



**MODELS OF KNOWLEDGE
BASED TRANSFER- THE
CASE OF THE
PRESIDENTIAL
INITIATIVE ON BANANA
INDUSTRIAL
DEVELOPMENT (PIBID)**



What is PIBID



1. Presidential Initiative on Banana Industrial Development
2. H.E., The President of the Republic of Uganda is the Patron.
3. Governed by a Board and Management Committee.
4. Collaborators include; professionals, private and public sectors and farmers
5. Main areas of focus
 - ✓ Value addition & Quality control operations
 - ✓ Marketing & rural enterprise debt.
 - ✓ Production



Project Context Within the Socio-economic Dev't Framework of Uganda's Economy –(PEAP/PMA)



1. **Poverty Eradication Action Plan (PEAP)**

Objective:

The PEAP provides an over-arching framework to guide public action to eradicate poverty.

Most Relevant Pillars to the PIBID Project

Economic management

- *Modernisation/commercialisation of agric with emphasis on value addition*
- *Removal of bureaucratic barriers to investment*
- *Actions to enhance rural access to finance & strengthen SME Dev.*
- *Actions to enhance environmental sustainability*

Enhancing production, competitiveness and incomes

- *Increasing the ability of firms to innovate & adapt to new technologies thereby increasing the ability of the private sector to profitably increase market share*

2. **Plan for Modernisation of Agriculture-(PMA)**

Goal:

To accelerate agricultural growth in Uganda by introducing profound technological change throughout the sector as a strategy for raising incomes of the poor.

Mandate government to harness its inputs to steer agro-industrial development targeting specific staple crops, which would score the greatest gains with respect to the livelihood of the rural poor.



