

# Pack 108

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**Local farmers find ways to scale-up conservation agriculture to larger areas**

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**Notes to broadcaster**

Many small-scale farmers are having difficulties because of climate change these days. But conservation agriculture practices show that it is possible for them to succeed in this challenging situation.

Conservation agriculture, or CA, offers simple practices that farmers can use to address the negative impacts of climate change and learn how to “farm with nature.” This sometimes involves changing or adjusting traditional ways of farming to take maximum advantage of the sometimes little or erratic rain and other water available for crops.

Many small-scale farmers think that only educated people can understand and practice CA. But CA is suitable for farmers with any level of education.

Important practices in CA include minimal disturbance of the soil, crop rotation or crop associations (meaning effective intercropping), and maintaining soil cover with mulch and living plants throughout the year. For resource-poor farmers, CA involves minimal financial input, including less dependence on chemical fertilizers.

When farmers change farming practices, they often try out the new practices on small areas of land. This is true of conservation agriculture. This script interviews a farmer and an extension worker who are both working with CA, the extension agent to advise farmers on expanding the amount of land they devote to CA. The two men talk about the types of equipment that are useful for CA, and the ways that farmers can work together to make these kinds of equipment available and affordable for everyone.

You might choose to present this script as part of your regular farming program, 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 conservation agriculture or similar topics in your country.

Talk to farmers and experts who are practising CA or are knowledgeable about this type of farming. You might ask them:

* What are the local farming problems that conservation agriculture could address?
* Have farmers in your area been successful with CA, including no-till or reduced tillage?
* What are the barriers to adopting conservation agriculture practices in your area, and how can these be addressed?

Estimated running time for the script: 15 minutes, with intro and outro music

**sigtune, then fade under host**

**Host:** Hello and welcome to our farming program on Radio \_\_\_. I will be your host today as we travel to Chihanga village in the central region of Dodoma, the capital city of Tanzania. Chihanga is one of the five villages in the city where farmers are using conservation agriculture.

This is a semi-arid region and ongoing climate change is now pushing more farmers in the region to adopt conservation agriculture. But farmers are facing challenges scaling up conservation agriculture, also known as CA, to larger areas of land. Today, we will talk about how farmers can expand CA through better access to mechanization.

In this village, we’re meeting Isaya Joseph, who lives on his two-acre farm with his family. We will also be joined by Mr. Samwel Elinuru. Mr. Elinuru is an agricultural officer who specializes in conservation agriculture and extension of technologies to farmers. Please stay tuned.

**Music:** FADE UP SIG TUNE, THEN OUT.

**Host:** It is seven o’clock in the morning and we’re at Mr. Joseph’s farm. Mr. Joseph, how long have you been farming?

**Mr. Joseph:** (LAUGHTER) It is many years. I started farming as I grew up, and now I have a family with three children. Farming is my job. It’s what feeds me and my family.

**Host:** What do you farm?

**Mr. Joseph:** I practice mixed farming, growing maize, millet, sorghum, and vegetables. I also keep chickens and goats.

**SFX:** SOUND OF CHICKENS PANICKING, THEN SLOWLY FADING.

**Host:** (TO AUDIENCE) Mr. Joseph adopted conservation agriculture gradually. He started with a quarter-acre of his land in 2015, and now he uses CA on his whole two acres. The majority of farmers in this area use CA practices on relatively small pieces of land. But the prolonged drought is making farmers consider the need for climate-smart agriculture to help them be more food secure. We’re also fortunate to have Mr. Elinuru here with us.

**Host:** Mr. Elinuru, how can farmers protect themselves in this changing climate and sustain their livelihood?

**Samwel Elinuru:** We’re encouraging farmers to apply various practices, including early land preparation and planting on time, planting crops that are drought-tolerant, and keeping crop residues on the soil to help reduce erosion and improve the soil.

Since 2015, we have been training farmers to minimize tillage, with help from the Diocese of Central Tanganyika, or DCT. Practices that minimize soil disturbance, maintain soil cover, and rotate crops, have been proven to improve soil fertility. They also eliminate the effort and cost associated with plowing. And farmers who adopt conservation agriculture practices are more likely to have high yields than those who use conventional farming.

**Host:** It is about three years since you started training farmers. But most farmers are using CA practices on less than two acres, and still tilling a large portion of their land. What is the main barrier to expanding the use of conservation agriculture?

**Samwel Elinuru:** Changing farmers’ practices is a long process. I can tell you that at least 80% of our farmers have increased their conservation agriculture plots from a quarter-acre to more than one acre. We advise farmers to start with a small area of land—about 20 metres by 20 metres—to master the techniques. The good news is that we have farmers who have completely changed over to conservation agriculture, while others are still in the process.

**Host:** Is it very difficult to change from conventional agriculture to conservation agriculture? What are the processes involved?

**Samwel Elinuru:** It is not difficult to switch at all. Farmers who use the type of CA where you make planting basins with hand hoes say that, when you have a larger farm, it can take a lot of time to prepare all your land with CA practices. But, when you use an oxen-based CA system, it does not take any longer to prepare the land with CA practices.

