

## Key information on the project

### Sifuri Halisi: Industrial Biochar production in Tanzania

“Sifuri Halisi” means absolute zero in Kiswahili. It represents both our pledge and our mission. Together, Dark Earth Carbon (DEC) and atmosfair, pledge to contribute to a net zero emission future by removing CO<sub>2</sub> from the atmosphere and stably store it in order to mitigate the effects of climate change.

In order to achieve our mission, DEC and atmosfair seek to partner with smallholders, government plantations, and Tree Grower Associations (TGAs) and use their wood residues. The wood residues from the forestry sector and timber industry in Tanzania are currently being burnt or degraded, which results in greenhouse gas emissions and health problems. One of the fundamental reasons is the lack of markets and sophisticated facilities in place for these end-of-life products. With this project’s activities, we fill in this void by providing a possibility of using these wood residues and converting them into biochar. This project will furthermore demonstrate the untapped potential of wood residues to the local forestry sector and local stakeholders, and therefore incentivise them to adopt not only a better waste management strategy but also more sustainable forestry practices.

Another important objective of the project is to improve the soil quality in Tanzania by introducing biochar as fertiliser to the local public. Biochar can improve soil quality and boost crop yields because of its impact on the soil water retention capacity, the soil pH and its ability to store nutrients. At the meeting more information about biochar will be presented and DEC will help introduce biochar to farmers, NGOs, government officials, and other interested parties throughout the coming year. DEC will be running field trials to demonstrate the positive effect of biochar, and biochar mixes, on crop yields and will be inviting local stakeholders to field days. DEC is already forging relationships with government institutions such as TARI to develop a local fertiliser mix suited for the needs of Tanzanian farmers.

The project activities will be supported by carbon funding for the reduction of greenhouse gases. For certification, atmosfair has chosen the Carbon Standard International (CSI), which focuses on the production and incorporation of biochar and is a leading standard in the field of biochar certification. Compared to other standards, the calculation of carbon sinks can be considered rather conservative. The emission savings due to the high technology pyrolysis compared to agricultural and forestry residues decay in nature as leftovers are not included in the calculation for this standard. There is currently no authorized method under the Clean Development Mechanism (CDM) and the Gold Standard for calculating carbon sinks through biochar produced in industrial production plants.

Certification is divided into two parts. Firstly, the production process, in which a potential for a sink is created, and secondly, the utilisation process, in which the potential is then actually converted into a sink. The production plant I registered under the CSI WBC standard and the carbon sink potential under the CSI Global Biochar standard.

## Project Implementation

The project is implemented by the local company Dark Earth Carbon (DEC), located in Mafinga, Tanzania. DEC is a start-up company which was founded with the mission to remove CO<sub>2</sub> from the atmosphere and put it to good use, improving the soil and lives of smallholder farmers. They have a good experience of working closely with Tanzanian smallholder farmers and have been advocating for the improvement of the management of local small-scale, low intensity community forests in Tanzania.

DEC will install several biochar reactors in Mafinga, Tanzania, in the heart of the country’s timber industry. DEC will source feedstock for their reactor from smallholders, government plantations, and Tree Grower Associations (TGAs). This will help to incentivise good management practices, such as timely thinning of plantations, particularly on smallholder farms. Additionally, it will reduce the fire risk in plantations, which is a major challenge in the Southern Highlands negatively affecting the development of the forestry sector

## Tentative Implementation Plan

2024	Achieve at least 50% planned production, achieve biochar production target of 1,000t, reduce wood waste of 4000t
2025	Planned biochar production target of 2,000t, reduce wood waste of 8,000t
2026	Introducing second reactor, Scale-up of biochar production to 4,000t, reduce wood waste of 16,000t
2027	Introducing third reactor, Scale-up of biochar production to 6,000t, reduce wood waste of 23,000t

## Social, economic and environmental impacts

Besides reducing GHG emission in line with the UN’s Sustainable Development Goal (SDG) number 13, the project will also contribute to the following SDGs:



SDG 3 Good Health and well being: reduce the practice of biomass burning as waste treatment, thus substantially reducing the number of deaths and illnesses from hazardous chemicals and air contamination.



SDG 8 Decent work and economic growth: Achieving full and productive employment and decent work for all women and men, by creating more job possibilities for the local communities.



SDG 12 Responsible Consumption and production: Substantially reduce wood waste by providing a market and incentive for recycling wood and turning it into biochar.