AGRIBUSINESS INNOVATION INCUBATION: LESSONS FOR AFRICA

A Compendium of Agribusiness Innovation Incubation Workshop and Incubator Visits in Africa

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SECTION A

PROCEEDINGS OF THE INNOVATION INCUBATION WORKSHOP

1.0 BACKGROUND OF THE WORKSHOP

The University, Business and Research in Agricultural Innovation (UniBRAIN) is a consortium of stakeholders for linking university education, research and business in the area of sustainable agriculture. UniBRAIN’s primary developmental objective is for innovation and entrepreneurship derived jobs in the agricultural sector to be created through partnerships between universities, research institutions and the private sector. It aims to support the following interventions:

1. Development of agricultural business innovations in a conducive institutional setting linking universities, incubatees (defined as small businesses inside Agri-Business Incubators), other research institutions, and private sectors in an Agribusiness Innovation Incubator Consortia (AIIC) environment,

2. Development of agribusiness entrepreneurs and innovators by improving Bachelor of Science (BSc) and Master of Science (MSc) agribusiness teaching and training,

3. Up-scaling and disseminating innovation outputs, experiences and practices through improved networking and channels of communication.

The initiative is funded by the Danish Ministry of Foreign Affairs/Danida and implemented by four pan African organizations namely the Forum for Agricultural Research in Africa (FARA) the African Network for Agriculture, Agro Forestry and Natural Resources Education (ANAFE), the African Technology Policy Studies Network (ATPS) and the Pan African Agribusiness and Agro Industries Consortium (PanAAC). Each of these institutions, by virtue of its mandate, is responsible for facilitating the involvement of particular categories of collaborating institutions and guiding the development of particular components.

In line with its core mandate under the UniBRAIN initiative, ATPS facilitates the agribusiness innovation incubators and incubatees through:

- Raising and sustaining awareness on the UniBRAIN initiative, among its stakeholder communities, including policymakers, incubator and incubate networks. Fostering and supporting development of the UniBRAIN Agribusiness Innovation Incubator Consortia (AIIC) through technical advice, training and facilitation activities on innovation incubation;
• Providing technical support for collaboration amongst the UniBRAIN AIIC to build a culture of innovation and entrepreneurship within the agribusiness incubators;

• Technical Capacity building support for the AIIC on incubator management, operation and governance; knowledge management and intellectual property rights; etc.

• Liaising with other UniBRAIN Team (UT) members to develop a comprehensive communications strategy to upscale the AIIC products and processes and engage with the relevant stakeholders in Africa;

• Engaging advisory services as a means of ensuring that the agribusiness incubators can provide services effectively along the value chains of agricultural products and processes;

• Engaging African Governments and Policymakers to support the UniBRAIN initiative.

In order to realize the core functions of ATPS in UniBRAIN initiative, visits to agribusiness innovation incubators and incubatees were undertaken by staff of the ATPS in some selected Danida priority countries and other countries recommended by Danida. The report on Section B shows an analysis of experiences and observations made during the visits. The report covered the following countries- Kenya, Egypt, and Uganda.

The ATPS hosted an Agribusiness Incubator’s workshop that brought together representatives of various institutions identified as stakeholders in the facilitation and implementation of the UniBRAIN project. This was held at the Nairobi Safari Club from 5th to 7th August 2010.

1.1 Rationale of the Workshop
The workshop targeted stakeholders from institutions in the Danida priority countries who have established Agribusiness incubators. In this respect the strategic goal of the workshop was to build networks amongst the countries, and learn from the successes and failures of the various incubators.

Furthermore, the workshop brought together a team of institutions that were identified as key stakeholders in the implementation of the UniBRAIN project.

1.2 Expected Outputs/Outcomes
The workshop was expected to produce the following key outputs:

1. Report of the agribusiness innovation incubation workshop
3. Enhanced collaboration and coordination amongst the participating partners expected to contribute to the success of the UniBRAIN initiative.
2.0 THE WORKSHOP

2.1 Opening Ceremony

The workshop was called to session by Prof. Atieno Amadi, the Founder/Chief Executive Officer of Kenya Country Business Incubator (KeKoBi). In her opening remarks, Prof. Amadi gave an overview of the aims, objectives and expected outputs from the workshop, noting that business incubation is a great initiative with prospects of creating wealth and employment, and eradicating poverty. The participants were given a chance to introduce themselves and thereafter Prof. Amadi invited Dr. Urama, the Executive Director of ATPS, to give the opening remarks.

Participants at the Agribusiness Innovation Incubation Workshop held 5-7 August 2010 at Nairobi Safari Hotel, Kenya
2.1 Welcome address by the Executive Director of ATPS

The Executive Director of ATPS, Dr Kevin Urama welcomed the participants on behalf of ATPS and the UniBRAIN Project Management Team (PMT).

Dr. Urama introduced the project’s guiding vision which is to build an innovation system through the collaboration of its principal partners, each of which contribute a necessary ingredient for success. He emphasized his conviction that it is only through broad-based engagement with the “quadruple-helix” consisting of policymakers, science experts, civil society actors, and the private sector that innovation systems can be effectively generated and sustained. Through the activities and purview of its constituent partners, the UniBRAIN project embodies the quadruple helix. He pointed out that ATPS works with the quadruple helix to build capacity in science, technology and innovation in Africa. For example, ANAFE is a university network in Africa, FARA is an agricultural research forum for Africa and PanAAC is a private sector agribusiness forum in Africa. The UniBRAIN concept is very exciting and at the same time challenging. The challenge comes when trying to collaborate between the private sector, research institutions, policy makers and the universities which is not easy. However, the UniBRAIN project is exciting because innovation is the only way to drive development in African countries.

ATPS acts as a conduit between Africa and the developed world through knowledge brokerage, and is also involved in building capacity in science, technology and innovation research and policymaking in the continent. Through its policy advocacy activities, ATPS works with national governments to support innovation and incubation programs. ATPS prioritizes the need to improve public access to intellectual property information. In this regard, it has launched the Intellectual Property Program, an initiative which considers the issue of intellectual property rights in relation to innovation systems across the continent.

UniBRAIN project partners pursue two interrelated missions; one is to support a platform for innovation and idea incubation, and the other one is to use that experience to design new university science curricula which promote innovative thinking. Dr. Urama expressed his pleasure in seeing the wealth of experiences in agribusiness innovation incubation brought together by all the participants present in the workshop. He specifically commended the role of Prof. Amadi in championing business incubation programs in Kenya.

Dr. Urama explained that UniBRAIN is an initiative funded by The Danish Ministry of Foreign Affairs/DANIDA which will run for five years. ATPS was involved in the inception phase that
ended in 2010, and presented a report to the Danish Ministry of Foreign Affairs highlighting the progress made during the inception phase.

Dr. Urama outlined the expected output of the meeting, to include;

- To enhance collaboration among African agribusiness actors through a structured discussion of their experiences.
- To prepare program related concept papers and proposals through discussion of results obtained from the UniBRAIN steering committee visits to program participants.
- To increase the UniBRAIN project’s utilisation of the private sector for sustainable seed-funding and incubation programs in Africa.

Dr. Urama recognised Prof. M’wagombe as the ATPS Board representative for the UniBRAIN project. He also urged the participants to join the ATPS network and commit to its vision of harnessing science, technology, and innovation for Africa’s development. He added that UniBRAIN was conceived with the vision to ensure that agribusiness products are inspired by Africans and used by Africans. Dr. Urama expressed his hope that this engagement with the social partners and private sector would continue after the five years of the DANIDA project funding.

2.2 Remarks by UniBRAIN Overall Coordinator, Mr. R. Von Kaufmann (Presented by Dr. Urama)

UNiBRAIN is a pan-African initiative led by the Forum for Agricultural Research in Africa (FARA) supported by the Danish Ministry of Foreign Affairs (Danida). UniBRAIN is addressing one of the five core initiatives identified through 15 comprehensive consultations held by the Africa Commission in 2008, which found that, “African universities are not sufficiently geared to meet the needs of industry. Graduates often cannot find employment, while many small businesses lack staff with the education and skills needed to drive innovation. Essentially, the relationship between the demands of the private sector and what universities teach is too weak”.

UniBRAIN promotes innovation by supporting the start-up, diversification and scaling up of commercial ventures, by supporting graduate training in entrepreneurial and business skills and by advancing graduate research-based knowledge that is relevant to the development of Africa’s agriculture and agribusinesses.

UniBRAIN provides competitive grants to enable universities to form consortiums to establish agribusiness incubators that will be centres of innovation and job creation. It also supports improved teaching and research in agribusiness and inspires the youth to become job-creating agro-entrepreneurs. Furthermore, UniBRAIN supports consortia of universities, businesses and research institutions to establish agribusiness incubators which facilitate the creation of
competitive agribusiness enterprises through technology development and commercialization. Although the incubator helps new entrepreneurs and enterprises with services starting from business conceptualization to implementation and scaling up, it is up to the entrepreneurs / enterprises to choose the kind of service they want from the incubator.

Opportunities for investment in African agriculture are encouraged by a range of technical opportunities such as availability of abundant land, rapidly growing markets with poor yields, high post-harvest losses, and ineffective processing and marketing. Additionally, investment is encouraged by plentiful sources of skilled workers and more capital than can currently be absorbed. However, wide scale investment in agribusiness and agro-industry is presently constrained. Factors inhibiting investment include low human and institutional capacity, few entrepreneurs and problem solvers, and insufficient leadership in identifying and exploiting socially responsible opportunities for investment in agriculture and the environment.

In order to realise the potential for investment in African agriculture, UniBRAIN is pioneering a new approach to promoting agricultural innovation and improving tertiary agribusiness education in Africa. UniBRAIN aims at stepping away from the mainstream to bring African Universities into agricultural innovation through increased and strengthened collaboration between universities, research institutions and the private sector, improved teaching and learning and knowledge sharing. These collaborations are being arranged with a goal to create cultures and environments that value, encourage and enable innovation as well as produce graduates who are problem solvers, decision takers and successful entrepreneurs.

2.3 Remarks by Dr. Nicholas Ozor, ATPS-UniBRAIN Coordinator

Dr. Ozor introduced ATPS as a multi-disciplinary network of researchers, practitioners and policy makers that promotes science, technology and innovation policy research, dialogue and practice for African development. Its vision is to become the leading international centre of excellence and reference in science, technology and innovation systems research, training and capacity building, communication and sensitization, knowledge brokerage, policy advocacy and outreach in Africa. Its mission is to improve STI knowledge generation and dissemination, as well as use and mastery, through which civil society, policymakers, scientific experts and the private sector endeavor to more effectively shape sustainable development in Africa. This mission is

Figure 1: ATPS member states.

The ATPS network functions through National Chapters in 23 countries, of which Egypt is the most recent member. It has also made connections with Sudan, Madagascar and Tunisia, each of which is expected to become a national chapter. Dr. Ozor noted that Egypt has many successful agribusiness incubators, comprised of researchers, universities and non-governmental organizations working together in one unit.

These functions are performed through three cross-cutting thematic research capacity building programs and three cross-cutting non-thematic facilitative programs. The thematic and facilitative programs are intertwined and together they form the six medium term strategic priorities of the ATPS.

2.4 ATPS strategic plan
Science, Technology and Innovation capacity building is the core of all ATPS activities: the capacity of researchers to conduct innovative STI policy relevant research; the capacity of policymakers, private sector actors and the civil society to understand, articulate, formulate and
implement relevant STI policies; the capacity of national chapters to sustain national policy
dialogue and monitor implementation; and the capacity to communicate and share science,
technology and innovation more broadly within the African continent and beyond. ATPS hold a
firm belief that the missing link in Africa’s development struggle is the lack of focus on building
science, technology and innovation capacity at both individual and institutional levels. There are
unlimited development solutions and the unlamented opportunities that building science,
technology and innovation capacities present for the new African renaissance hence the dream of
the new Africa where science, technology and innovation is the norm, and poverty is history.

The year 2008 saw the launch of the ATPS Phase VI Strategic Plan, 2008 – 2012. The five years
Strategic Plan which commenced on January 2008, adopted a forward looking and ambitious agenda. During the implementation of the ATPS Phase VI Plan, ATPS continue to close the loop through four interrelated functions:

1. **Knowledge Generation** (Research & Research Capacity Building/Training);
2. **Knowledge Brokerage** (Stakeholder Dialogue, Knowledge Circulation and Networking);
3. **Knowledge Dissemination & Outreach** – (Publications, STI Journalism, Policy Advocacy);
4. **Knowledge Valorization** – (Innovation Incubation and Challenge Programs, etc.).

All the thematic research and facilitative program activities aim at providing practical solutions to
practical problems through science, technology and innovation. All ATPS research and research
related activities demonstrate social relevance both in its conception and execution. Two critical
elements of this are: dialogue with the intended users throughout the process (through knowledge
exchange exercises, practical demonstrations etc.) and an actionable implementation plan using
the results of the activity. In a nutshell, ATPS research and research related activities all aim at
improving the innovative capacity of Africans to solve their own problems, and on the other hand,
improve their capacity to use and master scientific knowledge, indigenous and emerging
technologies and innovations for sustainable development in Africa.

All ATPS programs target the quadruple helix, i.e., the policy makers, the science experts, the
private sector actors and the civil society and aim at improving their capacity to put STI into use
for development. The training programs and policy seminars are increasingly serving as avenues
for utilizing results of ATPS supported research as well as the results of research and experiences
from other institutions and countries. One new feature of the training program is the training of
journalists in science and technology writing and reporting. This platform provides veritable
outlets for putting STI into use in Africa through media outreach.

Dr. Ozor concluded by emphasizing that Africa needs strong institutions as the era of strong men
has passed. These institutions need to be strengthened. The national partnership strategy is also
evolving as ATPS national chapters are forging links with national institutions whose contributions materially and in-kind are important is subsidizing ATPS national activities. Under the new governance framework of the chapters, emphasis is placed on the participation of the quadruple helix: the Policymakers/state institutions; the academia, the private sector and the civil society at all levels of the ATPS governance structure. New strategies are being devised for increasing Africa’s support to STI capacity building and ATPS in particular.

Figure 2: Strategies for increasing Africa’s support to STI capacity
Figure 3: Research Priority Sectors, Phase VI, 2008-2012

Figure 4: Quadruple Helix Model
2.5 Remarks by Dr Aissetou Drame, Executive Secretary, ANAFE

ANAFE is a network of 135 tertiary and natural science education institutions in 35 African countries. Founded in 1993, it acts as an advocate and consultant for agro-forestry departments in tertiary institutions. One of its major achievements has been the design of an agro-forestry curriculum that is taught at 67 tertiary institutions, in every African country where the agro-forestry discipline is offered.

ANAFE has also spearheaded efforts to “contextualize” agro-forestry learning material. Most university content is borrowed from the developed world. Contextualizing means transforming this content into that which is engaging and interesting to diverse student populations. While this is an ongoing, partially experimental process, ANAFE is proud to report that it has held contextualizing training courses for lecturers in 17 African countries. Furthermore, who expected a series of formal training materials to be complete by September 2010.

ANAFE has seen an opportunity to continue these programs through partnering with UniBRAIN. The partnership will see ANAFE continuing using its network to review and edit agribusiness curriculums, while also tailoring these curriculums towards the strategic aims of the partners.

2.6 Remarks by Ms. Lucy Muchoki, Chief Executive Officer, PanAAC (Presented by Mr. Sylvester Gule)

The PanAAC speaker focused on fostering innovations through multi-sectorial strategic partnerships. The talk was based on the assumption that researchers and universities are generally not equipped to respond to the demands of agribusiness and agro-industry in Africa. The cost of research collaboration is prohibitively high, and also few innovations are diffused from universities to industry. Furthermore, university graduates are often not ready for industry placement, and require expensive job training if they get employment. University ought to be a place where students learn the problems and the private sector where they create solutions. While the ideals captured by this delineation may sound overly simplified, it ought to give UniBRAIN a sense of purpose. PanAAC calls on professors and lecturers to commit themselves to turning these ideals into dynamic realities. Today, a combination of poor management and stunted vision plague the university-industry nexus. Innovation systems fail to harness the collective knowledge embodied in thousands of dissertations.
and senior projects completed by African graduates. Also, very few people who are trained in agribusiness actually start businesses. Amazingly, about 80% of small agricultural enterprises (SMAEs) are owned by people who were not trained in agriculture or agribusiness at the tertiary level.

The priorities of the private sector include building platforms for innovative business financing and other imbedded support mechanisms and innovations that ensure access to demand driven products of research.

The role of PanAAC in the UniBRAIN project is to mobilize the private sector in Africa and beyond to buy into the program, promote financing strategies for the SMAEs and start-ups, provide feedback on the impact of the program based on the real business experiences and benefits, propose the value chains that require intervention for best impact, provide a platform for private sector mentorship and internship, and give access to qualified industry personnel, such as scientists, marketing and managerial experts, and property rights specialists.

