

# Pack 108, Item 7

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***Changa ndi nyamanso* (Bushbabies are meat, too): Farmers in Malawi use indigenous plants to manage pests and livestock diseases**

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**Notes to broadcaster**

*Changa ndi nyamanso*is a Malawian proverb that translates into English as “Bushbabies are meat, too.” This means that, just as bushbabies are commonly overlooked but are still a useful source of protein, so can overlooked plant-based biochemicals be an effective way to manage pests and livestock diseases. It is in this context that MAFFA, the Malawi Farmer to Farmer Agroecology project based at Ekwendeni Hospital in northern Malawi, is promoting the sharing and use of indigenous knowledge amongst farmers.

Dictionaries define “agroecology” as the scientific study of ecological processes in agricultural production systems. Applying ecological principles to agroecosystems can help farmers find innovative approaches—using materials they find right in their own fields—that they might not otherwise consider.

Farmers in two parts of Malawi—in the Ekwendeni and Lobi areas—are working with MAFFA. These farmers have their own definitions of agroecology, based on their experience with using a variety of practices in the project. But all agree that they have benefited from adopting an agroecological approach and moving away from dependency on chemical pesticides and fertilizers.

This script is based on interviews that took place in Ekwendeni, a town in the Mzimba district of the Northern Region of Malawi. You could use it as inspiration to research and write a script on a similar topic in your area. You might choose to produce this script as part of your regular farmer 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 adapt this program for your audience and then invite listeners to call or text their comments and questions. Here are some possible questions for discussion:

* Are there farmers in your area who use local plants to manage pests or diseases? If so, what has been their experience?
* Are there farmers in your area who have adopted other practices common in agroecological farming, such as intercropping and crop rotation with legume and cereal crops? If so, what has been their experience?
* Generally speaking, do farmers in your area have a negative feeling or bias against traditional or plant-based ways of managing pests and diseases? Why?

Note: In the script, the speakers usually use the local name for different types of plants. The local name is followed in brackets by the scientific name when the plant is named for the first time.

SIGNATURE TUNE UP AND HOLD UNDER NARRATOR.

There is a list of common or local names for the plants named at the end of the script.

This script is divided into three parts: The duration of the first two parts, including intro and extro music, is about 20 minutes, while the third is about 10-15 minutes.

## NARRATOR: Welcome to a special program on (name of radio station) titled *Changa ndi nyamanso,* or, “Bushbabies are meat, too,” a Malawian proverb that means that, just as bushbabies may be commonly overlooked but are still a useful source of protein, so can overlooked plant-based biochemicals be an effective way to manage pests and livestock diseases.

##  This is a three-part series that highlights a group of Malawian farmers who are using biochemical techniques, or plant-based pesticides, to prevent and manage pests and diseases instead of using chemicals. You are with me, (name of presenter).

## SIGNATURE TUNE UP, HOLD, THEN CROSS-FADE OUT UNDER BELOW.

## NARRATOR: In this three-part series, we bring you stories of farmers who are using biochemicals in two parts of Malawi—Ekwendeni in the Mzimba district of the Northern Region, and Lobi in the Dedza district of the Central Region. These farmers are being helped by a project that helping them to grow crops according to agroecological principles. Botanical pesticides and biological veterinary drugs have enabled these farmers to prosper enough to buy cattle and build houses made with iron sheets from selling crops and livestock that are normally susceptible to pests and diseases.

##  Many farmers say that pigeon peas demand a lot of chemicals to manage pests. Esther Maona’s family used to yield only a bucket of pigeon peas from an acre. But now, she has a whole new story.

##  Stand by for Esther Maona and her friends, Dalina Tembo and Anita Chitaya from Chisangano village. The women were all smiles as they chatted with Gladson Makowa, a development journalist in Malawi.

## Gladson MAKOWA: What does agroecology mean to you? Esther?

## Esther MAONA: Agroecology to us farmers means diversity and integration of many farming techniques, including using composted manure and not using chemicals.

## Dalina TEMBO: Through this farming method, we share farmer-to-farmer techniques that make our farming easy and profitable. One of the ways of doing this is to check how our soils have degraded and then try to replenish or improve the soil fertility.

## Gladson MAKOWA: Thanks, Dalina. Esther mentioned that you don’t use chemicals in your farming. How do you do that? Anita?

## Anita CHITAYA: We plant various crops and herbs that replenish soil fertility in an integrated way. For example, we combine groundnuts and pigeon peas with soya in one garden. In many cases, we face challenges of insects attacking our crops, especially pigeon peas. That is when we bring in a shrub called *Tephrosia* *vogelii*, that is usually used to boost soil fertility. But in this case, we use it as a biochemical. We take the leaves of *Tephrosia vogelii*, and we pound them and soak them in water. Then we take the water and apply it to gardens where the insects are a problem—and we get relief. Or, when we want to keep our dried maize safe from weevils, we pound dried *Tephrosia vogelii* leaves and add them to the dried grains. The weevils do not attack the grains.

