

Agri About

www.agriabout.com

Sustainable agriculture for the future

July | Julie 2026

No 159

Cover photo: James Snelling

Renewable Energy For Resilient Farming From Cane to Current

SA Soil Science on the World Stage

Weather Extremes Are Stealing Your Yields

Building resilience in an era of permanent change

Protecting Rooibos at its Roots

Agri Oos-Kaap Jongboer van die Jaar Kompetisie



NAMPO
KAAP | CAPE

9-12 Sep 2026

BREDASDORP PARK

www.nampo.co.za

YOUR NEXT CUSTOMER IS READING AGRIABOUT

Agri
About

Sustainable Agriculture
for the Future

Reach South Africa's progressive
agricultural decision-makers every month.

AgriAbout is a free, monthly digital
magazine delivering practical, expert
content on the latest trends, technologies
and solutions helping the agricultural
sector increase productivity while
using resources sustainably.



66 000

**ENGAGED
READERS**

Growing every month



180

COUNTRIES

Global reach,
local impact



**FREE
MONTHLY
DIGITAL
MAGAZINE**

Accessible
anywhere, anytime



**EXPERT
CONTENT**

Written by
agricultural
specialists

WHO READS AGRIABOUT?



COMMERCIAL FARMERS

Focused on profitability and return on investment.



SUSTAINABLE FARMERS

Dedicated to minimising environmental impact.



YOUNG FARMERS

Driven by innovation and new farming technologies.



AGRI-TECH INNOVATORS

Leveraging technology for business success.



NEW FARMERS

From smallholders to commercially
oriented growers.



AGRIBUSINESS PROFESSIONALS

Across the full agricultural value chain.



LIFESTYLE & RURAL ENTHUSIASTS

Passionate about travel, gardening, food and wine.

PROMOTE YOUR BUSINESS WHERE AGRICULTURE CONNECTS

Trusted agricultural content that speaks directly
to decision-makers and solution seekers.

Our engaged readers turn to AgriAbout for
insights that help them farm smarter, run
stronger businesses and build a sustainable future.

Advertising with AgriAbout places your brand
in front of a targeted, influential audience across
South Africa and around the world.

Contract advertisers receive valuable
bonus exposure and additional
advertorial opportunities.

BOOK YOUR SPACE TODAY!



Lynette du Toit
076 167 4791



lynette@agriabout.com



www.agriabout.com

Agri
About

Sustainable Agriculture
for the Future





Editorial

Resilience is no longer a choice in agriculture; it is the very condition of survival. In this July issue of *AgriAbout*, we explore how farmers across South Africa are building resilience in an era of permanent change.

From the sugar industry comes innovation with impact: **From Cane to Current** shows how wastewater can be turned into energy, a reminder that renewable solutions are not only about solar panels and wind turbines but also about reimagining waste as opportunity. Our feature **Renewable Energy for Resilient Farming** continues this theme, highlighting how farmers are harnessing sun, wind, biogas, and hydro systems to secure their future.

Resilience is also personal. The **Agri Eastern Cape Young Farmer of the Year Competition** brings to light the stories of finalists who embody faith, humility, and determination. In this edition we profile **Tjaart Steenekamp, James Snelling, Marcél Stapelberg, and Gregory King**. Their journeys remind us that resilience is not only about

technology, but about people, families, and communities who choose to stand firm in the face of uncertainty.

Science and innovation remain central to our mission. In **From Symptoms to Systems: Part 4**, we continue to see the crop as a living system, while the **ARC puts South African soil science on the world stage**. We also examine how **AI offers promise for agriculture** yet caution that smallholder farmers risk being left behind if inclusivity is not prioritized.

Weather extremes, rooibos protection, and even the comfort of homemade tomato jam round out this issue, reminding us that resilience is both global and local, both technical and cultural.

As you turn these pages, may you find inspiration in the ingenuity of science, the courage of young farmers, and the enduring spirit of South African agriculture.

Until next time

Chris



If you are not a subscriber yet, please subscribe now by using the button.



Please share with your friends and colleagues

- 6 Renewable Energy for Resilient Farming
- 8 From Cane to Current: Turning Sugar-Industry Wastewater into Energy
- 11 Agri Oos-Kaap Jongboer van die Jaar Kompetisie
- 12 Agri Oos-Kaap Jongboer van die Jaar FinalisTjaart Steenekamp
- 18 Agri Eastern Cape Young Farmer of the Year Finalist James Snelling
- 22 Agri Oos-Kaap Jongboer van die Jaar Marcel Stapelberg
- 26 Agri Eastern Cape Young Farmer of the Year Finalist Gregory King
- 30 From Symptoms to Systems: PART 4 Seeing the Crop as a System
- 32 AI offers promise for agriculture, but smallholder farmers risk being left behind
- 36 Weather Extremes Are Stealing Your Yields
- 40 ARC Puts SA Soil Science on the World Stage
- 43 Building resilience in an era of permanent change
- 46 Protecting Rooibos at its Roots
- 49 Homemade Tomato Jam
- 52 Haddock & Cheese Quiche with Breadcrumb Crust
- 54 Marmelade Muffins

Menings van medewerkers, en adverteerders word nie noodwendig deur AgriAbout onderskryf nie. Alle artikels, foto's en inligting hierin vervat behoort aan AgriAbout en mag nie sonder toestemming herdruk of gebruik word nie.



Contributors

Medewerkers

Boipelo Molate: ARC-Natural Resources and Engineering

Primrose Magama: ARC-Natural Resources and Engineering

Zikhona Buyeye: ARC-Natural Resources and Engineering

Dr Ida Wilson: Independent Crop Production Consultant

Abiodun Olusola Omotayo: University of Maryland Eastern Shore; North-West University
University of Maryland Eastern Shore; North-West University

Abeeb Babatunde: Oyo State College of Agriculture and Technology, Igboora, Nigeria
and Indigenous Knowledge Systems Centre, North-West University

Dr Nondumiso Sosibo: ARC-Natural Resources and Engineering

Daneel Rossouw, Head of Sales at Nedbank Agriculture

Theresa Siebert: ARC- Natural Resources and Engineering

Ina Paarman

To contribute or to advertise
Om by te dra of om te adverteer

Chris Kriel
Editor

chris@agriabout.com
082 788 2467

Opinions of contributors and advertisers are not necessarily those of AgriAbout.

All articles, photos and information contained herein belongs to AgriAbout and may not be reprinted or used without permission.



Renewable Energy for Resilient Farming

South African farmers know that resilience is not just a theme for a congress, it is the daily reality of life on the land. From droughts and disease to fluctuating markets and the relentless challenge of loadshedding, agriculture demands constant adaptation. In 2026, one of the most powerful tools helping farmers adapt is **renewable energy**.

From Crisis to Opportunity

Rolling blackouts have forced farmers to rethink how they power their operations. Irrigation pumps, cold storage, and processing facilities cannot afford downtime. For many, the answer has been to turn to the sun, the wind, and even the waste from their own livestock. What began as a crisis has become an opportunity: farms across the country are now producing their own energy, cutting costs, and building independence.

Solar: Powering Irrigation and Cold Chains

South Africa's high solar irradiation, averaging **4.5 to 6.5 kWh/m²/day according to the CSIR**, makes solar power the most accessible renewable option. Across the Karoo and Eastern Cape, solar panels now glint above lucerne fields, driving borehole pumps and cooling storage rooms.

Five Ways Renewable Energy is Transforming Farms

1. **Solar irrigation** Panels power borehole pumps and cold storage, cutting diesel costs by more than half and stabilising water supply.
2. **Wind power** Coastal turbines complement solar, providing energy at night and keeping dairy parlours and irrigation systems running.
3. **Biogas digesters** Livestock manure and crop residues generate electricity and fertiliser, turning waste into a valuable resource.
4. **Hydro and smart pumps** Small hydro units and solarpowered pumps lift water efficiently, saving millions of litres annually in dry regions.
5. **Green finance** The Agro Energy Fund has invested over R1.2 billion since 2023, making renewable projects accessible to more farmers.

One landmark example is **Belle Rive Farm in the Free State**, which installed a **4.89 MW solar PV plant with 20 MWh battery storage**. According to project reports, it is the largest offgrid agricultural installation in the country, proving that farms can achieve energy independence at scale. Farmers report that solar irrigation has cut diesel pumping costs by more than half, with payback periods of just three to six years.

Wind: Harnessing the Coastal Currents

Wind energy is reshaping the coastal agricultural landscape. The **Overberg Wind Farm, a 400 MW project**, has become a cornerstone of renewable supply in the Western Cape. Farmers in the region explain that wind complements solar by providing power at night and during cloudy periods, stabilising microgrids for dairy parlours and irrigation systems. For coastal farmers, the wind is no longer just a force to endure, it is a partner in production.

Biogas: Turning Waste into Energy

Livestock farmers are discovering that manure is more than a byproduct; it is a resource. According to an **AgriSA report on farmbased digesters**, poultry manure and crop residues can generate electricity while reducing fertiliser costs.

One Eastern Cape poultry farmer describes how his digester powers barns and enriches soils: "It's closing the loop. What once cost us money now saves us money." Biogas projects of 50 tonnes per day can achieve internal rates of return of around 10%, while cutting emissions and improving soil health.

Hydro and Smart Water Systems

In Limpopo and the Northern Cape, small hydro units and solarpowered pumps are

transforming water access. Farmers use these systems to lift water from rivers and boreholes, ensuring crops survive dry spells. New **HydroCoop units**, piloted in 2025, integrate poultry and hydroponic vegetable farming, saving up to **1.5 million litres of water annually** while generating income for youth farmers.

Financing the Future

None of this would be possible without support. The **Agro Energy Fund (AEF), launched in 2023**, has already channelled **R1.21 billion in blended finance** into solar, biogas, and other renewable projects. Farmers who once saw solar panels as unattainable now find them within reach.

Private energy trading platforms, introduced in 2025, allow farms to **buy and sell green power directly**, fostering rural cooperatives and microgrids. This new flexibility is helping farmers stabilise costs and build resilience together.

Challenges Remain

Renewable energy is not a silver bullet. Upfront costs remain daunting, grid bottlenecks slow down wind integration, and biogas requires careful waste management. Yet farmers are proving that with creativity and persistence, these challenges can be overcome.



From Cane to Current: Turning Sugar-Industry Wastewater into Energy

Boipelo Molate, Primrose Magama and Zikhona Buyeye
ARC-Natural Resources and Engineering

When most people think about sugar production, they picture sweet treats - not wastewater. Yet every tonne of sugarcane processed leaves behind large volumes of wastewater that, for a long time, have been treated as an environmental problem. Now, researchers are exploring a technology that could turn this overlooked waste into a valuable source of clean hydrogen energy.

Every day, sugar mills generate wastewater during cane washing, juice extraction and equipment cleaning. This wastewater is loaded with biodegradable organic matter that, if discharged without proper treatment, can pollute rivers and dams as well as harm aquatic ecosystems. But instead of viewing it as waste, scientists are increasingly seeing it as a hidden energy resource.



