



Commercial uptake of research: Have the Innovation Fund supported projects delivered?

Overview

The Government of Uganda (GoU) through the Science, Technology and Innovation (STI) policy (2009) recognizes that innovations are critical for socio-economic growth and transformation. The Second National Development Plan (NDPII) and Vision 2040 envision ‘*A Transformed Ugandan Society from a Peasant to a Modern and Prosperous Country within 30 years*’.

This transformation majorly hinges on elevating Uganda from an agricultural to an industrial economy. Innovations result in the creation of small and medium sized enterprises (SMEs) as well as development of already established industries. Government through Vision 2040 is focusing on providing incentives to increase the size of productive labour by increasing research and development activities and the utilization of research and innovation products. Research and innovation are necessary for a strong and competitive industrial base to create employment and ensure a resilient economy. The Government has been supporting scientists through initiatives like Presidential Support to Scientists, Innovation Fund, and Research Fund to academic institutions among others.

This policy brief discusses the status of ongoing Innovation Fund supported projects with regard to commercialization. It also offers policy recommendations to transit from innovation to commercialization of STI projects.

Introduction

During the past decade, the Government has been funding research and innovation through the Uganda National Council for Science and

Key Issues

- Most innovations have failed to commercialize to self-sustaining entities due to lack of incubation facilities that focus on both product development and business models.
- Most supported projects have a prototype but not pilot tested/incubated to determine the ability to stand market waves of competition.
- Consistent budget cuts to grant recipients has constrained the achievement of set research and development targets.

Technology (UNCST), public universities, Uganda Industrial Research Institute (UIRI), Ministry of Information, Communication Technology and National Guidance (MoICT) and the Ministry of Science Technology and Innovation (MoSTI). This is aimed at improving competitiveness of the country’s goods and services. The Innovation Fund was launched in FY 2017/18 with a budget of Ug shs 35 billion and was aimed at progressing innovations from pilot to commercial entities.

This move was taken in anticipation to improve the industrial base of the country and create more jobs. The projects were supposed to receive funding for one to two years to be self-sustaining. Unfortunately, funding for the second year was not appropriated as originally planned. By January 2019, most projects had received more than 80% -100% of the annual budget FY 2017/18, but a few had taken a step



to commercialize with some still at research level.

Status of Innovation Fund-supported projects towards commercialization

Sericulture technologies project in Sheema District was launched in February 2018 with an aim of increasing the production of silk in Uganda. The project had a budget allocation of Ug shs 1.526 billion, of which Ug shs 1.495 billion (98%) was disbursed by July 2018. The project supported two out growers of mulberry to refurbish rearing houses and procure other assorted equipment. The project set up a furrow irrigation system and established a 30-acre plantation of mulberry for feeding the silk larvae. However, the plantation was not well maintained as zero resources were released for the subsequent year (FY 2018/19). Set up of experimental gardens for different mulberry varieties was done for optimized protocols for silk production. The constructed buildings for production of silk were not completed. The project is currently employing 60 people with a projection of creating 50,000 jobs in a period of five years. Although the project was looking at commercializing silk production it had no business plan detailing the cash flows and turnover, this makes its sustainability uncertain.

Development of indigenous microbial mosquito larval pathogens for malaria vector control housed at Uganda Virus Research Institute was allocated a budget of Ug shs 113million, of which Ug shs 94.24 million (83.3%) was disbursed. By January 2019, project implementation was ongoing at a rather slow pace. The study had achieved isolation of entomopathogenic bacteria for purification of the larvicidal toxin produced by bacteria. However, lack of additional resources in FY 2018/19 affected the cloning and identification of toxins that kill the mosquito

larvae, and the study of efficacy, safety and selectivity between target and non-target organisms of the purified toxins. This was making the initial investment wasteful. The project seemed to be far away from commercialization.

Malaria prevention at household level using Artemisia annual-avocado seed powder-lemon grass blend beverage (Artavol): The project overall goal was to increase Artavol production capacity, quality and market penetration for national, regional and global supply. The project was aimed at increasing the production capacity by a 100-fold to 300,000 units per year and create more jobs for the youth. By December 2018, 99.97% of the annual budget (Ug shs 226million) had been disbursed and the following achievements registered: National Drug Authority (NDA) certificate number THA137 was obtained, UNBS certification process was ongoing and almost complete, architectural work and bill of quantities were completed. Machinery such as driers acquired led to increase in production from 3,000 units to 4,000 units per year. The project has created 22 direct jobs and over 120 indirect jobs, and moved to commercialization stage, however had not achieved the intended production potential of 300,000 units and a detailed business plan is yet to be developed.

Forest Fruit Foods in Bushenyi District was supported to commercialize local banana juice (*eshande*). The allocated budget to this enterprise was Ug shs 339million, of which Ug shs 338.77million was disbursed by July 2018. The funds were used to procure 40 juice extraction vessels and establish export liaisons with Turkey and Yemen. Formation of a farmers' cooperative, acquisition of product certification (Quality mark) from the Uganda National Bureau of Standards (UNBS), and water filtration were ongoing. Juice production



had increased from 7,500L/month to 42,000L/month. The project was still in early stages of commercialization although the budget cuts were affecting the process.

