

# Pack 105, Item 5

Type: Script

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**[Farmers cope with drought and climate change in Zambia’s Luangwa Valley](http://www.farmradio.org/radio-resource-packs/102-raising-guinea-fowl/farmers-use-agroforestry-practices-to-heal-farmland-damaged-by-deforestation-and-soil-erosion-2/%22%20%5Co%20%22Permalink%20to%20Farmers%20use%20agroforestry%20practices%20to%20heal%20farmland%20damaged%20by%20deforestation%20and%20soil%20erosion)**

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**Notes to broadcaster**

Southern Africa has not been spared from the effects of global warming. Year after year, Zambia, Malawi, Zimbabwe, South Africa and other countries in the region experience devastating droughts and unpredictable patterns of rainfall. This makes farming a challenge for small-scale producers. Many have resorted to expanding their fields or even cutting trees to produce charcoal for sale. In Zambia, an alarming 250,000–300,000 hectares of forest cover are lost every year.

Climate change and deforestation have had a negative impact on the rains. Sometimes there is too little rain, resulting in poor yields; sometimes too much, which causes soil erosion. As a result, many farmers are at their wits’ end.

However, one family in the semi-arid Luangwa Valley of eastern Zambia is using simple methods to capture the little water available so that it is available to their crops for a longer period of time. They also improve their soils by using compost and practicing crop rotation. In this way, the family gets good yields even during years when the rains are poor. Many other farmers visit them to learn how they do it.

This script tells the story of how this family manages to get good yields in spite of drought and climate change. The information in the script can benefit many small-scale farmers in other parts of southern Africa and beyond where the problem of climate change makes farming difficult.

You may use this script for your own farmer program, using voice actors to represent the speakers. If you do that, please inform your audience that the voices are those of actors, but that the actors are representing real people who use the practices they talk about.

You could also use this script for research on how small-scale farmers can cope with drought and climate change, or to design a farmer program suitable for your own small-scale farmer audience.

Together with the intro and outro signature tunes and local music, the estimated running time for this script is 20 minutes.

**FADE UP SIGTUNE**

**SOUND OF VEHICLE STARTING (FADE UNDER AFTER 10 SECONDS)**

**FILIUS:** Hello. My name is Filius Jere, your farmer radio producer. I know that many of you are at your wits’ end because of the unfriendly climate you are facing nowadays. But I am sure that our program today will help you cope with this situation.

The rains seem to have forgotten their timetable, and the soil has lost its ability to nourish our crops. For instance, last season, many areas in southern Africa received their first good rains after Christmas. Apart from being late, there were frequent spells of drought, and many small-scale farmers are likely to face problems growing enough food this season. We have to find a way to overcome this challenge.

Fortunately, I have good news for you today. As you can hear from the background, I am in my vehicle with Charity, an extension officer. We are going to visit one small-scale farming family in Mambwe, in eastern Zambia’s Luangwa Valley. Charity says this family got good yields last season in spite of the harsh climate. So I invite you to come along with us so that we can learn together how this was achieved. I am sure that you, too, can adopt this family’s methods. Right now, we are at Mphomwa Hills and descending quickly into the valley.

**SFX: SOUND OF VEHICLE MOVING FAST**

**CHARITY:** Please don’t drive so fast, because we are now in the game reserve. An antelope could suddenly gallop across the road and cause you to lose control.

**FILIUS:** You are right.

**SFX: SOUND OF VEHICLE SLOWING DOWN**

**FILIUS:** What are the chances that small-scale farmers in upland areas could do better if they adopted what this family in the lowlands of Mambwe is doing?

**CHARITY:** The chances are very good. The Luangwa Valley has always had poor rains. So in the early years, the people cultivated small fields of sorghum and millet.

**FILIUS:** Sorghum and millet are not popular staple crops in Zambia. They are not even popular as commercial crops.

**CHARITY:** You are right. For that reason, the government introduced maize and other crops among the Kunda. Unfortunately, their traditional farming methods couldn’t give them good yields in the harsh environment of the Luangwa Valley. Look over there at those thin, dry stalks of maize left in that field on your right. That shows that yields were not good last season.

**FILIUS:**  So should we turn round and go back?

**CHARITY:** No, I told you that there is a family that has managed to get good yields under these conditions.

Look, we are almost there. Please turn to the right. We are going to that small house at the edge of that clump of trees.