## Dalina TEMBO: We also plant maize more intensively—at one plant per station, 25 centimetres apart. We use biological techniques to store maize seed. If you don’t apply *Tephrosia vogelii* leaf powder to the maize seeds, you can add ashes to the seeds. We burn legume pods and sieve the ashes, then add them to the maize seed. You just add enough so that the ashes are visible.

## Esther MAONA: It’s the pigeon peas that are most susceptible to insects. Beetles also trouble us with this crop. So, to deal with them, we pound the leaves of *Tephrosia vogelii*. Then, while the leaves are still fresh and green, we soak them in water in a bucket and, if you don’t have a sprayer, you apply the concoction to the garden using a broom. You soak a broom in the Tephrosia suspension in the bucket and then shake off the liquid onto the plants. If you use a sprayer, you need to filter the suspension to prevent small leaves and other particles from blocking the sprayer.

## Gladson MAKOWA: Are these the only biochemical techniques you use?

## Esther MAONA: No, we also prevent goats from eating our crops by soaking goat dung in water.

## Gladson MAKOWA: How much goat dung do you mix with water?

## Esther MAONA: It depends on how big your garden is, but you can add a 15-litre bucket of goat dung to 20 litres of water, stir it, and then spray or apply it on the edges of the garden that you want to prevent the goats from damaging. You can also use a broom to apply it. Then goats will not eat the plants or enter the garden.

## Gladson MAKOWA: So they won’t eat the plants?

## Anita CHITAYA: No. In the same pigeon pea garden, we can prevent insects by using bird’s eye chilies. We get a sizable amount of chilies, let’s say 200 grams because chilies are light in weight, and we pound them in a mortar. We mix them with one tablet of soap that is ground to make it easy to dissolve in water. Then we add at least 20 litres of water. The following morning, we apply or spray that solution in the garden. By doing so, you either repel or kill beetles, caterpillars, and other insects.

## Gladson MAKOWA: What else do you use as a bio-insecticide?

## Esther MAONA: We use many other botanicals and indigenous plants, including *muuluka [Securidaca longepedunculata]*, *muwawani [Cassia abbreviata]*, *deliya* shrubs [*Tithonia diversifoli]*, and many others. [*Editor’s note: See list of species at the end of part three for the common names of species in other languages mentioned in the script.]* For all of them, we pound and soak the leaves, and then spray the crops which have problems.

## Dalina TEMBO: We also use the *muwawani* tree to cure and prevent diseases in chickens, cattle, pigs, and other livestock. You just need to make sure that they either drink the water that contains these plants, or you mix it together with their feed.

## Esther MAONA: We also use *mvunguti* [*Keielia Africana]* fruits to cure cattle and pigs. We put some of the fruits in the water that the livestock drink. As they drink, they are cured or prevented from being infected by, for example, East Coast Fever or African swine fever. For bitter plants such as *muwawani*, we sometimes mix the concoction with their feed.

## Anita CHITAYA: We also use aloe vera in the same way we use *mvunguti*. We pound it and mix it with the feed, or simply put it in the animals’ drinking water. Other people’s chickens die but yours don’t die if there’s Newcastle disease in the area.

## Gladson MAKOWA: Did you have Fall armyworm here?

## Esther MAONA: Yes, last year we had them.

## Gladson MAKOWA: What do you use to manage the Fall armyworm that is causing such havoc?

## Anita CHITAYA: We used the *muwawani* tree mixed with *dema* [*Dolichos kilimandscharicus]*. We also pounded the tuber of *dema* and sprayed it in the maize field. The armyworms died.

## Esther MAONA: Another way to kill these armyworms that have caused such havoc is to fill the funnel of all the maize plants with soil. When we did this, the Fall armyworms died and all the maize tasseled well without any problems. We used soil much more than the other innovative methods. We just filled the leaves, the joints, and the funnels of the maize plant with soil from the garden.

## Gladson MAKOWA: Which one is more effective for the new, or Fall armyworm—adding soil or the *muwawani*?

## Anita CHITAYA: The *muwawani* was more effective when the plants were small, but when they were about to flower, we used soil and it was very effective.

## Gladson MAKOWA: Okay, you have told me many things that you use as bio-insecticides. What prompted you to try these innovations?

## Esther MAONA: We found it very important to try these indigenous biochemicals because there have been so many new and resistant insects recently. We can’t find the right chemicals for the insects and they are expensive for us to buy. So we invested our energies in these local biochemical products based on our forefathers’ practices as well.

## Gladson MAKOWA: What concrete benefit have you had from using these bio-insecticides?

## Esther MAONA: Pigeon pea is the crop that gives us headaches with insects. Without any chemicals, it is difficult to harvest anything at all. But when we use these biochemicals, we can harvest something. It’s the same for beans.

## Gladson MAKOWA: What changes did you see after using the biochemicals?

## Esther MAONA: The first year I grew pigeon peas, which was 2007, they grew very well. But after growing to a certain height and flowering, the flowers attracted insects, they never gave me pods, and I yielded only one bucket from an acre.

## Anita CHITAYA: Also in 2007, I planted one acre and mixed pigeon peas with soya beans. I wanted to replenish the soil fertility in my garden, and I harvested a good yield of soya but only half a bucket of pigeon peas.