2.7 Role of Agribusiness Innovation Incubators in Development

By
Dr. Nicholas Ozor
ATPS UniBRAIN Coordinator

Dr. Ozor began by describing an agribusiness incubator as an organization managed by specialized professionals, whose main aim is to increase the wealth of its community by promoting the culture of innovation and the competitiveness of its associated businesses and knowledge-based
institutions in the agro-allied sector. Projects with similar motivations and objectives include science parks, technology parks, research parks, techno pole, technology precincts, learning villages, and science cities. These incubators have various functions such as economic roles, environmental roles, social roles and knowledge management roles. In most developed countries the incubators fuel a vast ecosystem of private companies, creating employment and reducing social ills. Their operations are usually linked to research and universities, where constant innovations, driven mainly by youths, are demand-driven and generate small to medium scale businesses.

For example the University City Science Centre in Philadelphia is owned by a consortium of more than thirty academic and scientific institutions. It is physically located adjacent to both the University of Pennsylvania and Drexel University. Established in 1963, it is both the oldest and largest urban research park in the US. More than two hundred technology and research-based organisations are located within the science centre, and approximately 7,000 people are employed there. The centre was the world’s first business incubator, and has also been the most successful – it has launched approximately 250 private sector companies during the past three decades.

Considering examples like this one reveals that effective incubators depend on support from several actors. Dr. Ozor further noted that for an innovation incubation to thrive, it requires links with universities and research centres, as well as the private sector and the political class.

2.8 Challenges and Opportunities of Agribusiness Innovation Incubation: Lessons from Uganda

By
Prof. Charles Kwesiga
Executive Director, Uganda Industrial Research Institute (UIRI), Kampala, Uganda
Prof. Kwesiga remarked that the African Incubator Network, a consortium buttressed by infoDev with which he has been involved, requires funding to revive it. Prof. Kwesiga presented a view of the world, where national success and economic competitiveness is principally determined by a global hierarchy determined by technological capacity and access to intellectual property. The third world, he noted, is characterized by low level of technology use, unlike the first world (such as North America and Western Europe), which creates technology and the second world (e.g. India) which adapts and adopts technology. This situation may prevent those countries at the bottom of this global hierarchy from meeting millennium development goals.

Prof. Kwesiga added that desirable partnerships between research institutions and universities should focus on supporting the development and sustenance of small-medium-enterprises (SMEs), which depend entirely on technology transfer, skills development, capacity building, consultation and idea exchange, symposia and industrial visits. SMEs are enterprises that provide a new product or service, or develop methods, procedures, or technologies to produce or deliver existing services more optimally (with lower costs, better quality, improved environment, etc.). These are the engines of growth in developing countries, responsible for most jobs, products, tax revenues, welfare, and development. They also play a vital role in acting as suppliers to large corporations.

Incubation is the process of helping and nurturing start-up businesses so that they grow into sustainable enterprises.
Incubation takes place when technical knowledge, such as that derived from the laboratory, is combined with social knowledge relevant to problems and social demands. Together, these forms of knowledge generate demand driven innovation, which may be incubated and later commercialized.
Prof. Kwesiga said that the Ugandan Industrial Research Institute categorizes its incubation activities in three ways – virtual, in-house, and partnerships. These are faced with various challenges such as limited resources, low level technology use, inadequate infrastructure, and low level entrepreneurship, lack of institutional collaboration and lack of financial support mechanisms.

These challenges have been overcome, in part, through garnering political support. Prof. Kwesiga noted that their incubation has been fortunate to be visited by the president of Uganda. He succeeded in getting the President to visit the incubator by showing the him tangible products that have been made in their incubation. This interested politicians who now actively support several projects. UIRI has also managed to form effective collaborations with universities, industries, technical and tertiary institutions as shown in the diagram below.
Prof. Kwesiga finished his presentation with a quote from H.E. Kofi Annan which says, “The knowledge required to create wealth……is not lacking, what is lacking in sub-Saharan Africa is the will to turn this knowledge into practical innovations”.

Participants gave feedback focusing their initial discussion on the principal responsibilities of the incubator. One point of consensus prioritized political responsibilities. It is through political engagement that incubators may be funded and networked with state funded universities. In other words, incubators must convince politicians of their own importance. This was the case with UIRI.

It was also noted that incubators were not just needed for innovations derived from tertiary institutions, but also for innovations derived from indigenous knowledge. However, participants noted that combining informal sector innovations dependent on indigenous knowledge, such as bee keeping, with SMEs, presents unique difficulties. Participants recognized that indigenous knowledge may hold seeds of innovation and enterprise, but to make them commercially viable, disciplined scientific research and development would surely be necessary to translate innovations into standardized, branded, and marketable goods.
2.9 Challenges and opportunities of agribusiness innovation incubation: Lessons from Egypt

By
DR. ABDALLAH MAHMOUD ABDEL MAQSOUD AHMED
Heliopolis Academy, A subsidiary of SEKEM Group of Companies

Dr. Abdallah founded the Heliopolis Academy, which is the research and innovation centre of Heliopolis University; whose vision is to work for sustainable development through an integrated, multidisciplinary approach to research.

The Academy’s aim is to improve the University’s capacity to conduct, publish and disseminate relevant social and scientific research in the strategic focus areas of medicine, pharmacy, renewable energy, biodynamic agriculture, arts and social sciences. It is demand driven research designed to meet the future requirements of the Egyptian community and builds on national and international collaboration. The Academy offers training courses and personality development programs within the framework of sustainable and holistic development. The Academy employs 33 full-time employees and 13 part-time researchers with whom it supports 22 ongoing research projects.
Several distinct and significant administrative disciplines form the body of Heliopolis Academy.

The Special and Sponsored Program Centre is charged with coordinating research and development projects, funding them, and also supporting their strategic alignment so as to maximize synergies. The Innovation & Entrepreneurship Centre is a platform that provides a stimulating and supportive environment where the researchers work together and interact. It also provides support for researchers, from the origination of the idea until its implementation. The Academy also offers capacity building by linking researchers to industry and helping them with managerial and administrative aspects of their business. The Academy boasts research partnerships, including those with USAID/EGYPT, University of Portsmouth, and European Membrane House, amongst others.
2.10 Challenges and opportunities of agribusiness innovation incubation: Lessons from South Africa

By
Candice Kelly
Sustainability Institute, Stellenbosch University

Candice Kelly shared information about the Sustainability Institute, which works with masters’ students to help them develop demand-driven research proposals involving sustainable agricultural practices. South Africa has been trying to redistribute land more fairly since about 1.3 million subsistence farmers in small communities are not making any money, but these reforms have not yet been enacted. In the meantime, there is need to promote business in South Africa’s agriculture sector, which alone accounts for a tremendous portion of the economy. Last year the government started a mentorship and entrepreneurship program in agribusiness to mentor small farmers. This program fits nicely with the UniBRAIN program.
2.11 Establishment, management and operations of Agribusiness Incubators: Principles and Processes

By
Prof. Amadi
Founder, Kenya Country Business Incubator & Chairperson Business Incubation Association of Kenya

Prof. Amadi discussed the prospective UniBRAIN’s research priorities. She began by posing the rhetorical question: What are the objectives of UniBRAIN? She divided her answer into two parts; in the short-term, the objective is to raise the profile and credibility of innovation incubation; in the long-term, the objectives are to address poverty alleviation, employment generation, and wealth creation.

Prof. Amadi proposed a theory: that there is an association between an increase in the number of successful small enterprises and the wealth of a nation, defined as decreased poverty and increased employment opportunities. The UniBRAIN project harnesses resources and lays out strategies for carrying out research and implementing small enterprise creating mechanisms within the agricultural sectors of target African regions and countries using the business incubation approach to small business development.

The focus of UniBRAIN is in the agricultural sector because of its large size – 70% to 80% of the populations of the targeted regions are employed in the sector under both formal and informal agriculture – and its potential for wealth creation through increased production and value addition.

Prof. Amadi recommended a five year strategic plan for UniBRAIN focusing on the following;

- A market study coordinated by UniBRAIN to identify a group of agricultural products with the highest demand and market potential both locally and internationally, and justification for focus on this group of products;
- Research report on the complete agriculture demand and supply chains, outlining pertinent processes such as farm production, processing, and manufacturing, packaging, pricing, marketing, and logistics, as well as identification of players along the chain, specifying roles and deliverables;
• A feasibility study with budgets, work plans, and timeframes for an implementation strategy specifying the role of stakeholders and scoping the programme and individual projects;

Once UniBRAIN has a plan, it will need to implement it with the help of the UniBRAIN Coordinator, with a Management Committee, working with subject-matter experts to facilitate the following:

1. Publish papers on target agricultural products and their market potential (locally and internationally) published in an Agri-Business Incubation Innovation Journal, which might indicate findings such as that Africa’s Diaspora is a good target market with traditional and other foods such as tea, royco, spices, dried vegetables, dagaa (omena), smoked fish, and multi-grain flour. The papers could also recommend, for example, that although the large size of the Diasporas presents a potentially great market opportunity, the market needs to be cultivated.

2. Facilitate publication of a set of papers recommending methods for mass production of the pertinent agricultural products, through such means as working with locals and women groups to form cooperative societies. Furthermore, focus areas may reflect on working with government agencies such as standardization bodies for quality assurance, or processes for identifying and training entrepreneurs.

3. Paper publications on the feasibility of each product including demand and supply potential, budgets, work plans, timeframes, costs, and profit potential. Indicating good profit making potential may attract interested and savvy entrepreneurs. Designating specific products for specific regions of the different countries identified (e.g. viability of the Lake Region for omena and smoked fish; Kenya’s Kinangop area for dried vegetables); specific cities and large metropolitan areas overseas in which African food might be imported; and recommendations on how to select entrepreneurs (both at home and abroad) and the level of involvement of and support by UniBRAIN of the entrepreneurs.

4. A publication on product packaging and marketing strategies for each product – including the placement of Diaspora supermarkets, awareness creation, and community involvement, which includes mobilizing investors among the Diaspora.

Prof. Amadi also discussed specifics of the UniBRAIN incubator. By prioritizing three levels of entrepreneurs – farmers, manufacturers, and business owners in the Diaspora, she suggested that the business incubation component would emphasize enterprise development for farming cooperatives. That development would support individual farmers with a focus on farming as a business – including entrepreneurship trainings, farm input loans, technical assistance, business planning, and market information. Incubation should also support small manufacturers by
providing entrepreneurship training, equipment loans, provision of manufacturing facilities (e.g. go-downs), technical assistance from research organizations and universities, business planning, and market information. Furthermore business incubation should support retailers, both locally and in the Diaspora on entrepreneurship trainings, retail trade, access to start-up loans, mobilization of Diaspora investors, technical assistance with finance and bookkeeping, business planning, and market information.

She added that the business incubation process should include an innovation component for each product. Attractive innovations may include packaging products in more practical quantities and more appealing ways (e.g. microwavable containers), and also modernizing some of the traditional foods through value addition (e.g. fully cooked, spiced, smoked fish, dried vegetables and omena).

Prof. Amadi turned her attention to conceptualizing the role of universities in the UniBRAIN scheme. Their critical contributions must include working with farmers (members of cooperatives and groups) to optimize farm production through research and extension services; working with manufacturers on optimization of production processes and product variety/lines; working with business incubators and manufacturers on product standardization, packaging, product mix, and marketing strategies; and working with retailers on retail trade management and research on demographics, shop locations, trends in consumption of traditional foods among the different Diaspora groups, and other cultural influences.

Finally, Prof. Amadi advocated a strategic priority for the UniBRAIN Coordinator and Management Committee, which were encouraged to identify Technology Incubator Centers of Excellence in Agriculture and to provide support (e.g. through grants) for setting up business incubators including trainings for both entrepreneurs and incubator personnel. Their technical orientation and practical approach makes them more adaptable to business incubation, as compared to universities that often have greater focus on theoretical approaches and research. Technology incubators would work with farmers as well as with both students and the local communities for manufacturing or otherwise processing farm products for both local and export markets.

2.12 Intellectual Property Framework and the Innovation System

By
Engr. Dr. OKUONZI JOHN
National Coordinator, ATPS Uganda Chapter
The ATPS Uganda Coordinator opened his remarks by paying tribute to a guiding theory: that intellectual property management is the thread that runs through the innovation process, and the glue that holds entrepreneurial partnerships together. Scientific innovation can and must support economic growth and the development of sustainable agriculture, but innovation needs a supportive environment in which to thrive. Intellectual property rights (IPR) protection plays a key role in creating that environment.

Engr. Dr. John Okuonzi, ATPS National Coordinator, Uganda

Figure 7: Role of Intellectual Property in sustainable agriculture

Agricultural productivity in the continent has stagnated such that the proportion of Africa’s agricultural imports to exports, a common metric of economic wellbeing, has risen above acceptable levels. Through considering IPR regimes, Okuonzi expected to determine areas of weakness in this system.

The classic challenges of crafting an IPR system which both encourages invention and innovation were reviewed. That balance which provides incentives for research into new technological
innovations and also rewards inventors has always been difficult to find. The path between research and invention is simply not linear. Rather, innovations variably depend on scientific breakthroughs from across the research spectrum, anywhere between basic and applied research. For example, one person’s innovation may be another person’s basic research material.

In many African countries, on account of their lacking the organizing power of the private sector, many university researchers suffer from unclear mandates and limited funds. This state of affairs may be observed in the form of undisciplined and ineffective IP policies. Research shows that IPRs play a dynamic role among the research, private, and public sectors. Importantly, they shape facilitation of technological learning, creation of technology flows, transfers of foreign technologies, domestic diffusion of foreign technologies, and indigenous R&D efforts to innovate.

Interactions in the agribusiness external environment and value addition can be expressed as shown in the diagram below;

**Figure 8: Interactions in the agribusiness external environment and value addition**

Mr. Okuonzi incorporated a discussion of agribusiness incubators, noting that entrance of entrepreneurs into the incubator should be based on clear IPR. The success of the incubation process depends on the effective policies and management of the incubator itself. The development of enterprises in the incubator should be done by creating and nurturing an environment and providing various services such as physical infrastructure and management (especially for intellectual property protection) and post-incubation support. The graduation of businesses from the incubator need to be based on clear policies that determine clear time frames and an agreement on the type, amount, and value of services provided during the incubation process.
There are certain mechanisms that can boost agricultural innovation incubation, such as improving the mix of agricultural technologies (traditional knowledge and technology transfer), strengthening the innovation capabilities of African agricultural systems, making sure the technology package is embedded in the continent’s tremendously varied human, ecological and economic circumstances, and effective management of IP through research consortiums (e.g. bodies like ATPS creating incentive systems, modes of operation, and negotiate IP management).

There are some interventions that are likely to improve agricultural innovations in the short and medium term. In the short term; strengthening human and institutional capacity for agriculture, empowering farmers by including them in policy and programme design; and improving farmer strategic support systems and markets. In the medium term; making innovation systems more coherent with flexible IP systems, and utilizing open source information for effective technological adoption and increasing investment in agriculture R&D.

By comparing agricultural production in Asia and Africa we can find the gaps and find better ways of increasing production. See the following diagram for such a comparison.
Figure 9: Agricultural production in Asia and Africa

To strengthen innovation capabilities for African agricultural systems, Okuonzi suggested applying the innovation systems framework. He added that adherence to the innovation framework does not mean getting rid of old policy tools, but rather rethinking how these are used, sequenced, clustered, embedded and what additions might be necessary.

It is important to prepare effective systems for monitoring innovation systems. Building strategic interfaces for information exchange and effective monitoring between farmers and global knowledge networks is essential.

The absence of a well-coordinated education and public research system remains a major impediment to the emergence of an indigenous African agriculture revolution. It is through the innovation framework that one discovers that R&D investment often fails to materialize because local demands for innovation very seldom get codified into supply-side research agendas. To use a term from the economist Joseph Stiglitz, this is an example of information asymmetries within user-producer networks. In other words, the market for agricultural products in many African countries is severely fragmented, thus making it difficult to coordinate demand and supply.

To meet these deficiencies, there is need for careful targeting of agricultural investment, especially in so-called core areas with the potential to increase physical and scientific infrastructure. These include supporting collaborative projects, and investing in extension services.

Legal and regulatory reform must lead the way. It has been recommended that African countries need to adopt international IP standards and disseminate relevant IP knowledge to farmers and innovators. This can be done by encouraging academic licensing practices that make products
more accessible to impoverished populations, and through including IP provisions within research sponsorship agreements.

There is also need for supporting ‘peer IP mapping’ and ‘IP-landscape analysis’ – methodological approaches that enable innovative thinking and reduce research and invention duplications. Furthermore, UniBRAIN should institute IP training programs and personnel exchanges to build research and technology management competencies and partnerships for its incubators.