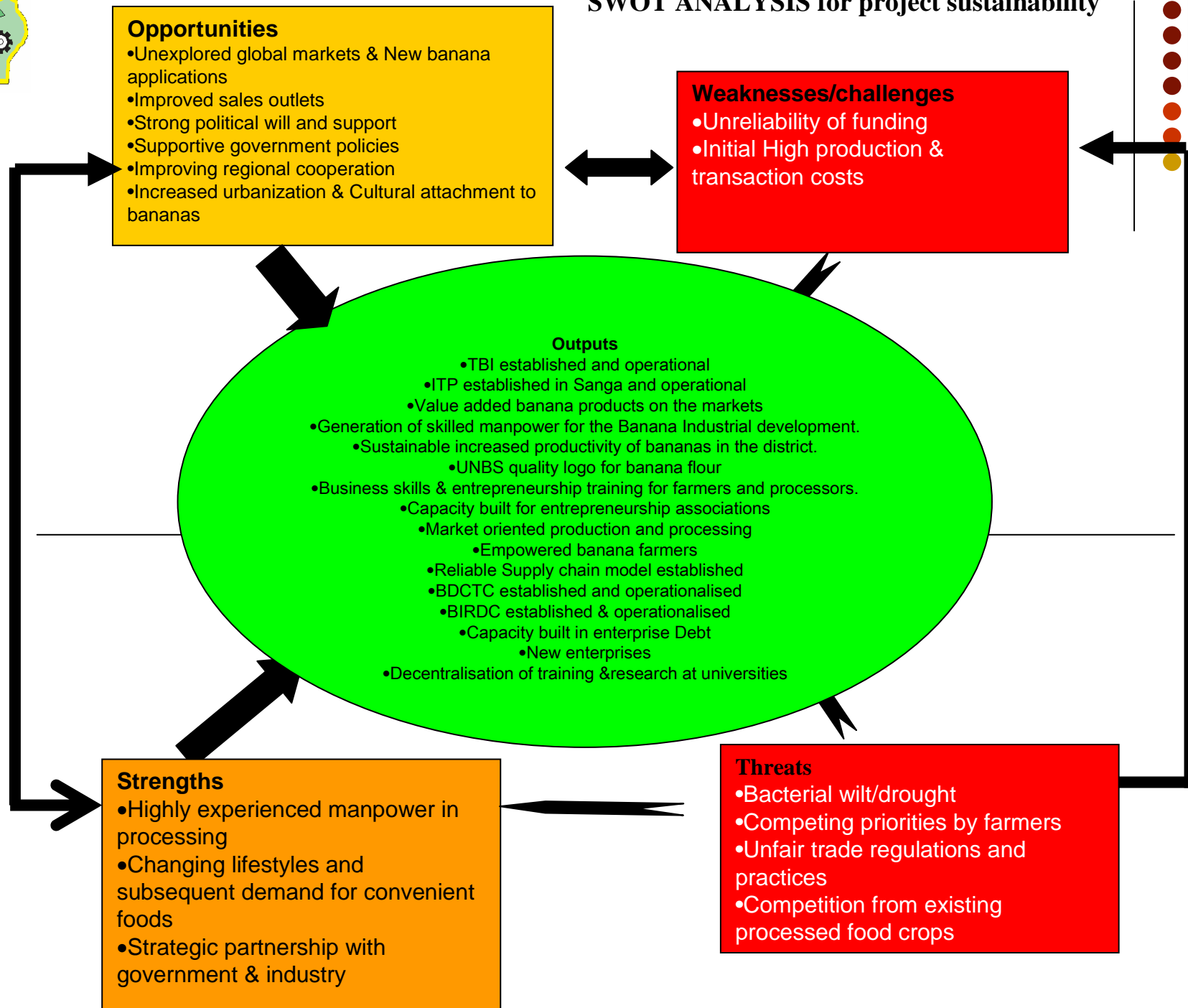
Developments in Banana Research



- *Research has been done on the dehydration & physicochemical characterisation of bananas.*
- *Banana flour has proved to possess good properties including among others the following:*
 - ✓ *>80% starch (db)*
 - ✓ *Extensive shelf life due to low sugar & fat*
 - ✓ *Negligible levels of condensed tannins therefore, non astringent*
 - ✓ *High levels of potassium, which is very good for health*
 - ✓ *Optimal properties for pharmaceutical industry*
 - ✓ *Useful in treatment of diarrhoea*
 - ✓ *Baking quality for gluten-free products (for celiac patients)*
 - ✓ *High energy density, recommended for young children*
- *Unfortunately no industrial uptake has been realised for banana flours as yet.*



SWOT ANALYSIS for project sustainability





UNDERLYING THEORY OF CHANGE



Requires four factors to be addressed namely that farmers need to:

- have **accessibility to tested technologies** in order to optimize their production capacity.
- **access experienced professionals to educate** them in processing and value addition and marketing techniques to help optimise the cost benefit ratio of their operations.
- **acquire improved rural infrastructure** that can support grading and quality standards for processed banana products at the village level.
- be **empowered in their bargaining power through the formation of strong marketing associations** for greater collective action in accessing critical inputs, value addition facilities, and meeting market requirements, i.e., volume, quality and timeliness of supplies



The Technology Business Incubator Approach (TBI)



What is TBI ?

A mechanism for enhancement of success of early stages of technology entrepreneurs by providing :

