RUFORUM Working Document Series (ISSN 1607-9345), 2018, No. 17 (1): 155-165.
Available from *http://repository.ruforum.org*

Research Application Summary

Building entrepreneurial acumen among graduates in business incubators: the RUFORUM Entrepreneurship Challenge Program (RECAP)

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Abstract

Incubators play a significant role in the development of business start-ups by providing opportunity for nurturing enterprise development whilst supporting networking services, capital support, and training programs for technical and soft skills for novice entrepreneurs. In a continent facing mounting pressure from young people in search of employment opportunities, business incubators form a critical pathway for catalysing business growth for economic development. The Regional Universities Forum for Capacity Building in Agriculture (RUFORUM) with funding support from the Mastercard Foundation launched the RUFORUM Entrepreneurship Challenge Program (RECAP), an agribusiness incubator program within agricultural universities in Africa. The RECAP has four focus objectives: (i) provide the RUFORUM network with opportunity to innovatively develop, mainstream and institutionalise entrepreneurship and agribusiness in the university structures; (ii) provide universities opportunity to create an enabling environment through which students, university academics and private sector work together to support students to design, develop and validate their business ideas, models and products and translate them into meaningful and viable enterprises; (iii) support universities to develop an innovation ecosystem; social, technological and business innovation that supports student's mentorship in entrepreneurship and enterprise development as well as enhance technical support, skills development, networking and engagement with industry; and (iv) support university transformation process as innovation and incubation hubs for creating a cadre of entrepreneurial graduates with high success transition levels in the employment and job-creation. Seventeen agribusiness incubators have been operationalised. Six incubators from the first cohort have supported the creation of 81 enterprises by 273 students working together and these enterprises have created 209 direct jobs in one and half years of operation. One of the constraints currently facing these young enterprises is funding for acceleration but their potential is immense. In this regard, universities can actively play a leading role in not only being centers of innovation but locus for ideation, translation, business growth and employment creation given an enabling environment.

Key words: African universities, agribusiness, business start-ups, jobs, RECAP, RUFORUM

Résumé

Les incubateurs jouent un rôle important dans la création d'entreprises en offrant des possibilités pour leur développement y compris les services de réseautage, le soutien en capital et les programmes de formation. Dans un continent de pression croissante due aux jeunes à la recherche d'opportunités d'emploi, les incubateurs d'entreprises constituent un débouché pour la croissance des entreprises et le développement économique. Le Forum Régional des universités pour le renforcement des capacités en agriculture (RUFORUM), avec le soutien financier de la Fondation Mastercard, a lancé le Programme d'Entreprenariat, un programme d'incubateurs agro-industriels au sein des universités agricoles en Afrique. Le programme a quatre objectifs principaux; (i) offrir au réseau RUFORUM la possibilité de développer, d'intégrer et d'institutionnaliser de manière innovante l'entrepreneuriat et l'agro-industrie dans les structures universitaires: concevoir, développer et valider leurs idées, modèles et produits commerciaux et les traduire en entreprises significatives et viables; (iii) appuyer les universités à développer un écosystème d'innovation; l'innovation sociale, technologique et commerciale qui renforce le mentorat des étudiants en entrepreneuriat et en développement des entreprises, ainsi que le soutien technique, le développement des compétences, le réseautage et le partenariat avec l'industrie; et (iv) soutenir le processus de transformation des universités en tant que centres d'innovation et d'incubation pour former des diplômés en entrepreneuriat avec des niveaux de transition élevés sur le marché d'emplois. Dix-sept incubateurs agro-industriels ont été opérationnalisés. Six incubateurs de la première cohorte ont soutenu la création de 81 entreprises par 273 étudiants travaillant ensemble et ces entreprises ont créé 209 emplois directs en un an et demi de fonctionnement. L'une des contraintes auxquelles ces jeunes entreprises sont actuellement confrontées est le financement du processus d'accélération. À cet égard, les universités peuvent jouer un rôle de premier plan non seulement en tant que centres d'innovation, mais aussi lieu d'imagination, de transformation, de croissance des entreprises et de création d'emplois dans un environnement propice.