The benefits from strengthening agricultural innovation systems cannot be overstated, but will require coordinated support from agricultural science institutions, such as agri-science parks, agri-innovation, agri-science funds, agri-SME development agencies, and agri-R&D foundation. UniBRAIN partners must foster innovation partnerships and linkages along and beyond the agricultural value chains.

Additionally, developing meaningful IP regimes which set appropriate balance of incentives, rewards, and penalties to innovators requires detailed preparations, a sound understanding of the processes related to developing and marketing, realistic forecasting of product potential, persistence in quantitative forecasting and in putting together a master plan for the product rollout, and above all, a mission-driven mind set.

2.13 Success factors for agribusiness in the 21st century

By
Mr. John Kashangaki
Executive Director, Strategic Business Advisors (Africa), Limited
Mr. Kashangaki began by pointing out that the key ingredients for the success of an agribusiness are an enabling environment and successful internal operations. An enabling environment involves a macro economic framework, encompassing interest rates, inflation, and infrastructure. There is also a need for a supportive policy and regulatory regime governing matters in relation to regulation, licensing, extension, legal framework and intellectual property. The internal operations which are critical for an incubator’s success include mentorship, seen as a prerequisite for institutional learning, as well of governance, which must be tailored to the incubator’s unique context. Access to finance is important as well as human resource management. Branding and marketing are also priority areas for any innovative start-up. In order to produce and move products easily and in an efficient way, regional and cross-sector partnerships are also important for an agribusiness incubator to succeed. Such linkages offer invaluable advice and methods to penetrate the different existing markets. Mr. Kashangaki concluded by recommending that agribusiness should target regional markets which, compared to domestic ones, have greater access to African consumers.
2.14 Agribusiness innovation incubation: The context and Scope

By
Mr. Samuel M. Wambugu
Manager, Technology Transfer and Business Development Services, KIRDI

The speaker opened with a few definitional statements. Agribusiness, he noted, is best understood as a generic term for the various businesses involved in food production, including farming and contract farming, seed supply, agrichemicals, farm machinery, wholesale and distribution, processing, marketing, and retail sales. Within the agriculture industry, agribusiness is widely used simply as a convenient blend of agriculture and business, referring to the range of activities and disciplines encompassed by modern food production. On another front, innovation is the application of existing ideas in a new way. It is a process that changes the yields of resources or changes the value or satisfaction obtained from resources. Innovation can be the modifications of a production or addition of values to a product. Edwin Mansfield, an economic theorist who conducted notable research into industrial innovation, regarded innovation as applied invention which had no economic significance until it was commercially exploited. It was the sociologist Everett Rogers who defined innovation as "an idea perceived as new by the individual", and theorized that, “the perceived newness of the idea for the individual determines his or her reaction to it”. Wambugu stated that it matters little as far as human behavior is concerned whether or not an idea is objectively new.

Mr. Wambugu related his definition of business incubation, which he described as a program of assistance and support for entrepreneurs developing new ventures. Incubators nurture young firms, helping them to survive and grow during the start-up period when they are most vulnerable. Incubator programs provide hands-on management assistance, access to financing and orchestrated exposure to critical business or technical support services. These programs also offer entrepreneurial firms flexible lease space, shared office services and access to office equipment – all under one roof.

The scope of agribusiness is large and will often involve innovative models of business incubation. He provided an overview of models of incubation, their contexts, weaknesses and strengths;
Table 1: Overview of Models of Business Incubation

<table>
<thead>
<tr>
<th>Program Type</th>
<th>Context &amp; Features</th>
<th>Strengths (Broad)</th>
<th>Challenges (Broad)</th>
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<tbody>
<tr>
<td>Mixed portfolio business incubation</td>
<td>* Target high-growth firms in a range of sectors</td>
<td>* Can align with regional and national strategies, germinate new areas of competitive capacity and provide a locus for innovation</td>
<td>* If new competitive sectors are under development, time to achieve impact and scale may be long</td>
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<td></td>
<td>* May select sectors that align with overall regional or national competitiveness strategy</td>
<td>*In environments where there is little entrepreneurial activity, may include extensive “pre-incubation” and education activities to source entrepreneurs and businesses</td>
<td>*Where there is little entrepreneurship, attracting clients with high growth potential can be a challenge and may not be possible to operate at the scale necessary to support the incubator’s business model</td>
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<tr>
<td></td>
<td>* May exist in environments where there is little entrepreneurial activity</td>
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<tr>
<td>Technology business incubation</td>
<td>* Targets high-growth technology firms</td>
<td>* Can be an economic resource by attracting and developing research, skills and businesses</td>
<td>* May be challenged to scale businesses beyond seed stage because of lack of financing and difficulties entering international markets</td>
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<td></td>
<td>* Requires foundation of strong technology and human capital infrastructure</td>
<td>* Can develop technology as a new source of competitive capacity</td>
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<td>* If infrastructure and human capital are weak, may require extensive pre-incubation activities</td>
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<td></td>
<td>* May exist in economies in transition</td>
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<tr>
<td>Business incubation with university relationships</td>
<td>* University or academic institution often has a role as founder and is a source of resources such as</td>
<td>* Can bridge the gap between research and commercialization or technology transfer</td>
<td>* Cultural differences if academics are seen as good researchers but poor business people or if the university is</td>
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| **Agri-business incubation** | research, expertise, space and/or funds  
* Typically targets technology firms, but may work with other sectors | * Access to intellectual property and the potential to develop competitive businesses from it  
* Often provides financial stability | viewed as too bureaucratic and risk averse |
| **Social business incubation** | * Targets agricultural firms  
* Aims to commercialize innovative practices or transform firms from slow-growth to growth | * Can have significant economic and social impact by improving the livelihoods of communities  
* Can focus on agri-technology and/or commercialization | * Requires both business and community development skills  
* May be challenging to enter markets beyond local communities |
| **Technology parks** | * Uses entrepreneurship and innovation as a mechanism for social impact  
* Engages entrepreneurs who may be disenfranchised or where illegal economies thrive  
* May focus on socially valuable products and services | * Can be a vehicle for economic impact and social change for individuals, families and communities  
* Effective models and methods evolving rapidly | * May require significant investment in human capital and “pre-incubation” activities with no assurance that early-stage business incubation can begin  
* Ripple effects of social impacts can be difficult to measure |
| **Technology parks** | * Designed to accelerate growth of relatively mature businesses  
* Focus on range of technology firms, but may target specific industries | * Recognized by public and private sectors as a source of economic impact  
* Can be a focal point for innovation and entrepreneurship, attracting talent, ideas and financial resources | * Discipline required to focus on growth businesses, so critical mass to make business model viable may not be possible  
* Where businesses are maturing, may be difficult to demonstrate value of incubation beyond provision of |
<table>
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<tr>
<th>Associations and networks</th>
<th>* May use incubation as way to source future clients</th>
<th>cost-effective space and infrastructure</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>* Target incubation organizations for membership and collective activities</td>
<td>* Can be influencers in including the SME sector in national and regional competitive strategies</td>
</tr>
<tr>
<td></td>
<td>* May advocate for entrepreneurship and innovation, especially in economies where this is not prevalent</td>
<td>* Can be important for capacity development for both incubators and their clients and with other stakeholders such as policymakers</td>
</tr>
<tr>
<td></td>
<td>* Often have a significant role in learning and training and providing networks for members</td>
<td>* In some cases, difficulty attracting resources to scale</td>
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Mr. Wambugu also defined an agro-incubator as a place where the process of starting agri-business ventures is catalyzed. An agri-business innovation incubator supports agri-based innovative entrepreneurs with agri-technology, consultancy, networking with management experts, venture capital funding, marketing experts and physical infrastructure.

Business incubation in the agriculture sector is important because the challenge in agribusiness involves linking innovation, investment and enterprise. This can happen only if a “knowledge network” exists which can bring together investors, entrepreneurs, and innovators. He suggested that it is the job of incubators to facilitate these networks. This concept is illustrated below. Incubation is complete only when a self-supporting entrepreneur has been realized.
Figure 10: Value chain of agribusiness

The scope of agribusiness can be seen by observing a value chain which is a sequence of related business activities performed by a set of enterprises performing these functions i.e. producers, processors, traders and distributors of a particular product. Enterprises are linked by a series of business transactions in which the product is passed on from primary producers to end consumers. According to the sequence of functions and operators, value chains consist of a series of chain links.

Mr. Wambugu emphasized that it is imperative that governments implement innovation and business incubation policy strategies aimed at enhancing the innovation capabilities of companies in the economy’s most important/flagship sectors. Policy should aim at creating new companies, or even entirely new industries in ‘high technology’ and high-value/ high-returns sectors, to gain financial or other return on government investment in research and education, and to infuse business and even community culture with innovation and creativity. To be globally competitive, such policies should enhance global networking initiatives in agribusiness and agro industry and in supporting technology transfer and overcoming tariff barriers for imported products. An innovation policy should aim not to substitute for the private sector, but to support the activities of private companies.
For these things to be done effectively, Mr. Wambugu advocated for a research agenda which aims to understand export procedures for various countries, as well as periodical meetings for the purpose of solidifying knowledge networks. He suggested that the policies should have impact on sectors of sufficient weight and potential. This implies that an innovation policy cannot restrict itself to ‘research-intensive’ industries (usually defined as industries with R&D/Sales ratios of more than 4 per cent) which make up only a small component of manufacturing in any economy, and an even smaller component of GDP.

Furthermore, policies should address the real needs that these sectors face and thus be based on an analytic understanding of an economy’s innovation process. Innovation follows different paths in different sectors. Growing sectors innovate in different ways, with a great deal of variety in methods, approaches, and results. In some industrial arenas, innovation takes the form primarily of new company formation; in others, it manifests through the activities of already existing large companies; in still others innovation is developed externally by not-for-profit entities and adopted by individual market participants. Innovation in certain sectors is primarily product focused; in others it is process focused. It is science-based in some sectors; in others, marketing focused. Only by developing deep insights into the actual processes through which innovation occurs in priority sectors can a government policy hope to devote its resources to activities that will build a basis for sustainable innovation and advancement of productivity.

Mr. Wambugu recommended that innovation be steered to complement, not attempt to substitute for, and certainly not compete with the activities of private companies. To be effective in supporting innovation, polices should strive to ‘do no harm’—that is, they should not distort market incentives by attempting, inappropriately, to substitute public-sector activity for those of the private sector. It should limit its investment to areas such as infrastructure, where resources are required to support innovation and in which it is not feasible for private companies or markets, in the normal course of business affairs, to undertake investment.
PHOTO GALLERY OF SOME OF KIRDI'S AGRI-BUSINESS INCUBATOR PRODUCTS

2.15 Social capital investment for agribusiness innovation

By
OLENTIKI ISAAC
Industrial and Commercial Development Corporation (ICDC, Kenya)
Industrial and Commercial Development Corporation (ICDC) is a wholly owned Government development finance institution. Since 1954, in partnership with both local and foreign private sectors, ICDC has played a leading role as a provider of investment capital to various industrial and commercial setups in the country. ICDC, like other Development Financial Institutions (DFIs), was established to address, inter alia, market failures caused by unstable macroeconomic environments as well as provide access to financial services in areas where the commercial banks were risk averse. To meet these expectations, the corporation’s main product offering for many years was, therefore, provision of venture capital and medium and long term loans.

Under Cap 445, ICDC Act, 1955 of the Laws of Kenya, the corporation’s mandate is to facilitate the industrial and economic development of Kenya by initiation, assistance or expansion or by aiding in the initiation, assistance or expansion of industrial, commercial or other undertakings or enterprises in Kenya or elsewhere. In the initiation role, the corporations aim to develop new businesses and industries in each province in Kenya and to increase its investment portfolio. In the assistance role, they strive to assist and grow micro, small and medium sized enterprises (MSMEs) by creating an enabling infrastructure to support and improve trade and open up new markets. Similarly, it is seeking to help empower rural areas by creating jobs, and establishing at least one manufacturing firm in each province in Kenya. In its expansion role, the corporation seeks to leverage its partnership with existing DFI’s, public and private sector and existing international organizations to develop forward and backward linkages, and horizontal and vertical integrated industries to improve trade.

Through the above mandates, the corporation has been instrumental in promoting some of the most successful enterprises in Kenya. Since inception it has promoted over 100 companies, some of the most conspicuous of which are shown in the table below.

**Table 2: Enterprises that have been promoted by Industrial and Commercial Development Corporation**

<p>| | |</p>
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<tr>
<td>1.</td>
<td>Aon Minet Insurance Brokers Limited</td>
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<tr>
<td>2.</td>
<td>Centum Investments Limited</td>
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<tr>
<td>3.</td>
<td>Development Bank of Kenya Limited</td>
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</table>
The Corporation has introduced a BISP programme aimed at organizing micro, small and medium enterprises (MSMEs) into producer groups or clusters and providing them with business premises, facilities and services that are similar to those of a business incubator at affordable rents and fees.

ICDC’s key role in the Vision 2030 for the development of Kenya is to finance those sectors not catered for by commercial banks and other financial institutions, especially in rural areas through the provision of financial products including development and seasonal loans. To enable ICDC achieve its mandate and contribute to the vision 2030, their medium term plan identifies key focus areas as follows; agri-business to include livestock (beef and dairy) value addition, tourism, infrastructure, ICT and local programming, financial services, mining and minerals, and low cost housing. In this regard, the Corporation closely works with stakeholders in all the areas mentioned above in identifying various opportunities.

2.16 Agribusiness Innovation Incubation in Africa in the new Millennium-the Way Forward

By

45
Prof. John H. Muyonga
HOD, Dept. of Food Science and Technology, Makerere University, Kampala, Uganda

Prof. Muyonga emphasized that agriculture is anticipated to remain the mainstay of Africa’s economies for the foreseeable future. Unfortunately, the performance of agriculture in Africa remains highly dependent on rudimentary technologies and there is limited use of modern inputs. For example, Africa has the least use of fertilizer in the World – as can be seen in the following diagram.
Figure 11: Use of fertilizers on a global scale

As a result of low technology use for agriculture in Africa, productivity is extremely low, relative to other regions of the world. Post-harvest handling systems are underdeveloped and post-harvest losses are high.

Most African countries have had agricultural colleges, university faculties and research institutes for decades. These institutions are actively engaged in research and have been credited with producing several innovations including new crop varieties, fertility management technologies, and processing protocols. The utilization of these research outputs, however, remains low. To enhance technology transfer and increase the contribution of universities and research institutes to agricultural development, there is need for universities and research institutes to establish structures and mechanisms for the transfer and development of technologies. Prof. Muyonga
pointed out that the incubation programs constitute one such mechanism. Technology and business incubation, which entail the nurturing of start-ups by providing technical support, access to facilities, training, access to networks and services, in order to improve enterprise survival, is known for engaging universities in enterprise development. Incubation is particularly helpful in the commercialization of new technologies because it promotes cooperative work between researchers and enterprises. This relationship serves a dual purpose, not only ensuring that technologies are refined to the satisfaction of the technology users, but also providing an opportunity for the users to master the developed technology.

Business incubation has potential to contribute to addressing societal development needs, enterprise needs as well as university and research institutional needs. Figure 2 shows the objectives of most business incubators.

![Importance of Objective Diagram](image)

**Figure 12: The objectives of most business incubators**

Source: INFODEV 2010 ([www.infodev.org/innovation](http://www.infodev.org/innovation))

Prof. Muyonga suggested several opportunities for locating incubators at universities as universities are home to extensive amount of expertise and research, technical and laboratory facilities, and large populations of potential consumers.
To ensure success of business incubation in Africa, it is important to attend to factors identified as necessary for successful technology transfer. The factors include the following: strong and focused research; public funding for research that can contribute to state priorities, high level commitment within government, universities and other research institutes, and private sector; availability of funding for start-ups.; vibrant entrepreneurship support programmes; infrastructure for collaborative work between researchers and early stage entrepreneurs (for example, science parks and incubation centers; programmes for networking between researchers, entrepreneurs and investors; incentives for innovators; and a well-developed intellectual property management regime.

African nations need to urgently generate these foundations for innovations. Prof Muyonga proposed the following interventions as immediate steps for Africa: provision of substantial and long term public research funding; establishment of incubators and other structures for collaborative linkages between the private sector and research institutions; implementation of entrepreneurship and skills development programs as part of university training; establishment of well-resourced polytechnics to produce highly skilled manpower to support technology based enterprises; development of national policies that support incubation and address intellectual property management.

In conclusion, Prof. Muyonga reiterated that science, technology and innovation are the major drivers of socio-economic development. Africa needs to invest in infrastructure and programs aimed at facilitating increased contribution of knowledge centers such as universities towards the continent’s development. Incubation presents itself as a proven mechanism for that purpose.
3.0 REMARKS FROM INCUBATEES

3.1 GODFREY MASOLO, Director, Left Foot Management (LFM)

Masolo began by introducing his company, which makes footballs; coaches football leagues and organizes football tournaments. This innovative idea sprouted from his love for football coupled with his realisation that all of Kenya’s footballs were imported. Mr. Masolo added that he has been an incubatee at KIRDI, which has been a fruitful association because KIRDI inspires confidence among prospective partners.