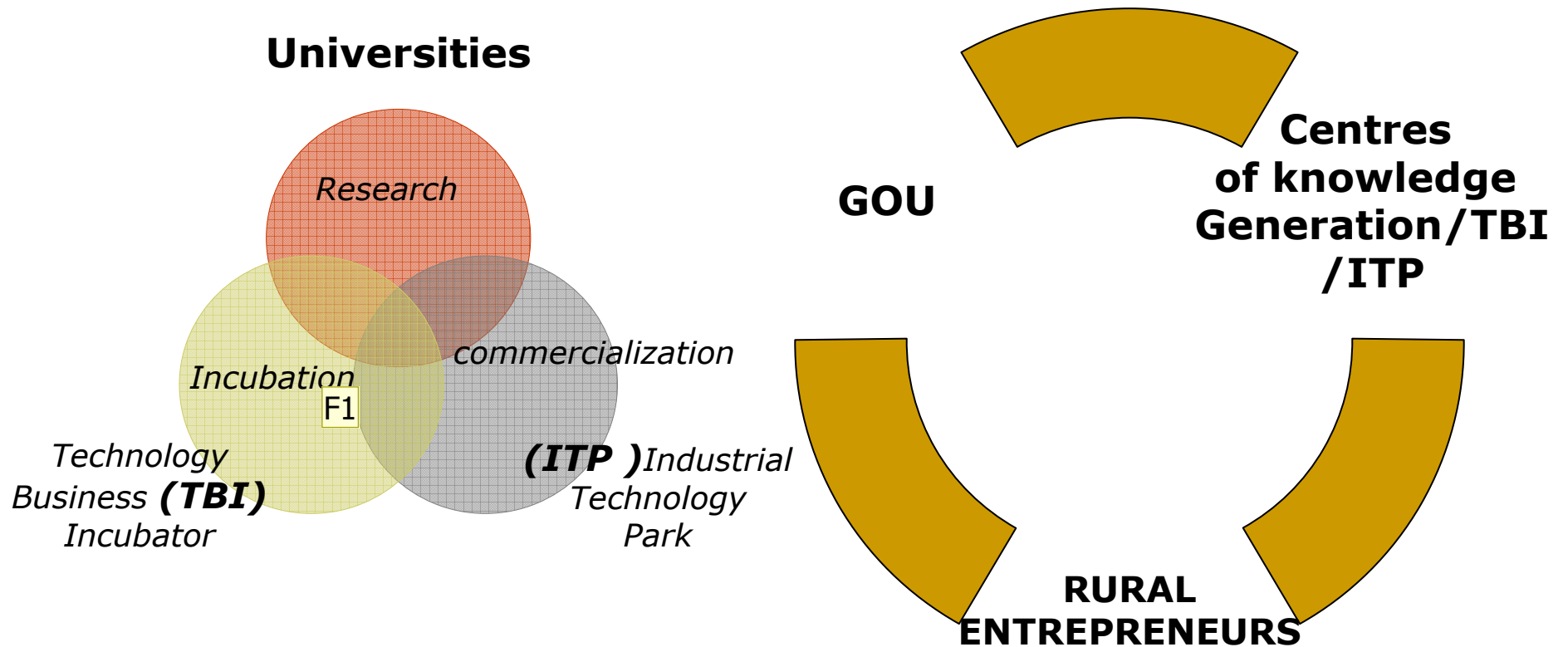
- *Advisory, training & information services, management & marketing support.*
- *Linkages to research faculty and facilities as well as access to capital.*

Why consider TBI system?

- *TBI serves to promote technology transfer and diffusion.*
- *Promote entrepreneurship among entrepreneurs, researchers & academics.*
- *Cushions enterprise against some of the risks that normally threaten new enterprises.*



THE SMART PUBLIC PRIVATE PARTNERSHIP- (PPP) for rural transformation



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TBI= Technology Business Incubator
ITP =Industrial Technology Park
Florence, 06/05/2006



Vision



- State-of-the-art banana processing enterprises in Uganda, producing value-added *matooke products with competitive market strength both locally and globally*, manned by rural farmers/entrepreneurs,



Mission



To offer rural farmers technical/scientific services, outreach and Research & Development opportunities in:

- Sustainable banana production.
- Sustainable and competitive value addition to bananas.
- Business and product process development.
- Product quality assurance & safety.
- Process/product technology transfer & commercialisation.

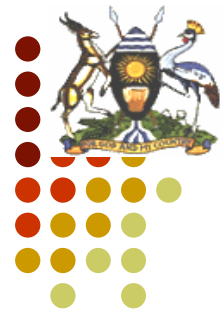


Goal of the Project

- ✦ To facilitate the development of state-of-the-art banana-based sustainable processing enterprises applying Technology Business Incubator (TBI) and Industrial Technology Park (ITP) system principles to help farmers/entrepreneurs to sustainably add value to *matooke* to yield profitable & competitive products.



Specific Objectives



1. Establishment of benchmarks for starting a rural based pilot banana processing Industry in Bushenyi.
2. To ensure sustainable processing of quality products by a start-up rural value addition enterprise through a TBI framework for local & global markets.
3. Capacity building for farmers in new production technologies & agronomic practices, so as to ensure sustainability of *matooke* production & marketing in Bushenyi District for a banana processing industry.
4. Linking farmers/entrepreneurs to favourable micro-financing mechanisms to facilitate the enterprises.
5. Establishment of reliable supply chains that link farmers to more profitable market outlets with medium and large scale food processors/consumers.
6. Assessment of overall project impact on overall economic wealth, and livelihood of poor households in the district.
7. Transformation of the Bushenyi TBI into a Banana Industrial Research & Development Centre (BIRDC).
8. To build capacity for entrepreneurship training & development through establishment of an Industrial Technology Park at Sanga, near Lake Mburo.



