



**PROMOTING
KNOWLEDGE MANAGEMENT CULTURE**

TOWARDS THE COMMERCIALISATION OF THE POTATO COMMODITY IN UGANDA

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Toward The Commercialization Of The Potato Commodity In Uganda

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Introduction



Potato (*Solanum tuberosum* L.) is an important food and income crop globally.

In Uganda, potato contributes to food security, employment, and household income.

Major producing areas include Kabale, Kisoro, Mbale, Kapchorwa, and the Kigezi region.

Demand for potato is increasing in urban markets and the hospitality sector.



Importance of Potato

Source of food and nutrition

Income generation for smallholder farmers

Employment along the value chain

Raw material for chips, crisps, and other processed products



Role of NARO in Potato Development

- Development of improved potato varieties
- Enhancing disease resistance
- Improving yield potential
- Supporting seed system development
- Promoting climate-resilient varieties
- Technical backstopping to farmers



The Vision

Potato as a Strategic Industrial Commodity

The Shift: Moving from "subsistence surplus" to a **market-led value chain**

Economic Impact: Potato is no longer just food; it is a high-value raw material for the hospitality, snack, and pharmaceutical industries

The Goal: Achieving **Import Substitution** (replacing imported frozen fries/starch) and increasing **Export Revenue** within the East African Community (EAC)



The Vision

The NARO Advantage – Foundation for Commercial Success

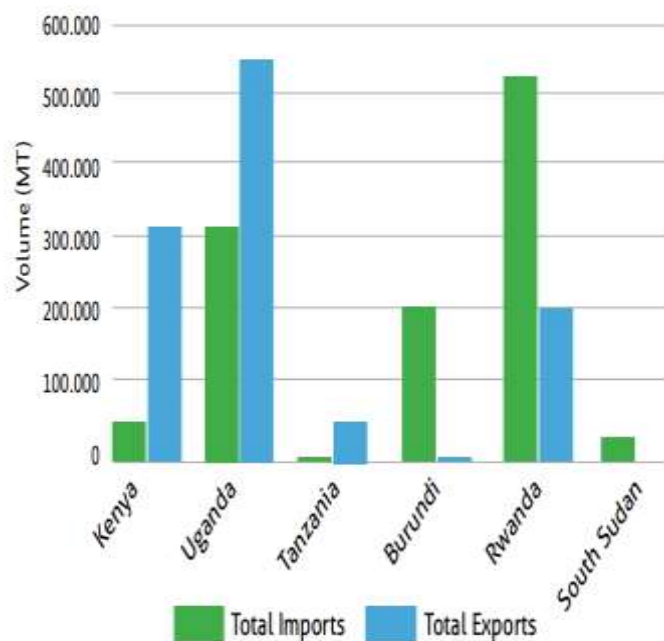
Commercialization begins with the right genetics. NARO has released varieties specifically "bred for business":

Industrial Processing (NAROPOT 7, 8, 9, 10): High dry matter content ($>20\%$), low reducing sugars, and uniform shapes for automated peeling/slicing.

Yield Gap Closure: Transitioning from traditional yields of **7–10 Tons/Ha** to commercial potentials of **25–35 Tons/Ha** using NARO certified seed.

