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Pack 99, Item 2

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**Processing cassava brings wealth to farmers**

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### Notes to broadcaster

Farmers often do not make enough money to support themselves and their families when they sell their produce. This happens for many reasons, including poor markets, inadequate farming or marketing skills, and the inadequate capacity to add value to their produce.

Cassava is one crop that can earn farmers a good income if they add value to it. A renewed interest in cassava and cassava by-products led to the recent development of new harmonized guidelines for processing cassava flour for East and Central Africa.

This script explains how to make cassava flour according to the new harmonized standards for processing cassava flour.

In this script, we meet Mrs. Bridget Shenyagwa, who created a factory that processes high quality cassava flour (HQCF). The factory not only provides her with a ready market for the cassava she grows, it also provides employment and income for local farmers.

You could use this script as inspiration to research and write a script on cassava flour processing and marketing. Or you might choose to produce this script on your station, using voice actors to represent the speakers. If so, please make sure to tell your audience at the beginning of the program that the voices are those of actors, not the original people involved in the interviews.

If you choose to use this script as background material or as inspiration for creating your own program, talk to farmers and other key players in the local agriculture sector in your country.

Estimated running time for this script: 20 minutes with intro and outro music.

*Signature tune up then under*

**HOST:** Good (morning, afternoon, evening) and welcome to the program. Today we are talking about processing cassava.

 New harmonized guidelines for processing cassava flour were recently created for East and Central Africa. The guidelines cover the selection of quality raw materials, plus processing, packaging, and labelling safe, high quality cassava flour. Lazarus Laiser visited a cassava processor to find out how she is implementing the new standards.

**MAMA SHENYAGWA:**My name is Mrs. Bridget Shenyagwa and I am an entrepreneur from Visiga village in the Pwani Region of eastern Tanzania, about 70 kilometres from Dar es Salaam.

**Lazarus Laiser:** When did you start your business producing cassava flour?

**MAMA SHENYAGWA:**I started in January2012. We used to harvest cassava and sell it raw, but after three days you had to throw the roots away.

**Lazarus Laiser:** How did you open a processing plant?

**MAMA SHENYAGWA:**My husband and I were employed in Kenya for many years. We decided to come back home and settled in the village. We have 20 acres of farm where we planted mangoes, oranges, cassava and other crops. We grew a lot of cassava on the farm but couldn’t get a good market. We tried making local cassava flour but you wouldn’t like it because of the grey colour it gets after drying. I heard about modern methods of processing cassava flour and decided to try them. The local government introduced me to the International Institute of Tropical Agriculture, or IITA, who trained us through a project called Unleash the power of cassava in Africa. We were connected to Small Industries Development Organization, which manufactures processing equipment. After the training, we were given a loan to buy cassava processing machines. Since I had an extra modern house, I decided to start my processing plant there. Today it is a big factory, as you can see.

**Lazarus Laiser:**Shall we visit your factory now?

**MAMA SHENYAGWA:**Yes, why not? Let’s go.

**SFX**:Footsteps walking towards the FACTORY. Sound of MACHINES FADES in AND OUT THROUGHOUT THE CONVERSATION.

**Lazarus Laiser:**Dear listener, I am standing in the cassava flour factory. I can see a lot of fresh cassava roots here, about fifty bags ready to be processed into flour. Workers are wearing white coats and boots and their heads are covered with white caps. The place is very clean. On my right hand, I see a machine ready to crush cassava. Right here where we are standing is a basin for washing cassava roots before they are put into the machine to be crushed.

Tell me about your business, Mama Shenyagwa.

**MAMA SHENYAGWA:** It is called KIMACECO, which stands for Kibaha Mangoes and Cassava Empire Company. We process cassava and sell mangoes.

**Lazarus Laiser:**What is the first step in processing cassava flour?

**MAMA SHENYAGWA:** Washing the roots is the first step. Cassava flour can be produced from fresh cassava roots or dried cassava chips and grated mash, but it must be processed into flour within one day only. Otherwise, the flour changes colour, and clients don’t like brown-coloured flour.

**HOST:** Mr. John Msemo, who used to work with International Institute of Tropical Agriculture*,* orIITA, and now works with the Ministry of Agriculture Food Security and Cooperatives, is here with me in the factory, and gives more details on the quality of cassava needed for flour.

**Lazarus Laiser:** How can you tell that some cassava is bad and some is good?

**JOHN MSEMO:** By looking at them carefully. You can cut the root to see if it’s white or if it has changed colour or become rotten. Some roots get broken while being transported. We process those roots first.

