# 

# Pack 104, Item 6

Type: Interview

August 2016

# \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Farmers triple sorghum yield thanks to mulch farming**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

### Notes to broadcaster

In the Sahel, farmland has been degrading for decades. That degradation has many causes, including the disappearance of vegetation cover, soil erosion caused by runoff water, and violent winds. All these factors contribute to making the land infertile and reducing farm production.

Half of Burkinabé territory is located in the arid Sahel, where there is less than 650 millimetres of rain per year. Since the 1970s, pockets of drought have been common. On average, rainfall is insufficient in one out of four years.

In order to survive, farmers are continuously innovating with ways of restoring the soil and making it more fertile.

In this script, you will discover an innovation called “woody mulch farming.” A farmer has created an ingenious method of using a local plant. Thanks to this method, local farmers are significantly increasing their yields.

This script is based on interviews with farmers in north central Burkina Faso.

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.

You could also use this script as research material or as inspiration for creating your own programming on growing crops in arid conditions. Talk to farmers and experts who are dealing with these challenges. You might ask them:

What difficulties do you experience with farming in this area?

Have you found solutions to these challenges?

Have you tried mulching or other methods of retaining soil moisture? If so, what was the result?

What do extensionists and other experts say about these challenges?

Estimated running time for the script: 10-12 minutes, with intro and outro music

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

SIGNATURE TUNE

**HOST:** Hello and welcome to this week’s show.

In the Burkina Sahel, sorghum has always been the main cereal. But harvests have been continually decreasing for the past three decades. This has led to widespread starvation and poverty in rural communities. The old ways of farming no longer fit the new situation—in particular, the practice of burning crop residues, which destroys soil nutrients.

Fortunately, farmers are not giving up. They are constantly innovating in order to find new ways to fertilize the soil. Mulch farming is one of them. The technique involves the ingenious use of a local plant, called *bâagandé* in the local language or known by its scientific name as *Piliostigma reticulatum*. They are using this plant as a mulch which fertilizes the soil. Thanks to this method, many farmers have doubled or even tripled their yields. As you must have guessed, today’s show will discuss mulch farming.

**sfx:** FADE IN FARM SOUNDS FOR SEVERAL SECONDS, THEN FADE UNDER SPEAKERS

**host:** We are in Yilou village in central northern Burkina, with Harouna Sawadogo and his family. Today, Harouna and the seven members of his family are in the middle of a harvest. The men put sorghum stalks on the ground, the women cut off the grain heads, and the kids carry them to a cart pulled by a donkey. Just by looking at it, you know the harvest is good. Let’s talk to the head of the household.

Hello, please introduce yourself to our listeners.

**Harouna Sawadogo:** My name is Harouna Sawadogo. I am a sorghum farmer living in Yilou.

**HOST:** From what I can see, the harvest will be good.

**H. Sawadogo:** Indeed, the harvest is very good, despite only average rainfall. We had about fifteen days without rain while the sorghum was maturing. Thankfully, the crop was not too affected. I’m expecting to harvest at least three tonnes of sorghum on my one and a half hectare field. It’s easily enough to cover my family’s needs for the whole year.

**HOST:** Your yields are extraordinary for this region, considering the deterioration of the soils. On the fields surrounding yours, the soil is hard and almost nothing grows. What’s your secret?

**H. SawaDOGO:** My field was as hard as the soils around it. Around here, we call that hard crust *zippélés*, which means “naked soil” in the Mooré language. Thanks to mulch farming, I was able to make it soft and fertile.

**HOST:** You mentioned mulch farming. What is it?

**H. SawaDOGO:** Mulch farming is my own innovation. Five years ago, I noticed that the most fertile places in my field were wherever branches of a leguminous shrub called *Piliostigma reticulatum* covered the ground. So I decided to cover the whole field with the shrub’s branches and sorghum stalks. In the first year, the effect was already noticeable. But in the second year, my harvest increased substantially.

**HOST:** I’m puzzled. How can simply covering the field with branches and stalks make soil fertile?

**H. SawaDOGO:** Yet it’s true! *Piliostigma reticulatum* branches protect the soil against the winds. They also hold runoff waters and allow them to infiltrate the soil. This increases moisture in the soil and helps plants develop. To improve fertility, I bring in organic manure made with cow dung.

**HOST:** What did mulch farming change in your life as a farmer?

**H. SawaDOGO:** Everything. I used to earn only enough to feed my family for six months a year. Right now, in my granaries, I have sorghum that was harvested three years ago. I also enrolled my two youngest kids in secondary school. My family is having a good life.

**HOST:** Harouna is not the only farmer whose life has changed for the better. We met with another farmer who has been happy ever since he started practicing the method. Please introduce yourself to our listeners.

**PatÉnÈma SawaDOGO:** My name is Paténèma Sawadogo. I am a crop and livestock farmer in Yilou.

**HOST:** How did you start doing mulch farming?

**P. SawaDOGO:** It happened naturally. When other farmers saw the good yields recorded by Harouna, they wanted to follow his example. So we created a farmer field school, with the support of a development project.

**HOST:** What are the benefits of mulch farming?

**P. SawaDOGO:** There are several. As well as increasing yield, using vegetation reduces work time. We don’t need to do more arduous methods like building *zai* pits and stone barriers.

