

***MUSA* PROCESSING BUSINESSES AND  
THEIR SUPPORT ENVIRONMENT IN  
TANZANIA: ITS ROLE IN POVERTY  
ALLEVIATION TO RURAL  
COMMUNITIES**

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## Proportion of banana production

- 80% cooking bananas
- 10% brewing bananas
- 8% dessert
- $\leq 2\%$  plantains
- 95% of sold bananas are sold fresh
- $\leq 5\%$  sold processed
- 100% sold in local markets

## Product segmentation from bananas

Product	Where demanded	Demand growth	Chief competitors	Principal buyers	Market requirement
Cooking type	In all producing and urban areas	high	Maize, rice, cassava and sweet potatoes	Traders and consumers with medium to high income groups	Efficient transportation system and good handling facilities of bananas
Brewing type	Within production areas	Medium	Industrial brews; beers and soft drinks	Local people	Production of good quality varieties
Dessert type	Both in rural and urban areas of Mwanza, Shinyanga, Dar es Salaam, Dodoma, Singida	high	Other fruits such as mangoes, oranges, mandarins	Traders and consumers (hotels, restaurants, etc)	Improve transportation facilities
Roasting type	In urban areas in bars and pubs	high	Round potatoes	Traders and beer drinkers	Increase in amount supplied and improve roasting techniques.
Local beer	In rural areas of banana production	Medium	Industrial beers and soft drinks	Low income people	Improve quality
Banana wine	In urban areas of major towns	medium	Industrial beers and soft drinks	Medium and high income people	Standardise quality and mass production
Banana biscuits, flours, breads, doughnuts, etc.	In areas not producing bananas and far markets	Low to medium	Cereal products from maize, wheat and rice	Traders and consumers	Availability of improve processing technologies and product differentiation

## Types of and sizes of processing business

Type of banana or plantain product	Cultivars used	National and local labels (Formal or informal)		Imported/Locally produced	Frequency compared to other similar food products	Primary sites of sale
Banana juice (Mulamba)	EAHB (brewing types), Pisang Awak, Gros Michel, Mtwishe, Apple bananas	Informal	No labels	Locally	Good	Roadsides, Bus stops and Local markets
Banana beer (Rubisi)	EAHB (brewing types), Pisang Awak, Gros Michel, Mtwishe, Apple bananas	Informal	No labels	Locally	Many	Roadsides, local markets, village beer clubs, urban beer clubs
gongo	EAHB (brewing types), Pisang Awak, Gros Michel, Mtwishe, Apple bananas	Informal	No labels	Locally	Few	Village beer clubs

## Types of and sizes of processing business cont,

Small scale banana wine	EAHB (cooking and brewing types), Pisang awak, Gros Michel, Apple bananas	Informal	No labels	Locally	Few	Urban beer club, village beer club, at production sites
Large scale banana wine	Mtwishe (Cavendish)	Formal	With labels	Locally	Few	Urban hotels, bars and village clubs
Roasted bananas	Plantains	Informal	No label	Locally	Few	Roadside, village and urban beer clubs
Banana crafts	EAHB (cooking and brewing types), plantains	Informal	No label	Locally	Few	Crafts shops within Kagera and outside Kagera both in Tanzania and other countries
Dried sweet bananas	Apple bananas	Formal	With label	Locally	Few	Germany
Pastries (Balagara)	Gros Michel, Apple bananas	Informal	No labels	Locally	Many	Roadsides, Bus stops and Local markets
Biscuits, cakes, chapattis, bread, chichili	EAHB (cooking types)	Informal	No labels	locally	few	Local markets,

## Business profile

- Name of business: Multiple brewers
- Location: All banana growing areas
- Products: Banana juice (Mulamba), Banana beer (Rubisi), Distillate (gongo)
- Clients: Local banana farmers
- Type of business: Small enterprises

