

# Pack 102, Item 6

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**Farmers use agroforestry practices to heal farmland damaged by deforestation and soil erosion** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Notes to broadcaster**

Small-scale farmers are often mere receivers of the bad results of other people’s careless actions. One example is when people cut trees in large quantities to supply fuelwood or charcoal to urban markets, or for other commercial purposes. When many trees are cut down, the rains may be affected and impact the growth of crops. Also, soil erosion can impact the amount of nutrients and water to grow crops. These cause poor yields, which result in hunger and poverty for farmers.

This script tells the true story of a part of eastern Zambia that was once thickly forested and had rich soil, but which was later occupied by people interested only in using the forest to earn short-term income. Unfortunately, this led to the degradation of the forest to levels that could lead to desertification, poor crop yields, and hunger for the small-scale farmers in the area.

Luckily, the farmers decided to face this challenge by using agroforestry systems and practices to protect and improve their soils and landscape.

You might choose to present this script as part of your regular farming program, using voice actors to represent the speakers. If so, then please inform your audience that the actors are representing real people who use the practices they talk about.

You could also use this script as research material or as inspiration for creating your own programming on deforestation and degradation or related topics in your own country.

Talk to farmers and experts who are using some of the systems and practices mentioned in this script. Ask them:

How has land in your area been damaged or degraded? And what has been the impact on the local environment, and on farmers?

Have farmers taken steps to rehabilitate or restore the land? What have they done? Have they been successful?

Are there barriers to taking steps to revive the land? If so, what are they, and how can they be overcome?

Estimated running time for the script: 20 minutes, with intro and outro music

Fade up sigtune

**NARRATOR:** It’s time for *Let’s conserve and restore our natural resources*, a program about how natural resources serve small-scale farmers and what we must do to get maximum benefits from farming.

 Please ensure that you have your pen and paper ready to take important notes.

FADE OUT SIGTUNE

**FILIUS:** Welcome to the program. My name is Filius Chalo Jere, your presenter. I am sure that what I have for you today concerns many of us because our livelihoods are affected by how well we or others manage our natural resources.

 As farmers, our primary natural resources are the land, the trees and the other natural vegetation on our land. Therefore, we must handle our land with care by using farming methods that replenish and improve our soils instead of degrading and destroying them.

 Today, I will tell you the story of a family whose piece of land used to be very productive. The land is located in a part of eastern Zambia called Mphomwa on the road to the famous Luangwa National Park.

 The family earned a good livelihood from this land. But the area was invaded by people who cut down trees to sell to town dwellers, while others produced charcoal. Many trees were logged and the area was in danger of turning into a desert.

 As a result, the poor family could no longer get as much from this land as they used to. To overcome this problem, they decided to plant trees to increase soil fertility and are using other best management practices to get better yields.

 In my studio, I have the land management officer, who is helping this family and other farmers in the region to restore some of the abundant fertility and productivity of their land.

**Charlton:** My name is Charlton Phiri and I work in the Technical Services Branch of the Zambia Ministry of Agriculture. My specialization is soil conservation and land management, including agroforestry and rainwater harvesting.

 I am familiar with the problem at Mphomwa. I am helping the farmers to deal with the problem of soil degradation caused by the removal of trees. I will take you there and show you what I am doing. You will meet one of the oldest families that settled in the region. I suggest that we go with the District Forestry Extension Officer who works with me to help the farmers.

**FILIUS:** Normally, field officers use motor bikes, which I can never get used to. But, as a senior officer, Charlton has a Land Cruiser, and this makes it easier to accept his invitation to accompany him to Mphomwa.

**SFX:** VEHICLE DRIVING OFF

**FILIUS:** We picked up the District Forestry Extension Officer from her office. She is an energetic young lady named Emma Sakala, who is dressed in a green uniform.

 We are driving on a very good tarmac road. I remember driving on this same route more than forty years ago in a rickety government vehicle when I was just starting my work as a farm radio producer. At that time, the road was just a bush track. There were also many big trees. Sometimes you met an impala or kudu or even a leopard on the road, and there were poisonous snakes. So it was safer to keep your windows closed tight.

 Nobody lived in this area until you came to Mphomwa Hills where there was a man named Yokoniya Mwale. People thought he was eccentric because he lived alone with his family so far from civilization. But we stopped there because there was a natural spring where we could drink water.

**Charlton:** That’s where I am taking you now. You will hear why Yokoniya settled in this place and how it became degraded over the years.

**FILIUS:** You mean Yokoniya is still alive after all these years?

**Charlton:** No, he’s long dead. But his youngest son, Abraham, and his grandchildren still live there. He almost abandoned the place until I showed him how to reclaim the land.