Figure 1 A sugarcane milling facility (Source: Vecteezy)

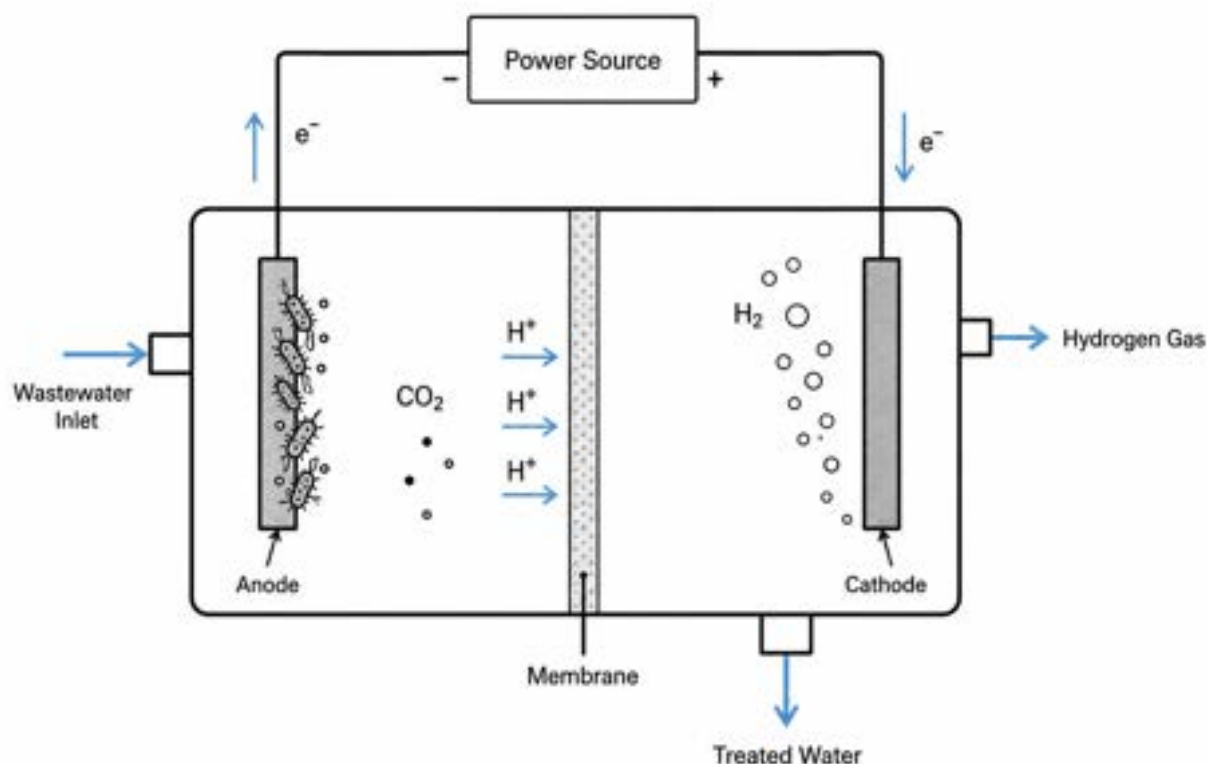


Figure 2 General MEC schematic for wastewater treatment and hydrogen production (Author generated).

Sugar mills typically produce between 0.4 and 1.0 cubic metres of wastewater for every tonne of sugarcane crushed. Across the global sugar industry, that amounts to hundreds of millions of cubic metres of wastewater every year. Rather than simply disposing of this resource, researchers believe its stored chemical energy can be recovered and put to good use. This would support the growing shift towards a circular economy where waste is transformed into something valuable. One reason sugar-industry wastewater is so promising is its composition. It contains high levels of biodegradable organic material, giving it a high chemical oxygen demand (COD) and biochemical oxygen demand (BOD). The wastewater is often acidic, dark in colour and contains suspended fibres and fine bagasse particles. While these characteristics make treatment challenging, they also make the wastewater an ideal feedstock for bio-electrochemical technologies.

Most sugar mills currently rely on conventional treatment methods designed to reduce pollution before wastewater is discharged. These systems generally begin with screening and equalisation, followed by anaerobic digestion in Up flow Anaerobic Sludge Blanket (UASB) reactors or pond systems that produce

biogas. Aerobic treatment is then used to polish the wastewater, so it complies with environmental discharge standards.

Although these methods are effective at cleaning wastewater, they recover only a fraction of its energy potential.

That is where **Microbial Electrolysis Cells (MECs)** come in.

MECs use naturally occurring electroactive microorganisms to break down organic compounds in wastewater. As the microbes consume the organic matter, they release electrons and protons. A small external voltage—typically between 0.2 and 0.8 volts—helps drive the reaction, allowing hydrogen gas to form at the cathode. The result is a process that treats wastewater while producing clean hydrogen fuel using far less electricity than conventional water electrolysis.

Hydrogen is attracting global attention as a clean energy carrier. It can be used in fuel cells to generate electricity, stored for future use, or integrated into renewable energy systems. Compared with biogas, hydrogen offers higher energy efficiency and produces only water when used in fuel cells, making it an attractive option for industries seeking to reduce their carbon footprint.

Despite its promise, MEC technology is still emerging. Most systems remain at the pilot or demonstration stage, with researchers reporting encouraging wastewater treatment performance and hydrogen production. However, moving from laboratory-scale systems to full-scale industrial applications presents several challenges.

Maintaining stable microbial communities over long periods can be difficult, while electrode fouling caused by solids in wastewater can reduce efficiency. In addition, specialised electrodes and membrane materials remain expensive, contributing to high installation costs. Improving long-term durability and reducing equipment costs will be essential before MECs can be widely adopted across the sugar industry.

Even so, the potential benefits are significant. MECs can produce high-value hydrogen while treating wastewater in a single system and require relatively little external energy. They could also be incorporated into existing wastewater treatment facilities rather than replacing them entirely, making adoption more practical for many sugar mills.

Researchers believe MECs are likely to work best alongside conventional treatment systems. By targeting wastewater streams with high concentrations of dissolved organic matter, such as wash water and molasses residues, these systems could recover additional energy while reducing the load on existing treatment processes.

As industries around the world search for cleaner production methods, technologies like MECs are reshaping the way wastewater is viewed. What was once considered an environmental burden may soon become a valuable resource, helping sugar mills generate renewable hydrogen, reduce pollution and move closer to a more sustainable, circular future.

The next time you stir sugar into your coffee, it may be worth remembering that the journey from cane to crystal could one day produce something even more valuable than sweetness: clean energy.

Inquiries: Buyeyez@arc.agric.za



Holding Africa's Water 30 Countries and Counting



MINING



AGRICULTURE



INDUSTRY



FOOD & BEVERAGE



MUNICIPAL



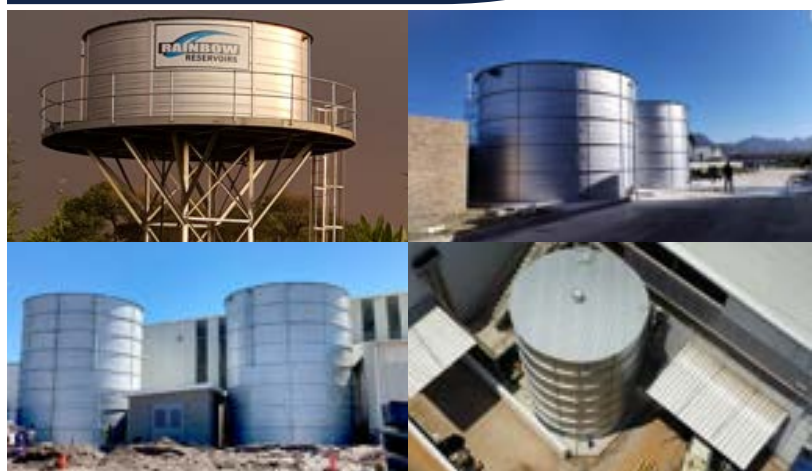
FIRE FIGHTING

- High corrosion resistance
- Cost effective
- On-site assembly
- Tough and durable
- Low maintenance
- 5kL to 4000kL
- Steel-domed roofs or open-top tanks
- Human consumption/ food grade certified
- Tanks < 350kL require no concrete foundation

www.rainbowtanks.co.za

sales@rainbowres.com

+27 (0) 11 965 6016





Agri Oos-Kaap Jongboer van die Jaar Kompetisie

[CLICK HERE
to read article
in English](#)

Die vier finaliste waaroor ons berig, vorm deel van 'n groep van vyf. Die vyfde finalis het egter om persoonlike redes verkies om nie deel van hierdie blootstelling te wees nie.

Ons bedank die vier finaliste vir hul **uitstekende samewerking** en die openhartige manier waarop hulle hul stories en boerderye met ons gedeel het. Hulle profiele weerspieël die passie, geloof en

veerkragtigheid wat jongboere in die OosKaap daaglik uitleef.

Met groot waardering wens ons elkeen van hulle **alle voorspoed toe** met die aanwysing van die wenner, wat vroeg in Augustus tydens die **Agri OosKaap Jaarkongres** bekend gemaak sal word. Die kongres dra vanjaar die tema *"Groeï deur Veerkragtigheid"*, 'n gepaste herinnering aan die krag en volharding wat hierdie finaliste uitleef.

Agri Oos-Kaap **JONGBOER** van die Jaar **2026**-finaliste

Julle passie en deursettingsvermoë inspireer.
OVK wens julle alle sterkte toe!

Tjaart Steenekamp • James Snelling • Gregory King
Marcél Stapelberg • Chase Minnaar





Agri Oos-Kaap Jongboer van die Jaar Finalis:

Tjaart Steenekamp:

[CLICK HERE
to read article
in English](#)

Op die plaas **2 Broers Dormers en Twee Seuns Suffolk** naby BarklyOos boer die 37jarige **Tjaart Johannes Steenekamp** met 'n diep liefde vir diere en die natuur. Hy is getroud met **Karla**, wat die administrasie en boekhouding van die boerdery bestuur. Saam is hulle die trotse ouers van twee kinders van ses en vier jaar oud, met 'n derde op pad. Die gesin se boerdery is 'n voorbeeld van geloof, nederigheid en harde werk, 'n lewenswyse wat Tjaart daaglik uitleef.

'n Familiedrewe Onderneming

Tjaart se boerdery fokus hoofsaaklik op skaap. Hy bestuur 'n **Suffolk stoet** en 'n **Dormer stoet**, aangevul deur 'n skoon **Brahman kudde** en **Angus en Brangus kommersiële koeie**. Die boerdery sluit ook **spekulasie en afronding van kalwers en lammers** in. As enigste eienaar dra hy die volle verantwoordelikheid vir produksie, terwyl Karla toesien dat die administrasie en finansies glad verloop. Hierdie samewerking tussen man en vrou is 'n kernpilaar van die onderneming, en weerspieël die gesin se gesamentlike toewyding aan landbou.

Geloof en Roeping

Vir Tjaart is boerdery meer as 'n beroep, dit is 'n roeping. Van kleins af het sy pa en broer hom geïnspireer en sy liefde vir die natuur en diere versterk. "Dit was nog altyd my droom





om my eie boerdery te hê," sê hy. "Dit is 'n voorreg om elke dag op te staan en te doen waarvoor ek lief is." Hierdie geloof en passie gee rigting aan sy werk en dien as 'n kompas in moeilike tye.

Eienskappe van Sukses

Hy glo dat 'n suksesvolle boerdery op drie pilare rus:

- Om die **Here** altyd in jou boerdery te hê en te eer.
- Om **nederig** te bly en jou voete op die grond te hou.
- Om **oop te wees vir raad, leiding, geleenthede en kritiek**.