## Organisations and services offered to Musa sector

Organization	Services offered and to what size business	% Service oriented to Musa
Research institutes (ARDI Maruku and ARDI Selian)	<ul style="list-style-type: none"> <li>• Research and product development</li> <li>• Training of small scale producers</li> <li>• Promotion of products using user friendly materials (leaflets, posters etc)</li> </ul>	50
Small Industries Development Organization (SIDO)	<ul style="list-style-type: none"> <li>• Research in value adding to different fruit products</li> <li>• Training on fruit products and quality control</li> <li>• Designing and provision of locally made materials (capping machine, bottle lids, labels etc)</li> </ul>	20
Non Governmental Organizations (NGOs) – CHEMA, FADECO, MAVUNO	<ul style="list-style-type: none"> <li>• Provision of technical information on processing, business training and marketing</li> <li>• Generation of technologies</li> </ul>	65
MATUNDA MEMA	<ul style="list-style-type: none"> <li>• Purchase bananas, pineapples</li> </ul>	30
Individual large scale banana businesses (Banana beverages in Arusha)	<ul style="list-style-type: none"> <li>• Promote of banana wine</li> </ul>	95
Kagera trade fair	<ul style="list-style-type: none"> <li>• Organization of trade fair</li> <li>• Promotion of different products</li> </ul>	1
Associations (women groups)	<ul style="list-style-type: none"> <li>• Promotion of banana sheath crafts e.g. hand bags, table mats, envelopes, post cards etc</li> </ul>	35
Sokoine University of Agriculture	<ul style="list-style-type: none"> <li>• Research and product development under the department of food science and technology</li> <li>• Promotion of banana products</li> </ul>	2

## Projects supported Musa Processing Businesses

<b>Project Name</b>	<b>Donor</b>	<b>Organization</b>	
Banana wine making	Karagwe District Development Programme	ARDI Maruku	
Solar drying of bananas	Karagwe District Development Programme	ARDI Maruku & FADECO	

## Size and Nature of Musa Processing

- Common banana products are banana juice and local brew
- Made locally with no fixed standards
- Other banana products include hard alcohol (gongo), wine, dried bananas, flour, breads and biscuits
- Generally processing of bananas was observed to be very low
- Production records were not available

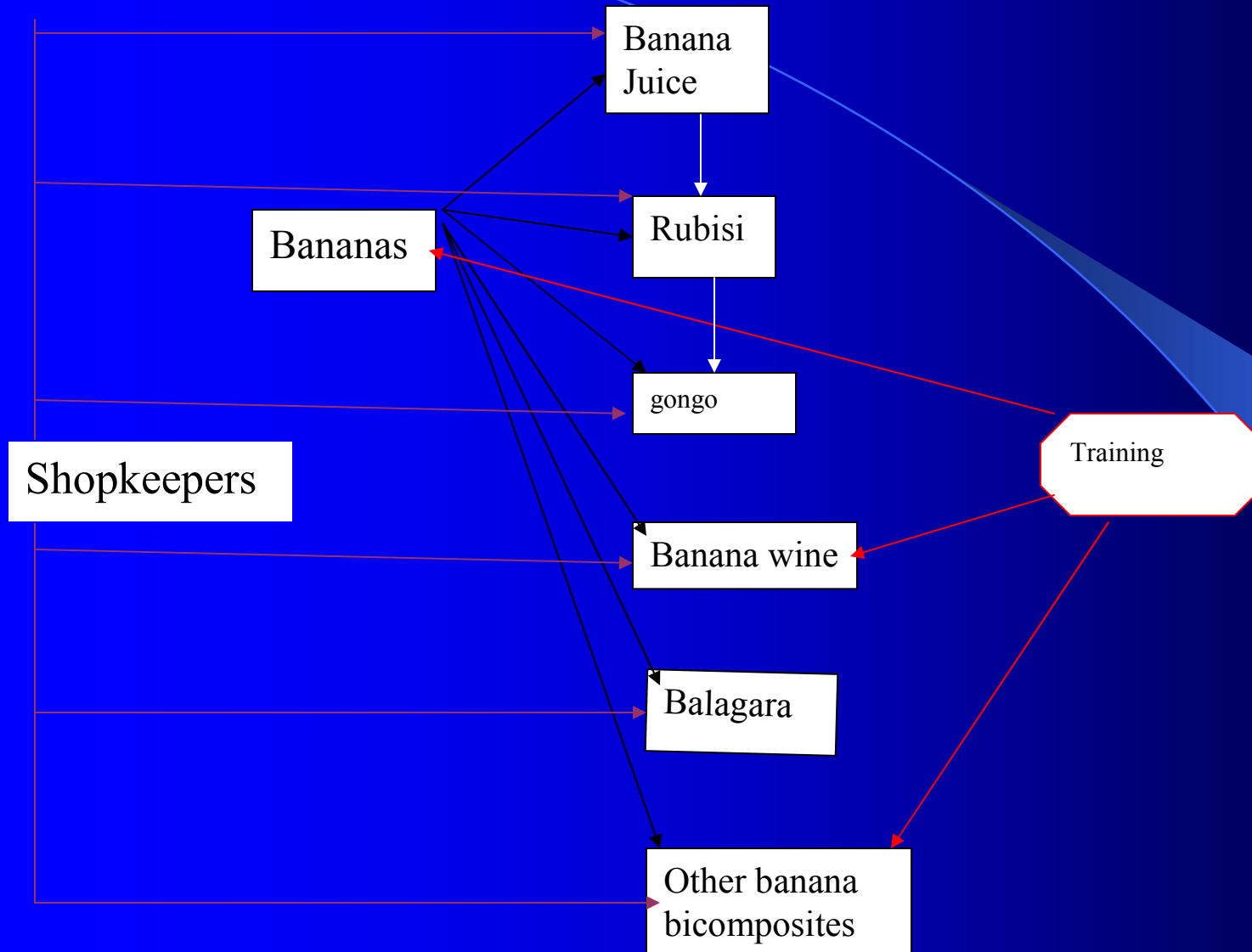
## Productive potential of bananas and plantains in Tanzania