Organs/Units of the Project:

1. The Project Secretariat (Kampala)
2. The Technology Business Incubator (TBI) at Bushenyi.
3. The Industrial Technology Park (ITP) at Sanga, near L.Mburo, Mbarara.



PIBID Secretariat: Functions

1. Carrying out the overall general administrations/management of the project.
2. Preparation of routine correspondence on Project administrative matters.
3. Custodianship of all Project reports and documents & property rights
4. Preparation of monthly, quarterly and annual financial reports.
5. Production and dissemination of Project progress reports.
6. Schedule and organize Project-related meetings /workshops / seminars; conventions etc.
7. Maintaining, updating and communicating PIBID. calendars/schedules to all stakeholders.
8. Handling general secretarial work at the secretariat.
9. Establishing and operationalising the PIBID project resource centre.



The Bushenyi TBI

- The focal point of the project will be the Field research station
- Its main functions will include:
 - Value addition & quality control,
 - Food product development
 - research & training,
 - improving production and
 - business development & marketing



Production Function

Justification of production function:

- To ensure sustainable supply of the right quantity and physiologically ascertained quality of raw bananas necessary for sustaining value addition operations
- To ensure continued food security

Approach:

1. High input strategy- this will utilise fertilizers including the biomass dryer by-products.
2. Soil management best practices-through training
3. Irrigation/fertigation will be modelled initially at TBI & later in selected communities
4. Agrodiversity

This will lead to a commercially competitive productivity of:

- Plant population increased up to 2200 stools per ha.
- Productivity up to four bunches per stool per year.
- Minimal crop loss through wind damage.
- Yield increased from current 7tons/ha/year to 176 tons/ha/year.
- Cost per Kg will fall from mean **75USh per Kg to below 7.5USh per Kg. at the farm gate hence increasing competitiveness of banana flour on the market.**



Business & Marketing Function



This will build capacity for competitive business enterprise dev't. by:

1. **Identifying** *market opportunities and creating market entry strategies (including branding, logos etc.) for banana value-added products*
2. **Collaborating** *with UNBS to create a Presidential Quality Mark.*
3. **Building** *end-user profiles for banana value-added products.*
4. **Testing** *end-user responses to new product formulations/recipes.*
5. **Creating** *awareness building/adoption campaigns.*
6. **Conducting training** *in business management and marketing.*
7. **Facilitating & promoting** *linkages among farmers, processing associations, processors, consumers & service providers.*
8. **Establishing a network** *of market information centres linking farmers, traders and community processor organisations.*



Research & Training Function

This function will serve to address demand-driven capacity building and research needs for all farmers /processors so as to ensure quality production of both raw material & processed products.

The key areas of focus will include:

- Value addition/quality control
- Soil management
- Marketing
- Environmental impact assessment