Virbac

Hartlik geluk Tjaart met die nominasie. Ons is trots om met jou boerdery geassosieer te word.





KM
Kimjer Agri
 — BURGERSDORP —

 **NEW HOLLAND**

Baie geluk, **TJAART STEENEKAMP!**

FINALIS – AGRI OOS-KAAP JONGBOER VAN DIE JAAR 2026

By Kimjer Agri is ons opreg dankbaar en nederig om deel van die **Steenekamp-familie** se boerderyreis te wees.

U erkenning van Kimjer Agri as een van u lojale verskaffers is vir ons 'n besondere voorreg. Dankie vir u vertroue, ondersteuning en vennootskap deur die jare.

Ons wens u alle voorspoed toe met die finale beoordeling van die Agri Oos-Kaap Jongboer van die Jaar-kompetisie.



Trots om saam met die **Steenekamp-familie** en Suid-Afrika se boere
aan die toekoms van landbou te bou.

KONTAK ONS:

 **Jeremy**
 076 497 7620

 **Morne**
 064 665 5150

 **Trevor**
 082 823 0570

**JOU BETROUBARE VENNOOT IN LANDBOU –
 VANDAG EN MORE.**

Baie geluk,

Marcel Stapelberg en Tjaart Steenekamp,

met jul benoeming as **Finaliste** in die
2026 Agri Oos-Kaap Jonboer van die Jaar
kompetisie!



Ons is trots om met julle geassosieer te wees.

Mega Feeds voorsien 'n wye reeks kwaliteit
voer — van skape en beeste tot volstruise,
varke, pluimvee en wild — om elke dier se
unieke voedingsbehoeftes en
weidingsomgewing te ondersteun.

Jul sukses en toewyding tot die
landboubedryf inspireer ons, en ons
sien uit na die pad vorentoe saam met julle.

MEGA
FEEDS



Kwaliteit voer. Gesonde diere. Volhoubare toekoms.



E-pos:
info@megafeeds.co.za



Tel:
051 653 0880 / 0886



Adres:
Koöperasiestraat 8,
Burgersdorp, 9744

Vir Tjaart is nederigheid nie 'n teken van swakheid nie, maar 'n bewys van krag. Hy glo dat boere wat bereid is om te leer en te luister, die beste kans het om volhoubaar te boer.

Uitdagings en Veerkragtigheid

Soos baie boere staar Tjaart groot uitdagings in die gesig: siekteuitbrake, onvoorspelbare weerstoestande en wisselvallige markpryse. Sy benadering om hierdie struikelblokke te oorkom, is gegrond op geloof en voorbereiding. "Vertrou die Here, wandel in geloof, en tref voorsorg waar moontlik," verduidelik hy. Hy glo dat boere nie altyd die natuur of die mark kan beheer nie, maar dat hulle kan kies hoe om te reageer, met geduld, planne en geloof.

Motivering vir die Kompetisie

Tjaart se deelname aan die Jongboer van die Jaar kompetisie is geïnspireer deur sy **BarklyOos Boerevereniging**, sy familie, en sy begeerte om 'n voorbeeld te wees vir ander jongboere. Vir hom is die kompetisie nie net 'n platform om sy boerdery te wys nie, maar ook 'n geleentheid om te leer, te groei en ander te inspireer.





Wysheid vir Jongboere

Sy raad is eenvoudig maar kragtig: "Leef naby aan die Here, wees lief vir dit waarmee jy boer, glo aan jou produk, bly nederig en wees bereid om te leer, en werk hard."

Hierdie beginsels is nie net woorde nie, maar riglyne wat hy self daagliks toepas. Hy glo dat jongboere wat hul werk met liefde en geloof benader, 'n sterk fondament vir sukses bou.

Gemeenskap en Betrokkenheid

Tjaart beklemtoon dat foute deel van die reis is. "Alles werk nie altyd uit soos jy dit wil hê nie, maar staan op en kom sterker terug," sê hy. Hy moedig jongboere aan om betrokke te wees by hul gemeenskappe, omdat die wêreld meer sterk en toegewyde jong boere nodig het. Vir hom is gemeenskapsbetrokkenheid nie net 'n bysaak nie, maar 'n noodsaaklike deel van volhoubare landbou.

'n Filosofie van Volhoubaarheid

Wat Tjaart se profiel uniek maak, is die balans tussen geloof, familie en boerdery. Hy sien sy boerdery nie net as 'n produksieeenheid nie, maar as 'n nalatenskap wat hy aan sy kinders

Nutrigrun
Quality at it's BEST

MYBURGH
— AGRI —



NUTRIGRUN - CUSTOM BLENDS
Custom blends for each crop



MYBURGH AGRI
Soils samples



MYBURGH AGRI
Fertilizer programs for each crop



Henk Myburgh	084 634 6217
Abrie Myburgh	082 902 8334
Pieter Myburgh	076 173 1188
Nutrigrun	058 481 4600

ONS IS HIER OM DIE BOER OP DIE PLAAS
Te help om die beste te bereik
WAT SY OES KAN BEREIK.



Ons glo in die **krag** van kennis, ervaring en betroubare data om elke hektaar tot sy **volle potensiaal** te laat presteer.



Ons neem grondmonsters direk op die plaas en stuur dit na **betroubare, geakkrediteerde** laboratoriums vir **akkurate en betroubare** resultate.



Op grond van hierdie resultate stel ons **spesifieke** kunsmisprogramme op – vir elke gewas, vir elke plaas, vir elke doel.



Ons werk **saam met die boer**, elke stap van die pad, want **jou sukses is ons passie**.

In samewerking met
Tjaart Steenekamp

Jongboer van die Jaar
Oos - Kaap finalis



Ons missie:
Gesonde grond. Gesonde gewasse. 'n Beter toekoms.
Vandag se besluite, môre se oes.

Trio-Sure **Ovi-Clos P**
Botu-Sure **Deca-Sure**
 + ANTHRAX VACCINE



**WEES SEKER OM DIE
REGTE KEUSE TE MAAK!**

**WEES SEKER JOU VEE IS GEËNT
MET KYRON AGRI ENTSTOWWE!**

**Beproefde gehalte vir
optimale immunisering**



Produk naam: Trio-Sure **Registrasienommer:** G4242 Wet 36/1947 (Suid Afrika). **Samestelling:** Bacillus anthracis ongekapsuleerde avirulente stam Sterne 34F lewendige spore, Clostridium botulinum tipe C1 + C2 en tipe D toksoides en Clostridium chauvoei anakulture. **Uitvoerlande:** Botswana - BV2100462/A/B (VPS), Namibië - V18/24/41438/1439 (VPS). **Produk naam:** Ovi-Clos P **Registrasienommer:** G4281 Wet 36/1947 (Suid Afrika). **Samestelling:** Bevat gesuiwerde en gekonsentreerde toksioïde van Clostridium perfringens Tipe D, Clostridium septicum en Clostridium tetani; integrale anakulture van Clostridium chauvoei; bakteriene van Pasteurella multocida en Mannheimia (Pasteurella) haemolytica bakteriene, geadsorbeer met aluminiumhidroksiediel. **Uitvoerlande:** Botswana - BV2100489/A/B (VPS), Namibië - V18/24/421438/1439 (VPS). **Produk naam:** Botu-Sure + Anthrax Vaccine **Registrasienommer:** G4258 Wet 36/1947 (Suid Afrika). **Samestelling:** Bevat toksioïde veehry van kulture van Clostridium botulinum tipe C en tipe D, en lewendige spore van 'n ongekapsuleerde avirulente stam (Sterne 34F-) van Bacillus anthracis. **Uitvoerlande:** Botswana - BV2100500/A/B (VPS), Namibië - V18/24/41436/1436 (VPS). **Produk naam:** Deca-Sure **Registrasienommer:** G4280 Wet 36/1947 (Suid Afrika). **Samestelling:** Bevat gesuiwerde en gekonsentreerde toksioïde van Clostridium perfringens Types A, B, C en D, Clostridium septicum, Clostridium novyi Tipe B, Clostridium tetani en Clostridium ordalii; en integrale anakulture van Clostridium chauvoei en Clostridium novyi Tipe D (Clostridium haemolyticum). **Uitvoerlande:** Botswana - BV2100488/A/B (VPS), Namibië - V19/24/421443/1443 (VPS). **Registrasiehouer:** Kyrion Animal Health (Edms) Bpk., Co. Reg. Nr. 2004/021847/07, Eenheid 45C, 45 Parkview Straat, Highway Business Park, Rooihuiskraal Uitbr. 31, Centurion, 0157, Suid Afrika.

wil oordra. Elke skaap, elke kalf en elke stuk grond is deel van 'n groter verhaal - 'n verhaal van volhoubaarheid, geloof en gesinswaardes.

'n Stem vir die Toekoms

Tjaart se visie is om nie net 'n suksesvolle boerdery te bestuur nie, maar ook om 'n stem vir die toekoms van landbou te wees. Hy glo dat jongboere 'n kritieke rol speel in die volhoubaarheid van SuidAfrika se voedselproduksie en gemeenskappe. Sy verhaal is 'n herinnering dat boerdery nie net oor wins gaan nie, maar oor mense, geloof en nalatenskap.





Agri Eastern Cape Young Farmer of the Year Finalist:

James Snelling:

**KLIEK HIERE
vir die artikel
in Afrikaans**

On **Raglan Farm**, part of Snellings Farms Pty Ltd, 32yearold **James Snelling** manages a diverse livestock enterprise with precision and passion. Married to **Karla**, with their threeyearold daughter **Cara**, James embodies a new generation of farmers who combine tradition, innovation, and community leadership.

A Mixed Livestock Enterprise

James runs a carefully planned operation that integrates **Angora goats, Dohne Merino sheep, and cattle**. His year begins with Angora shearing in January, followed by a second clip in July. Maintaining body condition, preventing seed contamination, and producing clean, highquality mohair are his priorities. His efforts have consistently placed him in the **top ten at national mohair sales**, across kids, young goats, and mature goats.

Sheep production follows an eightmonth shearing cycle to maximize clean yield. James manages flocks on both sweet and sour veld, synchronizing ewes to improve twin lambing rates. Through careful use of PMSG and pen management, he has achieved over 50% twin conception. Lambs are creepfed in the veld, then finished in a feedlot before being sold as store lambs. His goal is clear: **increase lambs weaned per ewe while producing some of the finest Dohne Merino wool in South Africa**. His wool has also earned him topten placements at Lapersonne wool sales.





Congratulations, James Snelling, on being selected as a finalist in the Young Farmer of the Year 2026 competition.

This outstanding achievement reflects your dedication, innovation and commitment to excellence in agriculture.

At Multitrust, we are proud to be associated with you and your farming enterprises. We wish you every success in the final and know you will continue making a valuable contribution to South African agriculture.

Congratulations and best wishes!

From Multitrust



Multitrust
— INSURANCE • TAX • WEALTH —

Multitrust is an authorised Financial Services Provider (FSP13588 & FSP32825)



For all your mechanical needs

Congratulations, James,
on your nomination
as a young farmer finalist.
We are proud to be associated
with your success.