**FILIUS:** Is that jungle place now populated?

**Emma:** Yes. As you probably know, the Luangwa National Park is one of the most famous game reserves in Africa. Tourists come from all over the world to see our wild animals. That’s why the government finally built this good road.

**FILIUS:** So much improvement!

**Emma:** Yes, but it came at a cost. Opening the area to the outside world has contributed to the degradation of the land and the wasteful use of resources. It also led to commercial poaching that has completely wiped out our wild animals.

**FILIUS:** Are we likely to meet any wild animals on the way?

**Emma:** That’s very unlikely, except maybe for a few stray impalas and hares. All this development came at the cost of large tracts of land being cleared. Between 250,000 and 300,000 hectares of forest are cleared in Zambia every year.

Since trees are the natural habitat of wild animals, they moved away. Most of the bigger animals are now inside the park near the Luangwa River where they are protected by law. But there are still plenty of monkeys and baboons in the area.

**Charlton:** So you see, we have our hands full trying to protect our resources. And the poor farmers are the ones who suffer the most. The massive deforestation has left the land bare and exposed the soils.

**FILIUS:** I can see evidence of what the two officers are talking about. Every few miles, there is a village or small settlement. There are large open areas with no crops, but with smoking kilns of charcoal. The hills have been robbed of most of their trees. I am so shocked that I cannot speak.

 As we come round a curve in the road, Charlton slows down. There is a sharp drop away from the road, and banana plants on the right hand side. Further on, I see a thick stand of old mango trees almost covering an old house of burnt bricks with a roof of rusty corrugated iron sheets.

 Everything looks familiar!

**Charlton:** We have arrived. This is Yokoniya’s place.

**FILIUS:** Charlton turns off the tarmac onto a short gravel road leading up to the mango grove. As we roll into the yard, the branches of the mango trees are so thick that they almost hide the sun and we seem to enter a dark cave.

**SFX:** VILLAGE SOUNDS OF CHILDREN PLAYING, GOATS AND CHICKENS

**FILIUS:** Apart from the old brick house, there are two or three grass-thatched huts. We see a lot of chickens and village pigs and a number of small children playing all over the compound. One small boy is standing alone at the edge of the compound, keeping an eye on some goats browsing near a small woodlot of broad-leafed young trees with pale flowers and pods like beans.

 A tall, middle-aged woman is sitting on an old reed mat cleaning fresh pumpkin leaves. I almost start to believe in ghosts when I see an elderly man weaving a new reed mat under the big mango tree in front of the old house.

**FILIUS:** (AMAZED) Charlton, I thought you said Yokoniya was dead?

**Charlton:** (LAUGHING) I expected you to say that. Many who knew the old man are amazed at the likeness. But this is his youngest and only surviving son, Abraham. Hodi, ba-Yokoniya(*Editor’s note:*Hodi*is the traditional way of respectfully asking to be admitted into someone’s presence in the Chewa/Nyanja languages*).

**Abraham:** Hodini – oh, it’s you, ba-Phiri and *Amai* Emma (*Editor’s note:* Amai *is a formal term of respect for a married woman*). You are most welcome and just in time for your favourite relish of pumpkin leaves.

**Tamara:** Yes, I have already prepared the groundnut flour, and *nsima* doesn’t take long to cook. So I am sure you will stay long enough for lunch.

**Emma:** I hope we can stay long enough for lunch. However, it depends on how long our visitor needs to talk to you.

**Tamara:** In the village, a visitor is never allowed to leave with an empty stomach. Who is he – a new staff member at the Ministry?

**Charlton:** Not really. His name is Filius Chalo Jere ...

**Abraham:** (SURPRISED) Are you really the owner of that voice on the radio?

**FILIUS:** There are many voices on the radio, Mr. Yokoniya ... er ... (HESITATION ON SURNAME)

**Abraham:** Mwale. My name is Abraham Mwale. Yokoniya was my father’s name.

**FILIUS:** Sorry, Mr. Mwale. But yes, I talk to farmers on the radio.

**Tamara:** How wonderful! Welcome to our humble home. (TO HUSBAND) Please tell Limbike to leave the goats alone for a while and catch a cockerel. We can’t give our important visitor only *nsima* with pumpkin leaves.

**Abraham:** No. But what happened to your manners, Tamara? How can you start chattering like a hen without first bringing out stools for them to sit on? I believe you are getting old!

**Tamara:** (GIGGLING) Maybe I am. But don’t forget that you were seven years older than me when you enticed me into eloping with you! (CALLING AT TOP OF VOICE) Limbike! Limbike!

**Limbike:** What is it, *ambuya (Editor’s note:* Ambuya *means “grandmother”)*?

**Tamara:** Leave those goats and come catch that black cockerel for our visitors. (PAUSE) Come to think of it, no, come and catch that hen that started laying eggs yesterday!