## Gladson MAKOWA: How did you learn about the innovations that you use?

## Anita CHITAYA: As part of the project, we are encouraged to do exchange visits and learn from our friends. I visited one of our friends who grows pigeon peas and asked how they grow them so they can harvest something. That’s where I learnt that I need to apply these biochemicals. I tried it that year, but it was too late. It assisted in repelling some insects or even killing them, but the yield was only half a bucket from one acre. The following year, I applied the *muwawani* before and during flowering, and I harvested 12 50-kg bags.

## Gladson MAKOWA: How did you use the biochemicals in the year you harvested 12 bags?

## Anita CHITAYA: I applied *Tephrosia vogelii* leaves mixed with the *muwawani*. I did this twice. When I applied it the first time, the rain came the same day and washed away my biochemicals. I felt bad, but I didn’t give up. I applied it again on the following day, and it worked. The insects were effectively repelled from my field. The hospital bought my pigeon peas to feed patients. I bought three goats that year. With the money that remained, I paid school fees for my child.

## Gladson MAKOWA: How much did you make?

## Anita CHITAYA: I earned 78,000 Malawi kwacha in 2008 (about US$1160 in 2008).

##  Since that time, I have been growing pigeon pea and following biochemical methods. I have educated my child, who is now employed; I have bought and built a house made from iron sheets; and I expanded my garden from one acre to eight acres.

## GLADSON MAKOWA: How much land do you dedicate to pigeon peas?

## Anita CHITAYA: I grow pigeon peas on one acre every year. Another reason I grow pigeon peas is because they break the soil and soften the soil texture. It is very easy to cultivate in the places where you planted pigeon peas.

## GLADSON MAKOWA: You first grew pigeon peas and bought those three goats. How many goats do you have now?

## Anita CHITAYA: I have 23 goats, and some pigs and sheep. We sell some and eat some.

## Esther MAONA: As for me, I sold my pigeon peas and bought one goat. The goat multiplied and eventually I reached 48 goats. In 2014, I sold 22 goats to buy a cow. I have two sheep, but some got stolen. I also built an iron sheet-thatched house. Because we have livestock, we apply a lot of manure and harvest a lot of maize with our fertile soils.

##  I bought the first cow in 2014 for 120,000 kwacha (about US$165). That one had a calf. I bought an additional calf that is now a cow that is mature enough to bear calves. We now have three cattle.

##  We joined the Malawi Farmer to Farmer Agroecology project early and now, after seeing how hard we are working, the project is giving us a chance to be promoters, to promote agroecological farming in our area to other farmers.

## NARRATOR: We have come to the end of part one of our three-part series of special programs titled *Changa ndi nyamanso* (Bushbabies are meat, too), a Malawian proverb that means that, just as bushbabies may be commonly overlooked but are still a useful source of meat, so can overlooked plant-based biochemicals be an effective way to manage pests and livestock diseases.

##  In today’s program, we heard that Tephrosia, *muwawani*, soil, chilies, and other plants can be used to deal with pests such as Fall armyworm in maize and to prevent livestock diseases. The interviews took place with farmers in northern Malawi who work with the Malawi Farmer to Farmer Agroecology project.

**SFX:** SIGNATURE TUNE HOLD UNDER BELOW

**NARRATOR:** You were with me (name of host). Please tune in next week.

SIGNATURE TUNE UP THEN OUT

## PART TWO:

## SIGNATURE TUNE UP AND HOLD UNDER BELOW.

## NARRATOR: Welcome to another special program, the second in our three-part series of programs titled *Changa ndi nyamanso*, or, “Bushbabies are meat, too,” a Malawian proverb that means that, just as bushbabies may be commonly overlooked but are still a useful source of protein, so can overlooked plant-based biochemicals be an effective way to manage pests and livestock diseases.

## SIGNATURE TUNE UP, THEN CROSS FADE OUT INTO BELOW.

## NARRATOR: In today’s program, Gladson Makowa talks to other farmers involved with MAFFA in the Ekwendeni area of northern Malawi. The conversation shows how much livestock farmers in the area have benefited from using biochemicals to protect stored grain and protect livestock from disease, including the dangerous Newcastle disease in poultry farming. According to farmer Aaron Moyo, you should never get worried if Newcastle attacks your chickens. Rather, *dema* cures Newcastle in poultry, something he learnt from his fellow farmers. Stand by for Gladson.

## GLADSON MAKOWA: When you hear the word “agroecology,” what does it mean to you?

## Aaron Moyo: Agroecology helps us with the changing climate. The soils are hard, but when we use agroecological methods, the soils become soft, fertile, and usable again.

## Wackson Maona: It teaches us how nature works, and enables us to discuss and compare traditional farming methods versus modern farming methods.

## GLADSON MAKOWA: How does agroecology differ from the farming methods that you used to follow in this area?

## Mariette Hara: In the past, we depended on fertilizer. We applied fertilizer twice, as a basal dressing and as a top dressing. These days, we apply fertilizer only once, as a top dressing, but we harvest enough. We are also practicing crop rotation. We change the crop families that follow each other.