Mots clés : Universités africaines, agro-industrie, création d'entreprise, emploi, RECAP, RUFORUM

Introduction

The economic crisis coupled with increases in food insecurity and the looming impacts of climate change have necessitated that Africa ought to urgently rise up to these challenges and opportunities by promoting growth, food security, employment, poverty reduction and environmental sustainability (Ozor, 2013). One of the strategies for realising Africa's potentials for development in the wake of these challenges is via agribusiness innovation incubation. The need for agribusiness development in Africa is undisputable, especially for its largely young and rural population. Africa is a youthful continent, particularly sub-Saharan Africa, half of the population is currently under the age of 18, and those in the age group 15–25 make up almost 62% of the population today (UN, 2019). The estimated youth unemployment rate in Africa

is one of the highest in the world at almost 40% (ILO, 2019). Majority of the youth live below the poverty line. A capital intensive agribusiness development path that invests in or targets youth can provide them with employment opportunities, investing in both the future of agribusiness for the continent at large.

Job uncertainty is a reality in many African societies. Self-employment has taken a more active role, not only out of necessity, but also because it brings innovation and accelerates social and economic development. Young African business innovators and enterprise developers require high quality training, expertise and strong networks to support their growth and profitability. Networks that support skills enterprise, skills development and relevant linkages are one means of supporting small entrepreneurs to grow. African universities are well placed to sustainably support growth of enterprises particularly when linked to skills development and generation of new and relevant knowledge for development. Universities are also well placed to link the training of youth with forward-thinking environments that exposes them to new advances in technologies and systems. However, doing this requires an enabling environment that is facilitative and space for students, staff, communities and private sector to connect.

Business incubators have become pronounced locus for providing networking services, capital support, and training programs to catalyse entrepreneurship development (Li *et al*., 2020). There is strong interest in business incubators because of their critical role in supporting the growth of small business that are engines to facilitating job creation locally and innovations that are relevant to the local context. Further, business incubators are a real vehicle supporting local entrepreneurs to take active role in local economy and most of the young businesses emerging from these incubators are likely to maintain their business operations locally compared to the multinational enterprises (Martins *et al*., 2019). This helps to engage young people with skills but also create a multiplier effect for job creation. Universities are currently under immense pressure to demonstrate their value beyond the academic certificates that the graduates emerge with but to be centers of innovation and job creation.

University incubators are seen as pivotal in transforming the way universities do business. This is because they offer a facilitative environment within which universities can meet multiple objectives including revenue generation through mobilise corporations with financial advantage, legal and technical support, government and philanthropists to contribute to university advancement (Jamil *et al*., 2015). The RUFORUM Secretariat with funding from the Mastercard Foundation under the "Transforming African Agricultural Universities to meaningfully contribute to Africa's growth and development (TAGDev)" program responded to the need for universities to establish business incubators in member universities. These business incubators were established through a competitive call for proposals under the RUFORUM Entrepreneurship Challenge Program (RECAP). These RECAPs are focused on establishing pilot agribusiness incubation hubs for proof of concept to garner lessons on implementation, business processes, internal capacity and organisational arrangements required within the universities to operationalise incubators. This article shares the overall status of the RECAP implementation and lessons garnered

with the aim of forging the next steps for strengthening these incubators.

RUFORUM Entrepreneurship Challenge Program

The RUFORUM Entrepreneurship Challenge Program (RECAP) is an innovative program that builds on the successful student enterprise scheme that had earlier on been piloted at Gulu University and Egerton University through which student business ideas are incubated with technical assistance and financial capitation through a revolving fund. The RECAP was therefore expanded to an incubation program that is institutionalised at an applicant member university to facilitate student's innovation and business incubation. Through the RECAP, agricultural universities have the opportunity to establish Agribusiness Incubation Centers (AIC) to foster the development of innovative business ideas leading to products and/or services at local, national to regional scale. The AIC hub provides opportunity to students and other innovators and entrepreneurs to design and validate their business models and products and test their viability for success in the real world. It brings together the university, students, academics, private sector and other funding agencies including government and philanthropists.