**HOST:** Dear listeners, in the first part of our program, we discovered how mulch farming works and what its benefits are. In this second part, we will discuss the difficulties and challenges related to mulch farming. We are still with Harouna and Paténèma Sawadogo. Based on your experience, what are the difficulties?

**H. SawaDOGO:** The availability of vegetation is the main difficulty. We also need it to feed livestock. Also, women gather the sorghum stalks and use them as firewood.

**P. SawaDOGO:** To increase the amount of vegetation in the fields, we planted *Piliostigma reticulatum* seedlings. But they grow slowly, and the need is huge. This is why we cover our fields with sorghum stalks.

**HOST:** What do agricultural experts who supervise growers think about mulch farming? We asked Georges Félix for his opinion. Mr. Felix works at Wageningen University in the Netherlands and cooperates with the Institut de la Recherche pour le Développement, or IRD, in Ouagadougou, Burkina Faso.

Please introduce yourself.

**Georges Félix:** My name is Georges Félix. As part of my doctoral work at university, I work on restoring farmland in collaboration with IRD and farm families in Burkina Faso.

**HOST:** What do you think of mulch farming?

**Georges Félix:** It’s an interesting innovation. Placing vegetation on the soil allows it to retain moisture. For example, when termites consume vegetation, it becomes humus and enriches the soil. Also, the termites dig underground tunnels which enable runoff water to penetrate into the soil.

**HOST:** What are the limitations of the method?

**Georges Félix:** One of the limitations is the extent to which farmers understand it. It’s not as simple as applying a fertilizer. You must know when and where to apply vegetation.

**HOST:** What is the best time to apply the mulch and the best soil to apply it on?

**georges félix:** The best way to benefit from mulch farming is to start preparing the field before the rainy season starts. We advise farmers to cover the whole field with *Piliostigma reticulatum* or sorghum stalks. Then, as soon as it starts raining, the field will be ready for sowing.

**HOST:** Is this method suitable for all types of soil?

**georges félix:** We are currently researching this question. But, generally, farmers use the method in places where the soils have a hard crust. They don’t apply the method in lowlands.

**HOST:** How could farmers improve the method?

**Georges Félix:** For the past three years, we’ve been working with farmers on standardizing and improving the innovation. We have experimental fields in Yilou.

**HOST:** What are the results of that experimentation?

**Georges Félix:** We’ve noticed that when we apply a double dose of mulch, yields are one-third better than with a single dose. This is no doubt because the soil retains moisture better and allows water to infiltrate, in addition to the organic plant material the mulch provides to the soil.

**HOST:** What is a single dose and what is a double dose?

**Georges Félix:** A single is between 800 kilos and 1200 kilos of vegetation per hectare. A double dose is 1600 to 2000 kilos per hectare.

**HOST:** Do you think this method could be useful to farmers in all Sahelian countries?

**Georges Félix:** Yes, it’s possible because the shrub grows everywhere in this area—*Piliostigma reticulatum* in the Sahel and *Piliostigma thonningii* (*Editor’s note: called bâaganyaanga in the Moore language*) in more humid areas.

It’s not an imported method, so it’s easy to copy. Farmers just need to be convinced that there’s an alternative to burning vegetation. They can use this method to improve soils. And they can be inspired by these innovative farmers from Yilou to use local plants to increase soil fertility.

**HOST:** Listeners, *Piliostigma reticulatum* increases the amount of carbon, phosphorus, and nitrogen in the soil. It also contributes to termite activity in the soil. All these factors increase soil fertility.

It’s important to note that some shrubs belonging to the same family have similar properties to *Piliostigma reticulatum*, and will also help your soil and your crops. These include *Combretum micranthum*—called *randga* in Moore and *Combretum glutinosum*, called *kutumpãgade* in Moore.

Dear listeners, today we talked about “mulch farming.” Farmers in central Burkina Faso are covering some parts of their fields with branches of a shrub called *Piliostigma reticulatum* in order to increase soil fertility, which allows them to produce more and better crops.

They start mulching their fields as soon as the rainy season is over. You must cover the whole field with branches. If there are not enough branches, you can use sorghum stalks to increase the surface of the field that is covered with vegetation. When you cover the field this way, you protect it from sun, wind, and runoff.

To increase soil fertility, you can also spread organic fertilizer or compost on the field. You can then plant as soon as the first rains start. To get the expected benefits, it is important to repeat the same activities every year. By doing this, your children will have fertile lands, which will enable them to grow the food their families need.

On these words, we conclude today’s show. See you next week to discuss another topic. Goodbye!

## Acknowledgements

Contributed by:  Nourou-Dhine Salouka, reporter for Barza Wire in Burkina Faso

Reviewed by: George Félix, Ph.D student at Wageningen University, Netherlands

**Sources of information:**

Interviews:

Harouna Sawadogo, farmer who invented the method, November 26, 2015

Patènèma Sawadogo, farmer who adopted mulch farming, November 26, 2015

Fatim Belem, agricultural technician in Yilou, November 26, 2015

George Félix, Ph.D student at Wageningen University in the Netherlands, working on soil restoration in Burkina Faso, in collaboration with IRD, November 30, 2015

 Project undertaken with the financial support of the Government of Canada through Global Affairs Canada (GAC)