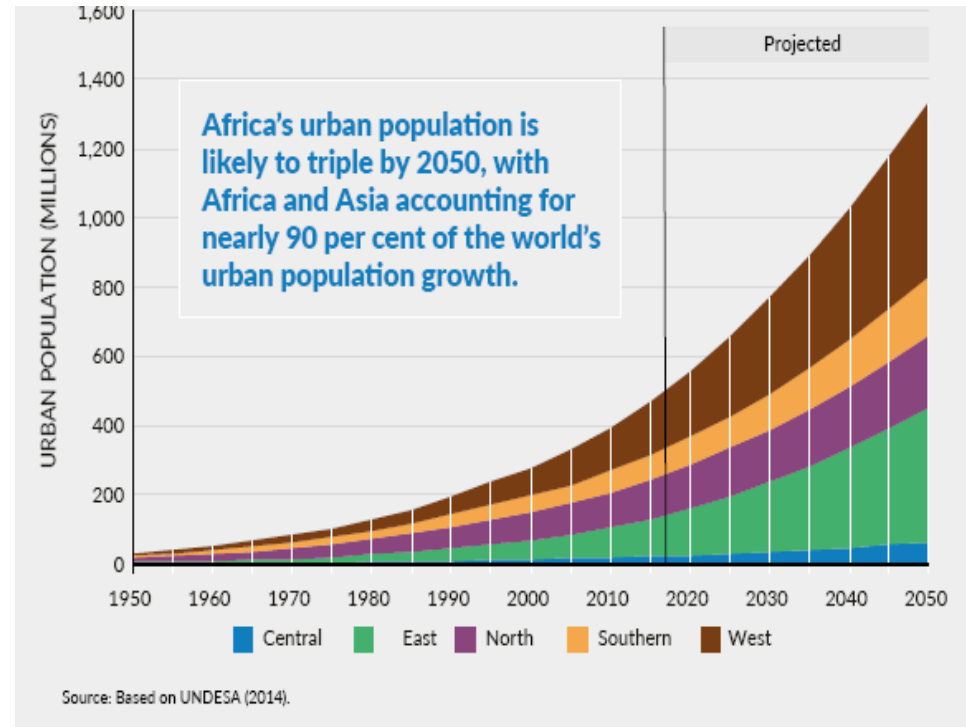
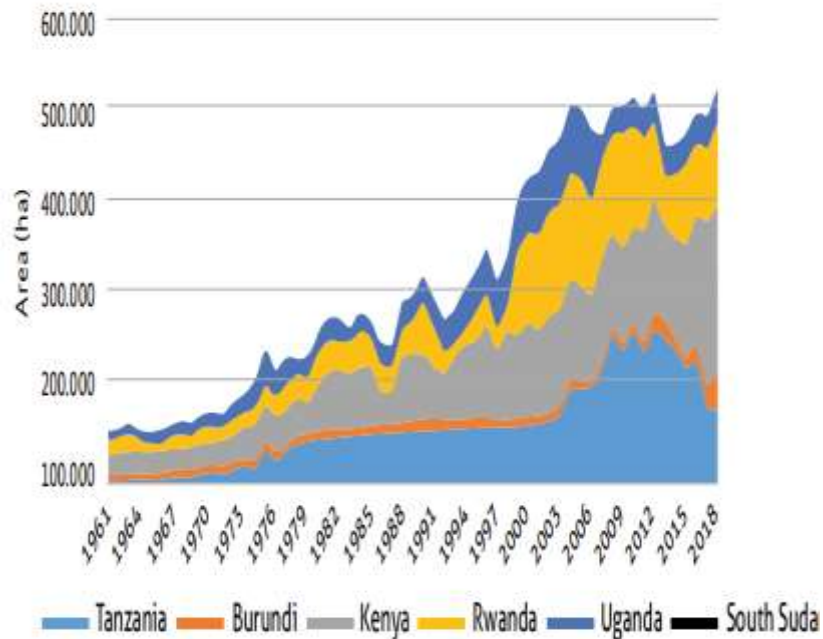
Disease Resilience: Built-in resistance to Late Blight and viruses, reducing chemical overheads and increasing net profit margins.

Potato trade in EAC, 2020



- Uganda biggest exporter mainly to Rwanda, Burundi and a little to S.Sudan
- Uganda also imports from Kenya
- Kenya and Tanzania hardly imports potato

Expanding potato growing driven by increasing urbanisation in East Africa





What is Commercialisation of Potato

- Producing potato primarily for the market rather than subsistence
- Involves improved seed systems, efficient production, market linkages, value addition, and processing



Naro's Commercialization Strategy

Licensing Framework: NARO has moved from distributing "free" seed to licensing varieties to private companies (e.g., FICA Seeds, KIPAL, Syova Seeds).