The RECAP is founded on four objectives: i) Provide RUFORUM network universities with opportunity to develop and or strengthen agri-incubation hubs and support agri-enterprise development in Africa by providing relevant skills development for entrepreneurs and linkages with key stakeholders; ii) Provide universities with the opportunity to create an enabling environment through which students and university academics and private sector work together to support students design, develop and validate their business ideas, models and products and translate them into meaningful and viable enterprises, iii) Support universities to develop an innovation ecosystem; social, technological and business innovation that supports students' mentorship in entrepreneurship and enterprise development; and (iv) support university transformation process as innovation and incubation hubs for creating a cadre of entrepreneurial graduates with high success transition levels in the employment and job-creation as well as influencing national and regional social and economic transformation. Each incubation hub is awarded US$50,000 for a period of two years (24 months) as pilot funds to support and nurture at least 10 student enterprises. The funds are awarded through a competitive process under the RUFORUM Competitive Grants Scheme.

RECAP projects implementation

Two rounds of competitive award have been undertaken for fifteen (15) agribusiness incubation hubs which are fully operational in 15 member universities (Table 1). The operational agribusiness incubators are now supporting 471 students (177 female, 294 male) to establish businesses both within the University campus and outside with varying levels of success. Out of these, six incubators from the first cohort have supported the creation of 81 enterprises by 273 students working together and these enterprises have created 209 direct jobs in one and half years of operation (Figure 1). In these six incubators, a total of four enterprises have failed while one has become dormant owing to the busy schedule of the entrepreneurs.

Implementation activities at these incubation hubs have focused on three key areas: (i) supporting networking services with e.g. private sector, (ii) training programs for technical and soft skills; and (iii) pilot capital support for student group enterprises. Each of the incubators is currently linked to at least two private sector players that are providing mentorship support to students in their entrepreneurial projects. The engagement with the private sector and other funding agencies has facilitated the implementing universities to attract US$750,000 in counterpart funding to strengthen operations of the incubators as well as increase on student's intake.

The operational incubators have had an evolution to serve beyond the university students to respond to the community needs for building entrepreneurship and business start-ups. The Universite Catholique De Bukavu in DR. Congo now provides training to Non-Governmental Organisations staff from Mercy Corps, IITA and Tetratech as well as the youth entrepreneurs supported by these institutions in Bukavu region. Université Catholique de Bukavu (UCB) further used the incubator to reach out to two other institutions, namely, Université Evangelique en Afrique (UEA) and Institut Supérieur de Développement Rural (ISDR) to recruit and provide opportunity to their students in business incubation as part of demonstrating to other institutions within Bukavu the relevance of incubators. On the other hand, Busitema University, an emerging university in Uganda, has similarly had collaboration with Bena General Agencies, FINASP Uganda, HACCO Company, and DFCU Bank. They have had additional collaboration with the AVSI through the Skilling Youth for Employment in Agri-business (SKY) project (AVSI SKY). This incubator has been a pioneer project running within the university and has provided many lessons to the university community. For example, the AVSI SKY project running an entrepreneurship skilling for rural youth in Teso sub-region implemented by Busitema University has adopted the incubator model.

The University of Abomey-Calavi Start-up Valley incubator besides focusing on entrepreneurial business skills development has supported the development of intrapreneurship that allows for competitiveness of the students internal abilities. Through this dimension, four students haven been able to compete internationally in the Young African Leaders Initiative (YALI) leadership program, five start-up competitively raised US$25,000 from the Tony Elumelu Foundation and the Social Entrepreneurship Fund supported by the Mastercard Foundation as investment funds to support their business growth. This incubator's success perhaps emerges as a result of stronger partnerships with institutions such as the African Agribusiness Incubator Network (AAIN), the Faculty of Agronomic Sciences, the Laboratory of Genetics, Horticulture and Seed Science (GBioS), the Food Science Laboratory (LSA), Unité Béninoise de Transformation des Produits Agroalimentaires (UBTPA) and Agro-Dynamics. These have provided technical support as well as strategic business guidance and mentorship to the young entrepreneurs.