**Mr. Joseph:** At first, it is very challenging. But, as you get committed, it is very simple to adopt and is less expensive than plowing. What takes time is tilling the planting holes needed to sow the crop and adding the composted manure. But if you start early in the season, I am sure you can finish a large piece of land.

**Host:** What materials or equipment do you use?

**Mr. Joseph:** Traditionally, when starting conservation agriculture, you need tillage tools, and I use a hoe. I also grow a cover crop to help manage weeds. I need a tape measure to measure the distance from one planting hole to the other and from one row to the other, and a rope to ensure that the planting lines are straight. All these materials are available in the village.

**Samwel Elinuru:** If I may add to that … A farmer may also use a Magoye ripper or subsoiler. Every village in Dodoma was supported by the government or by DCT and now has a ripper. We trained at least two operators in every village to ensure that farmers abide by the principles of conservation agriculture.

A power tiller ripper costs between 500,000 and 600,000 Tanzanian shillings [US $220-265]. A Magoye ripper costs around 70,000 Tanzanian shillings [US$30]. Some farmers also use motorized equipment, including motorized planters, but such technology hasn’t gained popularity here.

**Host:** (TO AUDIENCE) The Magoye ripper is an animal-drawn implement used for conservation tillage. The ripper consists of a frame that is attached to a standard plough beam, and on this frame is fixed a tine at an angle that penetrates and breaks up the soil when pulled. Unlike a regular plough, though, it doesn’t turn over the soil.

(TO FARMER AND AGRICULTURAL OFFICER) What is the difference between this equipment and the tools used in conventional farming?

**Samwel Elinuru:** Conventional farming also uses power tillers and ploughs. The only difference is that it doesn’t use rippers.

**Host:** Six hundred thousand shillings for a power tiller ripper is too much for an ordinary small-scale farmer. What is the alternative?

**Samwel Elinuru:** As I said earlier, each village has a Magoye ripper. In this village, farmers formed a group and the government donated a power tiller and ripper through the group. Members agreed that when a farmer needs the service, they will pay 17,000 shillings [US$7.50] per acre. The other villages in Dodoma adopted the same price. But DCT sponsored farmers in the first year to encourage them to use the technology. The organization paid 12,000 shillings and the farmer paid the remaining 5,000.

**Host:** What was the result?

**Samwel Elinuru:** There was a more positive response in Chihanga village than in other villages. Farmers in other villages were not thrilled; they viewed conservation agriculture as a farming practice that was specifically meant for women.

**Host:** Why is that? Please, Mr. Joseph—is that how you see it as well?

**Mr. Joseph:** No. I was interested in the practice after I tried it and realized that I could harvest more than with conventional farming. So I didn’t think about whether it was meant for women or men. I get more yield and I am happy with it.

**Samwel Elinuru:** We met a number of farmers who said that they didn’t try conservation agriculture because it involved crops such as sorghum that had no value in the market. They viewed CA from the angle of increasing profit. They needed marketable cash crops—like maize, rice, or sunflower—to make more money. So most of them did not invest in CA. And those who tried it but started late were not successful, in part because of poor rains. This lack of success discouraged other farmers from trying CA or paying the farmers’ group for the use of the ripper on their land.

DCT has now ended the subsidy and now farmers have to pay the entire 17,000 shillings. The good news is that we have introduced sunflower as one of the crops on which farmers can apply CA. And now we are seeing more men engaged in conservation agriculture.

**Host:** What are the other costs involved with doing CA?

**Mr. Joseph:** There are no more costs. Within the groups, farmers agreed to take turns helping on each other’s farms. In exchange for their labour, farmers who worked on another farmers’ land were provided with food and a small amount of money. When farming with a traditional plough, we normally pay labourers 30,000 shillings (US$13), and it takes more than one hour to complete an acre. Without tilling and by using a Magoye ripper, it takes less than 30 minutes to complete an acre.

**Samwel Elinuru:** The ripper is more beneficial to farmers. Unlike the plow that cuts the soil horizontally, creating a hard layer of soil underneath, the ripper cuts the soil vertically. This allows the plant to have the longer roots that are needed for best growth. The furrows also are essential for retaining rainwater.

**Host:** Do all farmers who don’t use tillage need rippers to farm on larger areas of land?

**Samwel Elinuru:** To complete the job more quickly, yes. The other alternative is to have more people on the farm using hoes and other hand tools. Motorized equipment simplifies the task, but it doesn’t mean that you can’t expand your farmland without it. Almost all traditional tools are accessible in the village and power tillers are available for rent.

**Host:** Listeners, this is all the time we have. But I want to remind you that farmers just like you are using conservation agriculture and equipment such as rippers to increase their production. Both men and women can easily use conservation agriculture. And farmers say that it increases their yield and reduces their costs.

Until next time, thank you for tuning in to (name of radio station). Tune in at the same time next week for another informative program. Bye for now.

**SIG TUNE**

## Acknowledgements

Contributed by: Sylivester Domasa, writer. Dar es Salaam

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**Sources of information**

Interviews:

Isaya Joseph, farmer, December 2017

Samwel Elinuru, local extension officer, Chihanga, December 2017

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