

# Pack 101, Item 6

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**Repairing the land II – plugging the soil leaks**

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**Notes to broadcaster**

The hilly regions around Mt. Elgon in eastern Uganda are some of the most fertile in East Africa. As a result, farmers from the surrounding areas have gravitated there over the years. The population has been steadily growing, which means that the land available for individual farmers has been getting smaller and smaller. Because of the increasing population, people have burned bushes and cleared forests to pave the way for ever-increasing human activities. In some areas, these activities have encroached on national parks, triggering fights between the government and communities.

Because of this increased pressure on the land, soil erosion is widespread in many areas. In some steep slopes, landslides have buried entire villages because of the lack of trees to hold the soil in place.

In 2011, an international NGO called the International Union for Conservation of Nature (IUCN) started a campaign in the region. The campaign had several goals: to restore the forest landscape that had been completely destroyed by years of bush burning and tree cutting, to strengthen the local capacity to implement “ecosystem-based” adaptations to climate change, and to reduce the vulnerability of communities in the Mt. Elgon ecosystem.

The people in the plains and the people in the hills were both suffering from crop failure. But the causes were slightly different. Crop failure in the plains was caused by intense droughts because of the lack of vegetation cover. In the hills, crops failed because water running downhill had washed away the topsoil.

Soil erosion is a big problem for the communities that live high up in the hills of Kapchorwa District. So IUCN encourages people living and farming on steep hills to adopt practices to reduce soil erosion by running water.

Through a project called *Ecosystem-based adaptation to Climate Change*, IUCN encouraged farmers to dig trenches across the slopes of their hilly fields, create contour bands in their fields, and plant elephant grass along the boundary lines of their farms. They encouraged those who lived along river banks to leave a 15-metre wide buffer zone between the river and the farm, and to adopt practices like mulching, irrigation and planting trees.

The outcome has been that slowly but surely, over the last three years, the soils have been regaining their fertility and many farmers are quite pleased that they heeded IUCN’s advice.

This script is based on actual interviews. You could choose to produce this script as part of your regular farmer program, using voice actors to represent the speakers. If you do, remember 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 inspiration to research and develop a radio program on the benefits of reducing soil erosion in your own area.

If you choose to use this script as inspiration for creating your own program, you could talk to farmers and other experts, and ask the following questions:

What do farmers in your area do to ensure that running water does not wash away topsoil on their farms?

What are the reasons for not adopting practices that reduce soil erosion? For example, in Kapchorwa, in eastern Uganda, some farmers along river banks believe that creating a buffer zone between the river and the farm is a waste of good farmland, while others fear that the buffer zone could end up being taken away by the government and added to the nearby national park.

Have some farmers found solutions to these and other challenges? If so, invite these farmers – or extension agents and other experts – to tell their stories on-air.

You could also host a call-in program where farmers talk about these issues. You could invite an expert to talk and respond to farmers’ questions and comments.

This program runs for approximately 20 minutes, including intro and extro music.

**HOST:** Greetings, listeners, and welcome to the program. My name is \_\_\_\_. Today, we’ll show how farmers are reducing soil erosion and increasing crop yields in the hilly villages around Mount Elgon in Kapchorwa District, eastern Uganda.

I am in Kapchorwa District to visit farmers and learn about different ways to reduce soil erosion on hilly land, and how reducing soil erosion is important to agriculture. Later, I will chat with a field assistant who works for an organization called the International Union for the Conservation of Nature, or IUCN. He has done a lot to convince farmers in this area to adopt practices which reduce soil erosion.

But first we travel to the village of Kaptokwoi to meet some farmers – Mrs. Bushendich Annet, Mr. Silkei Mike Chemusto, and Mzee Somikwo Charles (*Editor’s note*: Mzee *is a term of respect, often granted to older* *and/or well-respected men*). These farmers are pleased that their fields are regaining their fertility after they adopted the practices they learned from IUCN.

Signature tune up and out

**SFX:** CAR REVERSING, AND CAR ENGINE

**SILKEI:** (CLOSE TO MIC, PROJECTING VOICE) Guys, this must be our visitor from the radio station.

**SOMIKWO:** (CLOSE TO MIC, PROJECTING VOICE) Well, then let’s put the chairs on the veranda, guys.

**SFX:** CAR ENGINE STOPS, DOORS OPEN AND CLOSE

**HOST:** (MOVING TOWARDS MIC) Ladies and gentlemen, I hope I am on time.

**SILKEI:** (WELCOMING TONE) Well, sir, the last person has just arrived a minute ago, so you are right on time. You are welcome to Kaptokwoi.