	Plantain	Dessert banana	AAA-EAH Cooking banana	AAA-EAH Beer banana
Annual volume of production (MT)	15,000	60,000	600,000	75,000
% sold fresh for national consumption	5	99	98	0
% processed for sale for national market	95	1	2	100
% exported fresh	NA	NA	NA	NA
% exported in processed form	NA	NA	NA	NA

## Characteristics of service providers

- In Musa processing, service providers are limited to additional ingredients e.g. wheat flour to mix into banana flour, metal materials e.g. boiling drums and plastic containers and some small equipment
- Service providers are private and with various business
- Are not specialized to focus on Musa processing services

# Mapping of Musa processing sectors and their support providers



## Linking businesses with service providers

Service providers	Categories of processing Businesses				
	Banana juice beer and gongo	Banana wine	Roasted banana	Balagura	Bicomposite products
Small equipment	X	X		X	X
Utensils	X	X	X	X	X
Ingredientes	X	X		X	X
Technical training		X			X

## Relationships among Musa processing businesses

	Banana juice beer and gongo	Banana wine	Roasted banana	Balagara	Bicomposite products
Banana juice, beer and gongo		1	1	1	3
Banana wine			3	1	3
Roasted banana				3	3
Balagara					1
Bicomposite products					

Key: 1 = closer relationship 3= far or no relationship

## Relationships among the categories of service providers.

	Small equipment	Utensils	Ingredients	Technical training
Small equipment		1	1	3
Utensils			1	3
Ingredients				3
Technical training				

Key: 1 = closer relationship 3= far or no relationship

## Description of mechanisms, policies and programs which promote or inhibit the development of Musa processing businesses

- Tanzania policies favours post harvest and value adding to many products including Musa products
- However, some of products like gongo are not accepted
- The reason behind this is the methanol content in the distillate which can endanger the users
- From the study areas there was no documented information on how the policy is promoting Musa processing.

## Accessing secondary information on production, processing and service providers

- There is little user-friendly information on Musa processing in Tanzania
- Information can be obtained from
  - ARDI Maruku on banana wine and recipes for banana bicomposites products
  - FADECO on drying bananas using solar dryers
  - Sokoine University of Agriculture on different developments from research articles
- To conclude, there little documentation on Musa processing in Tanzania



# Analysis of processing businesses

# Production of Mulamba

- Materials for making Mulamba include the Canoe made from big trees of more than 1-meter diameter
- Canoes can be made by individual farmers and when purchased its cost between 25,000 TzShs to 30,000 TzShs
- To achieve the extraction of juice ‘mulamba’ farmers use grass *hypprenia sp.*
- The volume of grass needed depends on the amount of ripe bananas to be squeezed