9 Robinson Road
Cathcart

045 843 1148
admin@sandj.net

Cattle are another passion. James breeds Fenfieldtype cows with Brangus influence, aiming for fertility, adaptability, and efficiency across sweet and sour veld. Strict bull selection and disciplined herd management allow him to consistently wean calves of **210kg or more**, setting a high standard in his region.

Family and Community

James emphasizes that farming is a **family effort**. His father remains actively involved in the cattle enterprise, while his mother and wife manage office responsibilities. "I am a bootsontheground farmer," he says, "but I could not achieve this without my family's support."

Beyond his farm, James is deeply engaged in the agricultural community. He serves as **chairman of the Tylden Farmers Association**, where he revitalized participation and strengthened ties with Agri EC and RPO EC. He is also **vice chairman of Cathcart Round Table 75**, raising funds for local causes such as the Cathcart old age home. In addition, he chairs the **Sidespur Angora Ram Breeding**

Group, is deputy fire chief of the Hilton firefighting cell, and contributes to projects through the Hilton Methodist Church, Cathcart Country Club, and Kei Mouth Ski Boat Club.

Security and Vermin Control

Small stock farming in his area faces challenges from **stock theft and predators**. James has invested in GPS collars for his flocks, electrified 90% of his boundary fences, and patrols them weekly. He has trained in jackal calling and participates in organized hunts, reducing losses significantly. Vermin control has become a personal passion, reflecting his determination to protect his enterprise.

Philosophy and Motivation

For James, farming is not just a career but a calling. "Farming is in my blood," he explains. "I never saw another path other than being on the farm." He believes success rests on **planning, hard work, and trustworthy staff**.

Challenges remain unstable governance, diseases such as FMD, and global conflicts affecting input and output prices. His solution is pragmatic - electing leaders who can deliver and continuing to adapt at farm level.



**Congratulations
to
James Snelling**

**count
us in**

 **Stutt Trading**
Agricultural Supplies & Support

21 Alfred Street
Stutterheim

043 683 1108



GRIDVOLT

SOLAR | ELECTRICAL

CONGRATULATIONS JAMES SNELLING!



SOLAR MADE SIMPLE.
SAVINGS MADE CERTAIN.



076 655 4893



sales@gridvolt.co.za



www.gridvolt.co.za

“

Gridvolt Energy Solutions is immensely proud to support James Snelling, a finalist in the 2026 Agri Eastern Cape Young Farmer of the Year competition!

While James keeps his focus on driving the future of sustainable farming, we ensure he has the stable, reliable energy supply needed to power his vision.

Congratulations, James, on this well-deserved recognition! We are honored to be your trusted partner in renewable energy and wish you the absolute best of luck in the competition.



James entered the Young Farmer of the Year competition after being nominated by his peers, a recognition he values deeply. His advice to fellow young farmers is practical: *“The best fertilizer applied to your farm comes from underneath your boots. Don't just sit in your bakkie, walk your camps and fields, look at and count your own stock.”*

Vision for the Future

James's vision is to continue producing **worldclass mohair, wool, and cattle**, while strengthening community ties and mentoring younger farmers. His story is one of resilience, innovation, and faith in the future of South African agriculture.

C&S LIVESTOCK



Congratulations, James Snelling

on your nomination as a finalist
in the Agri Eastern Cape
Young Farmer of the
Year Competition



CLINT LITTLEFORD

083 407 8386

JAMES BARTLETT

084 420 2184

C & S LIVESTOCK

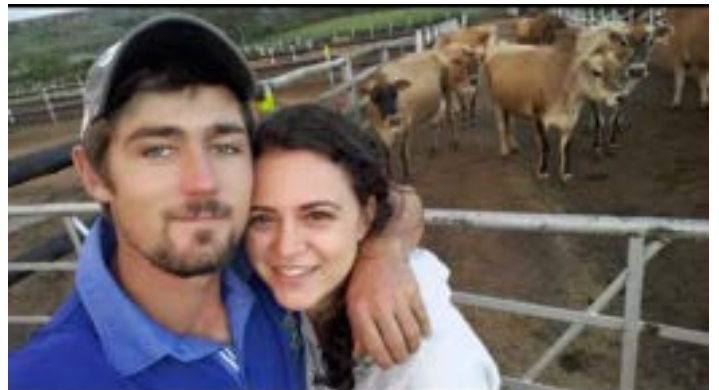


Agri Oos-Kaap Jongboer van die Jaar Finalis:

Marcel Stapelberg:

[CLICK HERE
to read article
in English](#)

Op die plaas **Cornish Farming** in die OosKaap boer **Marcél Stapelberg** met 'n passie wat van kleins af gevorm is. Hy is getroud met **Chantelle**, en saam is hulle die trotse ouers van 'n dogtertjie van twee jaar en 'n seuntjie van elf maande. Die gesin se betrokkenheid en ondersteuning vorm 'n sterk fondament vir Marcél se boerdery.



'n Volledige Produksieketting

Marcél se boerdery fokus hoofsaaklik op beeste, met 'n **Beefmaster stoet** wat 'n sleutelrol speel. Tweejaar bulle uit die stoet word gebruik op kommersiële koeie om genetika te verbeter. Die kalwers word grootgemaak en gespeen in hul eie voerkraal, waar hulle afgerond word en uiteindelik geslag word by die plaas se **slagpale**. Hierdie slagpale voorsien vleis regoor die OosKaap en bied ook 'n diens aan plaaslike boere wat hul vee wil slag.

Die skaapvertakking bestaan uit **Dormer skape**, waar die fokus is op meerlinge. Tweelinge word in 'n voerkraal gespeen, afgerond en by die slagpale geslag, terwyl enkel lammers direk van die ma geslag word. Elke jaar hou Cornish Farming 'n **produksieveiling** waar Beefmaster bulle uit top genetika verkoop word.

Die boerdery is 'n gesins- en familieonderneming: Chantelle hanteer die boekhouding van die boerdery en ander besighede in die dorp, sy pa doen die onderhoud van infrastruktuur, masjinerie en plantery, en sy oom Hennie bestuur die slagpale. Marcél self dra die volle verantwoordelikheid vir die bestuur van die boerderyonderneming.

Geloof en Passie

Vir Marcél was landbou 'n natuurlike keuse. Van kleins af het hy saam met sy pa geboer, naweke en skoolvakansies was altyd op die plaas. "Dit is al wat ek ken, en ek het 'n groot passie vir wat ek doen. As jy 'n passie het vir wat jy doen, sal jy nooit 'n dag in jou lewe werk nie," sê hy.

Eienskappe van Sukses

Hy glo dat 'n suksesvolle boerdery berus op drie kernbeginsels:

- **Bestuur en beplanning**
- **Begroting**
- **Goeie arbeiders**



Van links na regs
Anoeck, Oom Hennie, Marriete en Mieke

WHEN THERE'S **TOUGH** TO BE DONE



THE NEW-GENERATION
HILUX



Congratulations to *Tjaart Steenekamp* and *Marcél Stapelberg*, both named finalists for Agri EC's Young Farmer of the Year awards. Their hard work and passion reflect the farming excellence we're proud to see across our region - and we're honoured to call them part of our customer family. Well done, gentlemen. We're rooting for you!

Aliwal Toyota - your family dealer of choice since 1979, proudly serving the communities of the North Eastern Cape and beyond for over 45 years.

74 Somerset Street, Aliwal North, EC
info@aliwaltoyota.co.za
(051) 633 2818

Aliwal Toyota
— Since 1979 —

43 Grey Street
Dordrecht,
5435

T: 043 737 4136/22



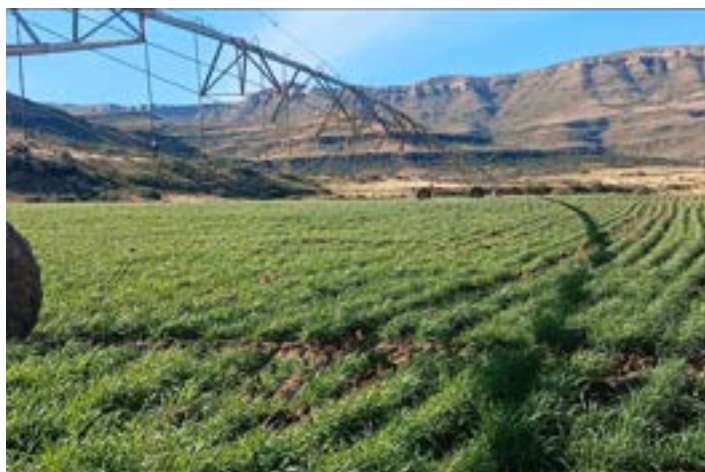
We would like to congratulate Marcel Stapelberg on your nomination as 2026 Young Farmer Of The Year Finalists.

Your many years of dedication and your passion for farming is evident in the outcome of your daily activities with always striving for the best outcome.

McCormick Agri wish you all the best on your selection as it is well deserved.



Visit our Website: [McCormick Agri](https://www.mccormickagri.co.za)



AgriAbout No 159 July 2026



**CHARTERIS
& BARNES**
— CLOSE CORPORATION —
CHARTERED ACCOUNTANTS (SA)

Marcél Stapelberg

Congratulations on being selected as a **Finalist** in the **Agri Eastern Cape Young Farmer of the Year 2026** competition.

Being chosen as a finalist is a remarkable achievement and a true reflection of your hard work, dedication, and commitment to excellence in agriculture.

We are incredibly proud of your accomplishment and wish you every success in the final judging. May this milestone be the beginning of even greater achievements.

the future - now

Congratulations, **MARCÉL STAPELBERG**

Celebrating Excellence in Agriculture

The Pinion Africa team extends our heartfelt congratulations to Marcél Stapelberg of Cornish Farming on being selected as an Agri Eastern Cape Young Farmer of the Year 2026 Finalist.

Your Trusted Partner in Agriculture
At Pinion Africa, we help agricultural businesses thrive through:

- ✓ Financial Management & Advisory Services
- ✓ Tax & Compliance Solutions
- ✓ Human Capital Services
- ✓ Business Consulting & Strategy
- ✓ Training & Skills Development through ACS Academy

pinion 

LOCAL EXPERTISE. GLOBAL INSIGHT.

041 368 6691 

info@pinionza.com 

www.pinionafrica.com 

Uitdagings en Aanpassing

Marcél is realisties oor die uitdagings wat boere daagliks ervaar: die ekonomie, klimaatsveranderlikheid en niebeheerbare oorhoofse kostes. Sy oplossing is om aan te pas en te begroot volgens die omstandighede, terwyl hy steeds daarna streef om winsgewend te boer.

Motivering vir die Kompetisie

Hy is genomineer deur 'n eksterne entiteit, en het die geleentheid aangegryp om sy boerdery en sy visie te deel.

Wysheid vir Jongboere

Marcél deel 'n les wat hy by sy ouma geleer het: "Maak die kraal vol, voor jy die huis vol maak." Hy verduidelik dat jongboere dikwels die blink dinge jaag, maar dat sukses lê in nederigheid en geduld. "Begin klein, hou jou voete op die grond, die res sal vanself volg."

Dankbaarheid en Visie

Hy prys die Here vir sy genade en spreek dankbaarheid uit teenoor sy pa, wat vir hom 'n platform geskep het om op te bou en vorentoe te gaan. Vir Marcél is boerdery nie net 'n beroep nie, maar 'n nalatenskap wat hy met passie en geloof uitleef.