**HOST:** It’s a beautiful place. I love the hills.

**SOMIKWO:** (LAUGHS) Well, that’s Kapchorwa for you. Every visitor who comes here loves it. Would you like to sit, sir?

**HOST:** Oh yes! Hello, my name is \_\_\_\_\_\_\_\_\_\_\_\_ and I am pleased to be here.

**SOMIKWO:** You are welcome, and I am Somikwo Charles.

**HOST:** Pleased to meet you, Mr. Somikwo. Hello, madam.

**BUSHENDICH:** Hello, sir. I am Bushendich. You are welcome to Kaptokwoi.

**HOST:** Thank you.

**SILKEI:** And I am Silkei Chemusto. You are welcome to my home, (TEASING) which is why it’s *my* responsibility to give you a seat!

**ALL:**  LAUGH

**HOST:** Thank you, sir.

**SFX:**  CHAIRS PULLED

**HOST:** (WITH WONDER)I must say; this village is so beautiful! Oh, the hills! Those fields, each with a different crop in it – they look so beautiful! These hills must be very fertile. There are crops everywhere!

**BUSHENDICH:** (LAUGHS) Crops are everywhere because we have to eat. And the hills might be fertile, but for many years, we have had a problem of running water taking away the topsoil when it rains. So it’s not as fertile as it used to be.

**HOST:** Madam, haven’t the people of the hills developed ways to reduce soil erosion over the years?

**BUSHENDICH:** Yes. Historically, most people dug trenches to direct the water away from the garden.

**HOST:** And that must have solved the problem.

**BUSHENDICH:** Not really. Running water was still taking the topsoil, and we didn't know what to do.

**HOST:** Describe these trenches for me, please.

**BUSHENDICH:** We used to dig trenches on the boundaries of the farm running from uphill to downhill so that when the rainwater came, it would flow along the trench, outside the boundaries of the farm, and not pass through the farm and take away our topsoil.

**HOST:** You say you used to make trenches. Do you no longer do this?

**BUSHENDICH:** No-one who attended the IUCN training digs those kind of trenches any longer.

**HOST:** When was this training?

**BUSHENDICH:** In 2013.

**HOST:** Why was this method of digging trenches stopped after the training?

**BUSHENDICH:** Because it did not prevent topsoil from being washed away. In some cases, it worsened the problem.

**HOST:** Mr. Silkei, do you know anyone in this village who has suffered from soil erosion in the past?

**SILKEI:** I have suffered the effects of soil erosion myself. What Bushendich said is true, and I can give you an example. In 1995, I bought a virgin piece of land. In the first few years, I planted 10 bags of Irish potatoes and harvested 100 bags. But the land was on a steep slope, like many other fields in this village. So every time it rained, I lost a lot of topsoil.

I dug the kind of trenches that Bushendich described, on the sides of my field, to stop rainwater from taking away my soil. But no good came of it. The problem continued year after year and my yields went down and down. Twelve years later, in 2007, I planted 10 bags of Irish potatoes in the same plot and only managed to harvest eight bags.

**HOST:** What did you do then?

**SILKEI:** I gave up on the plot. I abandoned it. There was no point in planting anything there.

**HOST:** How long will you abandon it?

**SILKEI:** Oh no; I resumed planting in it. After the IUCN training, and after learning how to dig trenches the right way and learning better ways of controlling soil erosion, I decided to give it another try.

**HOST:** Hold on. Are you saying that digging trenches the right way makes land regain its fertility?

**SILKEI:** (LAUGHS) Well, if rainwater from uphill brings a lot of topsoil and deposits it in your trenches, eventually your land becomes very fertile. And digging the right kind of trenches also stops your land from losing its fertility.

**HOST:** Is that how your land regained fertility?

**SILKEI:** No, I applied chemical fertilizers. But the training gave me hope that my land could be useful again. So I dug the right kind of trenches and started using the field again.

**HOST:** What’s the right way to dig trenches on a farm?

**SILKEI:** The right way is to dig trenches *across* the hill, not how we used to dig them – in a line from uphill to downhill.

**HOST:** Why is this method better?

**SILKEI:** Because this way,when running water comes from uphill, it settles in the trench instead of running away. And instead of washing away topsoil, it deposits the soil in the trenches. Later, we scoop out this soil and spread it over the farm.

**SOMIKWO:** I have something to add to that.

**HOST:** Yes, sir.

**SOMIKWO:** When you dig a trench, you don't make it hollow from end to end, you compartmentalize it. You leave a small wall every five metres. It’s like the joints of a sugar cane.

**HOST:** Why do you do that?

**SOMIKWO:** This helps to slow down the flow of water in the trench itself. And it helps distribute the water across the farm, instead of just directing it to one end of the trench. If the field is on a steep slope, all the trenches on the slope have to be close together so that the movement of water downhill is slowed down.

