POLICY BRIEF

UNIVERSITY-INDUSTRY LINKAGES IN AFRICA

ASSOCIATION OF AFRICAN UNIVERSITIES
ASSOCIATION DES UNIVERSITÉS AFRICAINES
اتحاد الجامعات الأفريقية

AUCC
Association of Universities and Colleges of Canada
Association des universités et collèges du Canada

AUGUST 2012
STRENGTHENING HIGHER EDUCATION STAKEHOLDER RELATIONS IN AFRICA

Funded by Canadian International Development Agency Agence canadienne de développement international
INTRODUCTION

This Policy Brief highlights the state of university-industry (U-I) linkages in African Universities. Results from a recent survey by Ssebuwufu, Ludwick and Béland (2011), which focused exclusively on university-side capacity factors, reveal that three quarters of African universities have a dedicated U-I office/unit and 92% of their strategic plans do refer the I-U linkages implying that they take the third mission of their mandate quite seriously in a constraining environment of few productive industries. Benefits of the linkages are briefly highlighted indicating that where there is an effective execution both universities and industries benefit greatly. The brief discusses also critical success factors and limiting factors for effective U-I linkages in Africa. The industry is used as a broad encompassing term which refers to all areas of the productive sector, including agriculture, banking, and the informal sector, among others. This brief is based on information from a workshop which was organized jointly by AAU and AUCC and funded by CIDA to discuss six showcases of U-I in Africa. The workshop took place in Accra on 28-29 June, 2012.

WHY UNIVERSITY-INDUSTRY LINKAGES?

Whether rightly or wrongly, African universities have been termed as ivory towers which are divorced with communities where they are located. This is opposite with the philosophy of their creation to a certain extent. A number of eminent writers on the subject have emphatically emphasized on a need of situating an African University in the development agenda. For example, to Nyerere (1966), the University in a developing society must put the emphasis of its work on subjects of immediate moment to the nation in which it exists, and it must be committed to the people of that nation and their humanistic goals. Therefore, the role of a University in a developing nation is to contribute, to give ideas, manpower, and service for the furtherance of human equality, human dignity and human development. On the other hand, Nabudere (2003) calls for African universities to not only cater for first and second missions of teaching and research, but more fundamentally, to have strategic conception and be the base of African and human emancipation and liberation. In order for an African university to undertake the above, it has to play the vital role of freeing knowledge production from the narrow class, technical, and instrumentalist dominance by a few specialists to a broader theatre of recognition of other producers of knowledge, which matters in their lives and which has validity in their cultural contexts. In other words, the real challenges for sustainable development in Africa are the promotion of economic and industrial development, the resolution of conflicts, and the optimum use of its natural resources. Therefore, if the African universities have to actively participate in these development endeavors, they must create linkages with industries.
BENEFITS OF UNIVERSITY-INDUSTRY LINKAGES TO VARIOUS STAKEHOLDERS

There are several benefits of U-I linkages at various levels. For example, at global level the linkage provides opportunity for shared expertise, training opportunities and equipment to provide competitive advantages, answer complex questions on a local or global scale. The linkages also enable specialized training for students by providing unique training opportunities on practical skills to gain real-word experience. With such training, the students maximise job opportunities upon graduation after acquiring the requisite employable skills.

Funding is another benefit which universities access. The funding may come from contract and sponsored research, industrial research chairs and matching programs with government or other funders. In other words, universities are able to access research funding, access to research facilities and equipment as well sponsorship and internship for students. With such collaboration, universities can attain technology transfer and innovations for growth and development.

Specifically, individual stakeholders benefit from the U-I linkages as follows:

(1) Benefits to academic staff (professors and other researchers)

- Technical collaboration through contract research: Project-based funding to address specific industrial needs; unique training opportunities
- Longer term collaborations: Industrial investment advancing specific areas of research (3-5 years);
- Technology transfer: Translation for social, commercial, health benefit and completion of the research lifecycle; financial gain

(2) Benefits to students

- Practical, hands-on experience with unique industry expertise and equipment
- Extension of knowledge gained through academic experience
- Development of marketable skills, contacts and possible employment
- Refined, scaled-up entrepreneurial skills
- Networking

(3) Benefits to Industry

- Cost savings through established university labs, infrastructure and workforce
- Matching funds, very generous tax incentives
- Ability to train workforce to its needs and to mine the talent pool produced by universities
- Long term research projects that are too cost prohibitive in an industry setting
ENABLERS OF SUCCESSFUL UNIVERSITY-INDUSTRY (U-I) LINKAGE