Agri Eastern Cape Young Farmer of the Year Finalist:

Gregory King:

**KLIEK HIERE
vir die artikel
in Afrikaans**

On **Braeside Farm and Comre Farm**, 32-year-old **Gregory King** represents the sixth generation of his family to farm the land, with his young son already poised to become the seventh. Married to **Laura**, with two children, a four-year-old son and an eight-month-old daughter, Greg balances tradition, innovation, and diversification in a business that has grown into a multifaceted enterprise.

A FamilyRun Enterprise

Braeside Farming is built on sheep, cattle, crops, and hunting. Greg manages **Merino sheep and Dormer crosses**, alongside a **Dormer stud**. His cattle herds include **Red Angus, Beefmaster, and Brahman**, bred for adaptability and efficiency. Lucerne production plays a crucial role, both as a buffer against drought and as a marketable crop.

The family's diversification extends to hunting, which has become a cornerstone of the business since 2012. With two lodges, one on Braeside and another on Comre, the enterprise hosts both local and international hunters. Comre Farm alone supports more than **43 species, including two of the Big Five**, making hunting a significant contributor to the farm's sustainability.

Generational Legacy

Greg's path into agriculture was shaped by his upbringing. "I was brought up on a farm, and it has always been generational," he explains.





Gregory King

Congratulations on being selected as a **Finalist** in the **Agri Eastern Cape Young Farmer of the Year 2026** competition.

Being chosen as a finalist is a remarkable achievement and a true reflection of your hard work, dedication, and commitment to excellence in agriculture.

We are incredibly proud of your accomplishment and wish you every success in the final judging. May this milestone be the beginning of even greater achievements.



His vision is to pass the legacy on to his son, ensuring continuity and resilience across generations.

Traits of Success

For Greg, success in farming rests on three principles:

- **Minimizing input costs** to protect margins.
- **Dedication** to the land and livestock.
- **Hard work**, the daily commitment that sustains the enterprise.

Challenges and Solutions

Agriculture is never without obstacles. Greg identifies **droughts, diseases, and volatile stock prices** as the greatest challenges. His solutions are pragmatic: producing lucerne to withstand dry seasons, persevering through disease outbreaks, and shopping around to secure the best possible prices for wellproduced livestock and crops.

Motivation for the Competition

Greg's decision to enter the Young Farmer of the Year competition stems from years of sacrifice and commitment. "All the hard work and dedication of the past few years, and

the family time missed because of farming or hunting, make it rewarding just to enter," he says. For him, the nomination itself is recognition of effort and resilience.

Advice for Young Farmers

His advice to newcomers is grounded in realism and humility: focus on sustainability, avoid chasing glamour, and build steadily. "Start small, keep your feet on the ground, and the rest will follow," he emphasizes. Farming, in his view, is about patience, persistence, and faith in the process.



Young Farmer of the Year 2026 Finalist *Greg King*

This outstanding achievement is testament to Greg's dedication, innovation and unwavering commitment to the agricultural industry.

His passion for farming, and pursuit of excellence, embody the qualities that continue to strengthen and inspire the future of agriculture in the Eastern Cape.

We are honoured to celebrate this remarkable milestone with Greg and his family and wish them every success as they continue to make a meaningful contribution to the farming community. Congratulations on this well-deserved recognition.

— The Build it Queenstown Team

Cement Blocks	Clay & Bricks	Lintels	Quality Sand	Quality Stone	Poles	Structural Timber

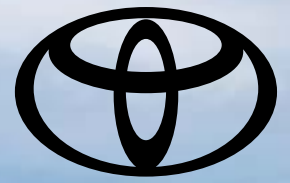
Build it Queenstown, 54 Robinson Road, Queenstown,
Tel: 045 839 6410. WhatsApp: 071 328 1059

Trading Hours :
Mon - Fri 07:00 - 17:00, Sat 07:30 - 13:00, Closed on Sunday

Build it
Queenstown



Congratulations Greg King



on being named a finalist in the **2026 Agri Eastern Cape Young Farmer of the Year** competition.

We're honoured to be one of the businesses supporting your operation and proud to celebrate this well-earned recognition. Best wishes for the competition and for many successful seasons ahead.



Kelston Toyota Cradock

Middelburg Road, Oukop Industrial Area | 048 881 1436 | www.kelston.co.za



Family Contribution

Greg is quick to acknowledge the role of his family. His wife Laura manages the household and supports the business, while his broader family contributes to infrastructure and operations. Farming, he insists, is not a solitary pursuit but a collective effort where each member's role is vital.

Vision for the Future

Looking ahead, Greg's ambition is to continue producing quality livestock and crops while expanding the hunting enterprise. He sees diversification as key to resilience, ensuring that Braeside and Comre Farms remain sustainable for future generations.

A Balanced Life

Beyond farming, Greg values the balance between work and family. He recognizes the sacrifices made but also the rewards of building a business that integrates agriculture, tourism, and conservation. His story is one of generational continuity, diversification, and determination, a testament to the evolving face of South African agriculture.



From Symptoms to Systems: PART 4

Seeing the Crop as a System



Dr Ida Wilson

Independent Crop Production Consultant

A crop is not a plant growing in isolation. It is part of a system. This may seem obvious, but it is often overlooked in practice. Management decisions typically focus on soil, nutrition, pests, or water as separate components. Yet the crop experiences all these simultaneously. What happens in the field is not the result of one factor, but of how these factors interact over time.

Soil as the Foundation

To understand crop performance, it is necessary to step back and see the system. At the foundation is the soil. Soil is not simply a medium that anchors the plant. It is a living, dynamic environment of minerals, organic matter, water, air, and microorganisms. These components interact continuously, influencing water movement, nutrient availability, and root development.

Notably, soil health is governed by a biological cascade that extends well beyond fungi and bacteria. Protozoa, nematodes, microarthropods such as collembola and mites, and other protists regulate nutrient flow and system function, yet are seldom considered in the general view of soil health in industry.

When soil functions well, and its biology does the work, quietly, and largely out of sight, roots explore freely, water is readily available

and nutrients are balanced. When soil function is compromised, through compaction, poor structure, or an imbalance in microbial life—these processes are disrupted. Effects may only appear later, but they originate below the surface.

Example: Citrus Orchard

A citrus orchard with declining vigour may be approached as a nutritional issue. Closer examination may reveal restricted root growth due to compaction, limiting water and nutrient uptake. Additional fertilisation may improve leaf colour temporarily, but it does not restore root function. The constraint lies within the system, not in the supply of inputs.

The Plant as a System

The plant itself is also a system. Growth, development, and defence are regulated by internal processes responding continuously to external conditions. Photosynthesis, respiration, nutrient uptake, and hormonal signalling are all influenced by the environment. A plant does not respond to one factor at a time; it integrates multiple signals and adjusts accordingly.

When conditions are favourable, processes operate efficiently. When suboptimal, the plant reallocates energy. Growth slows, defence weakens, and susceptibility to pests and diseases increases. This happens often before symptoms appear.

Water as a Central Driver

Water plays a central role. It drives processes in both soil and plant. It influences nutrient availability, root activity, and microbial balance. Within the plant, it affects turgor, transpiration, and nutrient movement. Both the quantity and distribution matter. Too little water induces stress; too much water reduces the oxygen available in soil, impairing roots and microbes. Uneven distribution of water in fields and orchards creates variability.

Example: Vineyard

In a vineyard, uneven irrigation may leave some vines stressed and others excessively wet. Stressed vines become disease-prone, while wet areas favour soilborne pathogens. The outcome is variability driven by water interacting with soil and plant processes.

Environmental Complexity

Temperature, humidity, light, and wind influence plant physiology and pest behaviour. These factors fluctuate daily and seasonally, interacting with the soil and plant. Their impact depends on system conditions at that moment.

High humidity may favour disease if the crop is stressed. Sudden temperature increases may accelerate growth, altering nutrient demand and chemical intervention timing. These changes never act in isolation.

Management Decisions in Context

Management decisions operate within this system and influence all components. Cultivar choice determines genetic potential. Fertilisation affects nutrients but also growth and resilience. Irrigation alters soil moisture and plant status. Crop protection inputs interact with target organisms and the broader system. Each decision has multiple effects.

Applying fertiliser not only supplies nutrients, but it also influences growth rate and tissue composition. Fungicides affect pathogens but also other non-target organisms and plant physiology. Irrigation changes water availability, soil conditions, root activity, and microbial activity. These effects are interconnected.

Interconnected Outcomes

When components are considered together, crop production looks different. Soil condition influences plant health, plant health influences pest susceptibility, and the environment shapes both plants and the organisms that interact with them. Management decisions act across all of these factors simultaneously. The system is always in motion.

Implications for Crop Problems

Visible issues are rarely single cause. They express how the system has been functioning. A disease outbreak may reflect an unsuitable environment, reduced resilience, and pathogen presence. A nutrient deficiency may reflect soil, water, or root limitations. The visible problem is only part of the story.

Rethinking Interventions

An input is not simply a solution; it is an influence on the system. Effectiveness depends on context. A well-timed intervention under the right conditions can shift the system favourably. The same input under unfavourable conditions may have little effect.

This does not mean every decision must account for every interaction. That is impractical. It does mean recognising that decisions occur within a system, influenced by more than the immediate problem. It requires asking different questions: not only what the problem is, but what conditions led to it, and how a decision will influence the system.

Toward Realistic Management

Seeing the crop as a system does not make management simpler, it makes it more realistic. It acknowledges complexity, variability, and uncertainty, but provides a framework for understanding them. Instead of reacting to individual problems, management becomes a process of influencing system behaviour over time.

In the next edition of AgriAbout, we will explore the patterns of failure in crop production systems and the importance of systems thinking in reducing crop vulnerability.

Contact the author: ida@croptgeniusai.com

Read PART 5 (**Patterns of Failure**) in the next edition of AgriAbout.

AI offers promise for agriculture, but smallholder farmers risk being left behind

Abiodun Olusola Omotayo:

University of Maryland Eastern Shore; North-West University

Abeeb Babatunde:

Oyo State College of Agriculture and Technology, Igboora, Nigeria and

Indigenous Knowledge Systems Centre, North-West University

Globally, agriculture faces mounting pressures. These are driven by climate change, land degradation, labour shortages, supply chain disruptions and the demand for food from a growing population.

At the same time, productivity is uneven. For example, maize yields in the US often exceed 10 tons per hectare. These high yields are driven by mechanisation, improved seed varieties, irrigation and efficient input use, supported increasingly by precision agriculture technologies. In contrast, yields in many parts of sub-Saharan Africa remain around 2-3 tons per hectare. This reflects constraints like limited access to inputs, reliance on rain-fed systems and weaker infrastructure and institutional support.

Smallholder farmers make up around 80% of farmers in developing countries. They often struggle with low yields due to limited access to key agricultural inputs such as improved seeds, fertilisers and agrochemicals (herbicides and pesticides). They are less likely to rely on irrigation and farm mechanisation. They also have high vulnerability to climate shocks.

Conventional farming practices, including reliance on rain-fed agriculture, the use of low-yielding local seed varieties, sub-optimal input application and heavy dependence on manual

labour, are increasingly insufficient to meet the demands of 21st-century food systems. In recent years, the use of artificial intelligence (AI) tools has been shown to improve input-output efficiency and enable real-time monitoring of crops and livestock. They've been shown to conserve soil and water resources and reduce post-harvest losses particularly in technologically advanced agricultural systems in the US, China and Europe.