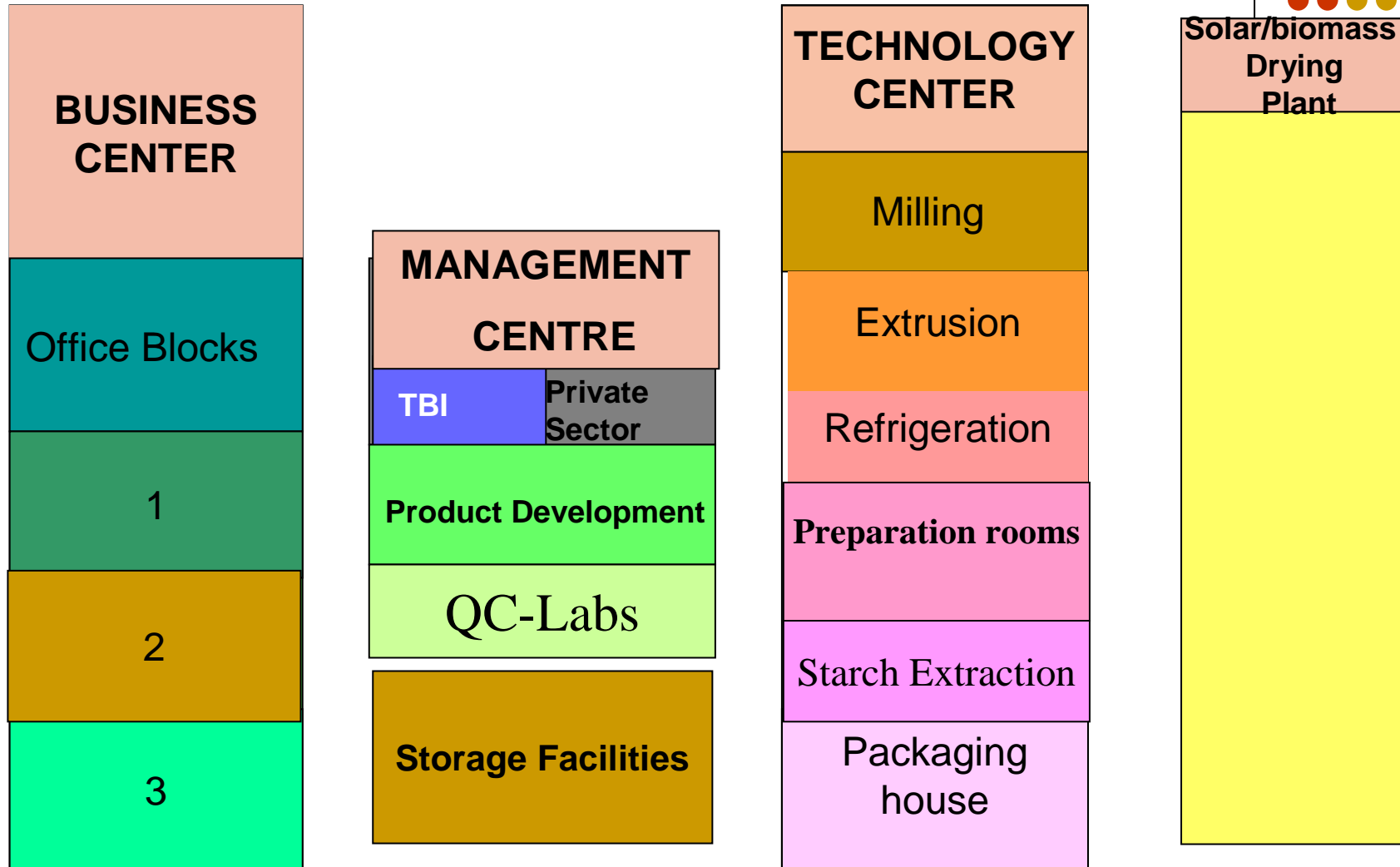


Functions of ITP

- Industrialization of proven secondary value addition technologies
- Provide services for the private sector
- Establishing Hazard analysis critical control points (HACCP) for the different processes
- Overall management/oversight over the ***TBI*** and ***Private Sector*** operations at the ITP