**HOST:** I see. Mr. Silkei said that IUCN trained you on other ways of controlling soil erosion. What are the other ways of controlling soil erosion in a hilly area like Kaptokwoi? Mr. Somikwo?

**SOMIKWO:** For those of us who farm along the riverbanks, IUCN trained us to leave a buffer zone between the river and our farms.

**HOST:** Why?

**SOMIKWO:** So that when it rains heavily and the river rises, the water doesn't take away our soil.

**HOST:** But surely everyone knows that when the river rises, it will wash away your topsoil, and knows that they need to leave a buffer zone?

**SOMIKWO:** (LAUGHS) Everyone knows this, but for many people, it’s worth the risk. The soil is most fertile nearest to the water. We learnt in the IUCN training that you have to leave a buffer zone between the farm and the river because if you don’t, eventually all the good soil in your farm will be washed away.

**HOST:** How big should the buffer zone be?

**SOMIKWO:** Fifteen metres. And in those 15 metres, it’s best to plant trees and elephant grass so that heavy rains don't wash your land away.

**BUSHENDICH:** Yeah. During rainy seasons, the water from the river, which we use at home, gets very dirty because people dig their fields right up to the water.

**HOST:** Are you saying there are people who still dig right up to the river, even after the training?

**BUSHENDICH:** Many people don’t want to leave a buffer zone. Some feel that it’s too much farmland to lose. And others feel that if they leave a buffer zone, the government will come and take it, and add it to the national park.

**HOST:** Madam Bushendich, is your farm next to the river?

**BUSHENDICH:** No, mine is up on the hill.

**HOST:** How do you control soil erosion on your farm?

**BUSHENDICH:** I have created contour bands on my farm.

**HOST:** What are contour bands?

**BUSHENDICH:** A contour band is a strip of soil that you leave untilled. It has to be at least two meters wide. You plant grasses in it so that when it rains, the grasses act as a break to rainwater from uphill.

**HOST:** Why did you use contour bands? Why not trenches, for example?

**BUSHENDICH:** In the training, we were told that if the soil in your farm is thin, it’s not advisable to dig trenches because they might cause a landslide. We were told that contour bands would be better.

**HOST:** Have these methods helped reduce soil erosion?

**ALL:** Oh yes! There is a big change.

**HOST:** Tell me, Mr. Somikwo. How can you tell that there has been an improvement?

**SOMIKWO:** I have just harvested five trucks of cabbages from my one acre of land. Before I started making trenches, I was lucky to get one truck of cabbages from the same piece of land.

**HOST:** When did you dig trenches?

**SOMIKWO:** That was 2013. The yields have been improving since then.

**HOST:** That was Mrs. Bushendich Annet, Mr. Silkei Mike Chemusto, and Mzee Somikwo Charles. They all say that controlling soil erosion has improved soil fertility and crop yields on their farms.

(PAUSE) I leave Kaptokwoi village and take the four-wheel-drive vehicle to another place in the hills, a place called Benet, in Kween district. Here I meet Kokop Emanuel, one of many people in this village who attended the IUCN training.

**HOST:** Mr. Kokop, what did you learn at the training?

**KOKOP:** We learnt how to control soil erosion by digging trenches, creating contour bands and planting Napier grass.

**HOST:** Which method do you mostly use on your farm?

**KOKOP:** I dug trenches in all my farms … in my *matoke* plantation, and in my fields (*Editor’s note:*Matoke*is the commonly used word in Uganda and much of East Africa for the starchy, cooking banana that is a cousin of the sweeter banana species*).

**HOST:** Why did you dig trenches?

**KOKOP:** Because we have a problem with soil erosion in this village. When it rains, things turn upside down in these hills! The topsoil is washed away.

**HOST:** And have the trenches helped reduce soil erosion?

**KOKOP:** So much! The trenches hold the water and keep it in the soil. But that’s not all. These trenches increase soil fertility.

**HOST:** How?

**KOKOP:** When IUCN called the community for training, some people heeded the call while others refused. Those who went to the training dug trenches on their lands, while those who didn't attend didn't dig trenches. So when it rains, all the good soil from the lands of those who refused to dig trenches is washed away and brought to the fields that have trenches – hence increasing their fertility!

**HOST:** Have you see this happen?

**KOKOP:** (LAUGHS) I have seen this happen on my own land. This land here was almost useless because of soil erosion. Then I dug trenches. Soon after it rained, all my trenches were filled with my neighbours’ soil. I removed the soil and heaped it along the downhill side of the trenches. I decided to plant passion fruit in that soil, all along my trenches. (LAUGHS)

**HOST:** Why are you laughing?

**KOKOP:** I was shocked by how fertile my land had become. The seedlings grew so fast and healthy, I was amazed! When they flowered, I could not believe it. To make a long story short, the yield was so good that I harvested six bags of passion fruit twice a week for about three months.

