add an interdisciplinary perspective to provide a broader, more appropriate lens for studying innovation and development issues in the context of individual African countries.

**Strengthening networks of researchers across universities and countries is essential**. Networking is an essential requirement for successful capacity building partnerships within and across universities. The AfricaLics project activities highlighted the importance of networking activities that enabled researchers to interact informally through both spontaneous and more channelled networking activities. The pressures of teaching and the lack of resources to enable African researchers to attend international conferences often limit their ability to interact with other researchers. AfricaLics provided researchers of all ages and stages of their career, networking opportunities. Some of this research-grant activity generated new networks of researchers. In other cases, informal networks of researchers were created, often across countries and career stages, that led to new research projects and co-authored publications.

**The importance of building an African innovation and development research community** – AfricaLics built research capacity that was focused first on Africa, and second on innovation and development. This was needed to redress the

balance between promoting innovation and entrepreneurship at the expense of analysing innovation activities and their contribution to economic and social development needs of African nations. AfricaLics is a Southern-driven research network but not at the exclusion of Northern partners. Ownership and the direction of activities have been through the AfricaLics scientific board — an advisory body made up of senior innovation and development scholars from or working in Africa.

**Southern intellectual leadership is needed to drive new thinking.** New theories, research methods, and indicators are needed to develop appropriate development strategies adapted to the changing situations in African countries and the changing interactions and increasing number of South–South partnerships. Building the capacity of researchers in these new emerging economies, and their trading partners in Africa, is essential for successful development and use of new analytical tools.

## 4 Concluding remarks : ensuring innovative activity leads to equitable economic and social development

A number of wider points can be drawn with regard to the relationship between innovation and development activities. Although strides have been made in many OECD countries, the innovation landscape in Africa is weak compared to other regions. This shortcoming is related to weak or missing institutional arrangements that foster innovation and learning activities, which necessitates scientific research on how to create and nurture such institutional and organizational systems. A further key element is to ensure that training and learning on innovation is related to development and social need. Most existing theoretical, as well as methodological, approaches commonly applied in African contexts were developed for application in OECD and other industrialized countries. These cannot be directly and uncritically applied in the African context.

New theories and methods suitable for African contexts can be developed and existing approaches can be adapted. But, this will only be possible if African researchers have opportunities to network among themselves and with researchers internationally. Researchers must also be able to access research grants and train the research leaders of tomorrow in critical thinking. These activities will enable much greater levels of analysis of innovation and development issues. Specifically, they will strengthen the opportunity for innovation and development research to not only ask : "how can innovation best take place ?" but to address questions such as "best for whom ?" and "why is innovative activity important for economic and social development ?"

## Related Resources

Adebowale, B. A., Diyamett, B., Lema, R., and Oyelaran-Oyeyinka, O. 2015. Innovation research and economic development in Africa. *African Journal of Science, Technology, Innovation and Development,* 6(5), v–xi. DOI :10.1080/20421338.2015.1010774

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Kraemer-Mbula, E. 2013. *Mapping Africa's research capacity in the field of innovation and development : Baseline report*. Nairobi : AfricaLics.