FRAMEWORK FOR THE SANGA INDUSTRIAL TECHNOLOGY PARK



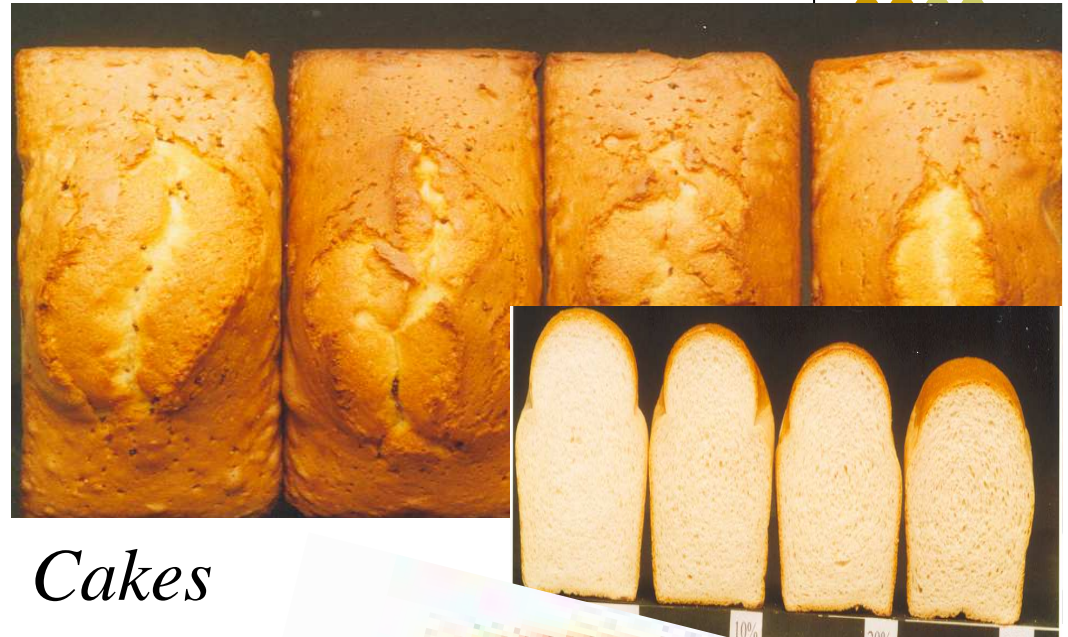
NB:1,2&3 provide for space for office block that can be subdivided for higher to the private sector