Table 1. RECAP Projects under implementation

No.	University	Title of Project
		Phase I Projects
1.	Egerton University (Kenya)	Empowering Kenyan youth through agri-enterprise incubation for improved livelihoods and economic development
2.	Gulu University (Uganda)	Enhancing the student enterprise training at Gulu University
3.	Busitema University (Uganda)	Agribusiness Innovations for Inclusive Soya bean and Honey Value Chain Development in Eastern Uganda
4.	Uganda Christian University (Uganda)	V-Hub: Venture Hub Project
5.	Bishop Stuart University (Uganda)	Youth Business Incubation Hub at Bishop Stuart University for Innovative and Diversified Employment Opportunities for Young Graduates
6.	University of Cape Coast (Ghana)	StartUp Villa UCC_AEE
7.	Catholic University of Bukavu (DRC)	Bukavu agribusiness incubation center
8.	University of Abomey Calavi (Benin)	Building the capacities of agricultural students in entrepreneurship and leadership to improve their professional insertion
		Phase II Projects
9.	University of Burundi (Burundi)	Agro-processing business incubation specializing in liquid and solid waste transformation
10.	University of eSwatini (eSwatini)	Establishing an Agribusiness Incubation Hub at Muni University
11.	Ndejje University (Uganda)	Development of Ndejje University Sustainable Agribusiness Incubation Hub
12.	Muni University (Uganda)	Establishing an Agribusiness Incubation Hub at Muni University
13.	South Eastern Kenya University (Kenya)	Youth business incubation hub for agribusiness

		innovations and increased employment opportunities project
14.	University of Juba (South Sudan)	Establishment of Agribusiness Incubation Hub at the University of Juba, South Sudan
15.	Haramaya University (Ethiopia)	Strengthening Entrepreneurial Capacity through Agricultural and Rural Innovation Incubation Hub at Haramaya University.