**HOST:** That must have required a lot of land.

**KOKOP:** No. I planted passion fruit along three trenches. Each trench is about 30 metres long.

**HOST:** You must have made good money.

**KOKOP:** After two seasons, I bought a plot of land in Kapchorwa town using the money from the passion fruit alone.

**HOST:** Was the IUCN training only about controlling soil erosion?

**KOKOP:** No, we were also encouraged to plant trees so that the effects of the hot sun could be reduced. Do you see that forest up those hills there?

**HOST:** Yeah.

**KOKOP:** The forest used to extend down to here and even lower down. But people cleared the forest to plant crops. Now the rain is not as common as it used to be. Sometimes when it rains, the rain falls up in the hills near the forest and doesn't reach here on our farms. So IUCN encouraged people to plant trees to provide shade for crops, and also to prevent the land from drying up too fast, and to hold the soil firmly and reduce soil erosion.

**HOST:** How many trees have you planted so far?

**KOKOP:** I have planted about 400 trees.

**HOST:** That was Kokop Emanuel talking about the benefits of controlling soil erosion and the importance of trees to the environment.

Back in the town of Mbale, at the IUCN offices, I meet Christopher Lutakome. He is the field assistant who worked with farmers in Kaptokwoi and Benet villages since the beginning of the project.

**HOST:** Mr. Chris, you are part of the team that trained the farmers in Kaptokwoi and Benet on better ways of controlling soil erosion and encouraged them to plant trees.

**CHRIS:** That’s correct.

**HOST:** Why was this training necessary?

**CHRIS:** There’s a lot of farming activity in the area surrounding Mt. Elgon. The eastern part of Uganda is very fertile. But many farmers don’t know how to best use their land. On top of that, the area is very hilly. When it rains, running water passes through people’s farms at high speed, taking topsoil with it.

IUCN discovered that most farmers were doing nothing at all to stop this terrible thing from happening. The few who were trying something were doing it wrong.

**HOST:** How were they doing it?

**CHRIS:** They were digging trenches going downhill. They thought that the water would be directed downhill, leaving their farms unharmed. But it continued to carry their soil away, and the problem went on for years.

**HOST:** When did IUCN decide to train these people on better ways of controlling soil erosion?

**CHRIS:** IUCN started training farmers about controlling soil erosion in 2011. We trained people on the right way to dig trenches, we encouraged them to make contour bands on their farms, we trained people along river banks to leave buffer zones between the water and the farm, and we encouraged people to plant trees, especially indigenous species.

**HOST:** What are some of the challenges you faced?

**CHRIS:** Many people didn't want to come for the trainings. Some people with land along river banks didn't want to create buffer zones even though they knew that when the river rose, it would take away their soil.

They were also afraid that the nearby protected area would reclaim their land. These people live next to Mt. Elgon National Park, and issues of encroachment are common. Many of them have still not adopted the practices we taught them.

As part of the project, we created an incentive fund to motivate people. It’s a revolving fund and works very simply: the fund promotes adoption of particular practices by rewarding people for adopting them. Whoever adopted the proper land management practices was automatically eligible to receive a loan.

The loans are very attractive because they‘re much cheaper than loans from a financial institution. The interest rate is 5% and the farmer pays it back after three months.

**HOST:** Is this helping to increase the pace of adoption?

**CHRIS:** Yes. Now, even those people who didn't want to adopt the practices no matter what are starting to envy those that adopted. They are getting motivated to adopt as well.

**HOST:** That was Mr. Chris Lutakome, an IUCN employee who has been training farmers on new and improved ways of controlling soil erosion. He has also been encouraging farmers to plant trees to minimize the negative effects of the hot sun on crops, and to reduce the likelihood of soil erosion.

Today we’ve heard farmers talk about the changes that happen when you reduce soil erosion with methods such as contour bands, trenches and planting trees. We hope that you will be inspired to adopt some of these practices so you can enjoy the benefits of controlling soil erosion.

Remember to tune in to the program next week, when our topic will be \_\_\_. Goodbye for now from me, \_\_\_.

## Acknowledgements

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Reviewed by: Richard Muhumuza Gafabusa, Project Officer – Ecosystem-Based Adaptation, IUCN (International Union for Conservation of Nature), Uganda, and Sophie Kutegeka – Mbabazi, Senior Programme Officer, IUCN (International Union for Conservation of Nature)

Uganda

**Sources of information**

Interviews: Farmers: Mrs. Bushendich Annet, Mr. Silkei Mike Chemusto, and Mzee Somikwo Charles, all from Kaptokwoi, Kokop Emanuel from Benet, and IUCN employee, Mr. Chris Lutakome. All interviews were conducted on February 5, 2015.

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