**SFX: SOUND OF VEHICLE COMING TO A STOP AMID SOUND OF CHICKENS AND GOATS RUNNING AWAY IN FRIGHT**

**CHARITY:** Let’s get out. We have arrived.

**FILIUS:** (TO AUDIENCE) Indeed, we have arrived at a small rural homestead. There are three village huts made of bamboo smeared with earth. The huts circle a slightly bigger house made of burnt bricks with old corrugated iron sheets. There are also two bamboo grain stores full of cobs of dry maize, and another smaller cone-shaped structure that is obviously a store for groundnuts. There are big mango trees all about. But it is out of season and there are no fruits. Their current role seems to be to provide shade for the family.

A middle-aged woman is sitting on a reed mat in the shade of one of the mango trees, feeding porridge to a healthy baby on her lap. Near her is a man who is probably her husband, weaving a basket with split bamboo stalks. As we leave the vehicle, the man stops his work and stands up to welcome us with a big smile.

**FOSTER:** Oh, Mai Charity, you are welcome to our small place. Have you come to check the results of what you taught us?

**CHARITY:** Not exactly; I have brought your farmer program producer. He wants to find out how you managed to fill your grain stores when so many farmers are crying. Please welcome him and introduce yourself.

**FOSTER:** Of course you are welcome. My name is Foster Musangu and my wife over there is Mary. It’s good to see you face to face. You encourage us so much on the radio.

**FILIUS:** I am glad that you find our farmer program useful, because it is not really mine but yours as the farmer. I am also happy to meet your wife, Mary, and, of course, the bouncy baby.

**MARY:** He’s bouncy because of the soya porridge. Mai Charity says that our primary reason for farming must always be to have good food before thinking about selling. So we kept one bag of soybeans and one of groundnuts for ourselves, and we sold the surplus. We do that for all our crops. The baby is enjoying soy porridge. Even we adults eat soy porridge for breakfast. It’s so good and healthy!

**FILIUS:** From the way you look, I cannot doubt it. However, as Charity said, I am surprised that your grain stores are full. Many farmers don’t seem to have enough food. How did you manage?

**FOSTER:** It’s simple. We identified our key challenges and followed Mai Charity’s advice on how to cope.

**FILIUS:** How do you cope?

**FOSTER:** We practice water harvesting.

**FILIUS:** I know that people harvest crops. How can water be harvested?

**FOSTER:** You must know that climate change doesn’t always mean poor rains. Good rain may fall at the right time, only to go away while the young crops still need water. So we use simple ways of farming that capture enough rainwater and keep the moisture in the soil for a longer time.

**FILIUS:** What exactly do you do?

**FOSTER:** My wife can explain that better than me. Come on, mother of Chuzu, explain exactly how we do this.

**MARY:** Alright, I will do so, although we work together. Many people do not realize that, instead of crying about poor rainfall and poor soils, what is needed is just to change the way we cultivate our crops.

In the past, we used to make ridges in the field to plant our crops. But these ridges become dry very quickly. So now we dig planting holes. They are not very easy to dig in the first year because we have to break a hard layer of soil below the surface of the ground. But after the first season, all you need to do is dig in the same place. The soil is usually loose and easy to dig.

**FILIUS:** What do these holes look like?

**MARY:** Each hole is about the length of an average foot and up to my wrist deep. The width is about the length of my hand. Mai Charity, please explain the actual measurements. We villagers don’t use any instruments to measure things.

**CHARITY:** One planting hole is about 30 centimetres long, 20 centimetres deep, and 15 centimetres wide. Using feet and hands gives our farmers an approximate measurement.

**FILIUS:** Hmm, so what is the secret of these planting basins?

**MARY:** Their main purpose is to break the hardpan and collect a lot of rainwater. First, we remove all the dry grass round the field so that no bushfires can cross into the field and burn the crop residues. After that, we dig the basins in the field. In this way, there is usually dry grass and crop residues from the previous season all over the field.

After digging the basins, we fill them with good topsoil. Mai Charity taught us how to make compost, and this is better than ordinary soil. So after digging the basins we put in a good amount of compost and fill the basins with the topsoil. Then we plant our seeds.

Many farmers usually wait for the first good rains. But we plant before the rains fall. In this way, our maize benefits from the nitrogen that is released from the dry grass and leaves in the field by the first rains.

In the past, when we planted on raised ridges, most of the rainwater ran off the sides. But the planting basins capture most of the rainwater and it sinks into the ground. We call this harvesting the rainwater so that more is available to our crops.

The dry crop residues in the field also shield the soil from heavy raindrops. The residues reduce the evaporation of moisture in the soil because they shade it from direct sunlight. This is called mulching. With reduced evaporation the crops grow well even during dry spells.