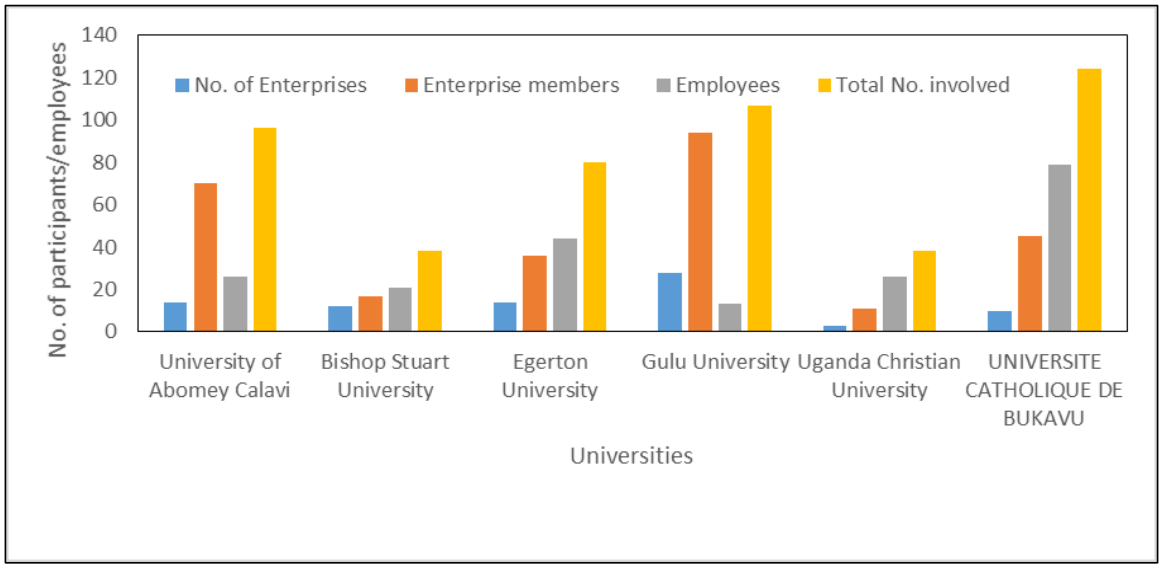

Figure 1. Number of student enterprises and jobs created in six universities

Business start-ups from young entrepreneurs in the RECAP incubators

Student start-ups in the various incubators initially started with social enterprises responding to opportunities within the different agricultural value chains. Start-ups included those in: horticulture (flowers, vegetables and spices), livestock feeds, livestock production-poultry, piggery, peanuts, fish farming and staple foods such as cassava flour (Universite Catholique De Bukavu). Similarly, a number of products and services have emerged from the University of Abomey Calavi Start-up Villa incubator (Plate 1) with some of these emerging from students valorizing Masters and PhD based research results translating them into products. For example; production of young baobab leaves, production of snowmelon milk, soursop juice and soursop, complete recovery of mango from the skin to the core, and production and commercialization of *Dioscorea dumetorum* biopesticide for efficient post-harvest management of food in Benin, among others. At Egerton University one start-up (Plotus Technology) is based on two innovation products Malkia Incu-Brooder and JumboCut. The Malkia Incu-Brooder is a machine that provides a solution to the poultry industry by providing a conducive environment for hatching eggs and rearing chicks. The JumboCut on the other hand is a cutting robot designed to cut sheet metal using high velocity electrified air.

Plate 1. Some of the student products from the University Abomey Calavi Start-up Villa Incubator in packages

Discussion

We find that there is an initial pattern of success with a relatively high number of enterprises established within a short time reflecting student's eagerness within the university campuses to launch their careers as entrepreneurs. We have also seen a relatively good number of transitions out of the university incubator of the 81 company start-ups, 25 of them have exited the incubators and are operational outside the universities and have created employment for 207 people. This is a confirmation of the potential that lies within the university incubators to create entrepreneurs and expand opportunities for job creation. In analysing the role of university incubators in entrepreneurship advancement, several authors (Rizzi *et al*., 2017; Paul *et al*., 2018) have alluded to the fundamental role they have in being engines of spin-offs and success in transitions are particularly higher in not for profit incubators such as those often operated by universities (Peters *et al*., 2004).

From the current pilots in implementation, five issues of interest are emerging. First, institutional commitment in terms of functional structures and infrastructure is key to the success of the incubators. Universities where the incubators were rapidly integrated in the institutional structures have had considerable success owing to a supportive ecosystem. In these institutions, the incubators have had the opportunity to tap into the institutional linkages with the private

sector for their success as well as with other sector actors. At the University of Abomey Calavi, the students at were particularly challenged to propose enterprises emerging from their research processes rather than simply any pre-existing social enterprises. This was part of the effort geared at strengthening the translation of research into business. Universities are technically seen as natural incubators; providing a support structure for teachers and students so that they may start their endeavors (Rizzi *et al*., 2017). As such, these universities exemplify entrepreneurial universities in practice.

Second, linkage with the private sector strengthens collective learning and enhances companies' transitions out of the incubators. In the current context of the RECAP incubators the focus is not for the technology transfer to the industry but rather the support the private sector/industry provides to the young people in terms of mentorship and coaching to succeed in business has been the focus that has brought success to the incubators. Simple transfer of research results from the university to established companies has previously been found not to have strong support among university academics in the case of Brazil (Closs and Ferreira, 2012), which is not any different from many African universities. The third issue of interest is that the demand is epic beyond the boundaries of the university and universities could potentially serve more than the university students. The demand for business incubators especially from outside the university community and among the youth already practicing and/or in the process of launching their business is a search to obtain relevant entrepreneurial skills, technical skills and management experience. Lack of these attributes have been observed to be responsible for failure of most young enterprises in Africa (Lose and Tengeh, 2015).

Fourth, capacity of the incubators directors requires to be up-scaled. In fact, the incubator directors require to transition from the purely academic practice to business development. As the incubators concept becomes enshrined in universities and universities increasingly become entrepreneurial, it is our anticipation that these skills will become evident within the universities. In the interim skills development trainings for the incubator directors is urgently required. It has previously been documented that improving the skills of incubator managers is essential in increasing their ability to support the small micro enterprises development through providing ambient nurturing (Lose and Tengeh, 2015). Fifth, transitions from the incubators among university graduates is limited by their ability to mobilise financial capital and relevant equipment to launch business. This is not a unique challenge to this group of incubates but a common occurrence across incubates in various incubators across Africa.