Intellectual Property (IP): Varieties are now protected assets. Licensing ensures that seed companies have exclusive or semi-exclusive rights to multiply and sell, guaranteeing a return on investment.

The Goal: Establishing a sustainable network of **Potato Seed Hubs** across Uganda to ensure farmers access certified, disease-free "clean" seed.



Yield Potential of Improved Varieties

- Traditional varieties: 6–10 t/ha
- Improved NARO varieties: 20–40 t/ha under good management
- Benefits include higher productivity and increased farmer income.

RELEASED VARIETIES

VARIETY	ATTRIBUTES
RUTUKU 	Resistant to late blight -Very high yields (40 t/ha) -Dormancy period 80-100 days -Large tubers -Light-red skin -Cream flesh -110-130 days to maturity
VICTORIA 	High yields with large tubers (27t/ha) -Wide adaption -Early maturing (90-100 days) -Short dormancy (50-60 days)
NAKPOT5 	The processors shape -Dry matter 19% -High yielding (40t/ha) -Good for table -Resistant to late blight

VARIETY	ATTRIBUTES
KACHPOT1 	The crispy cream (25.4t/ha) -Drought tolerant -Dry matter 23% -90-100 days to maturity -Good storability -Tolerant to late blight
KINIGI 	Highly marketable -Tolerant to late blight
NAROPOT1 	High yielding (35t/ha) -Dry matter 23% -Dormancy of 60-80 days -Maturity period of 90 days -Highly resistant to late blight disease -Cream flesh color -Good for crisping and table qualities

RELEASED VARIETIES

VARIETY	ATTRIBUTES
NAROPOT2 	Yield (30 t/ha) -Dry matter 19% -Resistant to late blight -Tolerant to bacterial wilt -Dormancy period 60-70 days -Maturity period of 100 days -Good crisping and table qualities -Cream flesh color
NAROPOT3 	Short round tubers Yields (25 t/ha), Resistant to late blight, High dry matter content (20.8%).
NAROPOT4 	tubers of different sizes -Dry matter 18% -Wide adaptation -Good cooking and processing qualities -100, 110 days to maturity

RELEASED VARIETIES

VARIETYR	ATTRIBUTES
RUTUKU 	Resistant to late blight -Very high yields (40 t/ha) -Dormancy period 80-100 days -Large tubers -Light-red skin -Cream flesh -110-130 days to maturity
VICTORIA 	High yields with large tubers (27t/ha) -Wide adaption -Early maturing (90-100 days) -Short dormancy (50-60 days)
	The processors shape -Dry matter 19% -High yielding (40t/ha) -Good for table -Resistant to late blight

VARIETY

NAROPOT5



ATTRIBUTES

Yield =36.9 t/ha

- Maturity= 90 days
- Good for crisping
- Dormancy period (45 -60 days)
- Dry matter =24%
- Tolerant to late blight

NAROPOT 6



Yield =24.9 t/ha)

- Maturity=120 days
- Good for crisping
- Dormancy (45-60 days)
- Dry matter = 20.6%
- Tolerant to late blight

RECENT RELEASES VARIETIES

VARIETYR	ATTRIBUTES
 	Yield potential 30.2 t/ha Disease tolerance Highly resistant to late blight Maturity Period 90-100 Days Dormancy period 45-60 days Use/utilization Processing (Crisping and Chipping) Dry Matter Content (%) 21.6 Agro-ecological adaptability Well adaptable to mid-high altitude areas (1200-2500 m.a.s.l)
NAROPOT8  	30 t/ha Highly resistant to late blight 90-100 Days 45-60 Days Processing (Crisping and Chipping) 22.1% Well adaptable to mid-high altitude areas (1200-2500 m.a.s.l)