Value Addition Impacts - Matooke Bakery Products



Biscuits

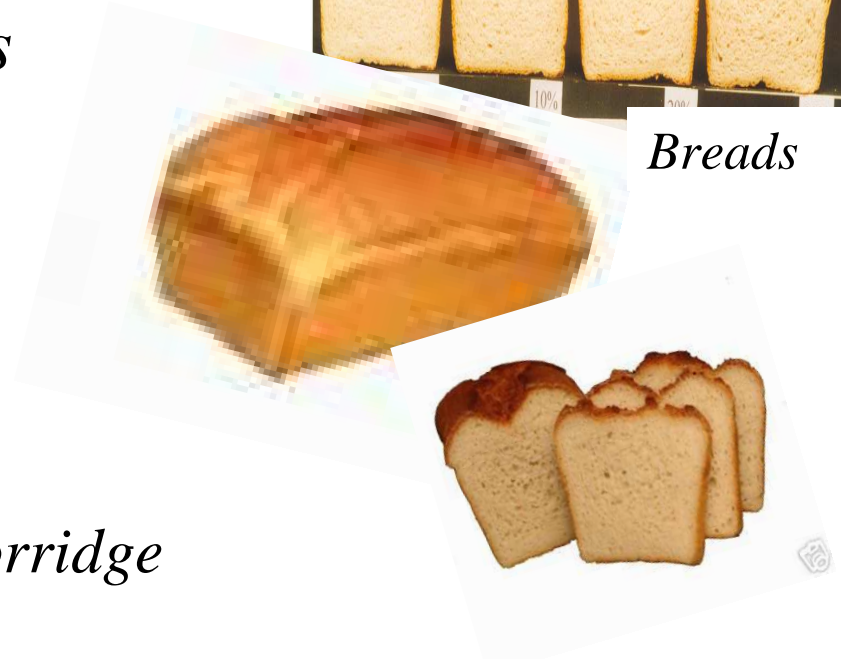


Cakes

Breads



Instant matooke porridge



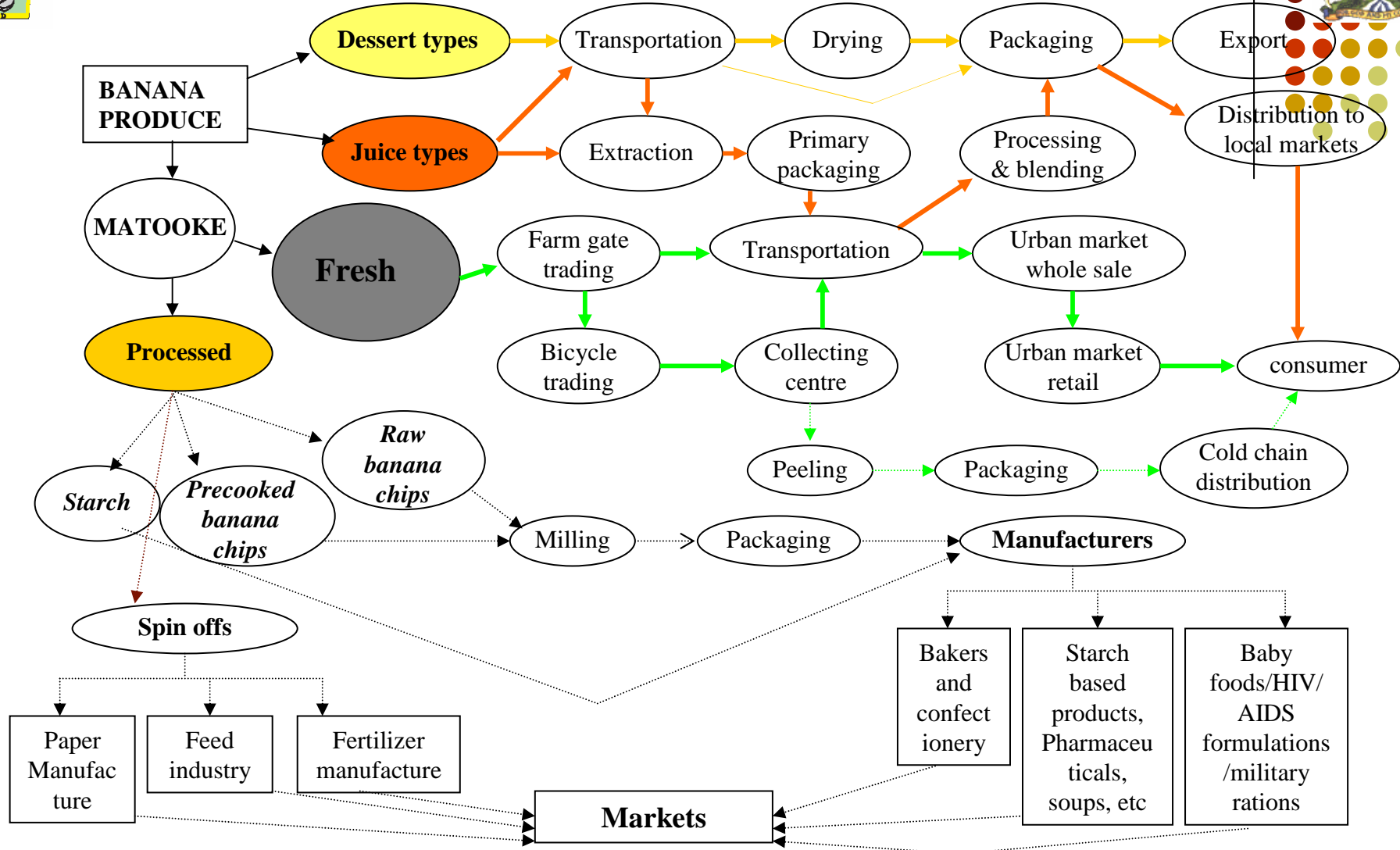


PIBID will lead to

- ✓ ***Rural banana value addition enterprises through R&D framework.***
- ✓ ***Market demand driven innovation of novel products.***
- ✓ **Substitution of up to over 25% of wheat in the bakery Industry**
- ✓ **Providing a main energy base for most public & private institutions in the country-through matooke instant flour including schools, hospitals etc.**
- ✓ ***Sustainable matooke production based on best practices/irrigation system.***
- ✓ ***Transformation of livelihoods of rural communities.***



PROJECTED UGANDA BANANA MARKETING, PROCESSING AND MANUFACTURING MAP



KEY:

- Main dessert dried produce
- Shunt for fresh dessert for export
- Juice processing chain
- Fresh banana matooke chain
- Proposed shunt for peeled bananas
- Proposed manufacturing processes
- Established manufacturing processes



Acknowledgement

- *Government of the Republic of Uganda*
- *The Board & management Committee (BMC), PIBID*
- *Makerere University*
- *The Rockefeller Foundation*
- *BAGKF-Germany*
- *British Council/WCC*
- *The PIBID Core/Research Teams*



Extrusion Process for *Matooke*



Thank
You