## Julius Thindwa: The difference between the farming methods that we used in the past and the agroecology that Ekendweni hospital is teaching us is that we used to depend on chemicals, but these days we use biochemicals. We use plants as biochemicals to kill insects and cure diseases.

##  I planted one acre of soya and pigeon peas. After harvesting pigeon peas, I incorporated the fallen leaves into the soil, and I rotated the pigeon peas with yellow maize. The maize did not wilt during dry spells and we had a good harvest. I used fertilizer as a top dressing just because I doubted that the pigeon pea leaves would work as a basal dressing fertilizer. So I added five grams per planting station.

## GLADSON MAKOWA: Did you use biochemicals?

## Julius Thindwa: Yes, I tried *Tephrosia vogelii* leaves. I pounded them, added them to water, and then sprayed them on the African armyworm and Fall armyworm. The armyworms died and the maize leaves regenerated, so I harvested enough maize. We dry *Tephrosia vogelii* leaves in the shed on a mat, and use them for protecting our grain. We pound the dried leaves and sieve them and apply the powder to the maize that we want to store. It looks greenish, but the larger grain borer doesn’t attack the maize. Also, if goats have ticks, we dip them or spray them with *Tephrosia vogelii* leaves in water and they get healed.

## GLADSON MAKOWA: Do you add *Tephrosia vogelii* to the maize that you want to keep for seed or for food?

## Julius Thindwa: I add it to the maize that I keep for food. When we want to eat the maize, we winnow it and take it to the maize mill.

## GLADSON MAKOWA: What quantity of *Tephrosia vogelii* leaves did you use for a 50-kilogram bag of maize?

## Julius Thindwa: I use two half-litre containers of powder in every 50-kilogram bag. I applied it in May and ate the maize the following year in January.

## GLADSON MAKOWA: If you don’t apply any Actellic super dust or other chemicals when storing your maize, does your maize reach January without any weevil attacks?

## Julius Thindwa: No, it’s not possible. We have the larger grain borer that can turn your maize into flour. But the maize with *Tephrosia vogelii* had no trace of weevils. I only applied the *Tephrosia vogelii* to five maize bags because it was an experiment. This year, I applied it to 15 bags.

## GLADSON MAKOWA: How much did you save by using *Tephrosia vogelii*?

## Julius Thindwa: In the past, I used two bottles of Actellic super dust for those 15 bags, and it cost 2,500 kwacha [about US$3.40] per bottle. But for two years now, I have only used *Tephrosia vogelii* to protect my grain.

## GLADSON MAKOWA: Do you have a problem with termites in this area?

## Pressing Moyo: Yes, but not much.

## Julius Thindwa: We use *nkhadze [Euphorbia tirucali]* against termites. We just plant it in the garden where there are termites. We leave roughly 20 metres between plants. They repel termites away from the area. Likewise, you can repel termites if you plant it close to your home. But we don’t frequently plant it close to homes because of children. The plants are poisonous, and if the milky sap from the plant falls in your eye, you may experience night blindness.

## Laina Njunga: I apply Tephrosia to stored beans and pigeon pea seeds. I also soak pounded *Tephrosia vogelii* leaves in water, and apply it with a broom in the garden where there are African or Fall armyworms. It kills the armyworms and the maize survives.

## Maurice Maona: I used the pounded and soaked *Tephrosia vogelii* leaves to treat my goats against ticks and prevent tick-borne disease. One of the goats gave birth to twins. These twin goats had a disease that was itchy, and they were always scratching themselves. I was stressed because I knew they might later suffer and die from tickborne disease. They were not looking good. But when I bathed them in *Tephrosia vogelii* concoction, they were cured. They are fine and running around.

## GLADSON MAKOWA: Where did you learn about this cure?

## Maurice MAONA: I went to Mr. Julius’ house because I wanted him to inject them with some chemical medicine. But he wasn’t home and I was stressed. On the way back, I met Mr. Maona, who asked me why I looked stressed. I explained that my young goats were sick. He gave me the suggestion about bathing them with the *Tephrosia vogelii* concoction.

## GLADSON MAKOWA: How much *Tephrosia vogelii* leaves did you pound?

## Maurice MAONA: It might have been about one kilogram of leaves, soaked in 10 litres of water. Soon after making the concoction, I bathed the goats. I washed them again the following day.

## Julius Thindwa: When I came back home, I heard that she had come looking for chemicals. Since I met the agroecology team, I have stopped using chemicals from the store. I have pigs that I normally bathe in a suspension of *Tephrosia vogelii* leaves as well.

##  One day, the men who buy meat for the butcher came and found all my pigs green from the *Tephrosia vogelii* concoction. They refused to buy because they had never seen white pigs turn green with this solution. But they came back after a few days and found them normal to buy. We also use a Tephrosia dip for plowing cattle.

## GLADSON MAKOWA: Miss Maurice, do you have a field of *Tephrosia vogelii*?

## Maurice MAONA: No, Mr. Maona used to give me the *Tephrosia vogelii*. But I have decided to plant it after noticing how beneficial it is.