We have over 15 years of scholarship in applied economics, development, resource economics and agricultural economics, including technology adoption and sustainable agricultural systems. Our recent study compared AI adoption in agriculture between developed and developing countries.

Recharge your morning. Receive daily insights about Africa from the people who know the continent.

Follow our WhatsApp Channel
We examined how artificial intelligence is accessed and used across different regions. Evidence from technologically advanced economies such as Europe, the US, Australia and Japan were analysed alongside studies from Africa, South Asia, Latin America and other low- and middle-income regions.



Our main finding was that AI has strong potential to improve agricultural productivity and resilience. But this potential depends on supportive policies, reliable infrastructure and equitable access. Without these, the technology could reinforce existing inequalities rather than reduce them.

The potential and the gaps

Our review examined:

- patterns of AI adoption: including the extent of uptake across regions, and types of AI applications used in agriculture (such as precision farming, disease detection, yield prediction, and smart irrigation)
- levels of infrastructural readiness: including the availability of electricity, broadband connectivity, digital literacy support, data management systems, smart devices, and extension or technical support services necessary for effective AI adoption
- key concerns around ethics and data governance: including data ownership, privacy and security, informed consent, algorithmic bias, transparency,

accountability, and equitable access to AI-driven agricultural technologies.

We also explored how national policies are responding to emerging risks. These include data privacy breaches, cybersecurity vulnerabilities, labour displacement, and unequal access to AI-enabled agricultural technologies. This approach allowed us to capture both global trends and region-specific realities.

AI is increasingly shaping agriculture in developed countries. Technologies such as precision farming tools are helping improve fertiliser use, irrigation, yield prediction and pest management, while also supporting more efficient resource use and greater resilience to climate variability.

The factors that made this possible included:

Digital infrastructure: In many developed countries, reliable internet, satellite systems, cloud platforms and connected sensors enable continuous data collection and analysis.

This supports real-time farm decisions and the seamless use of precision agriculture technologies.

Strong institutional support: This has enabled rapid uptake of innovations in agriculture. The support includes established governance frameworks that provide operational clarity on data privacy, transparency and accountability. This enabled more responsible technological innovation.

Reliable electricity: This is essential for AI-driven agriculture. It ensures the continuous operation of digital systems and technologies such as sensors, automated irrigation, drones, and data platforms.

But we found that AI adoption remains limited in developing countries, where smallholder farmers dominate food production. The limiting factors included:

- **The digital divide:** We identified this as the biggest barrier. Farmers often lack stable internet connectivity, affordable devices, or sufficient digital literacy.
- **Electricity:** Shortages hinder the adoption and effective use of AI in agriculture by disrupting the operation of digital tools and

infrastructure. These are required for data collection, processing and communication.

Cost: High cost of AI tools and a lack of digital literacy to engage with AI tools effectively.

Limited access to credit: Without sufficient financial capacity, farmers struggle to invest in digital technologies. They cannot afford the upfront purchase costs, installation expenses, or ongoing maintenance and subscription fees required to use AI tools effectively.

AI downsides

We also identified two factors that undermine the adoption of AI in Africa and other developing countries.

First, many AI models are not well suited to developing country contexts. Tools trained on data from industrialised farming systems often perform poorly in local environments. It leads to biased or inaccurate recommendations and increasing risks for vulnerable farmers.

For example, an AI-based yield prediction or pest detection model trained on large-scale monoculture farms in the US or the





Netherlands could generate unreliable recommendations when applied to African smallholder farms characterised by mixed cropping, irregular input use, rain-fed agriculture and highly heterogeneous soil conditions.

Second, there are ethical concerns around AI use, particularly the lack of clarity on data ownership and privacy. Weak data governance is most pronounced in developing regions. Farmers often have little control over how their data is collected, used or monetised.

These challenges are not evenly distributed. But the risks are more pronounced in low-income regions, where regulatory systems are weaker and smallholders have fewer resources to manage technological change.

Without appropriate safeguards, AI could reinforce disparities already embedded in global food systems. It also risks deepening existing inequalities, limiting its contribution to sustainable development and food security.

Way forward

AI could transform agriculture in Africa and other developing economies but without the right policies, it may deepen inequality instead.

The priority is to fix the foundations. Reliable electricity, internet access, and affordable digital tools are essential. Without these, AI will remain out of reach for most smallholder farmers. Access to finance, training, and locally relevant data systems will also be critical.

Adoption should be gradual, starting with simple tools like advance mobile advisory services before scaling up.

AI must be inclusive and farmer centred. Done right, it can strengthen food systems. Done poorly, it risks leaving the most vulnerable further behind.

Resources:

This article is republished from [The Conversation](#) under a Creative Commons license. Read the [original article](#).

ARC Puts SA Soil Science on the World Stage

Dr Nondumiso Sosibo

ARC-Natural Resources and Engineering

The Agricultural Research Council (ARC) has once again demonstrated its commitment to scientific excellence, professionalism and international collaboration through the successful completion of a major project contributing to the Global Soil Spectral Library (GSSL). Conducted under the Soils4Africa Initiative, the project brought together the ARC, ISRIC – World Soil Information, Innovative Solutions for Decision Agriculture (iSDA), and the USDA Kellogg Soil Survey Laboratory (KSSL) in a collaborative effort to strengthen global soil information resources.

At first glance, the project involved the preparation and shipment of soil samples. However, behind this seemingly simple task lay an intricate operation requiring strict compliance with international laboratory, phytosanitary and shipping regulations. The ARC was entrusted with processing, documenting, packaging and shipping 940 soil samples according to globally recognised protocols for inclusion in the Global Soil Spectral Library.

Delivering on this responsibility required exceptional attention to detail. Every sample

Figure 1: Process Followed for Preparation, Packaging and Shipment of Soil Samples to the USDA Kellogg Soil Survey Laboratory (KSSL), USA.



Sample to pass through a 2 mm sieve



Sieved sample transferred to a labelled 500 mL polypropylene container



Sample milled using the MM400 Retsch ball miller

underwent standardised preparation procedures, including sieving, sub-sampling, milling, labelling and verification to ensure consistency and analytical reliability. Comprehensive traceability systems were implemented to track each sample throughout the process, while rigorous quality control measures ensured that all requirements specified by international partners were met.

To ensure quality and regulatory compliance, the ARC adopted a phased shipment approach that allowed procedures to be refined continuously based on stakeholder feedback. Detailed photographic records, comprehensive documentation and strict packaging protocols were submitted to the USDA Kellogg Soil Survey Laboratory for review and approval before shipments were authorised. This proactive approach ensured smooth international transport and successful receipt of all samples without any discrepancies.

The project's success reflects not only the ARC's technical expertise but also the dedication and professionalism of its scientific and technical teams. International partners commended the organisation for the high quality of its sample preparation, meticulous documentation, strong communication and effective coordination throughout the project. Such recognition confirms the ARC's growing reputation as a trusted partner capable of



Figure 2: Retsch MM400 ball miller gifted to the ARC

delivering complex scientific projects to the highest international standards.

Perhaps the strongest endorsement of the ARC's performance came from project partner iSDA. To facilitate sample preparation, iSDA procured a **Retsch MM400 mixer ball mill** for exclusive use during the project. Upon successful completion of the project's objectives, impressed by the professionalism, dedication and quality of work delivered by the ARC team, iSDA subsequently gifted the equipment to the organisation. The donation serves as a lasting symbol of the trust that international collaborators place in the ARC



Milled sample in a clear ziplock bag inserted into a 500 ml hurricane-proof polypropylene container



The polypropylene container is tightly sealed with a lid



Samples are wrapped with newspaper and Sellotape as an extra precautionary step



Samples inserted inside a liner bag in the order they appear in the submitted metadata and sample list



All air spaces are closed with bubble wrap, as per USDA APHIS customs regulations, in a double-walled cardboard box



USDA Aphis permit inside the box as per customs requirements

and will enhance the organisation's ability to support future soil spectroscopy initiatives across Africa.

Beyond the immediate project objectives, the collaboration has enhanced South Africa's visibility within the global soil science community and strengthened strategic relationships with leading international institutions. The successful completion of the project demonstrates the ARC's ability to manage large-scale scientific operations while maintaining the highest standards of quality, accountability and regulatory compliance.



The box will have all the required labels and courier sticker ready for shipment

Importantly, the project forms part of the broader Soils4Africa programme, through which the ARC has received, analysed and archived thousands of soil samples representing 31 African countries. This work not only contributes to continental soil knowledge but also positions the ARC as a key player in advancing digital soil science across Africa.

As global challenges related to food security, climate change and sustainable land management continue to grow, international scientific partnerships will become increasingly important. Through projects such as the Global Soil Spectral Library, the ARC is not only contributing world-class science but is also showcasing the expertise, innovation and professionalism that South African researchers bring to the global stage.

The successful completion of this project reinforces the ARC's position as a leading agricultural research institution and provides a strong foundation for future collaborations that will advance soil science across Africa and beyond. More importantly, it demonstrates that when scientific excellence is combined with strong partnerships, Africa can make meaningful contributions to global research and innovation.

Inquiries: sosibon@arc.agric.za

Weather Extremes Are Stealing Your Yields

From 45 °C temperatures scorching Citrusdal citrus orchards to heavy rain disrupting fruit set in table grape vineyards, South African growers are becoming increasingly familiar with one of modern agriculture's greatest challenges: weather extremes that place crops under severe physiological stress.

While much attention is traditionally given to controlling pests and diseases, **plant stress has quietly become one of the biggest factors limiting crop performance**, says Martin Booyens, an expert in biological crop solutions and Technical Marketing Specialist at IntelliGro.



Effective stress management helps protect citrus against sunburn caused by oxidative stress during periods of extreme heat



Biological programmes support healthier plants by working with nature.



Managing environmental stress helps table grapes realise their full yield potential.

“Stress is the silent thief of yield,” says Booyens. “Conventional crop protection remains essential, but it is no longer enough on its own. A more holistic approach is required. Climate change has fundamentally changed the production environment. Today, one of the greatest threats to yield is often not insects or diseases, but the plant’s inability to cope with environmental stress.”

Booyens believes that with increasingly variable weather patterns becoming the norm rather than the exception, preparing crops for stress is becoming just as important as reacting to it.

When the weather calls the shots

The effects are already evident across South Africa’s production regions.

- Regular heatwaves in **table grape** areas such as **Kakamas** and **De Doorns** have resulted in poor fruit set, uneven bunch development and reduced yields. Unexpected rainfall during critical growth stages creates additional production challenges.
- During the past citrus season, **Valencia orchards** experienced significant fruit drop after crops came under stress during key developmental stages, while temperatures exceeding 45 °C in **Citrusdal** caused sunburn, oxidative stress and lower fruit

quality and pack-outs.

“These are physiological stress responses,” says Booyens. “When stress strikes, plants switch from production to survival. Energy that would normally drive growth, flowering and fruit production is redirected simply to stay alive. Photosynthesis slows, enzyme activity becomes restricted, and harmful reactive oxygen species begin damaging plant cells.”

The result? Crops can appear healthy yet still fail to realise their full yield potential.

“Heat places further pressure on plants by disrupting water balance within individual cells. As moisture is lost, cells shrink and microscopic cracks can develop, creating entry points for pathogens. At the same time, salts become more concentrated inside plant cells, further increasing oxidative stress and cellular damage.”