Some of his sponsors include Coca Cola, Safaricom and Barclays Bank. Some of the challenges his company faces include; the pricing of the football which, at KSH 1500, many consider overly expensive; the local market has not fully accepted that a local ball is as good as an imported ball; and the company lacks advanced production machinery. In conclusion Mr. Masolo urged the UniBRAIN project to come up with policies that protect local innovations and allow start-ups access to local market information and entrepreneurial training.

3.2 MICHEAL B. ODOTTE, Director SAHREC ENTERPRISES

The speaker chronicled the origins of his company, Sahrec Enterprise. In 2002 at the Kenyatta University Department of Pre-clinical Health Sciences, Mr. Odotte came up with an innovation of an immune booster for HIV positive persons. The product was a powder form of a potent immune booster developed from a natural plant extract and other compounds. In 2003 he subjected the food supplement to Kenya Bureau of Standards for analysis and was certified as fit for human consumption. Thereafter he applied for protection at the Kenya Intellectual Property Institute. By 2004, through the Norwegian Patent Office acting on directive from World Intellectual Patent Office, Mr. Odotte was granted a petty patent, around which he founded his company, Sahrec Enterprises. In 2007 Mr. Odotte joined KIRDI for incubation. A pilot study done in collaboration with Kenyatta University and North Carolina University, USA, indicated the product was elevating CD4 counts, lowering the
HIV viral load, and was less toxic to the patient. In 2008 he started working with communities to help in conservation of plants. KIRDI supported his efforts. In 2009, Sahrec Enterprises forged collaborative research with other research institutes and universities, bringing together Maseno University, Kenya Medical Research Institute and KIRDI.

Mr Odotte offered some lessons learnt from his experience, stating that incubatees benefit from organizing themselves in terms of individual company needs. Furthermore, Mr. Odotte noted the benefits of promoting partnerships and organizing incubatees in clusters, rather than in isolation.

He provided a list of recommendations for African incubates: Industrial growth in Africa will depend on public-private collaborations in research, but research grants cannot alone cover all the needed seed-funding. Incubators must step into this gap. The speaker reminded the audience of his companies’ partnership with Kenyatta University and North Carolina University, without which the costs of a laboratory study could not have been covered. Furthermore, the patenting process needs to be reviewed to strengthen its purpose and to make it easier for upcoming innovators. He recommended the establishment of a consortium within ATPS including successful inventors and patent examiners to help the innovator write patent applications.

3.3 DR G. BYARUGABA-BAZIRAKE Director of FREVASEM PROCESSING TECHNOLOGY

Dr. Byarugaba-Bazirake presented applied research looking at innovative methods for transporting bananas while reducing spoilage and discolouration. Bananas of the type usually transported in bulk to urban areas (known as matooke in Uganda) were carried to an urban center and peeled to determine percentage of waste bulk (peels and stalks) and preserved them for a longer shelf-life. Treatment of peeled bananas against microbial attack and browning was achieved by use of sodium metabisulphite (food grade) made by the European Union. The results showed a product that stays stably fresh for 30 days, once vacuum sealed. This kind of preservation creates convenient means of transporting, marketing and preparation of meals from the cooking type of bananas known as matooke in Uganda.
Figure 13: Fungal growth on peeled bananas stored under chilled conditions

Quantitative measurements revealing the success of the treatments was shared with conference participants. The results presented in Fig.1 showed that the *matooke* that were not treated in each case had fungal growth and browned. *Matooke* can be processed and preserved into a food raw material that is convenient to prepare with prolonged shelf-life up to 10 days. This means that bananas can be transported from rural areas to the urban user ends at reduced logistical expenses by pre-peeling to eliminate averagely 40% of waste that accumulates in form of peels and stalks. Organic manure from the peels and stalks can be used to fertilize and replenish nutrients in banana plantations besides other usage like biogas production and formulation of animal feeds. The banana leaves and stalks provide good mulching material whereas the extracted fibre can be used in making biodegradable bags and other hand crafts.

Freshly peeled and vacuum sealed *matooke* are conveniently transported and marketed with their desired palatability once they are prepared at the appropriate ppm of food grade sodium metabisulphite. The banana waste (by-products) can be used to process organic manure, biogas textile fibre, vinegar as well as formulations of animal feeds.

Dr. Byarugaba-Bazirake recommended that rural based industries should be set up to process and solve the logistical problems involved in transportation of bulky post-harvested banana and other similar raw foods in Africa where road infrastructure and other logistics are still limited.
3.4 ORIKIRIZA RUSIA BARIHO Director of ORIBAGS INNOVATIONS (U) LTD

Rusia introduced Oribags innovations, a private limited company registered under the laws of Uganda with the registrar of companies. Since its birth in 2007, Oribags has been producing handmade paper products including paper bags, beads, printing paper, and jewellery, out of agricultural wastes like wheat straw, rice straw, elephant grass, waste paper and other natural fibres like banana fibre, cotton fibre, and sisal fibre that are rather considered as waste. Oribags is an incubatee at the Uganda Industrial Research Institute incubation centre and has been working in close collaboration with UIRI for business development initiatives. Oribags is a member of the Private Sector Foundation of Uganda (PSFU). She pointed out that Oribags has not yet acquired any intellectual property rights so far due to limited capacity. They hope to obtain a trade mark and file a patent for their innovation with acquisition of viable resources.

Orikiriza Rusia Bariho

Products from Oribags Innovations
Ms. Rusia was awarded the Women Achievers Award 2010 by the New Vision Group and DFCU Bank for her contribution to innovation in science and technology. She has also received recognition from the Rising Star Award from International Labour Organization in collaboration with Africa Business Women Network and Uganda Women Entrepreneurs Association. Ms. Rusia was elected to the Board of Directors of Uganda Women Entrepreneurs Association (UWEAL) the Young Female Entrepreneur representative.

Ms. Rusia, however, added that despite all the success, she faces challenges such as; space is limited for operation of activities; lack of modern machinery and equipment to produce high quality products; inadequate financial resources have continuously limited effective production to meet the intended targets; limited capacity/training on better production techniques and specific areas in hand made paper technology, quality standards and assurance; weather variations which prolong the production process due to dependency on sunshine for drying purposes; limited market access across the borders like Southern Sudan and Rwanda due to lack of capacity to navigate the market; low consciousness of environmental sustainability among the public; high competition from foreign investors with established firms which are in the production of polythene paper (known as Kaveera); and transport challenges especially when it comes to sourcing for materials and deliveries.

Ms. Rusia pointed out that there are growth opportunities through collaborations with the Uganda Industrial Research Institute (UIRI) and other institutions which provide access to information. Furthermore, the newly launched East African common market promises to increase the customer base, and also the Government of Uganda proposed move to ban the use of polythene bags is likely to lessen competition.
4.0 BEST PRACTICES FOR AGRIBUSINESS INNOVATION INCUBATION
ESTABLISHMENT, MANAGEMENT AND OPERATIONS

4.1 Definitions of Agribusiness Innovation Incubator
The workshop participants deliberated on the most acceptable definition for an agribusiness innovation incubator. They arrived at many definitions as follows:

- An entity engaged in business involving materials of agricultural origin to carry out viable economic and social activities.
- A place where the process of starting agri-business ventures is catalyzed. An agribusiness innovation incubator supports agro-based innovative entrepreneurs with agro-technology, consultancy, networking with management experts, venture capital funding, marketing expertise and physical infrastructure.
- The application of economic theories and principles in the field of agriculture.
- An agro-based business innovation with an economically viable conclusion.
- An entity for nurturing innovative agri-business ventures through provision of agro-technology, consultancy, networking with management experts, venture capital funding, marketing expertise and physical infrastructure.
- An Agribusiness innovation incubator is an entity for nurturing innovative agri-business ventures through provision of agro-technology, consultancy, networking with management experts, venture capital funding, marketing expertise and physical infrastructure to ensure economically viable.
- A business entity engaged in sustainable value addition to materials of agricultural origin for socio-economic development.
- A component of creating innovative sustainable business in the economic knowledge whose aim is to achieve increased sustainable income generating opportunities and agricultural productivity and competitiveness.
- An entity for nurturing innovative economically viable agri-business ventures through provision of technical and business development support services (agri-technology, consultancy, networking with management experts, venture capital funding, marketing expertise) and physical infrastructure for sustainable socio-economic development.

Finally, after prolonged deliberations and discussions on the most appropriate definition, the delegates settled for the definition below:
An Agribusiness innovation incubator is an entity for nurturing innovative economically viable agri-business ventures through provision of agro-technology, consultancy, networking with management experts, venture capital funding, marketing expertise and physical infrastructure for sustainable development.

4.2 Guidelines for Establishment:
Guidelines for establishment of the consortium in line with the overall objectives of the project/programme are as follows:

- Establish the specific objectives of each incubator
- Have a clear network and defined functions of those involved in the consortium (four partners; University led, private sector, research institutions and incubators) each working in its (one) area of expertise and strength, to form networks that will steer the success of the project.
- Awareness creation of the importance of agribusiness innovation incubation in supporting MSMEs in the region
- Influence government policies to support ABII.
- Establish institutional policies for each member of the consortium that support BI
- To build capacity of the civil society, the main role is to identify the market gap

Agribusiness innovation priority sector –

- Establishment of guideline for incubation – rights of all stakeholders (incubators/incubatees) time frames and participations to be included in proposals.
- Priorities be set in different sectors relevant to agri-business.

Specific service offerings for the incubator –

- Memorandum of understanding between the partners involved, with an IP framework that should guide all stakeholders in the consortium specifying the obligations of each party – (with more responsibility put on the university – thro the researcher)
- The consortium should have a business plan to guide it – specifying objectives
- Identify the capacity building needs of the incubators
- Establish sustainability strategies and mechanisms for the incubator
- Establish Networking, partnerships, linkages between stakeholders
- Establish a Corporate Social Responsibility strategy

4.3 Guidelines for Management

- Establishment of steering committee of the consortium (representing all the stakeholders)
- Set up sub-committees to address various pertinent issues
- Incubator Management – empowered and competent incubator management team that reports to the steering committee
- Maintain a network of experts to support incubatees and incubators
- Hire highly competent staff
- Regular review of incubatee performance
- Support service provision team – for provision of technical assistance (issues of management, marketing and M&E, troubleshooting, IP, TQM, Finance, HR)
- Use tools such as Logical Framework for incubator management to define tasks, activities, obstacles/challenges, and means of verification, objectively verifiable indicators, and important assumptions.
- Periodic technical and financial reports
- Determine the impact of the incubator on the local economy

4.4 Guidelines for Operations:
- Define the operational tasks
  - Number of incubatees and duration of incubation
  - Specify type of support services to be provided and resources needed
  - Establish selection criteria
  - Establish recruitment procedure and recruit
  - Develop resource utilization matrix
  - Identify physical operational (infrastructural) facilities
  - Establish evaluation criteria for incubators and incubatees (technical, financial, etc.)
  - Establish an M&E system for the incubator and incubatees
  - Identify the production lines for the consortium (incubator)
  - Ensure adherence to current quality and safety management systems e.g. Good Manufacturing Practices (GMP)
  - Total Quality Management(TQM) in the value chain
  - Measure the impact of the incubator on the local economy
  - Establish reliable demand and supply chains (e.g. sources of raw materials)
  - Establish market access approach
  - Establish sustainability mechanisms (operational, corporate governance, technical, financial, etc.)
  - Set timelines using tools such as Gantt chart
  - Establish reporting frequency and report formats (report guidelines)
- Undertake capacity building of incubators (study tours, training and exchange programmes to learn from the best)
- Training incubator personnel and incubatees based on the identified gaps (at the establishment level)
SECTION B

REPORT OF THE AGribusiness INCUBATOR VISITS IN AFRICA

5.0 BACKGROUND INFORMATION

In order to realize the core functions of ATPS in the UniBRAIN initiative, visits to agribusiness innovation incubators and incubatees were undertaken by staff of the ATPS in some selected DANIDA priority countries and other countries recommended by DANIDA. The report below shows an analysis of experiences and observations made during the visits. The report covered Kenya, Egypt, and Uganda.

5.1 Pre-visit to the Kenyan Industrial Research and Development Institute (KIRDI)
On the 18th day of May 2010, the Universities, Business and Research in Agricultural Innovation (UniBRAIN) Team led by the African Technology Policy Studies Network (ATPS) made a pre-visit to KIRDI to discuss with management the intended visits to Agribusiness Incubatees under KIRDI’s management. On hand to receive the team was the Director of KIRDI, Dr. M. Charles Moturi.

Introducing the UniBRAIN project, Dr Kevin Urama, Executive Director of ATPS informed the audience that the aim of the UniBRAIN Project is for innovation and entrepreneurship derived jobs in agricultural sector to be created through partnerships between universities, research institutions and the private sector. He further noted that the Danish Ministry of Foreign Affairs/DANIDA agreed to provide funds to the Forum for Agricultural Research in Africa (FARA) to support the UniBRAIN Initiative, in collaboration with the UniBRAIN Team (UT) consisting of the African Network for Agriculture, Agro Forestry and Natural Resources Education (ANAFE), the African Technology Policy Studies Network (ATPS) and the Pan African Agribusiness Consortium (PanAAC). The role of the ATPS in the consortium is to provide guidance on the establishment, management and operation of agribusiness incubators.

In his remarks, the Director of KIRDI, Dr. M. Charles Moturi, noted that KIRDI undertakes research and development activities and disseminate results to users. KIRDI supports the establishment of industries through incubator development. He noted that KIRDI is made up of three sections namely;
- Research and Development (R&D Department), including energy, food technology, ceramics, environment, textile, leather, Aloe Vera, etc.
Business incubation is a programme under the first section. Incubators at KIRDI are made up of both in-house and virtual incubators.

**Major success stories at KIRDI**
- KIRDI manages about 24 incubatees in the areas of value addition, leather works, and beauty salons as at the time of the visit. The incubatees are nurtured so as to be able to run fully commercialized ventures.
- Records show that current incubatees are already serving as major suppliers to prominent shops and supermarkets in Kenya such as Uchumi and Nakumatt.
- KIRDI targets to establish pilot plants in certain regions in Kenya based on availability of raw materials that dominate in those regions such as mango, honey, hides and skin, banana, pineapple, biogas, etc.
- KIRDI provides platforms for technical knowledge acquisition for students in universities, polytechnics, and technical colleges. KIRDI has entered into Memoranda of Understanding (MOU) with some institutions in Kenya.
- KIRDI gives incubatees high flexibility in incubating their innovations.

**Major Challenges at KIRDI**
- There is a weak linkage between KIRDI and universities in Kenya.
- There is no policy on innovation incubation in the country. Such a legal framework would sustain the linkage among stakeholders required for innovation development and entrepreneurship.
- KIRDI has not yet developed a program for scaling up and commercialization of the innovations incubated.
- There is limited funding to support the services required by the incubatees.

**Key outcomes from the visit**
- KIRDI management welcomed the UniBRAIN initiative and promised to participate in the process and program.
- KIRDI requested for assistance and support from the ATPS in the area of intellectual property rights issues especially on how it will benefit the incubatees.
- There were some commitments from the Industrial and Commercial Development Corporation (ICDC) of Kenya, and the Kenya National Production Centre (KNPC) to participate in the UniBRAIN Program and give its support through the initiative to the incubatees. Such support
include both technical and financial during the short to medium terms. ICDC is already partnering with KIRDI in the development of business plans in specific areas including biofuels, recycling of agricultural wastes, and assembling of motorcycles.

5.2 VISIT TO AGRIBUSINESS INCUBATEES IN KENYA

Following the pre-visit made to KIRDI, visits to some incubatees were subsequently made. The ATPS coordinator of UniBRAIN, Dr Nicholas Ozor, led the visits in the company of the overall coordinator of UniBRAIN program, Mr. Ralph Von Kauffman. An audit of the incubatees visited is presented below:

5.2.1 KARMUGA ARTEMISIA FARMERS ASSOCIATION (KAFA)

Contact details:
Director’s name: Mr. David Nderitu Kibera
Address: KIRDI Office, Popo Rd, Off Mombasa Rd. South C, Nairobi Kenya
Phone: 0721494048; 0722742885
Email: kamuigaartemesia@yahoo.com; kamurgaartemisia@yahoo.com

Background Information:
The agribusiness incubatee started in the year 2001 at Nyeri district with the production of Artemisia and Armalandas. In 2008, the association engaged in the production of Aloe vera.

