



### About STEP

#### Southern Tanzania Elephant Program (STEP)

is a Tanzanian elephant conservation NGO working in the Ruaha-Rungwa and Udzungwa-Selous ecosystems of Southern Tanzania. We work with wildlife authorities and communities to increase protection for elephants and to enhance human-elephant coexistence. We also conduct conservation-relevant scientific research.

*Ensuring people and elephants can coexist into the future*

#### **An introduction to STEP's beehive fences: Did you know elephants are afraid of bees?**

Since 2011, STEP has been using the beehive fence model, developed by Dr. Lucy King of Save the Elephants in Kenya, to mitigate human-elephant conflict. The idea is simple: a beehive fence is set up in an area that elephants use to enter farmers' fields. The "fence" is made of beehives hung on wire between poles, alternated with "dummy hives" (pieces of wood painted to look like hives) to make the fence longer. When an elephant makes contact with the fence, the wires vibrate, causing the hives to shake and bee guards to come out of their hives. Elephants do not like being stung by bees, especially on the thin skin around their faces, ears and their trunks! Elephants also do not like the smell and buzz of bees, and even have a special "bee alarm call" to alert each other to the presence of them.

Not only does the beehive fence protect farmland from elephants, it also provides a source of income: farmers can sell elephant-friendly honey produced from the hives! In our long-term study site adjacent to Udzungwa Mountains National Park, the likelihood of an elephant entering farmland was reduced by half after a 1.2 km beehive fence was built along the forest-farm edge (Scheijen et al. 2018).





STEP decides where to establish a beehive fence based on data collected by a Local Elephant Monitor based in each of our project villages. Elephant Monitors spend at least 20 days a month following elephant movements, marking where they have come into farms, where they drink water and where they cross back into protected areas. This information helps us build a picture of elephant movements and crop use in the area. We place linear beehive fences along protected area boundaries where elephants are coming out into farms to feed on crops. We always make sure not to block elephant corridors, which elephants need for seasonal movements and dispersal. Together with the Village Council, we propose where to build the beehive fences based on which farmland areas most vulnerable to crop damage and suitability for beekeeping.

Once a location is proposed, STEP starts having conversations with the community about working together to increase human-elephant coexistence. STEP holds several more meetings with the Village Council and the whole community to introduce the beehive fence concept. If people are interested in being part of the farmer's group that will manage the beehive fence, they are invited to interview. Over the years, we have found the highest levels of cooperation from groups that are a mix of men and women as well as a mix of ages: everyone brings their own experience and abilities. Once a group is selected, they agree to terms and conditions with STEP and start building their fence!



Building the fence is tough work, often requiring heavy digging and some brush clearing. Once the poles are dug, groups can start hanging their freshly painted hives! Bees like areas that are shady so sometimes groups need to build shade covers for the hives. We try to put beehive fences along the edges of forest or very bushy areas, close to water, to give bees a comfortable environment.



STEP provides initial training to farmer's groups about how to maintain the beehive fence, how to keep their hives clean and how to apply wax to attract bees. Once the group has several occupied hives, we bring in beekeeping experts to provide farmers with two days of theoretical training and practical training. We also organize follow-up training and monitoring with a Master beekeeper who provides additional tips and often assists groups on their first honey harvests.



Since 2011, STEP has helped to establish eight beehive fences: six in the Kilombero Valley (between Udzungwa Mountains National Park and Selous Game Reserve, mostly along the edge of Magombera Forest Nature Reserve) and two along the western boundary of Rungwa Game Reserve north of Ruaha National Park. We have trained more than 150 people on beekeeping and beehive fence maintenance.

## Increasing protection for elephants and their ecosystems

### Aerial support for Rungwa Game Reserve: Why is the rainy season so risky?

In December, STEP conducted 13 hours of flying with our special light aircraft in Rungwa-Kizigo-Muhesi Game Reserves. It was very important to provide this aerial support during the rainy season, because the challenges of muddy roads and rushing rivers make it difficult for rangers to conduct their regular patrols. Poachers can take advantage of this, moving lightly (often with bicycles) and conducting illegal activity, hence making the wet season a risky time. With the support of the STEP plane, we can help rangers have a more exact sense of where to follow up, even if it means getting stuck a bit on the way. Rangers leave vehicles at specific posts and often use a tractor to get out of the mud.



*Flowing rivers make ranger patrols a challenge in the wet season;  
STEP's SkyJeep!*

## How you can help



- ✎ **Donate** to an aspect of STEP's work of your choice. You can make a donation online at [www.STEP.betterplace.org](http://www.STEP.betterplace.org) or email us at [info@stzelephants.org](mailto:info@stzelephants.org).
- ✎ **Follow** STEP on [Facebook](#), [Twitter](#), [Instagram](#), and via our [website](#), and share our work and news updates
- ✎ **Support** local farmers living with elephants by visiting beehive fence projects in Udzungwa and by purchasing elephant-friendly honey
- ✎ **Volunteer** your time and skills. Email us at [info@stzelephants.org](mailto:info@stzelephants.org) to inquire about opportunities.