## Mulamba continues

- Other materials include plastic buckets of 20 lt. Capacity used for measuring the amount of Mulamba.
- Mulamba is produced in two qualities
  - the sweetest extracted from ripe bananas before is mixed with water
  - the sweetest mixed with water at a ratio of 1:2 i.e. 20 litres of sweet Mulamba mixed with 40 litres of water to make 60 litres of Mulamba
- Materials for Mulamba making is mainly local and temporal such as banana sheath rope to support the person squeezing from the canoe, a funnel made of gourd with grass as sieve, and squeezing ladder

## Production of banana beer (rubisi) in lbwera village

- Generally, rubisi is produced by majority of farmers
- It was estimated that out of 745 household in the village, 50% – 60% make rubisi
- Rubisi is a traditional drink used in all local functions such as payment of dowry, wedding ceremonies, and funeral ceremonies
- Depending on availability of beer bananas commercial producers makes 160 –200 litres per month
- Depending on the expected uses of ‘that rubisi’ bananas used are obtained by buying from neighbours if it is for sale, contributed from family members and neighbour if is for cultural celebrations

## Rubisi cont,

- The idea of rubisi making in Tanzania has records of 300 years ago
- It started with making of banana juice (Mulamba)
- Mulamba was becoming sour after two days and had no alcohol content
- By that time farmers were drinking beer made from sorghum only and it was somehow bitter
- After finding Mulamba been sweet without alcohol while sorghum was bitter with alcohol, farmers tried to make a balance by sweetening sorghum beer with Mulamba

## Production of gongo

- Gongo is distilled from rubisi
- However producers of rubisi are not necessarily producers of gongo,
- Sometimes gongo producers buy rubisi, store it for 5-7 days to allow further fermentation thereafter, boil it and collect the distillate
- From Mulamba production to gongo production are closely dependent on one another in terms of equipment.

## gongo cont.

- It was noted that in Ibwera village there are about 20 – 30 individuals producing gongo
- Majority of gongo producers do not own equipment, they only hire them.
- 60 litres of rubisi produce 20 litres of gongo

## Initial cost for materials to produce 40 lts of gongo

Initial capital required		
Equipments/materials	Single/multiple use	TzShs
	Multiple	15,000.00
1.Aluminium Drum (200 lts)	Multiple	5,000.00
2.Five clay pots	Single	5,000.00
3.Firewood	Single	18,000.00
4.Bananas (30 bunches of 15 kgs)	Single	1,500
5.Sorghum (5 kgs)	Single	3,000.00
6.Labourers (haulage, squeezing)	Multiple	5,000.00
7.Plastic containers (5)	Multiple	1,000.00
8.Bamboo pipe	Single	2400.00
9.Processor (expert for gongo)	Single	1,000.00
10.Water	<b>Total</b>	<b>56,900.00</b>

*1 Tanzania Shilling (TzSh) = US \$ 1080*

- Although the initial cost of materials for gongo production is small still majority of producers are hiring equipment. The reasons given are;
  1. Owning materials was not enough if that person does not own a site closer to the water source mainly water stream
  2. Because gongo is illegally produced in Tanzania even the convenient site should be away of settlement and can allow fast hiding whenever there is an ambush for gongo producers
  3. The hiring cost is cheaper yet the person is safe by not owning illegal equipment

## Production of banana wine in Bisheshe village

- Banana wine making in started in the year 1998
- The idea to make banana wine was a follow up of the study on banana seasonally in Karagwe
- From that study, it was noted that there was a lot of cooking bananas wasted in the period with bumper harvest and farmers had no means to preserve them.
- Banana wine production in Kagera region started with FRG who accepted to be trained on banana wine making
- In areas where banana wine is produced, drinking of gongo has dropped and farmers prefer banana wine for gongo
- Drinking of banana wine increases ones status than drinking gongo

## Challenges to local Banana wine production

- Soliciting packing and packaging materials (crates and bottles)
- Maintenance of similar quality
- All processors needs to adhere to hygiene standards
- However, most of locally produced products have no quality control mechanism
- This is a set back in marketing of products out of the production areas.