**Lazarus Laiser:**Mama Shenyagwa, how do you choose cassava roots for making flour?

**MAMA SHENYAGWA:** You choose roots that have been harvested at the right stage of maturity and are fresh, firm, clean, and free from pests and diseases.

**Lazarus Laiser:**What happens after you choose the cassava?

**MAMA SHENYAGWA:** First, you wash and peel them. Then, you must wash them again thoroughly and ensure that the root is very clean from that point onwards.

**Lazarus Laiser:**What about when you use dried cassava chips?

**MAMA SHENYAGWA:**For roots,you need to use cassava which is free from impurities such as dead insects, animal droppings, soil and other foreign matter.

If you use chips, you need chips that are not mouldy and have a colour that is characteristic of the cassava variety – either white, creamy or yellow. You also need to ensure that the moisture content of the chips is twelve percent or less.

**HOST:** It’s important that the flour processing plant and the workers are clean and hygienic. Mr. Msemo from IITA explains.

**JOHN MSEMO:**Worker hygiene is critical because the tiny organisms that cause disease can be transmitted from people to products. So all workers must be trained in hygiene and sanitation.

**Lazarus Laiser:**Mama Shenyagwa, how do you take care of this place to make sure that you meet the required standards for cassava flour?

**MAMA SHENYAGWA:** The surrounding environment should be kept clean at all times, free from litter and garbage, dust, and debris. The grass should be kept short to prevent it from harbouring pests such as rats. There should be no stagnant water in gutters, open drains, potholes or pools around the factory.

**Lazarus Laiser:**What about the building?

**MAMA SHENYAGWA:**As you can see, my buildings are all well-constructed. You can’t start a processing business in a muddy, dirty house! The buildings should be designed and constructed so that cleaning and maintenance are easy – smooth walls, windows, floor and ceiling. The floor, roof, windows, and screens should be well-maintained and clean. The doors should be tight fitting to keep rodents, insects and dust away from the processing area.

**Lazarus Laiser:**How do you keep the processing equipment clean?

**MAMA SHENYAGWA:**We establish a cleaning and maintenance program. The recommended practice is to clean the equipment before and after use. We have a quality controller who monitors the cleaning.

**Lazarus Laiser:**What do you do after you wash the roots?

**MAMA SHENYAGWA:** After the cassava is washed, we put it into one of two machines ─ either this machine here, where it is grated to make a mash, or a chipper, which creates chips. If we use the grater, we put the mash in a clean bucket to take it to the next step.

**Lazarus Laiser:**We are standing in front of a machine which is reddish in colour andhas some knobs which can be adjusted. Is this for squeezing the cassava mash to remove water?

**MAMA SHENYAGWA:** Yes. After the cassava is crushed to mash, it is put in this machine which presses it to remove water. It will stay here for one to three hours until all the water is pressed away. After all the water is removed, the cassava mash becomes a hard cake.

**Lazarus Laiser:**What’s the next step?

**MAMA SHENYAGWA:**The next step is grating the cake to a smooth mash. And then the smooth mash is dried in the sun. If, instead of grating the cassava, you made chips, these are also dried in the sun.

**Lazarus Laiser:** How long do the smooth mash and the chips take to dry?

**MAMA SHENYAGWA:** It takes six hours to dry completely. Cleanliness is very important here too. Staff should be clean. Their hands must be clean because they will touch the flour with their hands in this step.

 If there is enough sun, it takes only six hours. But you must make sure that it is totally dried, without any moisture.

**Lazarus Laiser:**What will happen if it is not well-dried?

**MAMA SHENYAGWA:**First, moisture will make the flour smell. Second, the flour will change colour from white to grey. So it’s very important to make sure your flour is completely dried.

**Lazarus Laiser:**What if there no sun?

**MAMA SHENYAGWA:** Come and I show you.

**SFX:** footsteps

**MAMA SHENYAGWA:** You can use firewood, sawdust or charcoal to make a fire. The heat from the fire goes through this pipe to this drying machine and warms the trays that hold the smooth mash or chips.

This process can also take six hours depending on the amount of heat you apply. This helps when there is not enough sunlight. But from our experience, the sunlight dries better than electricity or fire.

**Lazarus Laiser:**Mama Shenyagwa, what is the next step after drying the smooth mash or chips?

**MAMA SHENYAGWA:** Then you mill it into flour. Cassava flour is milled just like any other flour. We use the same machine that we use to mill maize or wheat.

Next you must weigh the flour to see how many kilograms you have. After weighing it, you take it to the store for packaging.