## GLADSON MAKOWA: How much money have you saved by using *Tephrosia* *vogelii*?

## Maurice MAONA: It is a lot of money, a generation of goats. It’s difficult to quantify.

## GLADSON MAKOWA: Pigs are normally affected by African swine fever. When you use the *Tephrosia vogelii* concoction, do your pigs suffer from African swine fever?

## Julius Thindwa: I was told that cleanliness is the first step to prevent African swine fever. Our pig house has a cement floor. I avoid ticks in the pig house by washing the pigs and the floor with the *Tephrosia vogelii* concoction once a week. I hear from friends elsewhere that the swine fever does kill their pigs, but I have never experienced it.

##  You asked how much we save when we use biochemicals for livestock. There is a veterinary person who charges 500 kwacha [about US$0.70] for each goat or pig, and 6,000 [about US$8.20] for a cow that he injects with medicine. Since we learnt about these biochemicals, we have never used the injections. I have 28 pigs and use cleanliness and stall-feeding to prevent worms.

## GLADSON MAKOWA: How much do you sell a pig for?

## Julius Thindwa: I sell a year-and-a-half-old pig that is more than 100 kilograms at 100,000 kwacha [about US$135]. In 2017, I sold five pigs. I bought iron sheets to thatch my house. I sell the young ones for breeding at 8,000 to 10,000 [US$11-13]. The problem is we do not have a market for young ones, though there is a big market for large pigs.

## Aaron Moyo: On termites, we were told that termites like eating dead things, so if we want to prevent termites from eating the maize, we need to use zero tillage. We use the maize stalks as mulch. The termites eat the mulch and spare the growing maize.

## Another crop that MAFFA gave us but we do not use much is a mucuna species, called *kalongonda* in Chichewa. I heard from friends that it cures Newcastle disease. So now I use the mucuna to cure Newcastle.

## GLADSON MAKOWA: How do you cure the chickens from Newcastle disease?

## Aaron Moyo: I soak the mucuna beans in the morning, and then I pound it until it’s like porridge. I only give it to the chickens when there are signs that they are sick. Then I put it in the chickens’ drinking water. It cures Newcastle completely.

## My friend brought a chicken that was about to die, but I chopped the mucuna beans and made it drink the same day. It was cured and it now lays eggs.

## Maurice MAONA: We also prevent Newcastle disease from coming into our homes. We get chili, aloe vera, and *dema,* pound them, and put them in the chickens’ drinking water.

## GLADSON MAKOWA: Where did you learn this?

## Aaron Moyo: We learnt about this from farmers in Kabwanda area.

## Julius Thindwa: We went to Dedza and learnt they use ashes in pigeon pea crops. If you put ashes under each pigeon pea plant, ants do not climb the plant. When it flowers, we apply the ashes on the flowers, and then flies do not disturb the flowers. There is also one insect that flies around our garden. We catch them and burn them at the edge of the garden, and the wind blows towards the garden. The other insects smell their friend and run away.

## NARRATOR: We have come to the end of part two of our three-part series of special programs titled *Changa ndi nyamanso*, or, “Bushbabies are meat, too,” a Malawian proverb that means that, just as bushbabies can be commonly overlooked but are a useful source of protein, so can overlooked plant-based biochemicals be an effective way to manage pests and livestock diseases.

##  In today’s program, we heard that *Tephrosia vogelii* and ashes can prevent weevils from attacking our grains and also prevent insect pests in both crops and livestock. And don’t forget that mucuna beans can cure Newcastle in chickens. The interviews took place with farmers who work with the Malawi Farmer To Farmer Agroecology project in northern Malawi.

SIGNATURE TUNE UP AND HOLD UNDER BELOW

**NARRATOR:** You were with me (name of presenter). Tune in next week.

SIGNATURE TUNE UP AND OUT

PART THREE

## SIGNATURE TUNE UP AND HOLD UNDER BELOW.

## NARRATOR: Welcome to another special program, the third and final in our three-part series of programs titled *Changa ndi nyamanso*, or “Bushbabies are meat, too,” a Malawian proverb that means that, just as bushbabies may be commonly overlooked but are still a useful source of protein, so can overlooked plant-based biochemicals be an effective way to manage pests and livestock diseases.

##  Today, we broadcast the last program about farmers involved in a project that successfully promoted using biochemical techniques and crop and food diversification to cure pest problems and common livestock diseases.

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**NARRATOR:** In today’s program, Gladson Makowa interviews the coordinator of the Malawi Farmer To Farmer Agroecological Project, Mrs. Lizzie Shumba, at the Ekwendeni Church of Central African Presbyterian Mission Hospital in Mzimba. Mrs. Shumba explains why the hospital introduced a food security and nutrition project to help deal with the numerous diseases that people in the area were bringing to the hospital. We find out how the project worked, and the benefits of a hospital running a food security and nutrition project of this kind.

**GLADSON MAKOWA:** Please introduce yourself.

## Lizzie Shumba: My name is Lizzie Shumba, and I’m the project Coordinator for MAFFA, which is the Malawi Farmer to Farmer Agroecology project.

