

# Carbon Farming, Soil Conservation & New Technologies Conference

CONSERVATION | AGRICULTURE | REGENERATIVE  
PRACTICES | FOOD SECURITY

28<sup>th</sup> - 29<sup>th</sup> September 2022

Zimbali Coastal Resort Conference Centre - Umhlanga Kwa Zulu Natal

30<sup>th</sup> September 2022

Onsite Farm Tour – Zunckel Farm, Bergville

*We need to wean ourselves off the large-scale  
conventional agriculture that has depleted healthy  
carbon from the soil through excessive plowing,  
pesticide use, and overgrazing...*

*Hear Best practices from agricultural soil experts and  
scientists...*



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## OVERVIEW

Farmer experience has demonstrated that regenerative farming practices can restore the soil carbon sponge for better water absorption and purification, nutrient availability, CO2 sequestration and genuine farmer profitability. Scientific evidence for this is mounting rapidly. Here in Africa, the application of ecological principles to farming is reversing erosion, flood damage, chemical contamination, and global warming. Our agricultural practices of the last 80 years have exacerbated these serious problems... sustaining that approach into an increasingly uncertain planetary future is naïve. Agriculture is a major contributor to destructive global warming through habitat destruction. It is also one of the fastest, most powerful ways to reverse it by restoring healthy function to our soils and the hydrologic cycle. Regenerative farming practices do that at low cost.

**Creating carbon-rich soil can have a big impact on climate change. Now we just need to put a plan into action.**

We are at a turning point in agriculture. We need to wean ourselves off the large-scale conventional agriculture that has depleted healthy carbon from the soil through excessive plowing, pesticide use, and overgrazing. This type of agriculture is responsible for one-third of the carbon we've released into the atmosphere in the last 100 years, which has also led to the acidification of our oceans and damage to sea life.

Instead, we need to embrace "carbon farming" or "regenerative agriculture," which absorbs carbon from the atmosphere and puts it back in the ground where it belongs. This was the natural balance of the ecosystem before conventional agriculture distorted it with invasive practices

**Showcase your Products & Services! Whether it be new products or solutions or a digital platform for you to allow attendees to have first-hand access to your products and solutions –**

For more info on sponsorship packages email: [trisha@empiretraining.co.za](mailto:trisha@empiretraining.co.za)

## Soil Biodiversity as a Key Sponsor of Regenerative Agriculture Soil Biodiversity is essential for agriculture to be productive and sustainable "To lose biodiversity is to lose food"

Experts will address the key issues of soil biodiversity and how we can reduce threats.



See how experts are changing dirt to soil and creating a pathway to environmental recovery. Climate change has been called an existential crisis – our health, civilization, even existence is threatened. It's our responsibility to take the actions needed NOW to restore ecological integrity to SA's agriculture...

**The conference speakers will explain the Why and the How of profitably regenerating the Soil Carbon Sponge through Healthy Soil Principles to grow nutrient-dense food and fibre that improves our environment.**

**Don't miss out Day 3: One day field trip and Tour: Zunckel Farms -Bergville**

## Who Should Attend?

Emerging Farmers | Commercial Farmers | Youth Agriculturists | Conservation Agriculturalists | Environmental Managers | Scientific Manager | Laboratory Managers | Government Departments | Climatologists | Agricultural /Field Researchers and Consultants | Horticulturist | Agriculture finance and funding business units | Professional Scientist | Professors & Heads Agriculture & Agronomy | Soil Scientist/Technicians | Plant Scientist | Ecologists' | Biotechnologists | Fertilizer & Seed Companies | Extension Officers | Conservation Agriculturalists | Pasture Scientist | Plant Health Diagnostic Scientist | Agricultural Crop | Research Specialist

## KEY OUTCOMES

Minimize Tillage & Chemical Disturbance | Climate Change, Regenerative/ Conservation Agricultural Practices | Carbon Credits & Saving the Planet | Armour Soils with a Layer of Organic Matter | Cover Crop Farming Methods | Maximize Species Diversity | Soil & Crop Sciences – Agronomy | Keeping a Living Plant in the Soil | What is Carbon farming? | How Does Carbon Capture & Storage Work? | Assessing your Farms Carbon Footprint | Farming for the Future | What is the Soil Solution to Climate Change? | Carbon Sequestration in Soil

## Participating Companies





## Day 1 - 28th September 2022

08:00-08:30 Registration and Welcome

**08:30 -09:30 Opening address: Government framework plan in addressing soil health issues and conservation agriculture practices**  
**Presenter:** Ramakgwale Klaas Mampholo -Currently Deputy Director for LandCare within the Land Use and Soil Management directorate of the Department of Agriculture, Forestry and Fisheries (DAFF)  
 Klaas has more than 21 years of service in the field of agricultural natural resources management (Soil and Veld). Appointed as the country focal point for Global Soil Partnership led by Food and Agriculture Organisation, Conservation Agriculture and United Nations Convention to Combat Desertification and other multilateral engagements such as Sustainable development Goals, etc

**09:30-10:30 State of Soil in SA – The Future, the Challenges and the Way Forward**

**Future of SA Soil and what this means?**  
**Presenter:** Professor Karin Jacobs , Microbial Ecology, Stellenbosch University

Microbiologist with 15 year's research and teaching experience in Microbial Ecology with a focus on the role of microorganisms in soil environments. Her team has successfully commercialized their research to offer effective soil health testing (www.sporatec.co.za), focusing on biotic factors.