Mandates of the Incubatee:
The mission and vision of KAFA is to bring changes in Nyeri by transforming the people from poverty to wealth through membership empowerment, job creation and self-sufficiency in income. The key products of KAFA are:
- Soap
- Detergents
- Shampoos
- Creams
- Juices
On the other hand, the ancillary products of KAFA are:
- Organic manures
- Animal feeds
- Herbal products from dried wastes
Operations and management of the incubatee:
The incubatee has a key strength in the number of membership of up to 400 farmers. KAFA mobilizes communities in dry areas of Mweiga to produce Aloe so as to conserve the soil and also use it for medicinal purposes. It has facilitated the formation of farmers’ groups and recorded aloe yields of about 10 tons per 3 farmers. The major challenges of the incubatee include difficulty in the procurement of licenses to market aloe and the lack of basic processing equipment. However the incubatee acknowledges that working together with KIRDI will afford the opportunity of a better market outlook and visibility. The incubatee has worked together with some scientists from the University of Nairobi including Prof. Mukiama of the Dept. of Pharmacology. The management of the incubatee is such that they have a Supreme Council, Board of Directors, Chief Executive Officer, Head of Department, Managers, Supervisors and other Workers. The incubatee also uses out-growers to source for their raw materials. The marketing channel has been to local pharmaceutical industries and beauty salons. The incubatee has no established intellectual property regime/framework. However, the association has been guided by existing agreements and constitutions. The scale of operation of the incubatee is still micro, but it wishes to grow quickly to meet its aspirations. The source of capital for investment is through member contributions and the incubatee started with the contributions made by the initial 22 members of the association. The turnover has been poor and undulating.

Success factors:
Authority to trade and market aloe
  • Supply to local and international market
  • Investment supports

Key outcome from the Incubatee visit:
The incubatee is ready and willing to participate in the UniBRAIN initiative.

5.2.2 LEFT FOOT MANAGEMENT (LFM)
Contact details:
Director’s name: Mr. Godfrey Masolo
Address: KIRDI Office, Popo Rd, Off Mombasa Rd. South C, Nairobi Kenya
Phone: 0722833873
Email: goddie71@gmail.com

Background Information:
The agribusiness incubatee was established in November 2008. The main driving force behind the enterprise was the love for football and the quest to know how it is made. As a follow up to this, the Directors, Godfrey Masolo and Joseph Kenyua went for training on how to make
footballs in Pakistan and were trained by a company called Monsoor Manufacturers. On return to Kenya, they sourced the materials locally and started production on a small scale.

**Mandates of the Incubatee:**
The mission and vision of LFM is to develop footballs locally that are adapted to the local environment – soils, ground- and achieve higher durability. The footballs produced were first tested in some slums in Kenya including Kibera and Kawangware. Reports show that the football is more adapted to the local environment and lasts longer than most of the imported ones. These reports were confirmed by the users of the ball in those areas.

The key products of LFM are:
- Footballs, ranging from sizes 2, 3, 4, to 5.
- Volley balls
- Netballs
- Football uniforms

Currently, the incubatee has the capacity of producing 60 footballs per day. About 2.3- 2.7ft² of leather material are used to make 5 footballs. The leather is procured from BATA Industries while the strings are produced by Fine Spinners Industry. The dyeing material and tubes are currently being imported from India. The beeswax used to consolidate the string is obtained locally. One LFM football costs Ksh.1,500 compared to Ksh.4,000 for the imported Pakistan football. The wastes from production are now being considered by KIRDI to be used in producing boards.

**Operations and Management of the Incubatee:**
The incubatee has managed to change the perceptions of many individuals, corporate companies and organizations towards believing in locally-made products from Kenya. In this regard, individuals and organizations such as Safaricom, Coca Cola, Kenya Airways, banks, schools and politicians have procured footballs and football polo/T-shirts from the LFM. For instance, Kenya Airways presented a football each from LFM to all the fans who went from Kenya to South Africa for the 2010 World Cup edition. The LFM has strategized in the use of a local hero’s name on their footballs. For example, JOK Kadenge’s name (a onetime football star and hero in Kenya) is inscribed in the LFM footballs in order to promote local football and also get him (Kadenge) some benefits.

The support obtained from KIRDI during exhibitions in local and international events has made LFM very visible. Recently, a delegation from the Tanzanian President Mr. Kikwete made requisitions for LFM footballs.

The major challenge of LFM is poor equipment and facilities as it still operates manually to produce the footballs. It also lacks capital to invest on modern equipment and infrastructure. However, the incubatee has the opportunity for growth because of the growing demand, recognition and exposure. The LFM is also in touch with FIFA, the world football governing body to inspect and approve its football to be used for national and international events.
LFM is currently partnering with KIRDI only and has not had the opportunity of collaborating with the universities and other private sectors. The administrative structure of LFM is shown below:

![Administrative structure of the Left Foot Management](image)

**Figure 14: Administrative structure of the Left Foot Management**

The LFM has been able to register a Trade Mark and is working towards registering its brand name. Some intended brand names include; Kadenge Classic, Kadenge Original, and Kadenge Anayo. In as much as it is still operating at a micro level with an initial capital investment of Ksh.400,000 it has been able to sell about 70 footballs per day with a target of 100 footballs per day. The major source of income of the incubatee company is through product sales.

**Success factors:**
- Football is loved by many clients
- There is always demand for products

**Key outcome from the Incubatee visit:**
The incubatee is ready and willing to participate in the UniBRAIN initiative.

### 5.2.3 SAHREC ENTERPRISES

**Contact details:**

DIRECTOR: MICHEAL B. ODOTTE
Background Information:
The incubatee started operation in the year 2003 as a community based research initiative with a view of supplementing the nutrition intake of local people. This led to patenting of “Sunguprot”, an immune booster in the management of HIV/AIDS. The product has ‘given birth’ to other products numbering to five.

Mandates of the incubatee:
The mission of the incubatee is to be a leading company in the COMESA region dealing in natural products for health. It hopes to improve the health status of communities. The main objectives are to create employment, carry out research on medicinal plant extracts for quality health, and excel in business and to transform medicinal plants into agribusiness.

The major products of the incubatee include:
- “Sunguprot” (Patented in 2003), an immune booster in the management of HIV/AIDS which is also for malnourished people and for people at old age.
- Sungunet – Anti arthritis management
- Herbal tea I – For losing weight, treatment of high blood pressure, and high sugar level management (diabetic)
- Herbal tea II – used as antioxidant
- Brolux - Anti prostate cancer herbal based drug
- Supelido jet - Progesteron “For low libido”

Operations and Management
Some major achievements by the incubatee include:
- Patenting of products
- Acquisition of funding by the Kenya Government for further research, validation and improvement on products.
- Collaborative research with universities and leading research institutions e.g. Kenya Medical Research Institute (KEMRI)
- There is high rate of turnover in the incubatee’s business as both governments and individuals now place orders for products

The major drawback for the incubatee is limited marketing outlets, poor facilities and infrastructure, poor branding, poor business strategy and information as well as linkages.
The major opportunities for the incubatee

- Potential market for consumer due to HIV/AIDS pandemic
- Sub-Saharan Africa has food insecurity leading to malnutrition
- Poor nutrition in Africa
- Climatic interference

Currently, the incubatee has established partnerships with the Kenya Medical Research Institute (KEMRI) for pharmacological analysis (safety/clinical); the Maseno University for chemical/phytochemical analysis; KIRDI for product development; and Kenyatta University for clinical analysis. Some of the contacts are as follows:

- Prof. Job Jondiko and Prof. Mathews Dida, Department of Chemistry, Maseno University
- Dr. Jenifa Orwa and Dr. Wasuna, KEMRI
- Phylis Ngunjiri and Elisha Onyango, KIRDI

The Sole proprietor currently manages the incubatee but has a vision of making it a company by 2011. The scope of market for the incubatee is currently in Nairobi, Kisumu, Mombasa, Mwanza (Tanzania) and Kampala (Uganda). However, it hopes to cover the East Africa and COMESA regions in the near future. Already, the incubatee has patented one product - Sunguprot and has filled in application for another one. The incubatee uses out-growers in local communities to produce the raw materials used in product development.

The initial capital on investment was about 1 million. However, the scale of business is medium with an annual turnover of about Ksh.6 million.

**Success factors**

The incubatee noted that its prospects will be higher if more funds, training, and operating space are provided. It further noted that opportunity for partnerships and networking with relevant stakeholders could boost its potential.

**Key outcome**

The incubatee expressed desire to participate in the UniBRAIN initiative and to work together with other stakeholders so as to realize the mission and vision of its business.

5.2.4 ALL GRAIN CO. LTD.

**Contact details:**

Name of Director: Mr. Wanyeki Joseph  
Address: KIRDI South B Nairobi  
Email: allgrain200s@yahoo.com  
Phone contact: 0722856513
Background information:
The incubatee started in the year 2004 and deals in the manufacturing of composite soya bean flour. It has embarked fully in value added cereal based pre-cooked product with main ingredient being Grain Amaranth. The mission and vision of the incubatee is to be a top agri business company.

Mandates of the Incubatee
The main product of the incubatee is in value addition of grains and other nutritious foods.

Operations and Management:
The incubatee has successfully developed relief foods for UNIMIX (an NGO). The major drawback is the lack of modern equipment and facilities for production. There is opportunity for growth because of the availability of raw materials. The incubatee has successfully partnered with Jomo Kenyatta University of Agriculture and Technology, Kenya in proposal writing for improvement of Grain Amaranth value chain and has won the KAPP grant. The incubatee is led by two directors who take charge of the management and operations of the company. The incubatee now targets unique foods for children and aged adults to improve their nutrition. The intellectual property issue is a big challenge due to lack of funds and guidance. The scale of operation of All Grain Company is small with seven employees. The initial capital on investment was Ksh.700,000. The turnover of sales stands at Ksh.2.4 million per annum.

Success factors:
The incubatee has obtained grants from business proposals for example the KAPP grant (2008) from KARI. The incubatee also obtains some supports from micro finance institutions. The incubatee is also partnering with the Kenyatta University, Kenya through Dr. Nicholas Kamindu of the School of Alternative/Complimentary medicine.

Key outcome:
The incubatee is willing and available to participate in the UniBRAIN initiative.

5.2.5 ZUHURA BEAUTY CARE
Contact details:
DIRECTORS: Mr. SAMUEL DAGOMA and Mr. DANIEL GITHII
ADDRESS: 75956 – 00200 NAIROBI
Phone number: 0723761300/0203515903
EMAIL: skagom@yahoo.com; zuhuracare@yahoo.com

Background Information:
The incubatee started in the year 2006. It was started after the incubatee found out through research that most of the cosmetic products in the Kenyan market were harmful to the skin because of presence of ingredients like hydroquinone and mercury. Hence there was a need to substitute those harmful ingredients with natural ones like plants that is aloe-vera and neem oils.

**Mandates of the Incubatee:**
The vision of the incubatee is to be a leading high quality cosmetic manufacturer through the use of plant extracts, and to meet the expectations of consumers in the East African region. Mainly, the incubatee’s objectives are geared towards customer satisfaction and ensuring that they get value for their money. Other objectives are to uplift the living standards of those farmers who supply the business with aloe-vera plants through buying their products and also supporting them in order to get more yields hence greater profit.

**The incubatee’s products include:**
Body lotion -> having aloe as the active ingredient
Face cream -> has aloe and vitamin E extracted from plants
Herbal bath -> a shower gel with aloe-vera

**Operations and Management:**
The incubatee has been able to produce products which are highly regarded by consumers in terms of quality. The compliments received from clients have encouraged the incubatee to improve on its products and increase production too. The biggest drawback has been lack of sufficient working capital as banks in Kenya are very stringent in terms of the collateral. Cosmetics business is capital intensive and one requires a lot of money for marketing, advertising and even product development. There is a big opportunity for growth of the incubatee if the business is supported because of the high quality of its product. The market is there, but the business cannot sustain it due to lack of sufficient capital, facilities and skilled labour.

The incubatee has formed a formidable partnership with research institutes (KIRDI) and universities like Kenya Polytechnic University with Mrs. Dorcas Mutemi as the contact person. The structure of the incubatee is such that the employees are managed and supervised by the Director.

![Figure 15: Organizational chart of Zuhura Beauty Care](image-url)
The incubatee currently uses both door to door marketing strategy as well as running promotions like giving free samples. There are various outlets in Nairobi and the environs including major supermarkets (Uchumi and Nakumatt), retail shops, etc. The incubatee already has registered its trademark though it still operates as a small enterprise with an annual turnover of about Ksh.600,000. The initial capital investment was around Ksh.10,000. The incubatee has borrowed a long term loan from KCB and is servicing it.

**Success Factors:**
In order to scale up the business the incubatee has started investing in capacity development of key personnel and also seeking for collaborations with key stakeholders so as to realize its mission and vision of being a leading industry in cosmetics.

**Key outcome:**
The incubatee is willing and available to participate in the UniBRAIN initiative

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5.2.6 AROM CHEMICAL INDUSTRIES

**Contact details:**
Director: Mr. Peter M. Gachuhi
Address: KIRDI South ‘B’ Campus P.O.Box 13220 00200 NAIROBI
Phone: 0713 864 524
Email: aromchems@yahoo.com

**Background Information:**
The incubatee started in 2006 as a manufacturer of animal health products with special emphasis on de-wormers to control internal parasites on livestock. The incubatee also manufactures animal feed supplements such as minerals, vitamin and protein supplements from locally available raw materials.

**Mandates of the Incubatee:**
The mission of the incubatee is to be the leading provider of health and nutritional solution to the livestock sector and improve the profitability of small livestock farmers. The vision is to provide effective, competitive and convenient products to livestock farmers as accessible and as convenient as possible. The main objectives are to reach the peasant, rural based livestock farmers with farmer-friendly products.

The key products are:
(1) dewormers – to control internal parasites in livestock
   (a) aromisole plus
   (b) abedazole 2.5%

(2) mineral supplements – to provide minerals that are usually lacking in livestock diet and that reduce yields and productivity.
   (a) DCP
   (b) Heart Inducer

(3) Vitamin supplements – to provide vitamins, enzymes and hormones to boost health, productivity and rapid growth in livestock.
   (a) Multivitamin blend

Operations and Management:
The incubatee has introduced dewormers targeted for calves which were not hitherto available in the market. The product – “Abedazole Dowa Ya Njau” is doing very well on the market. Also, the incubatee is introducing a liquid dewormer for sheep and goats which is gaining acceptance in the market. Only tablets were available in the market before they introduced the product – “Abedazole Dawa Ya Mbuzi.”

The major drawback for the incubatee is the lack of funds to finance the rapid growth that is taking place in the company. Also, there is lack of adequate transportation and logistics to get products to the customers as fast as they are needed. A 1-ton van and a 3-ton lorry are needed to satisfy current demand. Packaging machines to accelerate production output and enhance product quality are not available.

However, there is tremendous opportunity for growth of the incubatee. Currently, the incubatee is growing at about 10% per month. It has registered its presence in three regions of Kenya and intends to cover other provinces in the near future. The incubatee is growing its product range consistently and every product it has introduced has gained acceptance on the market. Already, the incubatee has been funded by a microfinance institution -KADET and Equity Bank. It is also working closely with the Ministry of Livestock. The staff in the incubatee is made up of the Managing Director, office manager, factory manager, two salesmen, an IT operator and six factory workers.

The incubatee targets rural based Agro veterinary shops and chemicals. It has not yet registered any patents or trademark. The initial capital investment was Ksh.350,000 which was obtained from personal savings and loans from friends, but now has a monthly turnover of about Ksh300,000. The annual turnover is about Ksh.3.6 million.
**Success Factors:**
The incubatee is currently updating its range of products to meet huge demands.

**Key Outcome:**
The incubatee is ready to participate in the UniBRAIN initiative so as to explore the world outlook for its business development, partnerships and networks.

### 5.2.7 HOMEFIT FOODS

**Contact details:**

DIRECTOR: KIHURIA MWANIKI  
CONTACT ADDRESS: KIRDI (South ‘B’ Campus), Dunga/Lusaka Road Industrial Area (Nairobi)  
P.O.Box 565-00300, NAIROBI  
PHONE: 0722-943334  
EMAIL: kihuriam@yahoo.com

**Background Information:**
The incubatee started operations in 2009 with hotel supplies. The challenge that spurred the incubatee was why many hotels in Africa still import some basic food supplies such as jams and honey for their clients. In providing alternatives to these product supplies, the incubatee joined KIRDI so as to add value to honey and also do fruits value addition.

**Mandates of the Incubatee:**
The incubatee’s mission is to serve the hospitality industry with quality convenient single-use products. The key products are honey (20g single use; 300g, 500g) and jams made from locally sourced tomatoes, mangoes, pineapples, oranges.

**Operations and Management of the Incubatee:**
A key success story is the opportunity the incubatee now has to supply minijams to Kenya Airways. However, the lack of modern equipment and facilities, and capital restrains the incubatee to meet demands which is available in the tourism and hospitality industry. The incubatee is not also linked to other stakeholders except KIRDI. The incubatee also has not employed staff on full time basis but currently operates on needs basis. The tourist hotels and catering industries have been the major market outlets for the incubatee. However, value added honey products are being supplied to some supermarkets in Kenya (e.g. Tuskys and Ukwala).
The incubatee has not registered its trademarks and has not patented any of its product. In as much as the business is still at a micro level, it will employ up to 20 staff when it gets the best equipment and support. The estimated turnover from this business annually is Ksh.5 million to 7.5 million.