## GLADSON MAKOWA: What is agroecology?

## Lizzie Shumba: It is a sustainable way of producing crops at low cost without causing any harm to people.

## GLADSON MAKOWA: What principles does agroecological farming follow?

## Lizzie Shumba: It includes organic farming and using botanicals, especially to control pests and diseases in crops and animals and to rejuvenate the soil.

## GLADSON MAKOWA: Why did this project start?

## Lizzie Shumba: The project started because, in the past, the local areas were experiencing high rates of child malnutrition, which was caused by degradation of soil and hence poor food production. So we came up with some interventions to help farmers improve their food security—to improve the health of the people as well as the soil.

## GLADSON MAKOWA: When did you start the project?

## Lizzie Shumba: It started in 2000 in seven villages with 30 farmers. Now we are in 284 villages with over 17,000 farmers. In the past, we were limited to the Ekwendeni hospital catchment area, which is about 600 square kilometres. But now we have moved beyond those boundaries because of the benefits that farmers have been experiencing. More farmers have shown interest in joining the project so that they can also practice different agroecological practices.

**GLADSON MAKOWA:** Where is the project located in Malawi?

**LIZZIE SHUMBA:** The project is located in two areas, in Ekwendeni in Mzimba district, and in Lobi in Dedza district.

## GLADSON MAKOWA: What are the main combinations of crops grown in Ekwendeni and Dedza?

## Lizzie Shumba: Mainly, we promote legumes. Farmers are trained to intercrop either two legumes or a legume and a cereal in one stand in a garden. Many farmers intercrop pigeon pea with soya beans or groundnuts, or intercrop maize with pigeon pea. In the first years, farmers were given a basket of options from which to choose.

## GLADSON MAKOWA: Where do you find the seeds for these crops?

## Lizzie Shumba: At first, we bought the seeds from ICRISAT, and also from the Seed Company of Malawi. But now we have introduced a seed multiplication program. Farmers borrow seeds and then give some back after growing them out. For example, they might take five kilograms and give back 10 kilograms of seed. Those 10 kilograms of seed are stored and given to other farmers the next growing season.

## GLADSON MAKOWA: What kind of maize do you promote?

## Lizzie Shumba: In the past, we promoted white maize because we were not producing our own maize, and we trained the farmers to intercrop white maize with two different legumes on one ridge. We encouraged them to plant a cereal such as maize after that intercrop. They could find their own seed, whether hybrid or local.

##  But in the MAFFA project, which started in 2012, we have been promoting orange maize. We got this variety from one of the farmers in Dedza. We are also working with Chancellor College of the University of Malawi in Dedza. The orange maize is a local variety that farmers can recycle. It’s known locally as *mthikinya* and it’s an early-maturing variety.

## GLADSON MAKOWA: What are the differences between agroecological farming and the old farming methods?

## Lizzie Shumba: The major difference is that, in the old farming methods, farmers mostly used chemicals which they bought in shops. But with agroecological farming, we are promoting botanical pesticides and crops such as *Tephrosia vogelii* and chilies so that farmers can use them as pesticides in the fields or in storage. Also, agroecological farming is very similar to permaculture.

## GLADSON MAKOWA: How have farmers who practice agroecological farming benefited, and what have they achieved?

## Lizzie Shumba: The farmers are able to harvest more crops than they used to. In the past, farmers relied on only one crop, which was maize. But by integrating different legumes, they have diversified their daily diet. As a result, we have been able to reduce the cases of malnutrition in under-fives. Also, most of the people we are working with are in good health because they can now diversify their diet.

##  Through the agroecological practices, farmers have really improved their soils. In the past, they couldn’t harvest anything, but after intercropping with legumes and incorporating residues, they harvest more on the same piece of land.

##  Agroecology also involves water harvesting. Farmers capture water in their fields to make sure that run-off water doesn’t cause soil erosion. We teach them to make box ridges to help capture water.

## GLADSON MAKOWA: What are the main practices used by farmers in the agroecology project?

## Lizzie Shumba: There is intercropping of different crops, water harvesting technologies, making and applying composted manure, incorporating residues—and we are also promoting pit planting to help conserve water because of climate change.

##  We are also doing zero tillage, planting agroforestry species in the field such as Gliricidia, *mthethe* [*Acacia polyacantha]*, *kesha* [*Senna spectabilis]*, and *nsangu* [*Faidherbia albida]*. We have also been encouraging farmers to use botanical pesticides like *Tephrosia vogelii*, garlic, chilies, and onions. Some farmers who visited Salima got neem seed and tried it.

## GLADSON MAKOWA: How do farmers produce the plant species that they use as pesticides?

## Lizzie Shumba: They plant them in their fields as boundaries or in fallows. They plant chilies in a plot or as field boundaries. Sometimes farmers use tobacco leaves for pests, mainly in vegetable gardens. They pound tobacco leaves, soak them overnight and spray the solution in their vegetable fields to control termites and kill some other pests.

## GLADSON MAKOWA: What is the vision of your project in terms of pesticides?

## Lizzie Shumba: We have developed a training centre which has demonstration plots divided into zones. In one zone, we are developing a herbal garden. So we are busy collecting all the herbs that work as biochemicals. We are planting them in the field so that farmers can see and learn how these plants work and try them in their own fields.