**SFX:** CHICKENS RUNNING AWAY

**FILIUS:** Charlton and I are sitting on wooden stools while Emma sits on a reed mat with Abraham’s wife, Tamara. Meanwhile, Tamara has brought out a calabash of a sweet village drink called *munkhoyo*, made from wild roots.

As we drink and chat with her husband, Tamara is busy trying to do many things at once, including participating in the discussion. It is clear that she wants to ensure that we eat something before we leave.

**FILIUS:** Please tell me about this place.

**Abraham:** This place used to be like the Garden of Eden in the Bible. Over there beyond that run-down banana orchard is a spring that had the coolest water running down this way. That is why my father decided to establish a garden there.

**FILIUS:** What was the garden used for? You couldn’t eat all the vegetables, and the town of Chipata was too far away for you to go and sell your vegetables.

**Abraham:** You are right. People thought my father was mad to settle here. But he once lived in South Africa and was very smart: he saw a big opportunity in the lodges and safari camps in the Luangwa National Park.

**FILIUS:** What opportunity did he see?

**Abraham:** There were no vegetables in the area because of the wild animals. So the lodge and safari camp operators had to travel 145 miles to Chipata for fresh vegetables. The road was so bad that the round trip took two days. My father established this garden so the lodge and safari camp operators did not have to travel all that way.

**FILIUS:** The garden looks run down. Is that because the good road made it easier to travel to Chipata for provisions?

**Abraham:** Not really. Yet, in a way, it is to blame for the decay of this place.

**FILIUS:** How? I thought the road opened up the area and brought development. It meant more traffic and customers for you.

**Abraham:** You are right that this road brought more people. But most of them were a lot of trouble.

**FILIUS:** What do you mean?

**Abraham:** As the town of Chipata grew, people needed fuelwood. So people cut the trees to supply town dwellers with fuelwood. Over time, the demand changed to charcoal.

**Tamara:** Yes, people settled around us. They pretended to be farmers as an excuse to cut trees to make charcoal, which they sold in town. They did very little farming. When the trees were finished, they moved on to another area.

**Abraham:** And recently we have experienced the issue of the *mkula* trees (*Editor’s note: The scientific name is* Pterocarpus tinctorius.) These trees provide high quality hardwood. We have heard that the settlers use it to make gun butts and other products. Foreigners come and offer the local people money to cut the trees to take to their countries.

**FILIUS:** What was the effect of these actions?

**Abraham:** (SADLY)Poor rains and poor soils. Crop yields have decreased.

**FILIUS:** How are you coping with the situation?

**Abraham:** Let’s go to the fields so that you can understand how we are coping.

SOUND OF PEOPLE MOVING AWAY

**FILIUS:** We are walking in a straight line like white ants. Abraham is in front, followed by Charlton and me, while Tamara and Emma take up the rear. As soon as we leave the cover of the mango trees, it is shocking to see that the land has been cleared all the way to the hills. Even the hills are bare except for scattered shrubs.

 In front of us, I see fields of maize, groundnuts and other crops. Some of the crops are planted together with the pod-bearing shrubs we saw at the edge of the compound. Otherwise, there are no big trees in sight until the distant horizon where a line of green indicates a river.

**FILIUS:** I am surprised that your field is so open. Were you also involved in the logging of trees?

**Abraham:** No, of course not. But my father was only interested in the small piece of land around the spring for his garden. So he allowed people to settle around him. It was a good idea because wild pigs used to come and destroy the crops in the garden. Having more people around us reduced that risk.

 But our new neighbours were the fake farmers I told you about. As soon as they had cut down all the big trees and made their charcoal, they moved away and left this land bare.

**FILIUS:** What did you do with the abandoned land?

**Abraham:** As we grew up, got married and had our own homes, the garden could not sustain all of us. So we started to grow rain-fed crops in the abandoned fields.

**FILIUS:** How did you manage to do this, since you were brought up as vegetable producers?

**Abraham:** (CHUCKLES) A village child is brought up with a hoe in his hands. In addition to the garden, my father used to grow sorghum. Later, he switched to maize.

But maize needed more care in the field and the soil was now poor because of erosion. Our farming methods were also poor.

SOUND OF WOMEN SINGING WITH A MALE VOICE IN THE BACKGROUND AND COMING ON-MIC

**Tamara:** Oh, here comes Anna and our group.

FADE UP WOMEN SINGING, FADE OUT

**Tamara:** (EXCITEDLY) Thanks for coming at such short notice Anna, Sithembile, Bibian and you too, Ganizani.

 We have received a special visitor who has a million questions. And look – he has his recorder out! We are going to be on radio, my friends.