Conclusions and way forward

These pilot incubators established with funding from the Mastercard Foundation are providing unique learning experiences prior to scale-out. The five key issues emerging; (i) institutional commitment in terms of functional structures and infrastructure; (ii) linkage with the private sector strengthens collective learning and enhances companies' transitions out of the incubators; (iii) demand is epic beyond the boundaries of the university and universities could potentially serve more than the university students; (iv) capacity of the

incubators directors requires to be boosted; and (v) transitions from the incubators among university graduates is limited by their ability to mobilise financial capital and relevant equipment are important and this require to be addressed in the scale-outs. RUFORUM needs to consider a blend for incubation and acceleration within the universities to enable proper transitions with a continued follow-up. Thus, each incubator established in the scale-out needs to have a capitalization fund that is geared towards supporting the incubates that graduate from the incubator; this is part of acceleration.

Acknowledgment

We gratefully acknowledge the funding from the MasterCard Foundation through the Transforming African Agricultural Universities to meaningfully contribute to Africa's Growth and Development (TAGDev) project implemented by RUFORUM. This paper is a contribution to the 2018 Sixth African Higher Education Week and RUFORUM Biennial Conference.

References

Amanor, K. S. and Chichava, S. 2016. South–South Cooperation, Agribusiness, and African Agricultural Development: Brazil and China in Ghana and Mozambique. *World Development* 81: 13-23. dx.doi.org/10.1016/j.worlddev.2015.11.021

Closs, L.Q. and Ferreira, G.C. 2012. A transferência de tecnologia universidade-empresa no contexto brasileiro: uma revisão de estudos científicos publicados entre os anos 2005 e 2009. *Gestão & Produção* 19 (2) : 419-432.

International Labour Organization (ILO). 2020. Global Employment Trends for Youth 2020: Technology and the future of jobs. Geneva: ILO.

Fox, L., Senbet, L.W. and Simbanegavi, W. 2016. Youth employment in Sub-Saharan Africa: challenges, constraints and opportunities. *Journal of African Economies* 25: i3–i15, doi. org/10.1093/jae/ejv027

Jamil, F., Ismail, K. and Mahmood, N. 2015. University Incubators: A gateway to an entrepreneurial society. *Journal of Economics and Sustainable Development* 6 (6): 153-160.

Li, C., Ahmed, N., Khan, S.A.Q.A. and Naz, S. 2020. Role of business incubators as a tool for entrepreneurship development: The mediating and moderating role of business start-up and Government regulations. *Sustainabilit*y 12 (5): 1822.

Lose, T. and Tengeh, R.K., 2015. The sustainability and challenges of business incubators in the Western Cape Province, South Africa. *Sustainability* 7 (10): 14344-14357.

Martins, J.M., Abreu, A. and Calado, J.M., 2019. Business Incubator and Economic Development. In Transfer of Technology (TOT). IntechOpen.

Ozor, N. 2013. The role of agribusiness innovation incubation for Africa's development. *African Journal of Science, Technology, Innovation and Development* 5 (3): 242–249, dx.doi.org/10.1080/20421338.2013.796742

Paul, U.I., Aderonke, O., Anuoluwapo, O. and Kolo, S.D. 2018. University incubators: A pathway to entrepreneurial society. *Covenant Journal of Entrepreneurship* 2 (2): 34-41.

Peters, L., Rice, M. and Sundararajan, M. 2004. The role of incubators in the entrepreneurial process. *The Journal of Technology Transfer* 29 (1): 83-91.

Rizzi, D.I., Wescinski, J.V., Poli, O. and Jacoski, C.A. 2017. The importance of incubation processes from the perspective of incubated and graduated companies. *JISTEM-Journal of Information Systems and Technology Management* 14 (2): 263-279.

United Nations. 2019. World Population Prospects 2019: Highlights (ST/ESA/SER.A/423). UN, Department of Economic and Social Affairs, Population Division. UN, Washington, DC