**Success Factors:**
All the raw materials used by the incubatee are sourced locally.

**Key Outcome:**
The incubatee declared unreserved interest and willingness to participate in the UniBRAIN initiative and noted that the initiative will promote Homefit through market linkage, ICT, product development and research. These are the resources that the company cannot afford alone now.

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5.3. VISIT TO AGRIBUSINESS INCUBATORS IN EGYPT

5.3.1 THE FOOD TECHNOLOGY CENTRE

**Contact details:**
Executive Director: Dr Ahmed Fouad Mandour
Address: 9 Cairo University Street, El-Orman 12916
Phone: +20235712019, mobile: +2012 212 36 43
Email: a_mandour@mfti.gov.eg
Website: www.ftc.gov.eg
Mandates:
The vision of Food Technology Centre (FTC) is to serve the Egyptian technology based industry to become a better society. FTC creates value through research and innovation, and offers specific solutions for a sustainable food sector. FTC mobilizes a multi-disciplinary team of international & Egyptian top level experts in life science and biotechnology. It cooperates closely with universities, authorities and industry, and combines research & innovation to the Egyptian business culture.

The core competencies of the FTC are:
- Manage technology transfer and innovation activities to deliver new products and process innovations in life sciences and biotechnology.
- Strong & reliable communication methodology between research teams and beneficiary industry.
- State of the art fat analysis laboratories and medium technology pilot plants supported by international institutions (AINIA & Fraunhofer).
- Qualified and trained technicians and industry experts. A multidisciplinary pool of consultants.
- The FTC culture supports creativity and innovation.

Operations and Management:
FTC is providing services and linkages to over 3,000 agribusiness entrepreneurs in Egypt in food production, processing, packaging and storage. For instance, an entrepreneur may demand the best fruit juice that will be preferred by the public, FTC goes ahead to prepare and pre-test a formulation which will be made available to such an entrepreneur. If the product or process is for export, FTC ensures that the product meets the standards and requirements of the country of destination. The FTC offers services to entrepreneurs who are registered with the Egyptian Industrial Modernization Centre (EIMC). The IMC is a EU project worth Euro 180M for a period of 10 years aimed at modernizing and improving the competitiveness of the private sector in Egypt, especially the SME sector. It is required that prospective entrepreneurs have licenses and at least 10 workers on their staff list.

SWOT- Analysis

<table>
<thead>
<tr>
<th>Strength</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Innovative Services.</td>
<td>• Slow response bureaucratic system.</td>
</tr>
<tr>
<td>• Efficient customer services.</td>
<td>• To many levels discussion making in the organizational setup.</td>
</tr>
<tr>
<td>• Personal relation with customers.</td>
<td>• Weak response to new evolving issues.</td>
</tr>
<tr>
<td>• TT &amp; Innovation service.</td>
<td></td>
</tr>
<tr>
<td>• Fat Laboratory &amp; Pilot Units.</td>
<td></td>
</tr>
<tr>
<td>• Multidisciplinary pool of experts.</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Threats</th>
</tr>
</thead>
<tbody>
<tr>
<td>• New trend healthy food.</td>
<td>• Weak framework for TT.</td>
</tr>
<tr>
<td>• Sustainable and ethical food production.</td>
<td>• Apathy of Industry for TT.</td>
</tr>
<tr>
<td></td>
<td>• Competitors are fast to market.</td>
</tr>
</tbody>
</table>
Figure 16: A SWOT analysis of the Food and Technology Center (FTC) in Egypt

Impact of FTC on Food Industry in Egypt:
- Innovative food and feed processing.
- Improved quality and safety of food, beverage and feed.
- Total food chain concept (Fork to farm).
- Increase the industry knowledge of food consumer science.
- Enhanced cooperation in the area of technology transfer and innovation between medium technology provider and Egyptian food industry.
- Increase the excellence and innovation potentials of the Egyptian nutrition research communities. Promoting health and quality of life by addressing health determinants such as diet and lifestyle conditions.

Key Success Factors:
- Enhance international networking activities.
- Capacity building of technical staff.
- Innovative services packages with strong impact.
- Access to Global Market trends & Technology Watch.
- Cooperation with peer development agents.
- Technology Transfer and Innovation national policy and framework.

Key Outcome:
The FTC accepted to collaborate with other partners in the UniBRAIN initiative by offering technical support to incubatees in the DANIDA priority countries of Africa.
5.3.2 The SEKEM Initiative  
Contact details:  
Founder: Dr Ibrahim Abouleish  
Address: 3 Cairo – Belbeis Desert Road, P. O. Box 2834, El – Horreya, Cairo, Egypt  
Tel: +20 226564124/5; Fax: +20 226566123  
Email: info@sekem.com  
Website: www.sekem.com  

Background and Mandate:  
SEKEM was established in 1977 by Dr. Ibrahim Abouleish, in the north east desert of Egypt. He received the RIGHT LIVELIHOOD AWARD also known as the “ALTERNATIVE NOBEL PRIZE” for “establishing a business model for the 21st century in which commercial success is integrated with and promotes the social and cultural development of society through economics of love.” The name SEKEM is the transliteration of a hieroglyph, meaning “vitality”. The SEKEM initiative with its many areas of activity was founded to realize the vision of sustainable development. SEKEM aims to contribute to the comprehensive development of the individual, society and environment. Cooperation in economic, social and cultural endeavours is cultivated through dedication to the pursuit of science, art and religion.  

SEKEM has various arms including:  
- Business arm - 9 companies  
- NGOs  
- Educational arm  
- Research arm - all research is conducted based on industry need and demand. Some areas of research are: renewable energy, water, biotechnology, climate change  
- University  

SEKEM’s main objectives include:  
- Rehabilitating the environment through the application of biodynamic agriculture methods  
- Developing solutions, providing services, and manufacturing a variety of products that meet the consumer’s true needs and conform to the highest standards  
- Marketing and distributing products in partnership with farmers, producers, vendors and consumers  

For all social endeavours, the cooperative of SEKEM employees forms a community of people, from all over the world, who:  
- Appreciate dignity of each human being  
- Teach democracy and governance
Create the foundations of healthy living

In the cultural domain, the development of the individual is strengthened by the Sekem Development Foundation through:

- Education for children, youth and adults, provided in several centres to promote free and clear thinking and artistic expression.
- Health care and therapy using holistic medicine available through the medical centre and outreach programmes
- Research and development to provide solutions for pressing questions dealing with various aspects of life conducted and taught by the SEKEM Academy for Applied Arts and Science

The Abouleish foundation is holding the family capital of SEKEM. The foundation council is the safe guard of SEKEM’s vision to ensure the future sustainability of all SEKEM activities.

SEKEM Companies:
The SEKEM initiative has established several specialized companies to ensure production and marketing of its products. The umbrella organization for SEKEM’s independent firms was established in order to supervise, evaluate, and support all subsidiary ventures, and to enable it to act as investor and lender to them. The nine companies include:

1. The SEKEM Holding- supervises, evaluates, and supports all its subsidiary ventures.
2. LIBRA- an organic cultivation company that has evolved into a multifaceted production company by diversifying into milling, drying and oil processing
3. El-Mizan - a joint venture between Grow Group Holland and SEKEM Group Egypt which offers grafting and plant cultivation services for organic and conventional fruit and vegetable plants.
4. LOTUS- processes organic and biodynamic, thus natural and chemical free, herbs and spices according to international Demeter Processing Guidelines.
5. ISIS - produces wholesome, nutritious, tasty and healthy food, from carefully selected raw materials, free of artificial additives or preservatives. The foodstuff processed and packed by ISIS includes organically grown cereals, rice, vegetables, pasta, honey, jams, dates, spices, herbs, edible oils, beverages such as herbal teas, coffee and juices and other multi-ingredient products.
6. HATOR - packs bio-dynamically grown fresh produce to local and international markets in order to supply and maintain the highest nutritive value, and adhere to the customers’ technical specifications of each product.
7. ATOS Pharma manufactures and markets an array of natural medicines and health care products of superior quality for effective causal treatment combined with maximum tolerability.

8. NATURETEX - is an organic cotton producer of high quality fabrics, fashionable home textiles, and colourful baby wear. The products are produced and marketed internationally under their own brand Cotton People Organic (CPO), NatureTex or under private labels.

9. SEKEM Europe - located in Bochum, Germany is a 100% subsidiary company of the SEKEM Holding. It operates in the areas of import and sales of SEKEM’s readymade consumer goods and fresh produce, raw materials and ingredients, provides services to SEKEM in the field of customer care, export marketing, market development and public relations.

There is a strong IP framework guiding businesses at SEKEM and they have registered trademarks and patented some products.

**Key Outcome:**
SEKEM is ready to partner with agribusinesses in sub Saharan Africa and collaborate in the UniBRAIN initiative.

5.3.3 Agricultural Research Centre (ARC) of the Ministry of Agriculture and Land Reclamation

**Contact details:** Prof. Dr. Eid M. A Mageed  
Director Technology Management and Commercialization Office  
ARC President Office, 9 Gamaa St, 12619, Giza, Egypt  
Email: meid@idsc.net.eg  
Mobile: +2010 585 4306  
Phone: +202 3570 4359  
Fax: +202 3571 4959

**Background**
The Technology Management and Commercialization Office of the ARC is charged with the mandate of encouraging technology and innovation development and commercialization of such in order to meet industry needs, create jobs and promote entrepreneurship in Egypt. The Centre conducts relevant research and is strongly linked with universities and private sectors. The Centre is partnering with the Industrial Modernization Centre (IMC) and the Research Development Initiative (RDI) to strengthen the linkage between research and industry on specific needs of the industry.

**Current Status**
Currently, the Centre is engaged in eleven programme activities across Egypt with over 37,000 participating entrepreneurs. To confirm the strength of the centre in research development, it has about 6,000 staff with PhDs. The Centre recognizes that for any incubatee to thrive, it must have good reputation, commitment to duty, trust, and adequate funding. It is noteworthy to mention that Egypt has a policy on Intellectual Property that support innovation incubation.

The Centre conducts training programmes for both researchers and private sectors on how to optimize products and services. Such trainings include technology development, technology validation, technology management, technology licensing, technology negotiation, etc. The flowchart of operation of the Centre is shown below:

![Flowchart of Operation of Agricultural Research Centre (ARC)](image)

**Figure 17: Operation of Agricultural Research Centre (ARC)**

**Key Outcome**

The Technology Management and Commercialization Office of the ARC expressed its availability and willingness to cooperate with the UniBRAIN team by providing expertise and sharing experience which could lead to the overall success of the initiative.

### 5.3.4 International Trade and Marketing Company (ITM)

**Contact details:** Dr Amr Mohamed Helal
Managing Director
International Trade and Marketing Company
11, Abu El-mahasin el-Shazly Street – El-Mohandiseen,
Background
The ITM is among the leading companies in the field of public health, agricultural and environmental issues. Most specifically ITM has three main innovative products and services:

- Rice waste management- from rice straw and bran
- Developing Egyptian Nutraceuticals
- Developing Egyptian Algae

Most importantly, the rice waste management initiative of ITM has led to the development of a range of products that has not only lead to environmental improvement but also to sustainable development, employment, and entrepreneurship.

Current status of ITM on rice waste management
ITM is currently engaged in several research projects aimed at commercialization of products and services from rice waste. They include:

- Phytochemical study of stabilized rice bran
- Implementation of the different rice bran products in food, pharmaceutical and cosmetic industries
- Rice bran stabilization
- Innovative, environmental and economic rice waste management
- Rice bran nutraceuticals

Key Outcome
The ITM expressed its desire to collaborate with ATPS in the UniBRAIN initiative.

5.4 VISITS TO AGRIBUSINESS INCUBATEES IN UGANDA

5.4.1 Tropical Aloe Lands Foundation (TALF)
Contact details: Director: Mr. Muhumuza James
P.O. Box 70646 Kampala Uganda
Tel: +256 772 460 171
Email troaloelds@yahoo.com

Background Information
The TALF started on 1st July 2002 as an initiative for adding innovativeness and improving indigenous knowledge (IK) based plant uses and values from communities. Thereafter the uses and values were much marked to respond to modern demands for product through creative innovation and by improving upon the existing methods of production at small scale level. Priority is mainly on the Aloe Vera (*Aloe dawei* sp) which is dominantly found along the shores of Lake Albert in the Western Albetine Rift in Western Uganda. This Aloe Sp has been used by the indigenous Banyoro as a remedy for many health problems in human livestock as well as biological pest control among others.

TALF started product development from wild collected raw materials which could not sustain the demand of the developed products. TALF is also engaged in the domestication initiatives for commercial cultivation by host communities as a solution for sustainable production. Over 200 farmers have been registered and have cultivated over 400 acres and the company owns 15 acres of Aloe. So far 30 products have been developed ranging from cosmetics (skin care), Herbal teas, Therapies, insect repellents, nutrition supplements, natural ingredients for cosmetic and pharmaceutical among others. The market demand is increasing due to product use and acceptability by consumers.

**Mandates of TALF**

**Mission, Vision and Objectives**
TALF aims to develop IK by utilizing biodiversity resources sustainably for product development through innovativeness for social, economic, institutional and environmental sustainability.

**Key Ancillary Products and Services:**
- Introduction of commercial cultivation of medicinal plants for income in rural communities
- Developing sustainable use of biodiversity resources through domestication.
- Field attachment of University Students from Department of Botany from universities around Kampala. Students engaged are mainly those registered for B.Sc. Botany, /B.Sc. Ethno botany, / B.Sc. Conservation Biology. Such students acquire new knowledge, practical skills and experience to improve their confidence in problem solving, and exposure to the demand and challenges of the work place (industrial work experience).
- Stakeholder in developing National Conservation Assessment and Management Planning for Prioritization of Medicinal Plants of Uganda, Makerere University.
- Stakeholder in value chain development for development of Bio trade activities in Northern Uganda (UNCTAD and UNDP programmes)
- Implementation of prioritized medical plants in the Lake Victoria Basin with Makerere University’s Sustainable Use of Plant Diversity (SUPD).

**Key Success Stories**
• Development of 30 marketable products from IK and indigenous resources
• Creating household incomes at community level in rural areas
• Improving IK processing methods to the current generation
• Involving high institutions and Universities in TALF’s activities so as to develop their real life experience through innovation internship.
• Documentation of products and acceptability by consumers

Major weaknesses and draw backs of the Incubatee
• Lack of standardization and certification of products.
• Lack of Training skills at production level
• Lack of modernized equipment i.e. Transport facilities for raw materials from collecting centres, processing and parking, etc.
• Research on therapeutic claims of the products by universities and institutions.
• Lack of funding to scale up the initiatives.

Opportunities for Growth
• Sky rocketing demand of green and organic products.
• Possibility of innovating multiple values from biodiversity resources.
• Virginity of the sector in all areas of research and product development.

Partnerships and Stakeholders
• Makerere University, Botany/Ethno
• Bio Trade Initiative (UNCTAD/UNDP)
• Natural Chemotherapeutic Research Laboratory of Uganda (NCRL)
• National Organic Movement of Uganda (NOGAMU)
• Uganda Export Promotion Board (UEPB)
• Sustainable use of Plant Diversity Makerere University.

Management
The incubatee has an administrative Board of Directors comprising of farmer, production, marketing and human resource personnel. TALF has four marketing outlets and also supply products to supermarkets, pharmacy shops, organic shops and regional exports. Currently, the incubatee has neither intellectual property framework nor any patent. However, he hopes to have one soon. The estimated initial capital on investment was $50,000.

Suggestion on way forward
• A number of opportunities in innovation and technology development and universities can be exploited leading to research and product development.
• Developing IK for new innovation and new products for use in a modern world which will create more jobs for university graduates.
• Response to UniBRAIN by Business and research in Agribusiness is a very important tool, if well understood by the stakeholders.

Key Outcome
The incubatee is willing to participate in the UniBRAIN initiative.

5.4.2 Bushenyi Beekeepers Association (BUBEEKA)

Contact details
Bushenyi Beekeepers Association (BUBEEKA)
Director: Ben J. R. Asiimwe
Mobile: 0772-915601/0712-853910
E-mail: basimwe@yahoo.com
P.O Box 31750, Kampala/ P.O Kabwohe
Head office: Nyamufumura Trading Centre, (After Kabwohe Township).
25 km Mbarara- Ishaka Road

Background:
The Bushenyi Beekeepers Association (BUBEEKA) was established in 2002 as a Community Based Organization (CBO) at Nyamufumura T.C in Kagango Sub-county, Sheema County, Bushenyi District to promote beekeeping from domestic to a community self-help project promoting honey and related bees products. It started with twenty five (25) members of which 15 were women practising domestic beekeeping on their own small pieces of land. Later the association was registered at district level to increase production and improve on bees’ products quantity and quality standards. The incubatee undertakes other agro- based activities like mushroom, fruit and vegetable, banana, tree planting, peas, beans and flower plants growing.