10:30-10:45 BREAK

**10:45-11:30 A good soil physical condition is a prerequisite for good soil health.**

**Presenter:** Professor: Michiel Laker -PrEmeritus professor of Soil Science, University of Pretoria.

Lectured and conducted research in all fields of Soil Science. Honorary member of the Soil Science Society of South Africa and recipient of the Silver Medal of the Society for exceptional service to soil science and the Society and its Gold Medal for exceptional contributions in the field of soil science. Still active in soil science since retiring 21 years

**11:30-12:15 Conservation Agricultural Practices and Organic Waste Management and their Implications for Soil Carbon Storage and Nutrient Cycling.**

**Presenter:** Professor Pardon Muchaonyerwa, Soil Science in the School of Agricultural, Earth and Environmental Sciences (SAEES) at UKZN  
 One of 13 Soil Scientists to watch globally. (Food Tank)

12:15-

**13:00 Boost Your Farm's Sustainability with the Right Crop Rotation**

**Presenter:** Dr. Johann Strauss Senior Scientist, Sustainable Cropping Systems Research, Western Cape Department of Agriculture President South African Society for Plant Production, Vice President SAPSSC

Dr Johann served as vice president, president and past president on the board of the South African Society of Crop Production from 2014 to 2016. While serving on the board Dr Johann managed to introduce two new awards for the society. These awards are for the best research presentation and poster in conservation agriculture. He is also the secretary of the CAWC since 2012 and was appointed as the 2017 Agricultural Writer's Agriculturist of the year

13:00-14:00 LUNCH

**14:00 -14:45 Agriculture Drainage for Excess Water from the Soil to Enhance Crop Production**

**Presenter:** Felix Reinders, Chairperson at Global Framework on Water Scarcity in Agriculture.

Former Chairperson of the SA National Committee on Irrigation and Drainage (SANCID) Serves on several International committees and is President Honoraire of the International Commission on Irrigation and Drainage. At present he serves as Chair of the Global Framework on Water scarcity in Agriculture.

14:45-15:00 Break

**15:00-15:45 Drip Irrigation has Saved Water, Enhanced Soil Moisture and Crop Yield in Agriculture**

**Presenter:** Heinrich Müller, Irrigation Designer at Overberg Agri

An irrigation specialist with eleven years of hands-on experience in all levels of surveying, designing and advising effective and sustainable irrigation system

**15:45-16:30 How we can Beat Soil Acidity in NO-Till Farming and the Challenges Farmers are Faced With?**

**Presenter:** Guy Thibaud, Soil Scientist - Department of Agriculture and Environmental Affairs in KwaZulu-Natal

He holds an MSc Degree in crop Science from the University of Natal. His research interest are on soil fertility and conservation agriculture

End of conference Day one

## Day 2 -29th September 2022

**09:00-10:00 State of soil erosion in relation to soil crusting and sub-soil compaction, and how it affects fruit & nut production in SA**

**Presenter:** Dr Gerhard Nortjé (Pr. Sci. Nat) Senior Lecturer (Environ. Sciences/Soil Science) UNISA

Gerhard Petrus Nortjé currently works at the Department of Environmental Sciences, University of South Africa. Gerhard does research in Soil Science, Horticulture and Ecology. Their current projects are 'Subtropical fruit production', and 'soil in conservation research'. Gerhard is also the owner of SoloVivo, Soil & Environmental Consultants

**10:00-11:00 How Farmers can Earn Extra Income by Practicing Regenerative Agriculture**

**Presenter:** Gray Maguire AgriCarbon Programme Lead and Carbon Project Manager at Climate Neutral Group / Anthesis, South Africa. Gray is the former Green Economy Coordinator at the Department of Environmental Affairs and Development Planning at Western Cape Government where he had a strong focus on the biomass economy. He is the programme lead for South Africa's first listed VM0042 - Improved Agricultural Land-use Management methodology carbon credit programme and the co-chair of the Carbon Hub of the Sustainable Landscape Finance Coalition. He holds a post-graduate degree (Cum laude) in Poverty, Land and Agrarian Studies from UWC and wrote his Masters thesis on private investment in sustainable land-use management at the WITS.

11:00-11:15 Break

**11:15-12:15 Biodiversity and organic Nutrients for healthy soil**

**Presenter:** Rory Milbank Consulting Agronomist at Eco-Agri Consultants CC, registered consultant at Brookside Labs, New Bremen, Ohio, USA

Eco-Agri advises Farmers in the practice of Responsible and Sustainable Agriculture, focussing on building and managing the Mineral, Biological and Physical properties of the Soil.