WOMEN ULULATING

**Tamara:** Oh, you’ll break our visitor’s eardrums. Come, it’s time for introductions.

**Anna:** My name is Anna, the secretary of Yokoniya Conservation Group. I keep the records of everything we do. But our most important activity is farming.

**FILIUS:** Thank you. Now, as Tamara said, you could be on the radio teaching other farmers why cutting trees carelessly is not good, and how you are coping with the bad effects. What were the major problems you experienced because of deforestation?

**Anna:** For us women, it meant travelling longer distances to fetch our firewood. In the dry season, it also meant long distances to fetch water for drinking and other uses.

**Sithembile:** I am Sithembile, Ganizani’s wife. We have a vegetable garden, but nowadays we cannot grow vegetables throughout the year because our *dambo* dries up quickly (*Editor’s note:* Dambo *means “wetland or swamp” in the Chewa language*). This affected our income.

**Bibian:** I am Bibian. I live farther away, after Anna’s place. Yes, cutting trees carelessly is not good. It destroys our soil and the result is lower yields.

 This is why we welcomed ba-Phiri’s new method of farming, which does not rely on chemical fertilizer to increase crop yield. Instead, we plant trees like *musangu* and *Gliricidia sepium* that help increase the fertility of our soils (*Editor’s note:* *The scientific name for musangu* *is* Faidherbia albida).

**Abraham:** Charlton taught us that this type of farming system is called agroforestry. It requires men and women to work together. Men establish the tree nurseries and clear up the fields. But women are more careful when it comes to transplanting.

**Anna:** You are right, except when transplanting the thorny *musangu* seedlings. The *musangu* tree also takes too long to give us results, and most of us women have no patience. But once *musangu* is established, you don’t need chemical fertilizer for good yields.

**FILIUS:** This *musangu* must be a wonderful tree. Is it the one I saw back at the house, where the goats are browsing?

**Abraham:** No, that is *Gliricidia*. Its benefits are not as long-lasting as *musangu*. But you start to get results in the second year of planting.

**Sithembile:** *Gliricidia* also produces more leaves, which are useful for making compost and increasing organic matter in the soil. Its branches don’t have thorns like *musangu*. We use the twigs as firewood, especially in fuel-efficient cook stoves. We no longer go very far to fetch firewood.

**Ganizani:** (LAUGHING) Women always talk about women’s things. Don’t forget that deforestation took away our wild honey. But by establishing *Gliricidia* woodlots, we have started to keep bees again. Honey is good for health and we can easily sell it in town.

**Abraham:** Trees are our roof. They shield our soil from the sun and the wind and water erosion.

**Ganizani:** You are right, Yokoniya. We have also learnt several good methods of farming. For instance, minimum tillage to control soil erosion, building planting basins and ripping for water harvesting, and also alley cropping with *Gliricidia*.

**FILIUS:** Alley cropping − what is that?

**Abraham:** That’s when we plant *Gliricidia* or other nitrogen-fixing shrubs together with our food crops in one field. In addition to the shade it provides to our crops, we chop off the branches and lay them along the rows where they rot and fertilize the soil, and also help increase the water content in the soil for the plants.

 In a field like mine, you also see rows of grass running across the slope at intervals.

**FILIUS:** Is the grass also used for alley cropping?

**Abraham:** Not exactly. That is vetiver grass. It has strong roots which hold the soil in the field. It is also hardy and will sprout even after being burnt down.

**CHARLTON:**  (CHUCKLING)I am very happy to see how you have all become such good advocates of agroforestry and learned the bad effects of cutting trees carelessly. I hope this message spreads to other farmers around you!

**Abraham:** Indeed it will. We don’t really have to go round shouting. People will see the results in our fields!

**FILIUS:** My friends, Abraham is right. Careless cutting of trees brings bad results. So if you are lucky to have natural forests around you, please conserve and take good care of them. But if your field is barren and your soils are poor and in danger of erosion, please use agroforestry like the Yokoniya Conservation Group.

I will sign off now, but shall be back next week with another topic on how we can conserve our natural resources for our own good and for the good of the planet.

 If you need more information on today’s topic, please contact Charlton Phiri at the Technical Services Branch of the Zambia Ministry of Agriculture, and Emma Sakala, the Forestry Technician.

 Or myself.

 We shall be glad to help you.

Outro Sigtune

## Acknowledgements

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**Sources of information**

Interviews:

Charlton Phiri, Technical Services Branch, Ministry of Agriculture and Livestock, P. O. Box 510046, Chipata, February 13 and 16, 2015

Emma Sakala, District Forestry Technician, Chipata, February 16, 2015

Abraham Yokoniya Mwale, Mphomwa, Mfuwe, February 16, 2015

Members of Yokoniya Conservation Group, Mfuwe, February 16, 2015

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