**FILIUS:** You said that you sometimes use compost. What is wrong with using fertilizer from the agro-shops?

**CHARITY:** Nothing really, except that fertilizer is effective for one season only. However, in addition to feeding the crops, using compost gradually improves the soil. After some years of using compost, you do not need to add a lot of nutrients for your crops to grow well.

**FILIUS:** How can that be? What do you put in compost to make it so good for your crops and your soils?

**MARY:** We use many things to make our compost, but all of them can be found on the farm. For instance, we use dry maize stalks and groundnut and soya residues. We add livestock manure to this mixture. So the compost has a lot of nitrogen for our crops.

**FILIUS:** Are you saying that compost is what made you succeed in coping with climate change?

**MARY:** Not only compost. This challenge needs a holistic approach and uses many different methods. In addition to all this, we practice crop rotation for two reasons. First, legumes like groundnuts and soybeans leave nitrogen in the soil. So the next crop that we plant after the legume crop usually benefits. Secondly, certain crops encourage bad weeds like witch weed, as well as pests. By rotating our crops, we reduce the bad impact of these weeds and pests.

**FILIUS:** This sounds too good to be true!

**MARY:** Of course. Everything has its challenges. This way of farming requires a lot of determination and energy. For that reason, it is not easy to cultivate a very big area. We normally cultivate 1 ½hectares, divided into six plots. We plant maize on two plots because it is our staple crop. Half of that is in that granary over there. That is enough for us until the next harvest. We sold the other half to get money for necessities.

In the other plots, we plant groundnuts, soybeans, or sweet potatoes. But we rotate the crops we plant systematically. The big limitation is that this restricts the size of the fields that we can cultivate, because each field needs so much attention.

Maybe the other drawback is that we are busy all year round. Previously, we used to sit back after harvest until the rains were near. Now we have to continue working even after harvest.

**FILIUS:** What do you have to do after harvesting?

**MARY:** Our first task is to protect our fields from bushfires. Bush fires are a great problem because they burn all the crop residues in the field. These crop residues are our raw materials for making compost and also for mulching. So we clear all the dry grass around the field so that the bushfire will not cross into the field.

Then, we must dig our planting basins for the following season while it is still cool and the soil is slightly moist. At the same time, we make our compost while we still have the raw materials and the time. By the time we finish all this, it is almost time to plant again.

**FILIUS:** What do your neighbours say about your farming methods?

**MARY:** Most of them cultivate big fields using the old way. But, when the drought comes, they see that our crops don’t wilt because the planting basins usually retain enough moisture until the rains return. They also see that the harvest from our smaller area is better that the harvest from their big fields.

The lazy ones say we must be using magic. But the smart ones come and ask us how we do it. I usually advise them to start on a small area of maybe fifteen rows. I show them how to do everything. When they follow everything well, they are usually surprised by what they can get from those fifteen rows. This encourages them to use this way of farming on bigger areas the following season.

**FILIUS:** It is said that seeing is believing. After talking to Foster and Mary, they took us to their1½ hectare field. We could not believe that all that harvest came from such a small area.

**CHARITY:** That’s exactly what everyone says the first time they see the results of practicing these simple farming methods. As Mary said, the secret is in overcoming the two challenges of not enough water for crops and poor soils. This way of farming works very well for small-scale farmers.

**FILIUS:** (TO THE AUDIENCE) And so it does. I returned from that visit all fired up about sharing this wonderful way of farming with you. Of course, I cannot force you to adopt it because it is said that you can take a horse to the river, but you cannot make it drink if it doesn’t want to.

I urge you to consider the way you cultivate your crops and the size of your land. Think about the way that the rain falls these days and think about the poor soils. You are the only person who can decide whether what Foster and Mary does can work for you in the face of drought and climate change!

I am signing off now. But if you think that what you heard today is worth trying, please contact me on 0975971529. Remember, I always prefer a short message which I can write down. If you live nearby, you canal so come to Breeze FM at plot number 866, Parerenyatwa Road in Chipata.

I would have loved to take you to Foster and his wife so that you could hear and see everything for yourself. However, I will refer you to Charity at the Department of Agriculture. She has offered to help everyone who is interested, in the same way she helped Foster and Mary.

 Goodbye!

**Outro Sigtune Up and out**

## Acknowledgements

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**Sources of information**

Interviews:

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Foster Musangu, Chikowa village, Chief Jumbe, Mambwe

Mary Mumba Musangu, Chikowa village, Chief Jumbe, Mambwe

All interviews conducted in June, 2016

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