## NARRATOR: Thank you.

##  We have come to the end of the third and last part of our series of special programs titled *Changa ndi nyamanso* (Bushbabies are meat, too), a Malawian proverb that means that, just as bushbabies may be commonly overlooked but are still a useful source of meat, so can overlooked plant-based biochemicals be an effective way to manage pests and livestock diseases.

##  In this part, we interviewed the coordinator of the Malawi Farmer To Farmer Agroecological Project, Mrs. Lizzie Shumba, and explored how farmers who take an agroecological approach to farming benefited from using biochemicals. Mrs. Shumba shared how the project began as a way to address the frequency of diseases and undernutrition in the area. The project not only addressed hunger but poverty in general, income challenges, and malnutrition via crop diversification and using biological practices.

I am your host (host’s name), who says: remember, just as the Malawian proverb “Bushbabies are meat, too” means that there are many sources of protein, so plant-based biochemicals are also a good tool for managing insect pests and animal diseases.

## Acknowledgements

Contributed by: Gladson Makowa, Story Workshop Educational Trust, Blantyre, Malawi.

Reviewed by: Stephen P. Nyirenda, Principal Agricultural Research Scientist, Plant Protection, Bvumbwe Agricultural Research Station, Limbe, Malawi.

**Sources of information**

Interviews took place on December 22, 2017:

Part one: Esther Maona of Mzuku Shonga Chisangano village, Anita Chitaya of Mayipi Nyoni village, and Dalina Tembo of Yesaya Jere village, all interviewed at Bwabwa School in Ekwendeni.

## Part two: Aaron Moyo, Wackson Maona, Mariette Hara, Esiliya Maona, Julius Thindwa, Pressing Moyo, Laina Njunga, Maurice Maona, and Jane Salanda.

Part three: Lizzie Shumba, project Coordinator for MAFFA (Malawi Farmer to Farmer Agroecology project.)

**For further information:**

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* Stevenson, P.C., and Belamin, S., 2016. Pesticidal Plants in African Agriculture: Local uses and global perspectives. ***Outlooks on Pest Management*, Vol 27(5), 226-230.** <http://www.projects.nri.org/options/images/stevenson_and_belmain_opm.pdf> (177 KB)

**List of common names for plants mentioned in the script**

(Note: The common names below were gathered from a variety of online sources, and FRI cannot guarantee their accuracy.)

***Acacia polyacantha*** (also called *Senegalia polyacantha*)

Afrikaans: *witdoring*

Chichewa: *mthethe*

English: white thorn

Northern Sotho: *mooka*, *mpho-kamagwa*

Shona: *chikwiku*, *chiungadzi*, *kovakova*, *mugone*, *mukwakwa*, *munanga*

Tswana: *xigatlu*, *nkowankowa*

Venda: *tshikwalo*

Xhosa: *umnga*

***Cassia abbreviata***

Afrikaans: *sjambokpeul*, *peulboom*, *peulbos*, *boontjieboom*

Bemba: *musambafwa*, *munsokansoka*

Chichewa: *muwawani, muwawane*

English:Sjambok pod, long-tail cassia

Fula/Fulfulde: *jutahi*

Gwari: *mihuski*

Hausa: *gama fada*, *malga*, *malgi*, *màrgáá*, *mihuski*, *sandan maya*

Kalanga: *nshahanyana*, *nlembelembe*

Kololo: *mokwankusha*, *sifonkola*

Ndebele: *isihaqa*

Otjiherero: *omutangaruru*

Shona: *mremberembe*, *muvheneka*

Somali: *rabuya*, *domader*

Swahili: *mbaraka*, *mkakatika*

Tswana: *molepelepe*, *monêpênêpê*

Venda: *muboma*, *mulambivhu*, *muluma-nama*, *muvhonelathangu*, *munembe-nembe*

***Dolichos kilimandscharicus***

Chichewa: *dema*

English:wild lupin, veld lupin

Yao: *ndupa*

***Euphorbia tirucali***

Afrikaans: *kraalmelkbos*

Arabic: *azfur zukkum*

Chichewa: *nkhadze*

English: rubber-hedge euphorbia, Indian tree spurge, African milkbush, pencil tree, rubber euphorbia