The effects extend below ground, too.

“High temperatures suppress beneficial soil microbes responsible for nutrient cycling and healthy root development, while soil salinity makes it increasingly difficult for plants to absorb water and essential nutrients such as nitrogen, calcium and potassium.”

Biologicals: beyond another spray programme

"Growers often respond to stress by adding more chemistry," says Booyens. "Those products have an important role, but they are generally designed to solve a specific problem, not necessarily to restore the plant's physiological balance or strengthen its ability to cope with future stress."

This is where biologicals come into their own – not as rescue treatments once crops are already under pressure, but as preventative management tools that improve crop resilience before stress occurs.

Different biological products perform different functions. Some support the plant's metabolism during periods of stress, while others help maintain cellular water balance during heat and drought. Beneficial soil microbes stimulate root growth, improve nutrient uptake and strengthen soil biology, while products containing amino acids supply compounds that would otherwise require significant energy for the plant to produce itself.

"If a plant is experiencing a severe heatwave, it's using virtually all its energy simply to stay alive," Booyens explains. "Providing amino acids allows the plant to redirect that energy towards recovery, growth and strengthening itself."

Before the stress takes hold

Timing, however, is everything. "These are not products you apply once your crop starts wilting," says Booyens. "By the time visible symptoms appear, much of the physiological damage has already occurred."

Instead, growers should monitor weather forecasts closely and make management decisions proactively. Biological products typically require between 48 and 72 hours before the relevant metabolic processes are activated within the plant.

Successful stress management also begins with getting the basics right. Booyens emphasises that biologicals cannot compensate for poor plant nutrition or inadequate crop management.

"There is little point in investing in secondary metabolites if your plants cannot photosynthesise properly."

He encourages growers to first ensure that crops have the nutritional building blocks required for normal photosynthesis and protein synthesis before addressing crop-specific stress challenges with biological products.

Once those fundamentals are in place, biological programmes can be tailored to individual production systems. Amino acids



Successful fruit set in pears shows how timely management during critical growth stages supports yield potential.

may help crops recover after hail damage. Beneficial fungi such as *Trichoderma* can improve root development where soilborne diseases are problematic. During periods of excessive heat at flowering or fruit set, Osmo protectants such as glycine betaine can help plants maintain cellular stability and improve fruit retention.

“There is no one-size-fits-all programme,” Booyens says. “The solution depends entirely on the conditions on your farm.”

Rather than relying on a single product or intervention, IntelliGro’s crop programmes integrate biological solutions with plant nutrition, soil health and crop protection according to the needs of each production system.

Good decisions start with good information

Booyens cautions growers against selecting products based purely on marketing claims or applying biologicals without expert guidance.

“You need to understand what is happening in your soil, your water and your crop. Good crop decisions start with good information. Regular soil, water and sap analyses help remove the guesswork, allowing management decisions to be based on what’s happening in the field rather than what might be happening.”

Working with trained Crop Advisors is equally important, he adds, as biological products should form part of a broader crop management programme rather than be used in isolation. Growers should also ensure products are correctly registered under Act 36 of 1947 and seek advice from qualified advisors registered with CropLife South Africa.

Although some growers remain hesitant because biological programmes increase short-term input costs, Booyens believes this overlooks their long-term value.

Unlike conventional chemistry, which generally provides relatively short-lived protection, beneficial biological organisms establish themselves within the soil ecosystem over time. As these populations build, they continue supporting plant health and resilience, often reducing the need for repeated applications in subsequent seasons.



Effective stress management starts early – protecting vulnerable growing tips in table grape vineyards.

“You’re not simply buying another product,” he says. “You’re investing in a healthier production system.”

Farm one step ahead of the weather

Building resilience into crops is no longer simply another management option – it is becoming a defining feature of profitable, sustainable production.

“The growers who consistently produce high-quality crops in future will be those who prepare their plants before stress arrives, not afterwards,” says Booyens.

That preparation starts long before the forecast predicts a heatwave. It begins with understanding your production system, monitoring crop health and working with an integrated approach alongside qualified Crop Advisors to make informed decisions before stress takes hold.

Building resilience in an era of permanent change

Daneel Rossouw,
Head of Sales at Nedbank Agriculture

Speak to almost any agricultural producer today, and a common theme emerges: Uncertainty has become part of the job description.

Whether it is unpredictable weather, changing consumer preferences, rising input costs, geopolitical tensions, or evolving market requirements – South African farmers are operating in an environment where disruption is no longer the exception but the norm.

Over the past few months, I have had the opportunity to engage with key stakeholders at several important sector gatherings, including NAMPO, the Agbiz Conference, and the South Africa Wine Summit, which Nedbank has sponsored for the past 20 years. Although these events focused on different industries and challenges, they all pointed to the same conclusion: South African agriculture is operating in an environment that is increasingly complex, interconnected, and unpredictable, demanding continuous adaptation.

The wine industry provides a valuable example of this shift. Discussions at the SA Wine Summit highlighted how economic uncertainty, climate volatility, evolving consumer preferences, technological disruption, and sustainability expectations are impacting the sector.

Yet these are not unique to wine; they are forces influencing businesses across the entire agricultural value chain.

From cyclical disruption to permanent change

For generations, agriculture has been influenced by cycles, like periods of drought and abundance, rising and falling interest rates, and strong and weak commodity prices. Success depended on understanding where you were in the cycle and positioning your business accordingly.

Today, however, the challenge is different. Agriculture is no longer just about navigating cyclical disruption; it is also about adjusting to permanent change.

The forces driving this change vary but are deeply interconnected. While South Africa has made promising progress in areas such as energy stability and logistics reform, uncertainty in the global economy and shifting trade dynamics continue to influence local businesses.

At the same time, climate volatility is becoming a permanent feature of agricultural planning, rather than an occasional setback. Building resilience is no longer simply about recovering from a difficult season; it is about preparing for a future in which volatility itself becomes a constant.

The changing face of value

The wine industry offers an interesting example of how these changes are playing out. Globally, consumers are drinking less wine, but more selectively¹. Growth is increasingly driven by value rather than

volume. Consumers are seeking products and experiences that align with their lifestyle, value, and budget, while competition from alternative categories intensifies.

This reflects a broader trend across agriculture. Whether producing wine, fruit, grains, livestock or nuts, businesses must differentiate themselves and respond to changing consumer expectations in increasingly competitive markets.

These shifts also present opportunities and challenge traditional assumptions about where future demand will come from – and technology is accelerating many of these shifts. Consumers have more information and choices than ever before, while technology also enables producers to improve decisions, increase efficiency, and strengthen resilience.

Taken together, these trends point to a simple but important conclusion: Resilience and competitiveness are increasingly linked to adaptability.

Investing for resilience

These shifts are also changing the way agricultural businesses think about investment.

Historically, agricultural finance has focused on helping producers manage seasonal production cycles. While this is still important, there is growing recognition that long-term success depends on building more resilient businesses.

This means producers should invest in areas that help farms operate more efficiently, manage risk, and stay competitive over time. This may include investment in greater energy independence, stronger water security, more precise farming practices, and improved logistics.

It also means taking a longer-term view when making investment decisions. Rather than reacting to current market conditions, producers should focus on investments that will increase productivity, improve efficiency, and strengthen adaptability over time.

Diversification also plays a key role, whether through additional income streams or new markets. Funding structures matter and major investments should be aligned with production cycles, cash flow, and long-term business strategy to ensure they deliver long-term value.

From compliance to competitiveness: The next phase of agriculture

The same is true for sustainability, which has become a business imperative. It is clearer than ever that agriculture is entering a new phase where sustainability, traceability, and reporting are shifting from compliance requirements to core drivers of competitiveness.

Changing consumer demand is central to this shift. Buyers are placing a growing emphasis on product provenance, supply-chain transparency, and verifiable production



practices. As a result, traceability is becoming a market-access requirement rather than a voluntary enhancement. At the farm level, this is increasing the need for reliable data and auditable supply-chain information.

At the same time, environmental, social and governance (ESG) reporting is moving from a retrospective corporate disclosure exercise to shaping how farms are managed. Environmental indicators such as water efficiency, soil health, biodiversity, and carbon intensity are now influencing procurement standards and buyer requirements, effectively embedding ESG into production systems.

Financial institutions have a vital role to play in agriculture's transition. As highlighted during the Banking Association South Africa (BASA) financial panel discussion at the Agbiz Conference, traditional lending alone will not support the scale of transformation required. Instead, the future of agricultural finance is increasingly partnership-driven, combining commercial bank finance, development-finance institutions, government guarantees, and private capital.

In this evolving environment, the role of the bank becomes not only financial but also enabling – directing capital towards investment in sustainable practices, which helps producers meet shifting reporting requirements, and supports investment in climate-adaptation technology.

Building for what comes next

South African agriculture has always shown remarkable resilience. Our producers have consistently found ways to adapt, innovate, and compete despite challenging circumstances. Those qualities will remain essential in the years ahead.

The challenge now is not simply to weather the next disruption, but to build businesses that can prosper in an environment where disruption itself has become permanent. The goal is no longer to navigate the cycle. It is to build in anticipation of what comes next.

¹ https://www.oiv.int/sites/default/files/2026-05/OIV-State_of_the_World_Wine_Sector_in_2025_1.pdf



Protecting Rooibos at its Roots



Rooibos has earned international recognition for its distinctive flavour, health benefits and uniquely South African origins. As new export markets open and demand grow, safeguarding Rooibos' origin is becoming increasingly important to the industry's future.

Recent trade developments, including expanded market access and the removal of tariffs on South African exports to China, are expected to create new opportunities for Rooibos producers and exporters. At the same time, they bring renewed focus to protecting one of the industry's most valuable assets – the right to call a product “Rooibos”.

A name rooted in place

Unlike many herbal infusions, Rooibos benefits from formal Geographical

Indication (GI) protection and is recognised as a Protected Designation of Origin (PDO) under the EU system. This means the name “Rooibos” is legally reserved for beverages made from *Aspalathus linearis* grown within a defined production area in South Africa, primarily the Cederberg and surrounding parts of the Western and Northern Cape, in jurisdictions that recognise the designation.

This protection links the name directly to its place of origin, meaning it may only be used for products originating from the designated production area. Rooibos is therefore in the same category of origin-protected products as Champagne, Parmigiano Reggiano and Darjeeling tea, where only products from the designated region may legally carry the name.

Dawie de Villiers, Director of the South African

Rooibos Council (SARC), says protecting the name has become increasingly important as international demand grows.

“As Rooibos becomes more widely recognised around the world, protecting its origin helps preserve the integrity of the product and the reputation South African producers have built over generations. Consumers want confidence that when they buy Rooibos, they’re getting the genuine product from its natural home.”

It also safeguards the economic value of an industry that supports thousands of jobs in the Western Cape and Northern Cape and exports Rooibos to more than 60 countries.

Protecting authenticity in global markets

While Rooibos enjoys strong origin protection in several key markets, equivalent protection does not automatically extend to every export destination. As international demand grows, broader intellectual property strategies are becoming increasingly important to help

safeguard its origin across different legal jurisdictions.

While legal protection provides an important foundation, maintaining consumer trust requires more than just legislation.

Once Rooibos enters international supply chains, it may be blended into flavoured teas, functional beverages, food products or cosmetic formulations. The industry’s long-term success depends on ensuring its South African origin remains clearly identified throughout the value chain.