Mandates:
• To become a number one East African County of excellence for beekeepers organization in developing, promoting, processing and marketing honey and related hive products by the year 2015.
• Realization of a rich beekeepers community through sales of products and packaged bees by-products:- Honey, bees wax, propolis, bees venom, royal jelly, and also fruit and vegetable, bananas,
• Incubatee penetrating national and external markets.

Key Products:
Honey, bees wax, propolis, bees’ venom and royal jelly.
Operations and Management:

Key success stories
The Association has acquired a piece of land on which to build structures, has a bank account, is registered, planted honey trees, fruits and vegetable nursery, has planted trees and flowers to increase nectar and mitigate climate change hazards, has trained more than five hundred stakeholders and has registered more than 321 members. Bubeeka has enabled members to acquire five beehives each. The Association finds markets and buys honey and other hive by-products from the members to sell to the markets.

Bubeeka has linked its members with Bushenyi local authorities, Private sector/trader’s development partners e.g. Uganda National Chamber of Commerce and Industry (UNCCI), Private Sector Foundation Uganda (PSFU), and traders in Bushenyi (Western Uganda) and other parts of Uganda. Development partners include Makerere University cluster department, and it is in advanced stage of linking with Africa Technology Policy Studies Network (ATPS) Uganda chapter.

Major Weaknesses
Bubeeka has not yet acquired an office space of its own and hence still rents. There are no adequate beehives procured to members to increase honey production. There is lack of processing plant or refinery to handle member’s products expected to increase in the near future. Membership registration in Bubeeka is now declining due to high demand for modern beehives. There is also lack of funds to make hives and other equipment for members.

Opportunities for Growth
There is a growing number of beekeepers in the district hence more honey and hives are expected to be produced. There is high demand for Bubeeka organic honey and other products. Bushenyi organic products are on high demand in neighbouring countries of Rwanda, DR Congo, Kenya and Tanzania.

Partnerships with other stakeholders
Bubeeka’s partners include; Makerere University, Private Sector Foundation Uganda (PSFU), Kabaale University, Kampala International University (Western wing), Rwampala Firm School, Ruharo High Centre, Mbarara University of Science and Technology (MUST), Imperial Royal Hotels, Kabila Country Club, Shoprite Supermarkets.

Structure of Administration
Bubeeka is governed by Board of Directors whose chairman is Mr. Asiimwe Ben J.R. Other portfolios include; Vice Chairman, Treasurer, Secretary, Publicity Secretary, Volunteer Secretariat headed by office administrator.
Marketing strategies
Bubeeka has employed some unique marketing strategies including; radio and newspaper adverts, direct sales at outlets, exhibitions, supermarkets, churches, hotels, schools, Universities, Restaurant, Bars, Hospitals, Clinics and homes.

Intellectual Property Rights
The protection of Bubeeka’s products is of high priority. Unfortunately, none of the products is currently protected or patented through a formalized IPR regime. This is a great disadvantage as most people tend to copy genuine organic products and sell them under the company’s name outside permission. The incubatee is still on a small to medium scale but hopes to grow bigger if given support. The original investment was approximately twenty five Uganda shillings (UGSH25m). This has enabled the organization to organize and sell 130,000 kilos of clean honey and other products since the inception of the association.

Way Forward
Bubeeka hopes to become a member of ATPS and other networks aimed at scaling-up innovations and knowledge of innovators. It hopes to acquire more skills for better managerial and organizational performance and employ more technical personnel for improved operational performance. It hopes to establish effective strategies for resource mobilization.

Key Outcome
Bubeeka’s response is that UniBRAIN is quite welcome mainly because of its readiness to combine skills, resources and input from diverse sectors like academia, professional and private sector in order to support the development of SMEs.

5.4.3 BTL International Ltd Uganda
Contact details:
Name of Promoter: Luzinda Henry Kizito
Address: P.O. Box 5902, Kampala

Figure 18: Organizational Chart of Bushenyi Beekeepers Association

Bubeeka has employed some unique marketing strategies including; radio and newspaper adverts, direct sales at outlets, exhibitions, supermarkets, churches, hotels, schools, Universities, Restaurant, Bars, Hospitals, Clinics and homes.
Physical Address of Demonstration Plot: Najjera Village, Kiira Sub county, Wakiso District
Physical address of commercial production: Najjera Village, Kiira Subcounty, Wakiso District
Phone numbers: Mobile 0712 416101; 0712 939333
E-mail address: tmnhomeuler@yahoo.com

Background Information:
The agribusiness incubatee started in the year 2005. During that year, a first step was undertaken to outsource farmers to plant the plant - Loofah. BTL International Ltd was established to add value to the loofah, package, brand and produce the loofah for both local and foreign markets. The ROBI Bath Sponge was the first branded and packaged bathing sponge in the Ugandan market.

Mandates of the Agribusiness Incubatee
Mission: To become the largest producer of the natural loofah bath sponge in Africa for both the local and foreign market and encourage the practice of using natural and environmentally friendly products.
Vision: To encourage, support and empower local communities in the production of the loofah raw materials for consumption in the process of the final product - Robi Bath Sponge.

Key products from the incubatee:
The Robi Bath Loofah sponge is the final finished product of BTL International.

Operations and Management

Key Success Stories
- BTL International Ltd has succeeded in creating a client base of over 20 large and medium sized super markets in and around Kampala
- BTL International Ltd supplies the ROBI bath loofah sponges to hotels in Uganda.
- BTL International Ltd exports its products to destinations within East Africa.

Major weaknesses/draw backs
- Inadequate source of the Loofah raw material
- Poor farming methods employed by the farmers
- Inadequate operation capital
- Limited access to funds

Opportunities for growth
The incubatee has comparative advantage over competitors in other countries in terms of a good and reliable climate, land, labour and fertile soils for the production of the plant. It also has available market for the sale of the products.

**Partnership with other stakeholders**
The incubatee has partnerships mainly with the farmers and farmer organizations that produce the plant used as primary raw material for the production of *Robi bath loofah*.

**Organizational Structure**
BTL International Ltd comprises of a Managing Director and Directors with individual assignments. These are supported by a Project Coordinator.

**Marketing strategies and outlets for the products**
From the inception in 2005, a network of outlets both within and outside Uganda has been established and these include:
- Hotels within and outside Uganda
- Shoprite Super Market – Lugogo
- Shoprite Super Market – Clock Tower
- Uchumi Super Market
- Nakumatt Super Market
- Half Price Chain [TUSKER MATRESSES] – Bugolobi, Ntinda, Nakulabye
- Quality Chain – Martin Road, Lubowa and Ntinda
- Embassy Super Market – Kabalagala
- John Riche Super Market – Kabalagala
- Jaaz Super Market – Bugolobi
- Kibuli Super Market - Kibuli
- G & R Super Market Ntinda
- Pick ‘n Save – Ntinda
- Good Price - Ntinda
- REHOBATH Shopping Centre – Kiwatule
- Quick Sale Super Market – Kiwatule
- P.K. Super Market - Kiwatule

**Intellectual Property Right (IPR)**
BTL currently has no IPR regime and has not patented any product. However it hopes to do so in the coming years as business scale grows.
Investments
The initial capital on investment was UGX18,000,000 with an annual turnover of UGX 24,500,000.

Opportunities for scaling up the innovation
BTL International Ltd is in partnership with the farmers to introduce better methods of farming in order to enhance production of better and reliable loofah raw material.

Key Outcome
The BTL International is willing to participate in the UniBRAIN initiative along with other stakeholders in the agribusiness innovation.

5.4.4 Fresh Vacuum Sealed Matooke (Frevasema) and Ancillary Products

Contact details:
Director/ Principal Investigator: Dr.G.W.Byarugaba-Bazirake
Address: Food Processing Department, Kyambogo University, P.O.Box 7181, Kampala, Uganda
Mobile: +256776426578
Email: gwbbazirake@gmail.com

Mandates:
Vision
To commercialize post-harvested banana fruits and its by-products sustainably for global benefits.

Mission
To provide fresh peeled, vacuum sealed matooke for both local and export market, reduce banana bulk transportation, optimally utilize matooke by-products (wastes) and reduce matooke wastes in urban centers.

Objectives
- Adding value to the matooke by prolonging FREVASEMA shelf-life and easing marketing locally and internationally.
- Reducing by 40% weight of the bulk burden of transporting matooke, hence reducing matooke waste (garbage) and their disposal costs in urban areas.
- Formulation of enriched livestock feeds.
- Formulation of dietetic menus using matooke as a base.
- Utilization of biotechnology cultures to produce vinegar.
Background

Tropical and sub-tropical Africa is endowed with plenty of fruits growing domestically and naturally. However, a lot of these fruits are not optimally utilized for economic benefit. Fruit losses and wastages have been reported as high as 25% in bananas (Shahadan and Abdullah, 1995). One particular fruit which has become the most important crop world worldwide is the banana (Shahadan and Abdullah, 1995; INFO COMM, 2005). Globally, Uganda has annual banana yields of over 12 million tons, Uganda ranks 2nd in world banana production after India. Uganda is the largest world producer of cooking bananas locally referred to as matooke and yet it ranks 70th country in terms of total banana trade. Evidently, this shows that banana production in Uganda does not correlate with expected commercial returns. It is therefore uneconomical and a big burden for farmers and traders to transport unpeeled matooke on the poor road networks, at high fuel prices using reconditioned tracks in the Ugandan situation.

FREVASEMA project therefore, focuses on establishing ways of commercializing post- harvested matooke in a fresh state.

Chains of Agribusinesses under the FREVASEMA Company

i. Biogas Electrification and Refrigeration Project at Mbarara Industrial Park

Objectives:
- To provide full or partial power of the Fresh Vacuum Sealed Matooke factory with a biogas fueled electric generator
- To provide full or partial refrigeration for the Fresh Vacuum Sealed Matooke factory from a biogas fueled absorption chiller (heat driven refrigerator)
- To economize the fuel requirements of the absorption chiller by utilizing the waste heat from the electric generator

ii. Biogas Production from Banana (Matooke) Waste Project in Eight Districts of Uganda

Objectives:
- To develop a commercially viable, market oriented biogas industry in Uganda
- To increase awareness and knowledge transfer of biogas technology in rural areas
- Strengthen sustainable development of the biogas sector
- Provide low cost, clean and environmentally friendly cooking energy and reduce respiratory and eye diseases caused by indoor pollution from smoke inherent to traditional cooking
- Improve the sanitary conditions of farm yards
• Design and build a macerating/shredding machine which will be used to reduce the size of the feedstock before fermentation
• Fabricate efficient biogas stoves
• To reduce the workload of women and children related to fuel wood collection and cooking
• Identify and establish the possible commercial applications of biogas (thermal and refrigeration) at dairy farms and institutions
• Evaluate the emission reductions from biogas systems to make a case for carbon emissions reductions (CERs)
• To improve soil nutrition through application of organic manure (from the biogas digester).
• To create rural employment related to local biogas enterprises providing biogas services to households

iii. **Uganda Banana Textiles Project (Ubatex) at Kyambogo University**

**Objectives**

• Collaborate with Kyambogo University for research and development of banana textiles
• Conduct countrywide feasibility studies of fabrics and other essential products out of banana stems.
• Establish community banana textile groups to extract fibres and produce textiles
• Provide training in manual extraction of banana fibres and weaving
• Establish links with local and International Agencies interested in buying banana fibres and products.
• Introduction of appropriate technology to extract fibres from banana stem

iv. **Banana Wine Processing at Bushenyi Winery**

The Bushenyi Banana and Plantain Farmers Association (BUBAPFA) aims to promote agricultural value added innovations through banana wine processing and marketing.

BUBAPFA was established as a sustainable institution to support and sustain activities of improving and conserving bananas at grassroots in Bushenyi District. BUBAPFA operates and works with farmers in Bushenyi district. It is concentrating in the pilot sub-counties of Nyabubare, Mitooma and Bumbaire. It is a fully registered local NGO under non-governmental Statute of 1989, of the Republic of Uganda and incorporated under section 16(1) of the company’s Act with limited liability status. The Association itself is a properly registered local NGO with functional structures and stakeholders that include Local Authorities, Research Institutions, Religious leaders and farmers.

**Expected Outcome**
- Increased production and earning capacity of the peasants by increased value from their bananas.
- Imparting new practical technologies of food processing and post-harvest technologies

**Management and Operations**
The business chain operates using the Structure of Administration & Governance shown below:

- Kyambogo University Administration
- Director
- Associate Researcher
- 1 Senior Researcher
  - Banana Fibre
  - 2 Research Assistants
  - 1 Office Administrator
  - Marketers
  - 4 Technical Staff
  - 2 Drivers
  - 1 Turn boys
  - 1 Attendant
- 1 Senior Researcher
  - Banana Wine
  - 1 Research Assistant
  - 1 Office Administrator
  - Marketers
  - 4 Technical Staff
  - 2 Drivers
  - 1 Turn boys
  - 1 Attendant
- 1 Senior Researcher
  - Biogas
  - 1 Research Assistant
  - 1 Office Administrator
  - Marketers
  - 8 Technical Staff
  - 2 Drivers
  - 1 Turn boys
  - 1 Cleaner
  - 8 Attendants
- 4 Research Assistants
- 4 Office Administrators
- Marketers
- 60 Technical Staff
- 10 Drivers
- 3 Turn boys
- 4 Cleaners
Figure 19: Organisational chart of Banana Wine Processing at Bushenyi Winery

Table 3: Capital Investment and Annual Turnover for 2010/11

<table>
<thead>
<tr>
<th>No.</th>
<th>UniBRAIN Proposed Project</th>
<th>Capital Investment (USD$)</th>
<th>Annual Turnover (USD$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FREVASEMA</td>
<td>967,989.60</td>
<td>1,440,000.00</td>
</tr>
<tr>
<td>2</td>
<td>BIOGAS</td>
<td>128,774.00</td>
<td>3,600,000.00</td>
</tr>
<tr>
<td>3</td>
<td>BANANA WINE</td>
<td>121,412.00</td>
<td>100,000.00</td>
</tr>
<tr>
<td>4</td>
<td>BANANA FIBRE &amp; TEXTILE</td>
<td>506,030.00</td>
<td>1,400,000.00</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>1,724,205.60</td>
<td>6,540,000.00</td>
</tr>
</tbody>
</table>

**Key outcome**
The consortia of FREVASEMA agribusinesses are very willing to consolidate the opportunities they have to participate in the UniBRAIN initiative.

5.4.5 ORIBAGS INNOVATIONS (U) LTD

Contact details:
Managing Director: Orikiriza Rusia Bariho
Address: ORIBAGS INNOVATIONS (U) LTD, c/o UGANDA INDUSTRIAL RESEARCH INSTITUTE P.O.BOX 26187 KAMPALA
Mobile: +256 774510325/ +256 703049185
E-mail: oribags_innovations@yahoo.com; orikirizarusia@yahoo.co.uk

Background Information
Oribags innovation is a private limited company registered under the law of Uganda with the registrar of companies Reg No.111402. Since its birth in 2007 Oribags has been dealing in the manufacture of handmade paper products including paper bags, printing paper, beads and jewellery, out of agricultural wastes like wheat straw, rice straw, elephant grass waste paper and other natural fibres like banana and sisal.

Brief History
The company derives its experience from its founders in particular Mrs. Orikiriza Rusia who started making beads in 2005 while still a student as she narrates her story below.
“Having been a first born from a peasant family, my parents could not afford to pay for my secondary education. I was adopted by a humanitarian family that took care of me right from senior one. While in school I used to ponder about the blessing I had but something difficult was worrying about how my siblings would survive. They probably would not get the opportunity and luck I had received. I used to think of what to do to break this barrier and support my siblings in the village. In 2005, I observed I could do something out of jewellery which could be sustainable for years. I used to do design and do decorations out of art pieces using local resources such as millet seeds and beans to make artistic impressions. From such experience, I embarked on beads making using imported beads from India and China to make bracelets, bungles, necklaces, and designs. The business was lucrative. After the discovery of the need to back up my work with intellectual capacity and to ensure long term sustainability, I did data collection on how to use paper and dry banana leaves to make jewellery. After experimentation, I realized that instead of relying on imported products, I could set up my own project. I thought of forming a small company for my own but this seemed a dream due to lack of funds to effect the process.