VARIETY	ATTRIBUTES
NAROPOT9 	31.4 t/ha Highly resistant to late blight 90-100 Days 45-60 Days Processing (Crisping and Chipping) 20.5 Well adaptable to mid-high altitude areas (1200-2500 m.a.s.l)
NAROPOT10 	30.3 t/ha Highly resistant to late blight 100-120 Days 60-90 days Processing (Chipping and Crisping) 28.1 Well adaptable to mid-high altitude areas (1200-2500 m.a.s.l)

Segmenting The Market

Market Segment	Preferred NARO Variety	Key Commodity Trait
Crisping Industry	NAROPOT 7 & 8	Round tubers, high dry matter, no browning.
French Fry (Chipping)	NAROPOT 9 & 10	Large, elongated tubers (max yield of long fries).
Fresh Table Market	Rwangume (NAROPOT 4)	Red-skinned, high consumer demand, long shelf life.
Institutional Supply	Victoria	Wide adaptability, consistent boiling quality.

To commercialize, we must grow what the buyer wants:

Scaling Through Strategic Partnerships

- Commercialization is a collaborative effort:
- **NARO:** Continuous R&D and supply of Breeder/Foundation seed.
- **Private Sector:** Large-scale multiplication and off-take agreements (Contract Farming).
- **Financial Institutions:** Targeted credit for irrigation and mechanization (tractors/planters).
- **Policy Makers:** Protective tariffs on imported potato products to encourage local industrialization.

Potato Value Chain In Uganda

- Seed producers
- Farmers
- Traders
- Transporters
- Processors
- Retailers
- Consumers
- Support actors include research institutions, extension services, financial institutions, and government.

Standardizing the Commodity Pipeline

- *Buyers pay for consistency and reliability.*
- **The Seed System:** Licensing NARO varieties to private seed companies (e.g., FICA, KIPAL) to ensure a steady supply of **Grade 1 Certified Seed**.
- **Grading Standards:** Implementation of UNBS size-grading (Small, Medium, Large) to meet the requirements of premium supermarkets and hotels.
- **Post-Harvest Management:** Moving from 100kg "extended bags" to **50kg breathable mesh bags** to reduce bruising and rot during transit.

Constraints To Potato Commercialization

- Limited access to quality seed
- Pests and diseases (late blight, bacterial wilt)
- Poor post-harvest handling
- Price fluctuations
- Weak market linkages

Strategies To Promote Commercialization

- Strengthen certified seed systems
- Promote improved NARO varieties
- Enhance farmer training and extension services
- Improve storage and post-harvest handling
- Support processing and value addition
- Strengthen market access and farmer cooperatives

Role of Stakeholders

- Government: policy support and infrastructure
- Research institutions (NARO): variety development and technology dissemination
- Private sector: seed multiplication and processing
- Farmers: adoption of improved technologies