## Marketing chain for Musa processing business

- Most of processed Musa products are sold locally
- Apart from those exposed at the local market or roadsides, business persons usually investigate and find out who has made rubisi and usually selling in done at the farm gate
- There is no defined marketing system for Mulamba and wasting of produce is common
- Mulamba has good market during dry season due its cheap price compared to soda
- On the other hand, rubisi has more demand from urban clubs and gongo makers
- Gongo been illegal has no defined market. However its demand is very high and contributes high to small-scale farmers livelihood in terms of income
- Producers, buyers and final users never sell and drink openly

## Marketing chain for Musa processing business cont.

- Musa processing businesses get raw materials within its locality
- These includes local materials such as bamboo, pots, bananas, sorghum, grass etc and imported ones like drums, cooking pans, plastic containers, sugar yeast etc
- Since the providers of imported materials does not necessarily focus Musa processing, the supply is not always assured

## Marketing chain for Musa processing business cont.

- Sometimes specific varieties of bananas are needed for certain products
- For example sweet bananas are used for Balagara
- Types of bananas produce different qualities of products. For example cooking bananas is not used for banana beer 'rubisi' while it produces white banana wine and banana bicomposites products
- Price of bananas depends on the type of bananas, i.e. cooking bananas fetches high price compared to beer bananas.

## Marketing chain for Musa processing business cont.

- Most of Musa products are sold immediately after been produced
- Banana wine and gongo with longer shelf life can be stored for sometime if there is no ready market while rubisi and Mulamba are spoiled easily and are not stored for longer period
- Storage of products can be with the producer or the buyer for those with longer shelf life
- Products are sold to whole sellers, retailers and sometimes to consumers
- The buyers are responsible for transporting the products
- Prices are market dependent
- Once sold Musa products cannot be returned.

*Analysing and summarizing the results  
presented in table format*

# Conclusion

- Although Musa processing in Tanzania is among the income earning business, there is still little emphasis made to promote it
- Majority of products are made locally by farmers from own experiences
- These experiences are not documented neither improved.
- Musa processing business is mainly on soft and hard drinks with little confectioneries
- This situation is leading to minimum utilization of cooking banana types and
- Farmers are forced to sell fresh cooking bananas and experience more wastage due to high perishability.

## Conclusion cont.

- Service providers in Musa processing are limited
- Those available have little or no collaborations
- Musa processors are not benefiting from them
- There is a need to design a forum where Musa stakeholders must meet and discuss the business
- On surprise even those training farmers on Musa processing never discuss on the plans to train
- Sometimes same farmers have been trained on the same product but with different approach and advising different ingredients for that product (case of Bisheshe banana wine by ARDI Maruku, FADECO and SIDO).

## Conclusion cont.

- Lack of credit facility was among the setback to Musa processing
- Farmers are not exposed to credit facilities and when exposed they fail to acquire credits due to difficult set conditions for credits
- Packing, packaging and labelling was also major constraint to Musa processing
  - This jeopardises exportation of products to external markets.
- Finally Musa processing still needs a lot to be depended on by banana producers in Tanzania.

# Recommendations

- Musa processing sector in Tanzania is just beginning
  - Only very few processors have had basic training in processing
- There is a need for various stakeholders both Government, private, NGOs, CBOs and others to join efforts in scaling-up the promotion and development of the small-scale processing businesses

- There is a need to expose Musa processors to credit facilities to enable them expand their businesses
- There is a need for farmers organizations to enable them have bargaining power in the market
- Majority of Tanzanians trade in fresh and dessert bananas, which are highly perishable as compared to processed products.
  - Value adding activities which appear to offer a viable alternative to the improvement of the rural livelihood food security and cash income should be emphasized

- Improvement of Musa products and quality control needs be emphasized by all banana stakeholders in the country
- Service providers of the packing and packaging materials are located far away from processing places
  - There is a need to have service providers-agents closer to processors units.
  - Can be achieved by the Government putting in place deliberate and enabling policies on manufacturing companies as regards the acquisition of raw materials

- Banana gongo is illegal in Tanzania, but highly produced for rural livelihoods, using traditional knowledge
  - There is a need for Government to allow processing research, so that policies can be formulated and make it legal after improvements.
- More research is needed for Musa processing in the country.