This in turn leads to the production of Healthy, Nutrient Rich food for Animals and Humans alike, thus promoting Human Health

**12:15-13:00 Managing soil health in "unhealthy" soil -Overview of the practices the farmers in the Western Free State do in order to be sustainable in soils that is not suited for no-till.**

**Presenter:** André Labuschagne Campaign Manager Syngenta

André was an agronomist in the maize and potato production area of the Western Free State and had the privilege to learn from some of the best farmers in the country. His curiosity and interest in sustainable crop production led to many informative discussions, trials and research. Increasing profitability and sustainability of growers was one of the outcomes, the other, more questions...."

13:00-14:00 LUNCH

**14:00- 15:30 Towards Resilient Soil: The Role of Soil Biodiversity**

**Presenter:** Dr. Charlene Janion-Scheepers, Department of Biological Sciences, University of Cape Town Environmental and Economic Regeneration, Farming Like the Future Depends On It

**15:30-16:30 PANEL DISCUSSION**

Don't miss out on this thought-provoking panel discussion presenting varying viewpoints on sustainable food-related topics, such as the climate benefits of creating carbon-rich soil

**Climate Change: What it Means for Our Agriculture and Our Health," five experts will tackle the crisis of climate change and its effects on our agriculture and our health**

Highlights of the discussion:

- Such as our diet emerging as a major contributor to climate change and how we can fix it,
- Solutions for heading off the heavy use of chemical fertilizers and insecticides
- Communicating the urgency of curbing climate change to policy makers
- What you can do in your everyday life to create positive and sustainable change.

**Panellists to be announced**

16:30 Afternoon Break and Closing remarks

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# Itinerary

## Day 3- 30th September 2022

5:00 am Rise and Shine  
Breakfast on the go

05:00 Depart Zimbali lodge to Zunckel farms

09:00 Arrival @ the farm

Facilitator and Tour hosted by: Egon Zunckel

25 years No-Till including 8 years with cover crops as well. Served on the KZN No-Till Club committee for many years and currently chairman

### About Zunckels Farm:

The Zunckels' 2 150ha farm, Rustenburg, lies 15km north-west of Bergville in KwaZulu-Natal. Egon is one of a number of leading figures in the country, initially because of his no-till practices and now with his conservation agriculture approach.

The family produces irrigated winter wheat on about 120ha in rotation with both irrigated and dryland summer crops, typically comprising two-thirds yellow maize and one-third soya bean. Delegates will have an opportunity to hear insights from successful farming practices - Sharpen your farming skills and knowledge with leading expert, Egon Zunckel.

### Outcomes:

- How to practice No till soil/regenerative agricultural practices

Before no-till, the farm's predominantly Avalon-type arable soils had been prone to capping, poor moisture infiltration, and high-water run-off and associated soil erosion. Collectively, these problems were a major contributor to sub-optimal production across all of the family's commodity crops. However, after only 10 years of no-till, in combination with covering soil surfaces with living or dead crop residue, the family were able to double the average level of beneficial soil carbon from approximately 1.4% to 3%.

- Oxen on cover crops

Multi-species cover crops

To further enhance soil health, the Zunckels began planting multi-species cover crops between harvesting and planting the commercial crops.

The summer cover crop mix comprises black oats, white oats, cowpeas, babala grass and Japanese radish, while the winter mix consists of white oats, black oats, Japanese radish, turnips, stooling rye and grazing vetch.

In addition to their direct benefits, the cover crops are grazed by the family's 300-head breeding cow Bonsmara-type and Bovelder-type commercial beef herd.

- Technology and Machinery showcase for improved topsoil

Centre Pivot Irrigation

The farm's centre-pivots have been designed to apply sufficient irrigation within the windows between expected berg wind conditions, and to do so efficiently.

While more conventional centre-pivots apply 4mm to 5mm of water a day, the Zunckels' system can apply between 7.5mm and 16mm a day.

The combination of conservation agriculture practices on the farm means that the water from this higher volume and more rapid irrigation does not run off the soil surface to be wasted and cause erosion.

To further enhance water-use efficiencies on the winter wheat lands, the Zunckels have fitted wobbler- and spinner-type irrigation nozzles on the centre-pivots. These nozzles produce water droplets that are suitably sized to resist most wind drift but, at the same time, are evenly distributed across the application area of the soil.

13:00-14:00 lunch

14:00 Depart Bergville back to Zimbali Lodge

End of Tour Day



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Fill in the form and send to: **Ravin**

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☐ Yes. [I / We] will attend the event

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**Registration fees above INCLUDES the following entitlements: Entrance to session, registration pack, lunch and refreshment breaks.**

**Registration fees above EXCLUDES the following entitlements: Travel costs and accomodation**

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