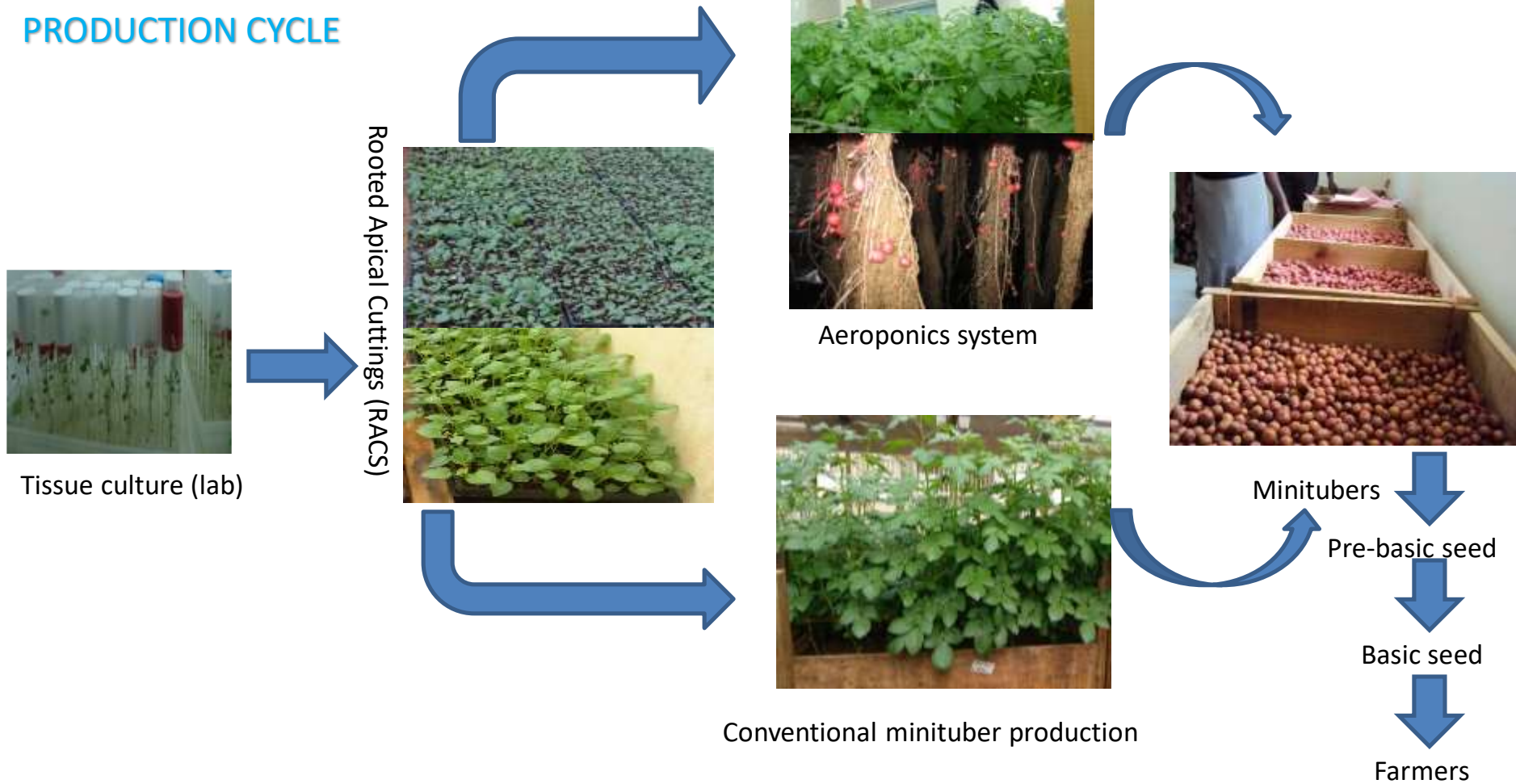
Expected Impact of Potato Commercialization

- Increased farmer incomes
- Improved food security
- Job creation along the value chain
- Growth of the agro-processing sector
- Contribution to national economic development

Opportunities For Potato Commercialisation

- Increasing urban demand
- Growth of fast-food restaurants
- Expanding potato processing industry
- Regional export opportunities
- Availability of improved varieties
- Available research facilities and seed system support

CURRENT SEED PRODUCTION CYCLE



SEED PRODUCTION FACILITIES

IMPROVED SCREEN HOUSES



KOPIA team visiting KAZARDI on potato production



AEROPONIC UNIT



**Capacity of
2000 plants
generating
between
30,000 -
40,000
minitubers
per planting**

- Trained Seed producers
- Two privately owned aeroponic facilities
- 12 farmer operated screen houses (in the country) with capacity ii EGS production



Harvesting, grading and bagging



Conclusion

- Potato has high potential for commercialisation in Uganda.
- Improved varieties developed by NARO provide a strong foundation.
- Strengthening the value chain, seed systems, and market linkages is essential.

Key Partners



- **USAID FtF**
- **Buginyanya Zonal Agricultural Research and Development Institute (BugiZARDI)**
- **Rwebitaba ZaRDI**
- **District Local Governments in potato production zones**
- **Farming community**

Thank You

- Thank you for your attention.
- Questions and discussion.