Due to its strategic nature, success of I-U linkages must have support of all key stakeholders. The research that was carried by Ssebuwufu, Ludwick and Bélard (2011) on the subject revealed that a cross-cutting theme appears to be the importance of leadership both in terms of policy and personnel. Expressed support by the governing board, promotion of productive sector linkages in the strategic plan, senior leadership positions, and presence of entrepreneurial staff all ranked among the top enabling factors. Although university-industry linkages require proactivity on the part of both sides, there is need for internal capacity-building (skill development, strategic planning, leadership etc...) at the university level. In other words, rather than concentrate on unconducive external conditions (lack of national policies, industry weaknesses, etc...) the universities themselves need to take responsibility and action for strengthening their own internal capacity to work with the productive sector.

CONSTRAINTS OF UNIVERSITY-INDUSTRY LINKAGES

There are some of the factors which are likely to reduce the effectiveness of I-U linkages. These include, among others, lack of financial support for research and inadequate research infrastructure needed to undertake research activities. Other constraints include limited number of productive industries in majority of the African countries as well as some mistrust between the universities and the industry. The mistrust is arising from the misalignment in the expectations. It is largely a debate between function and form: industry is keen for functional knowledge with academia (in most cases) insisting on form. Absence of academic staff or professionals with relevant entrepreneurial experience is another key factor hindering U-I linkages with the productive sector.

REQUIRED SUPPORT SERVICES

The development of strategic plans with strong emphasis on productive sector linkages is one of the most important support services requested. The strategic plans can serve to play an important function in focusing priorities, yet these documents need to be developed with conscientious introspection if they are to become effective guiding documents.

Support for establishing science parks and technology incubators is essential in establishment of sustainable I-U linkages. Support on this front would help to directly respond to the low number of scientific parks and technology incubators currently in African universities. Such support would likely need to extend beyond setting up the physical infrastructure, but also in building intellectual property (IP) expertise, business and project
management skills, among other types of capacity required for the effective governance of such structures. For such ventures to succeed and yield benefits to both universities and industry, high calibre faculty with the appropriate qualifications are also critically important.

Though the development of appropriate IP policies are surely needed for effective governance of techno parks and incubators, and should accompany efforts to train specialists in IP issues as requested by respondent institutions in earlier parts of the survey. Institutional IP policies may be especially important in the absence of national policy frameworks. As conflicts and issues concerning IP have already occurred in some respondent institutions, the development of appropriate IP policies and expertise may be helpful in mitigating future conflicts as institutions deepen and broaden their engagement with the productive sector.

CONCLUSION

While there is a potential of taking the U-I linkages in African universities to higher heights, the information synthesized from the survey and the six case studies on the subject are clear testimony that a number of the African universities have started to doing a commendable job of engaging the industries even though there is so much to be done. In this brief, it has been shown that the advantages of the linkages are multi-faceted with so many stakeholders including the industry being beneficiaries of the arrangement. It is imperative therefore that at policy level the African government have to create a thriving environment to foster the U-I linkages. The African universities have also to put in place requisite curricula, develop capacities of staff in the U-I linkage skills, have policies such IP policies which are needed for effective governance of techno parks and incubators, and should accompany efforts to train specialists in IP issues. Other recommended policies guiding the I-U linkages are follows: conflict of interest; costing and pricing of contract research and consultancy services; sharing of royalties and profit from collaborations with external actors; and environmental activities undertaken with the productive sector.

POLICY IMPLICATIONS & RECOMMENDATIONS

Governments also play an important role in creating a conducive, incentivized environment for strengthening such linkages by putting in place policy frameworks for Science and Technology strategies, appropriate legislation for the protection of intellectual property, and funding R&D, among others; however, many governments in Africa have not yet turned their pledges into concrete actions. A policy to support the development of curricula that promotes entrepreneurial skills is equally important. Other recommended policies guiding the following are needed: conflict of interest; sharing and ownership of intellectual property; costing and pricing of contract research and consultancy services; sharing of royalties and profit from collaborations with external actors; and environmental activities undertaken with the productive sector.
REFERENCES


Ssebuwufu, J., Ludwick, T., and Béland, M. (2011) *Strengthening Linkages between Industry and the Productive Sector and Higher Education Institutions in Africa*. A study conducted by the Association of African Universities (AAU) in partnership with the Association of Universities and Colleges of Canada (AUCC) funded by the Canadian Government through the Canadian International Development Agency (CIDA).