In 2007 while in first year at Makerere University, I embarked on utilising waste paper from offices to manufacture beads. I then did my first experimentation on how to extract fibre from banana stems to get fibre to make paper in a combination with other locally available materials. After saving some little pocket money from my guardian, I thought it was the opportunity I had always been waiting for to form the small company that was always in my dreams. I teamed up with a colleague and we formed Oribags Innovations. In 2008, we started trying other organic fibres like pineapple crowns, rice and wheat straw, cotton cuts, and waste paper in collaboration with Uganda Industrial Research Institute after the Institute had identified the potential we exhibited. We are currently operating under the incubation programme at the Uganda Industrial Research Institute. Despite its limited capacity Oribags Innovations now produce good quality products from local materials which are then used to produce paper bags and beads that currently sell on retail to various gift shops, craft shops and on many workshop functions in and around town”.

**Mandates of Oribags Innovations**

**Vision**

To be the leading producer of environmentally friendly products in the region

**Mission**

To be a regionally respected value addition and environmentally responsible company in the region that offers, quality and cost-effective products and services to clients at the right period of time focusing on ensuring client needs and satisfaction.

**Key products**
Oribags’ key products include beads for jewellery including bangles, ear rings, necklaces, paper bags, greeting cards, manilla paper, and visitors’ books. With improved capacity Oribags hope to make improved products and also diversify product range to suit customer needs. Ancillary products include beaded bags, egg trays, craft paper, tetra packs and recyclable/disposable cups.

**Awards and Recognition**

Won the **WOMAN ACHIEVERS AWARD 2010** from the New Vision Group and DFCU Bank due to the contribution on innovation in Science and Technology/education/research/agricultural value addition/health and information sharing that has improved the wellbeing of people in communities. The award was dedicated to the 2010 International Women’s Day (March 8th 2010).

- **Won the RISING STAR AWARD** from International Labour Organization (ILO) in collaboration with Africa Business Women Network (ABWN) and Uganda Women Entrepreneurs Association (UWEAL) on 13th November 2009 at the Imperial Royale Hotel Kampala as the Youngest Entrepreneur in Uganda with a young business that has demonstrated a true point of difference in the market place.

- Was elected to the Board of Directors of Uganda Women Entrepreneurs Association (UWEAL) as Young female entrepreneur’s representative.

**Major Weaknesses/Draw backs**

- Space is limited for operation of activities
- Lack of modern machinery and equipment to produce high quality products
- Inadequate financial resources have continuously limited effective production to meet the intended targets.
- Limited capacity/training on better production techniques and specific areas in handmade paper technology, quality standards and assurance.
- Weather vagaries which prolong the production process due to dependency on sunshine for drying purposes
- Limited market access across the borders like southern Sudan and Rwanda due to lack of capacity to navigate the market.
- Greater effort is required to enable the public realize the importance of environmentally friendly products
- High competition from foreign investors with established firms which are in the production of polythene paper known as Kaveera.
- Transport challenge especially when it comes to sourcing of materials and deliveries which are far from the city centre.

**Opportunities for growth**

- Collaboration with the Uganda’s lead agency for industrialization (UIRI) and other institutions gives a lot of hope for business growth and support services.
• Increased access to information through the available information centers at UIRI
• Increased exposure and publicity especially has enhanced the opportunity of identifying new customers
• The newly launched East African common market promises to increase the customer base as the business grows.
• Availability of Technical expertise both in Oribags and UIRI will lead to improved product quality and business growth.
• The Government’s move to ban the use of polythene bags is envisaged as an opportunity to boost market for paper bags.
• Oribags hopes to benefit from the governments support to young innovative entrepreneurs.

Partnerships
• Oribags is an incubatee at the Uganda Industrial Research Institute incubation centre and has been working in close collaboration with UIRI for its business development initiatives.
• Oribags is a member of the Private Sector Foundation of Uganda (PSFU)
• Oribags is an active member of Uganda Women Entrepreneurs Association Ltd (UWEAL) and has its director as the representative for young female entrepreneurs at the Board of Directors.
• Oribags is a member of the Uganda National Chamber Of Commerce and Industry.

Structure and Governance
Oribags Innovations is owned and operated by Orikiriza Rusia and Davis Bagamuhunda. The shareholders own 60% and 40% respectively. Orikiriza Rusia, a trained Entrepreneur is the Manager and Managing Director of the company. She oversees management and running of the enterprise. Davis Bagamuhunda is a trained Engineer with great experience in production engineering and energy systems engineering, innovation and entrepreneurship. He is the Technical Director of the Company also responsible for research and development. Daily operations of the company are run by Kanyankole Denis who is the Production Manager. He has great experience in paper and textile technology and has attended various trainings in Japan and India in paper processing and product development. The Company employs other 4 people doing operations in the small scale plant. There are prospects of recruiting more personnel as the company expands.

Marketing Strategies
The clientele is basically retail shops dealing in the sale of crafts and paper, gift shops, workshops and conferences where the company supplies most of the gift bags and jewellery. A big share of the market in jewellery lies in the wedding functions where an Oribags Innovation has done lots of jewellery for wedding and introducing couples.
Oribags Innovations recognizes primary packaging production to be a new niche and the best prospect for Uganda in the medium to long term. It is against this background that efforts are being geared to this industry so as to specialize in producing complete ready-made biodegradable primary packages for end-users. This industry has great prospects to grow as local production increases.

At the other end of the spectrum, it is reasonable to assume that these trends will continue given the company’s strategic location, human resource, experience, mandate among others. In order to sustain our relationship with the private sector, Oribags innovations hope to strengthen its collaboration with UIRI- a lead agency in the Industrialisation of Uganda, other institutions and indigenous entrepreneurs who are seasoned players in the making of similar products for the past three decades. Oribags does person to person marketing. Oribags currently sells its products directly from the plant at UIRI and has no outlet in town. With increased resources Oribags plans to open up an outlet in the city centre for its products and also at Katuna, the border between Uganda and Rwanda where the products have been identified to attract a good market. Oribags intends to do serious advertising through the media to increase the market base for its products.

**Issues of Intellectual Property Rights**
Oribags has not yet acquired any intellectual property rights so far due to limited capacity. However, it hopes to obtain a trade mark and file a patent for its innovation with acquisition of viable resources.

**Scale of Oribags Innovations**
Oribags Innovations is still a nascent enterprise at the micro level although it is developing at a fast rate.

**Financing**
The initial capital investment for Oribags innovations was 5 million Uganda Shillings ($2,500). This included contribution of its Directors and seed support from UIRI. The estimated turnover in the last year was 7 million Ugandan Shillings.

**Way forward**
**Opportunities for scaling up the technology**
- The government of Uganda is in strong support of agricultural value addition initiatives to produce quality products. Oribags initiative is a good venture that promises serious transformation of the country within the sector.
- Space expansion for production facilities including establishment of a technology demonstration centre.
• New equipment that can aid quality improvement to meet international standards and compete favourably on the market.
• Skills capacity development and training in business management, project management, marketing skills etc.
• Mentoring and coaching in the area of business development.
• Intensive marketing and collaboration with other institutions for proper delivery of results.

Key Outcome
Oribags is willing to enter into the UniBRAIN initiative so as to enhance further use of research from universities and other research institutions, do networking with other entrepreneurs and foster cooperation and benefit from the capacity building programme which is very critical at this stage.

6.0 SUMMARY OF LESSONS LEARNT FROM THE VISITS

• There was overall willingness of the incubatees to participate in the UniBRAIN initiative. This was manifested in the positive responses that culminated during the workshop for agribusiness incubatees.
• Most of the incubators and incubatees visited have no existing intellectual property arrangement and have not patented their products.

• Most of the incubatees have strong links with research institutions and private sectors but the link between them and the universities are weak.

• The incubators have no confidence in the university researchers hence they distance themselves and their innovations from them.

• The incubatees lack the requisite facilities and infrastructure for scaling up the innovations and are not well linked to sources of social capital/venture capital.

• The incubators and their incubatees still need capacity strengthening in agribusiness innovation incubation and in their respective endeavours.

Appendix

Workshop programme
INVITATION TO AGRIBUSINESS INCUBATOR’S WORKSHOP, NAIROBI, KENYA, 5 – 7 AUGUST 2010

Workshop Programme

DAY 1 – Thursday, 5 August 2010 (Arrivals)

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic/Presentations</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00 – 9:30a.m.</td>
<td>Registration at the Nairobi Safari Club (Lillian Towers), Nairobi, Kenya</td>
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**OPENING SESSION**

Venue: Nairobi Safari Club (Lillian Towers), Nairobi, Kenya

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic/Presentations</th>
<th>Proposed Presenters</th>
<th>Session Chair</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:30 – 9:50 a.m.</td>
<td>Welcoming Remarks and overview of workshop objectives and purpose</td>
<td>Dr. Kevin C. Urama, Executive Director, ATPS</td>
<td>Prof. Atieno Amadi, Founder / Chief Executive Officer Kenya Country Business Incubator and Chairperson Business Incubation Association of Kenya</td>
</tr>
<tr>
<td></td>
<td><strong>Remarks by UniBRAIN participating institutions</strong></td>
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</tr>
<tr>
<td>9:50: – 10:00 am</td>
<td>Remarks by UniBRAIN Overall Coordinator</td>
<td>Dr Ralph Von Kaufmann, FARA</td>
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<tr>
<td>10:00 – 10:10 am</td>
<td>Remarks by ATPS</td>
<td>Dr Nicholas Ozor, ATPS-UniBRAIN Coordinator</td>
<td></td>
</tr>
<tr>
<td>10:10 – 10:20 a.m.</td>
<td>Remarks by ANAFE</td>
<td>Dr Aissétou Dramé Yayé, Executive Secretary, ANAFE</td>
<td></td>
</tr>
<tr>
<td>10:20 – 10:30 a.m.</td>
<td>Remarks by PanAAC</td>
<td>Lucy Muchoki, Chief Executive Officer, Pan African Agribusiness Consortium</td>
<td></td>
</tr>
<tr>
<td>10:30 – 10:40 a.m.</td>
<td>Remarks by FARA</td>
<td>Irene Annor Frempong, FARA</td>
<td></td>
</tr>
<tr>
<td>10:40 – 11:00 a.m.</td>
<td>Report on agribusiness incubators</td>
<td>Dr Nicholas Ozor, ATPS-UniBRAIN Coordinator</td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>Session</td>
<td>Speaker/Institution</td>
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</tr>
<tr>
<td>11:00 – 11:30 a.m.</td>
<td><strong>PHOTO SESSION &amp; Health Break</strong></td>
<td>Rapporteur: Ms Wairimu Mwangi</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Agribusiness Innovation Incubation in Africa: Cross Country Experience on Challenges and Opportunities</strong></td>
<td></td>
<td></td>
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</tbody>
</table>
| 11:30 – 11:50 a.m. | Experience from Kenya                                                     | Dr. M. Charles Moturi  
Director, KIRDI, Nairobi                                                                   |
| 11:50am – 12:10 pm | Experience from Uganda                                                  | Prof. Charles G. Kwesiga  
Executive Director, Uganda Industrial Research Institute, Kampala, Uganda            |
| 12:10 – 12:30 pm | Experience from Egypt                                                   | Prof. Dr. Eid M. A Mgeed  
Director, Technology Management and Commercialization Office, Min. Of Agric. And Land Reclamation, Agricultural Research Center |
| 12:30 – 12:50  | Experience from South Africa                                            | Professor Mark Swilling  
Sustainability Institute, School of Public Management and Planning  
Stellenbosch University                                                             |
| 12:50 – 14:30 p.m. | **LUNCH BREAK**                                                        |                                                                                       |
| 14:30-14:50 pm | Agribusiness Innovation Incubation: The Context and Scope               | Mr Samuel M. Wambugu, Manager, Technology Transfer and Business Development Services, KIRDI, South B, Nairobi |
| 14:50 – 15: 10 pm | Establishment, management and operations of agribusiness innovation incubation: Principles and processes | Prof. Atieno Amadi, Founder / Chief Executive Officer  
Kountry Business Incubator and Chairperson  
Business Incubation Association of Nairobi, Kenya                                        |
| 15:10 – 15:30 pm | Intellectual Property Framework for Successful Agribusiness Innovation Incubation in Africa | ATPS  
Rapporteur: Prof. Agnes Mwang’ombe  
Principal, College of Agriculture and Veterinary Sciences and Professor of Plant Pathology, University of Nairobi |
| 15:30pm – 15:50pm | Success factors for agribusiness in the 21st century                    | Mr. John Kashangaki, Executive Director, Strategic Business Advisors (Africa) Limited  
Rapporteur: Hannah Adari                                                               |
| 15:50pm – 17:00pm | Facilitated discussions based on presentations                          | Mr Marsden Momanyi, Senior Communications and Outreach Officer, ATPS                  |
| 19:00 – 21:00 p.m. | **COCKTAIL RECEPTION HOSTED BY ATPS**                                 |                                                                                       |

**DAY 3 - Saturday, 7 August 2010**
<table>
<thead>
<tr>
<th>Time</th>
<th>Topic/Presentations</th>
<th>Proposed Presenters</th>
<th>Session Chair/Lead Discussants</th>
</tr>
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<tbody>
<tr>
<td>9:00 – 9:10 a.m.</td>
<td>Recap of Day 1</td>
<td>Ms. Wairimu Mwangi, Research Officer, ATPS</td>
<td>Chair: Prof. Charles G. Kwesiga, Executive Director, Uganda Industrial Research Institute, Kampala, Uganda</td>
</tr>
<tr>
<td>9:10 – 9:30 a.m.</td>
<td>Indicators of success and sustainability for agribusiness incubators</td>
<td>Mrs. Dorcas Mutemi, Director Entrepreneurship Department Kenya Polytechnic University College</td>
<td>Rapporteur: Mr Marsden Momanyi</td>
</tr>
<tr>
<td>9:30 – 9:50 am</td>
<td>Strategies for the commercialization and Up-scaling of agribusiness innovations</td>
<td>Dr. Amr F. Abdelkhalik, Ministry of Higher Education &amp; State Ministry for Scientific Research, The Minister Office, Cairo, Egypt</td>
<td></td>
</tr>
<tr>
<td>9:50 – 10:10 am</td>
<td>Social capital investment for agribusiness innovation incubation in Africa</td>
<td>Byron Mudhune, ICDC, Kenya</td>
<td>Rapporteur: Mr Marsden Momanyi</td>
</tr>
<tr>
<td>10:10 – 10:30 am</td>
<td>Agribusiness Innovation incubation in Africa in the new millennium- the way forward</td>
<td>Prof. John H. Muyonga, HOD, Dept of Food Science and Technology, Makerere University, Kampala, Uganda</td>
<td></td>
</tr>
<tr>
<td>10:30 – 11:00 a.m.</td>
<td>HEALTH BREAK</td>
<td></td>
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**DISCUSSION:**
<table>
<thead>
<tr>
<th>Time</th>
<th>Session Description</th>
<th>Speaker/Chair</th>
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<tbody>
<tr>
<td>11:00am - 13:00 p.m.</td>
<td>Best practices and expectations for agribusiness innovation</td>
<td>A guided discussion by Dr Nicholas Ozor, ATPS-UniBRAIN Coordinator</td>
</tr>
<tr>
<td>Chair: Dr. Amr Mohamed Helal Managing Director, International Trade and Marketing Company, Cairo, Egypt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lead Discussants:</td>
<td>Dr. M. Charles Moturi;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prof. Atieno Amadi;</td>
<td></td>
</tr>
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<td>Dr. Ahmed F. Mandour;</td>
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<td></td>
<td>Prof. Dr. Eid M. A. Mgeed;</td>
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<td></td>
<td>Prof. Charles G. Kwesiga;</td>
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<td></td>
<td>Professor Mark Swilling</td>
<td></td>
</tr>
<tr>
<td>Rapporteur: Ms Wairimu Mwangi</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13:00 pm – 13:30 pm</td>
<td>Concluding remarks</td>
<td>Dr. Kevin Urama, Executive Director, ATPS</td>
</tr>
<tr>
<td>13:30 – 14:30 p.m.</td>
<td>LUNCH</td>
<td></td>
</tr>
</tbody>
</table>
Participants for the Agribusiness Incubators’ Workshop

<table>
<thead>
<tr>
<th>NAME</th>
<th>ORGANISATION</th>
<th>COUNTRY</th>
<th>CONTACTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>HANNAH ADARI</td>
<td>ATPS</td>
<td>KENYA</td>
<td>P.O. BOX 10081 00100 TEL: 254 722321008 <a href="mailto:fununuh@yahoo.com">fununuh@yahoo.com</a></td>
</tr>
<tr>
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<td></td>
<td>EGYPT</td>
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<tr>
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<td>KENYA</td>
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</tr>
<tr>
<td>ORIKIRIZA RUSIA BARIHO</td>
<td></td>
<td>UGANDA</td>
<td>TEL: 256 774510325 P.O.BOX 26187 KAMPALA <a href="mailto:orikirizarusia@yahoo.co.uk">orikirizarusia@yahoo.co.uk</a></td>
</tr>
<tr>
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