Up-Scaling the production and commercialization of Makapads: The project aimed at refining the product (MakaPads) to meet market demands and global standards, and increase commercial production. A bench making trip was made to China to identify a source for quality raw materials, 85,000 pads were in stock and marketing advertisement developed. The project had started commercial production but had not realized full production potential.

Production of tropical fruits wines under M/s Maritus Wine in Bweyogerere-Wakiso had an allocation of Ug shs 170 million, all of which was disbursed and expended by end of January 2019. The company registered with the Uganda Registration Services Bureau (URSB) for Intellectual Property (IP). Acquisition of a UNBS Quality mark was ongoing. After the intervention, production increased from 500 liters per month to 1,200 liters. The company had moved to commercialization with products already on the market.

Improving livelihood of rural communities through cassava processing and value addition project in Lira and Kole districts received a budget allocation of Ug shs 85 million all of which was disbursed and expended by January 2019. The demonstration and seed multiplication gardens (40 acres and 30 acres respectively) were established in Kole District. The enterprise had started commercial production of High Quality Cassava Flour (HQCF) and marketing it in the region. The project is employing 50 people directly against the 30 jobs projected at the start. The pending

activities by January 2019 included: delivery of a hydraulic press and product certification.

Bugarama Super Wine in Sheema District received support for scaling up production and distribution of wine. The project was allocated Ug shs 68 million, of which Ug shs 64.77 million was disbursed and all spent by January 2019. The entity was able to upgrade the production facility infrastructure and equipment. Wine production increased from 20,000 to 40,000 litres per month, and acquisition of the UNBS quality mark and intellectual property (IP) were ongoing.

Fresh Vacuum Sealed Matooke (FREVASEMA) Research Project: The project aimed at commercializing production of banana wines, animal feeds and innovative biscuits and cookies from banana flour. The project received Ug shs 203.1million out of Ug shs 339million annual budget. Commercial production of banana wine was ongoing by January 2019, while the other products were still at product development stage. The project is currently employing 4 people directly and 150 people indirectly (banana farmers and wine distributors).

Integrated Banana Juice Factory in Uganda Project: The project aimed at setting up a pilot plant to commercialize the production of banana juice (*eshande*). The project had received Ug shs 675.08 million out of the Ug shs 678 million annual budget. Architectural and civil plans were finalized as well as ground leveling of the proposed site. Mbidde farmers in Luweero, Mpigi and Nakaseke were mobilized by 31st December, 2018. The project had not progressed to commercialization and had no comprehensive sustainability and business plans.

Low Cost Solar Irrigation Water Pumps: The project received Ug shs 520 million out of



the Ug shs 678 million annual budget. The project seeks to locally design and manufacture affordable solar water pumps for irrigation on smallholder farms in Uganda. By 31st December, 2018 the project had assembled 500 solar pumps and 500 pieces of motors procured for assembling the next lot of pumps. An assembly site for the pumps was constructed at Mawakato. The project had progressed to commercial production, but with no comprehensive business plan.

Conclusion

Science, technology and innovations are key for economic transformation of low income countries through promotion of industrialization and creation of SMEs. Funding of basic research is key in generating innovations that can be commercialized. Therefore, government should consider funding for both research and commercialization of research outputs with clear guidelines of each funding window.

Most of the innovations in Uganda have failed to commercialize to self-sustaining entities due to lack of incubation facilities that focus on both product development and business models. Even though the Innovation Fund 2017/18 was to commercialize innovation outcomes, a few projects had started commercial production and were at various levels, while others were still at research or product development stage. All the projects lacked a comprehensive business and sustainability plan. In order to transit from innovations to commercially self-sustaining entities, the need for business plans, sustainability strategies and establishment of open innovation incubation and data centres is key.

Recommendations

- The MoSTI should establish open innovation incubation centres that focus

on both products development and business models

- The MoSTI should strengthen the innovation capacity of the public sector, enabling it to partner with domestic firms to foster innovation in areas of science, technology and engineering for improved service delivery. Given that public funds may be limited; government should consider promoting an enabling environment for the private sector to engage fully in capitalizing innovations.
- The MoSTI should consider having the Innovation Fund in two phases (research and innovation) with well elaborated guidelines for each phase.
- The MoSTI and UNCST should close the data gap by improving data collection. Adopting open data and science as a driver to stimulate and motivate innovations.

References

1. National Planning Authority, NDP II: 2015/16 – 2019/20
2. Uganda Vision 2040, “A transformed Ugandan society from a peasant to a modern and prosperous country within 30 years” (2009)
3. MoFPED, Annual Budget Monitoring Report FY 2017/18
4. MoFPED, Semi Annual Budget Monitoring Report FY 2018/19
5. MoSTI; Ministerial Policy Statement FY 2018/19
6. Technical progress report for innovation fund projects, 2018.

For more information, contact
Budget Monitoring and Accountability Unit (BMAU)
Ministry of Finance, Planning and Economic
Development
Plot 1-12 Apollo Kaggwa Road
www.finance.go.ug