The purpose of weighing cassava flour is to see whether you will make a profit or not. You will know how much raw cassava you had and how much flour you got from it.

**HOST:**When making cassava flour, it’s important to follow the standards developed by the National Bureau of Standards. This can help farmers expand the market for their products, so they can sell within and outside the country. Mr. Msemo from IITA explains.

**JOHN MSEMO:** It is a legal requirement that consumers know the details of the food they are buying and consuming. The product label must include a lot of information, including the content, weight, name and address of manufacturer, brand name, country of origin, date of manufacture, best before date, and other details. Cassava flour should be stored in dry, cool conditions in plastic containers, polypropylene bags, tins, or laminated paper bags that are food grade, in other words, certified as ok to contain food.

**Lazarus Laiser:** What else is needed on the package labels?

**MAMA SHENYAGWA:**You must show the nutrients contained in the food, things like starch, sugar, vitamins and other nutrients.

**Lazarus Laiser:**How long does cassava flour last before it expires?

**MAMA SHENYAGWA:**Fresh cassava flour without any preservatives can remain fresh for twelve months.

**Lazarus Laiser:**What benefits have you received so far from processing high quality cassava flour, Mama Shenyagwa?

**MAMA SHENYAGWA:**A lot of benefits. Now we are sure of selling all the cassava we grow, even bitter cassava. We no longer throw away rotten cassava.

We have white flour which competes with maize on the market. We used to process flour in our home in a week, but it changed colour to grey or brown – even the smell was bad.

These buildings were constructed with the profits of this business. My son is in university, and part of his fees was paid by this business. Also we get food; we eat the flour.

Local farmers get paid more when they bring their cassava to the processing plant than when they take it to the market.

I employ other farmers here. There are some who plant and weed cassava, some who harvest cassava, and others who transport it to the factory. We have cleaners, people who operate the machines and those who package the final product.

But the market is bad. We sell a two-kilogram package of cassava flour for two thousand Tanzanian shillings (about U.S. $1.20). This is very inexpensive. And yet we don’t have enough buyers.

**Lazarus Laiser:**Mama Shenyagwa, what are some of the challenges you face as a producer of high quality cassava flour?

**MAMA SHENYAGWA:**The main problem is capital. To start a business, you need enough capital to buy machines and employ workers. Everything from planting to processing needs human labour. Also, you need vehicles to transport the final product to the market.

Another challenge is that I don’t have a permanent market. I depend on the local market. You take your flour to the market without being sure who is going to buy, and you may end up bringing it back home.

Another big problem is water. At this factory, we use water from the village pipe, which costs us money. We use a lot of water to make sure the cassava is clean and free from all kinds of impurities. That costs a lot of money.

We have a big challenge on price because the customer is the one who decides how much he or she pays for your products. We set our retail price at two thousand Tanzania shillings for two kilograms. The customer refuses to pay 2000, and only pays 1000, and the processor is forced to sell at 1000.

**Lazarus Laiser:**How are you coping with the new harmonized standards

for cassava flour processing in term of difficulties and costs?

**MAMA SHENYAGWA:**It is not difficult or expensive.We like following the standards because it gives us flour in one day. But it needs capital to buy machines, build modern buildings, and employ workers.

**HOST:** That was Mrs. Brigit Shenyagwa of KIMACECO, a processing factory in eastern Tanzania.

We also heard from John Msemo, formerly with the International Institute of Tropical Agriculture and now with the Ministry of Agriculture, Food Security and Cooperatives.

This marks the end of our program. Today we learnt how to process cassava flour according to the [new](http://www.farmradio.org/radio-resource-packs/package-97-growing-groundnuts/mangoes-for-all-seasons-kenyan-farmers-profit-by-drying-and-selling-mangoes-all-year-round/) harmonized standards for cassava flour in East and Central Africa. This is (name of host) on (name of radio station), and you’ve have been listening to (title of program). Thank you for listening. Goodbye.

**Acknowledgements**

Contributed by: Pr. Lazarus S. Laiser Journalist-Trainer, Habari Maalum College, Arusha, Tanzania.

Reviewed by: Mr. John Msemo, Kibaha Research Center, Ministry of Agriculture, Food Security and Cooperatives, Tanzania

**Information sources:**

Interviews with:

Mrs. Bridget Shenyagwa, Kibaha Mango and Cassava Empire Company (KIMACECO), Kibaha, Pwani, Tanzania, May 24, 2014.

Mr. John Msemo, Kibaha Research Center, Ministry of Agriculture, Food Security and Cooperatives, Tanzania, May 29, 2014.

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