

Making a difference by

# partner engagement

## Project

Jobs for Carbon in South Africa.

## Goal

To improve ecosystem health and resilience in the Little Karoo and restore severely degraded thicket by planting spekboom.

## Partner

Gouritz Cluster Biosphere Reserve (GCBR).



Simeon Max (L) and Luami Zondagh (R) in online meeting.



For this first issue, we spoke with Luami Zondagh from Gouritz Cluster Biosphere Reserve (GCBR) and Simeon Max from Crowther Lab about opportunities within the Jobs for Carbon project. They show how a relatively simple and quick collaboration can be valuable for both parties involved.

Within this project the South African GCBR works on the improvement and resilience of the rural economy and ecosystem of the Little Karoo in South Africa by restoring severely degraded thicket by planting Spekboom back into the landscape. 'Spekboom is an iconic plant that used to dominate large parts of the region', Luami explains. 'Unfortunately much of it has disappeared nowadays.' Spekboom is not only vital for a healthy ecosystem, it also plays an important role in the fight against climate change: it happens to capture CO<sub>2</sub> and store it in the soil very efficiently.

This is where Crowther Lab, a key DOB Ecology knowledge partner, comes in. This interdisciplinary research group at ETH Zurich focusses on generating globally-relevant ecological information for restoration organizations to help them improve the success of ecosystem restoration. Simeon, Environmental Impact Officer at the Lab: 'We want our research to be a bridge between theoretical ecology and direct practical action, providing on-the-ground tools to combat biodiversity loss and climate change in ways that benefit planetary and human wellbeing.'

The teams of GCBR and Crowther Lab are now exploring a possible collaboration. One of the topics is how Crowther Lab can help find alternative restoration methods in the Little Karoo region. The current Spekboom restoration efforts are costly, as it is labour intensive. In addition, official carbon certification (needed to monetize any carbon credits) is quite expensive, and revenue from carbon trading would only be able to cover a small fraction of the restoration costs at this point in time. Apart from limiting GCBR to grow, these costs make this restoration method unattractive for surrounding local landowners to implement.

‘One aspect we are very anxious to explore is if doing nothing – protecting the land without disturbances – would actually lead to natural regeneration, and to carbon levels that would be interesting in terms of Carbon payments for both the landowners and for us’, says Luami. ‘Crowther Lab can help us investigate this and in the long term help us identify other restoration techniques that are less costly.’

‘Crowther Lab sees great potential in the Gouritz Cluster Biosphere Reserve’ emphasizes Simeon. ‘We would love to have research plots in the Reserve, but the first results of testing different restoration techniques would only be available after three to five years.’



### Baseline study

Simeon and Luami are now working on a plan to do a baseline study for the Little Karoo area surrounding the Spekboom plantations. They want to identify and test what would happen under these three different types of land:

- protected land without active restoration (fenced off from wildlife and cattle);
- land that is left as is (not protected, not actively restored);
- land that is under active Spekboom restoration

Luami clarifies that one goal of this study would be to test if not disturbing the land and letting it rest, will lead to regeneration and improved stored carbon levels. Another goal is to measure the differences between actively restored and undisturbed land: ‘We could take soil samples and send them to Crowther Lab for analysis – it wouldn’t even require any travel.’ Simeon adds enthusiastically that the Crowther Lab is increasingly engaging with people in the field to collect ground data and understand restoration challenges for the benefit of both the science and the practice of restoration. ‘With the data collected from this carbon baseline study, a new business case for restoration can be made for us and all stakeholders in the region’, concludes Luami.

# Spekboom: a versatile green miracle worker



Also known as 'Pork Bush' or 'Elephant's Food', Spekboom is a succulent plant indigenous to South Africa, most predominantly in the Eastern Cape. Apart from being a small environmental worker thanks to its carbon sequestering qualities, this plant has an array of other extraordinary characteristics that are worth mentioning:

- The spekboom thrives on (semi)arid land and is drought resistant as it can suck up any moisture quickly and store it for months. Its roots have excellent soil binding characteristics making it a valuable asset in fighting erosion.
- A Spekboom can live up to 200 years and grow as tall as 5 meters, or you can prune it to your liking and grow it dispersed as a soil cover. It is easy to grow and to maintain, just break off a piece of Spekboom, let it dry out for a couple of days and stick it in the ground.

- The Spekboom has become quite famous in the last couple of years as an efficient ally against climate change effects in South Africa. It absorbs carbon dioxide from the atmosphere (sequestration) faster than most other trees in dry conditions. By using a special adaptable photosynthesis process, it continues to do so day and night, even in harsh dry conditions in which other plants shut down their CO<sub>2</sub> absorption. This allows it to efficiently capture large amounts of carbon using very little water.
- Last but not least, the Spekboom is edible! It is a favourite for rhinos and elephants but humans can also enjoy the lemony flavour of this wonderful 'Spekkie' that is high in Vitamine C. Enjoy the juicy leaves as a snack during a hike to hydrate or have a cup of hot heartwarming Spekboom soup!





In 2018 the Gouritz Cluster Biosphere Reserve was showcased by UNESCO as part of their #ProudToShare video campaign, in which biosphere reserves from all over the world were given the opportunity to submit videos with their story. You can watch the video here.



Watch this video to find out more about the work of Crowther Lab.