As global food supply chains become more complex, provenance has become a key differentiator. Consumers increasingly want products that are authentic, traceable and sustainably produced, particularly in premium food and wellness markets.

“Origin has become part of the value proposition,” says De Villiers. “Our objective



isn't simply to increase export volumes. It's to grow demand while maintaining the premium quality, authenticity and provenance that distinguish Rooibos in international markets. That requires more than legal protection – it also depends on strong supply chain traceability, credible certification systems and ongoing brand stewardship.”

Safeguarding long-term value

The industry continues to pursue measured growth rather than rapid expansion.

The SARC has repeatedly noted that production is carefully managed to maintain quality and sustainability, recognising that Rooibos can only be cultivated within a relatively small geographic area where the unique combination of climate, soil and biodiversity gives the plant its distinctive characteristics.

That exclusivity is precisely what makes GI protection so valuable.

Unlike products that can be grown almost anywhere in the world, authentic Rooibos cannot simply be replicated elsewhere. Protecting the name therefore helps ensure that the economic benefits associated with growing global demand continue to flow back to the communities and producers responsible for cultivating the indigenous crop.



Homemade Tomato Jam

Theresa Siebert
ARC- Natural Resources and Engineering

Tomato jam is produced from green or ripe tomatoes and can consist of whole fruit, pieces of fruit, fruit pulp, or fruit puree. It may include one or more other fruits, as well as fruit juice or fruit juice concentrate as an optional ingredient.

Ingredient Selection for Tomato Jam:

Green tomatoes:

The tomatoes are picked at full size, just prior to turning colour. For making jam the tomatoes should be free from rot and disease. Minor blemishes can be tolerated if they can be easily trimmed away.

Ripe tomatoes:

The tomatoes are picked at the firm-ripe stage. Selective handpicking enables the fruit to be sorted in the field. Any sunburnt, overripe and infected tomatoes are discarded.

Sugar:

Cane sugar is usually used at a ratio of 1:1 with the fruit on a mass basis. Corn (glucose) syrup may be used to replace a portion of the sugar. It has the advantage of preventing sugar crystallisation, improving texture and enhancing smoothness, while ensuring better colour retention during processing, and

provides a pleasing level of sweetness. Corn syrup can be substituted for sugar, where 0.57kg of corn syrup can replace 0.45kg sugar.

Optional ingredients:

Other fruits such as green apple blend very well with tomatoes while passion fruit makes for an interesting blend with ripe tomatoes. Spices such as ginger, nutmeg, and cinnamon can be used to spice up green tomato jam.

Acids:

The optimum pH for obtaining the perfect gel is between pH 3 - 3.5. If the fruit is not acidic enough. Acids in the form of vinegar, lemon juice, lime juice, fumaric acid, citric acid, malic acid, tartaric acid, or combinations thereof may be added towards the end of the cooking process. Lemon juice is rich in acid and pectin, which are two very necessary components of a jam. It may be necessary to add a small quantity of lemon juice to ripe tomatoes that may be lacking in one or both components to ensure a good gel formation.

Washing of the Tomatoes:

Washing is necessary to remove soil, dirt, spray residues and any insect contamination, especially in cases where the tomatoes are

not peeled. Washing is necessary to remove soil, dirt, spray residues, and fruit fly eggs and larvae. Soaking the tomatoes prior to washing loosens dirt and residue, making the washing process more effective. A soaking period of 3 minutes in water at 54°C is considered ideal.

Peeling of Fruit for Tomato Jam:

The tomatoes are scalded for approximately 1 minute in hot water or steam at 98-100°C. They are then given a cold-water dip. This rapid drop in temperature helps loosen the skin for easy peeling without loss of sub-surface tissue. The cooled tomatoes are given a shallow slit at the blossom-end, and the peel is pulled off using a sharp knife.

Apples are peeled and cored by hand, or by special hand-driven apparatus.

Chopping the Tomatoes:

Chopping of the tomatoes and other fruit is done by hand using stainless steel knives, hand-driven apparatus, or small electric food processors. The size of the fruit pieces will have a great effect on the consistency of the product.

Cooking the Jam:

The chopped fruit is placed in a large saucepan or batch cooker and heated over a low heat until the fruit is soft and pulpy (approximately 30 minutes). The remaining ingredients are added and stirred continuously over a low heat until all the sugar has dissolved. The mixture is brought to boil and left uncovered until the jam starts to thicken. The mixture is stirred occasionally.

Jam Testing:

As soon as the jam starts to thicken, scoop a spoonful from the pot and place on a chilled saucer, which is then placed in a freezer until the sample has reached room temperature. If the cooled sample has gelled to form the desired consistency, the jam is ready and cooking is terminated. If not, continue cooking and repeat the test after 10 minutes.

Sterilisation of the Jars:

Glass jars used for the preservation of food should be of high quality, without any cracks or chips and should form tight seals. There are



various methods of sterilising jars involving either dry or moist heat.

Oven method:

The clean jars are placed upright in a cold oven, allowing an even spacing between the jars. The temperature is set on 160°C and the jars are left to spend a minimum of 30 minutes in the oven. The hot bottles are removed from the oven using gloves and tongs.

Boiling method:

The clean jars are placed lying down on a deep pot and covered with cold water. The water is brought to boil. After 10 minutes of boiling the jars are removed using gloves and tongs. The jars are placed upright on a wooden board, ready to fill.

Steam method:

Jars can be sterilised by saturating the interior with steam. This can be done by simply holding the open neck of the jar over the spout of a steam generator, water boiler or

even a kettle for 1 minute. Tongs or clamps are necessary to handle the hot jars.

Please note that generally hot food goes into hot jars, and cold food into cold jars.

Filling and Sealing of Tomato Jam Jars:

The hot sterilised jars are filled to the brim with jam. This is important since the hot jam shrinks upon cooling. The filled jars are sealed with suitable, tight-fitting lids. Metal lids are generally not recommended since the high acid content can cause corrosion of the metal, leaving the product inedible. Specially lined or lacquered lids are required.

Labelling:

The sealed jars should be labelled with the date on which the jam was made. Because this jam recipe does not rely on a boiling water bath after the jam has been jarred, the product can last up to 4 weeks in a refrigerator.

Inquiries: SiebertT@arc.agric.za



Haddock & Cheese Quiche with Breadcrumb Crust

Ina Paarman

In my book, this is the ultimate quiche. Creamy, delicious and filling. Best served lukewarm. This quiche reheats well in an air fryer for 3 - 4 minutes.

Serves: 6 - 8

You Will Need:

Crust

2 cloves garlic, crushed
2 T (30 ml) parsley, chopped
4 T (60 ml) butter
3 slices classic brown bread
(make breadcrumbs in food processor or small blender)
soft butter for dish

Haddock

150 g - 200 g smoked haddock (fresh or frozen)
½ cup (125 ml) milk

Quiche Filling

1 small - medium onion, finely sliced into half rings
1 t (5 ml) Ina Paarman's Lemon & Black Pepper Seasoning
1 T (15 ml) oil
½ T (7,5 ml) butter
2 extra large eggs
1 cup (250 ml) fresh cream (or ½ cream and ½ milk)
1 x 200 ml Ina Paarman's Ready to Serve Cheese Sauce
milk from poached haddock
¾ cup (180 ml) strong cheddar cheese, grated
poached and flaked haddock (skin removed)



Method:

Crust:

Adjust the oven rack to the middle position, and preheat the oven to 200 °C.

Stir-fry the garlic and parsley in butter.

Add the breadcrumbs and mix well.

Leave to cool.

Butter and line the bottom and sides of an ovenproof quiche dish (± 24 cm in diameter) with the breadcrumb mixture.

Bake for 10 minutes until crisp and lightly browned.

Haddock:

Poach the haddock. (If using frozen haddock, thaw it in measured milk before poaching.)

Turn the oven down to 170 °C.

Pour the milk over the haddock in an ovenproof dish or pan.

Cover the dish with baking paper and bake for 10 minutes.

Remove the dish from the oven and discard the paper.

Cool the fish, still in the milk.

Reserve the milk for the quiche filling.

Quiche Filling:

Keep the oven temperature at 170 °C.

Sauté the onion, seasoned with Lemon & Black Pepper

Seasoning, in the oil and butter mixture.

Keep aside.

Beat the eggs, cream, Cheese Sauce, and milk (reserved from the poached fish) together.

Sprinkle half of the cheese over the baked breadcrumb crust.

Top it with the onion mixture.

Add the flaked fish.

Pour the egg mixture over.

Sprinkle the remaining grated cheese over the top.

Bake for about 30 minutes.

Turn off the oven and leave the quiche to cool in the warm oven with the door slightly open. Allow to set for 10 minutes.

Serve lukewarm or at room temperature.

Ina's Tip

Crust Options (Depending on your needs and time available):

Short Crust Pastry – Delicious, but time-consuming to make. Best baked blind, before adding the quiche filling.

Breadcrumb Crust – Quick and easy to make with either white or brown breadcrumbs. The trick is to butter the dish well to allow for the cooled crumbs to stick. Always pre-bake the crust, before filling.

Crustless – Quick, but adds no 'bulk' or texture to the quiche. Simply butter the dish, shake ± 3 T (45 ml) of flour to coat the inside, and freeze it to firm, before adding the filling.



Dit Begin Tuis



Ons voeg die fynproewer smakie by.

Marmelade Muffins

Ina Paarman

My absolute favourite fibre-rich health muffin. Marmelade, rich, deeply flavoured with citrus, tailor-made for brunch. Baked muffins freeze exceptionally well.

Makes ± 16

You Will Need:

- 2 extra large eggs
- ½ cup (125 ml) canola oil
- 125 g butter, melted
- grated zest from 2 oranges
- 1 cup (250 ml) plain yoghurt
- ½ cup (125 ml) full cream milk
- ½ cup (125 ml) orange juice from zested oranges
- ½ cup (125 ml) marmelade
- 1 x 700 g Ina Paarman's Raisin & Bran Muffin Bake Mix
- extra marmelade
- 1 orange, cut into slices and then in ¼s



Method:

Remove the raisin bag from the muffin box, and pour boiling water over the raisins to plump them up.

Drain the raisins, set them aside, and leave them to swell.

Adjust the oven rack to the middle position, and preheat the oven to 180 °C.

Line the muffin tins with baking paper squares. (See the back of the box for step-by-step instructions on how to do this.)

Beat the eggs, oil, and melted butter together for 1 minute on high speed, until well blended.

Add the orange zest, yoghurt, milk, orange juice, and marmelade.

Beat for another minute on high speed.

Add the contents of muffin pack and the plumped raisins.

Stir the mixture by hand with a spatula until uniformly blended – do not beat.

Spoon the muffin mixture into the lined muffin tins. An ice cream scoop is perfect for the job.

Make a hollow at the top of each muffin with the back of a wooden spoon (dipped in water), and spoon about 1t (5 ml) of marmalade into each hollow.

Push an orange ¼ slice into each muffin.

Bake for 40 - 45 minutes.

Serve with butter and extra marmelade.



Dit Begin Tuis



Ons voeg die fynproewer smaakie by.

9-12 Sep

2026

BREDASDORP PARK



**Saam
groeï ons**

**Together
we grow**

NAMPO
KAAP | CAPE