Ndebele: *ingotsha*

Portuguese*: almeidinha*

Shona: *hejiyemukaka*, *rusungwe*

Swahili: *mtupa mwitu*

Tumbuka: *mduzi*

***Faidherbia albida***

Afrikaans: *ana*, *ana-boom*

Arabic (Chad): *harraz*

Arabic (Sudan): *hazar*, *hiraz*

Ateso: *edurokoit*, *ewoi*

Bambara: *balansan*, *balasa*

Cangin (Senegal): *saas*

Chichewa: *nsangu*

Dagomba: *puhu wuni*

Djerma: *gao*

English: apple-ring acacia, winterthorn

French: kad, cadde, arbre blanc

Fula (Fulfude, Pulaar): *cayki*, *caski*

Hausa: *gao*

IsiZulu: *umHlalankwazi*

Kuunda: *musangu*

Maasai: *ol-erai*

Moore: *zanga*, *zaaga*

Portuguese: *espinheiro de Angola*

Sepedi: *mogabo*

Serer: *saas*

Setswana: *mokosho*

Somali: *garbi*

Tabwa: *muchese*

Tamachek: *athes*, *ates*

Tonga: *musangu*, *muunga*

Tumbuka: *nsangu*

Turkana: *edurokoit*

Venda: *muhoto*

Wolof: *kad*

***Gliricidia sepium***

English:mother of cocoa

French: gliricidie des haies

Yoruba: *agunmaniye*

***Keielia africana***

Afrikaans: *worsboom*

Arabic: *abu shutor*, *um shutur*, *um mashatur*, *abu sidra*

Bemba: *mufungufungu*

Chichewa: *mvunguti*

English: sausage tree

French: saucissonnier

Fula: *jilahi*

Hausa: *rawuya*

Igbo: *uturubein*

Kikiyu: [*mũratina*](https://en.wiktionary.org/wiki/m%C5%A9ratina#Kikuyu)

Lozi: *mufungufungu, muzungula, mPolata*

Luganda: *mussa*

Lunda: *ifungufungu, mufunofuno*

Luo: *yago*

Ndebele: *umvebe*
Northern Soto: *modukguhlu*

Nyanja: *chizutu*, *mvula*

Shona: *mubveve*, *musonya*, *muvhumati*

Swahili: *mbungati*, *mwegea*, *mnyegea*, *mvongonya,* *mvungwa*, *mwicha*, *mvungavunga*

Tigrigna: *mederba*

Tongan: *muzungula*, *muVeve*

[Tugen](https://en.wikipedia.org/wiki/Tugen_people) (Kalenjin): *totinwo*

Tumbuka: *mvunguti*

Venda: *muvevha*

Yoruba: *pandoro*

Zulu: *umVunguta*, *umFongothi*

***Mucuna pruriens***

Bekwarra: *akpakru*

Bemba: *sepese*

Bini: *iyèkpè*

Chichewa: *kalongonda*

English: Bengal bean, cow itch, cowage, cowhage, itchweed, Mauritius bean, velvet bean

French: pois a gratter, pois pouilleux, pois velu, pois eveque, pois mascate

Ibo: *agbala*

Igala: *inyelekpe*

Nyanja: *nkasi*

Portuguese: *feijão maluco*

Shona: *huriri*

Swahili: *upupu*

Yoruba: *werepe, yerepe*

***Securidaca longepedunculata***

Afrikaans: *krinkhout*

Agnuakgna: *urao*

Amargna: *temene*, *etse*, *menahe*, *etse menabele*

Ateso: *elilie*, *elilyoi*

Bambara: *satene*

Bertagna: *sheqet*

English: violet tree

French: arbre a serpents, arbre aux hachettes

Gumuzgna: *sikida*

Luganda: *lilo*

Lugbara: *oiyofe*

Lugishu: *wadambasima*

Lugwe: *mwiabala*

Lugwere: *loloyi*

Luo (Acholi): *aliya*, *lalia*, *lalon*

Nuyergna: *leele*

Runyankore: *mweya*

Runyoro: *nkondwe*

Shinashgna: *sigida*

Tswana: *mmaba*

Tumbuka: *muuluka*

Venda: *mpesu*

Wolaytgna: sangano

Zulu: *iphuphuma*

***Senna spectabilis***

Chichewa: *kesha*

English*:* spectacular cassia, calceolaria shower, cassia, pisabed, yellow shower, whitebark senna

French: casse remarquable, séné spectaculaire

Kikuyu: *mwenu*

Swahili: *mhomba, mhoba*

Tumbuka: *kesha*

***Tephrosia vogeli***

Chichewa: *katupe, mthuthu*

Diola: *diabi*

English: Vogel’s tephrosia, fish-poison-tree, fish-poison bean, fish bean

French: téphrosie de Vogel

Fula-Pulaar: *bãntãnkuludi*, *garkassa ki*

Fulfulde: *yomji*

Manding-Bambara: *diéfa diaba*, *diéfé daba*, *tiabi ndiaboy*, *tiébi ndiaboy*

Mandinka: *bãntamaro*

Portuguese: *tefrósia*

Swahili: *utupa wa mrima*, *utupa wa kingindo*, *utupa wa kibaazi*, *mtupa*, *mibaazi*, *kibazi*, *kibaazi*

Tumbuka: *tetesya*

Yao: *uwombwe*

***Tithonia diversifolia***

Afrikaans: *Mexikaanse sonneblom*

English: Bolivian sunflower, Mexican sunflower, Nitobe chrysanthemum, shrub sunflower, tree marigold

French: tournesol mexicain

Kamba: *ilaa*

Kikuyu: *maruru*

Kisii: *amaua maroro*

Luo: *maua makech*, *akech*, *maua madungo*

Luhya: *maua amalulu*

Portuguese: *margaridão-amarelo*, *girassol mexicano*

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