AGRI PROBE

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125 Years of Excellence in Agriculture

Southern Treasures – a wine brand proudly owned by humble farm workers

The old and new from the UK

Research and news magazine of the Western Cape Department of Agriculture

Recognition of Prior Learning
Project 2023/2024

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Elsenburg Agricultural Training Institute has an opportunity for you to obtain a partial or full qualification through a process called Recognition of Prior Learning (RPL).

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Recommendation:

- Qualifications obtained such as agricultural short skills courses etc.
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Closing date:
15 January 2024

Setting the SCENE

by Darryl Jacobs

Harvesting success: Celebrating agricultural triumphs in the Western Cape

As we draw the curtain on another fruitful year, the Christmas edition of *AgriProbe* serves as a reflection of the remarkable strides made in the Western Cape's agricultural landscape. This year, we are particularly proud to celebrate the 125th anniversary of Elsenburg College, the oldest agricultural college in the entire African continent.

In this edition, we bring you a diverse array of articles that not only showcase the depth of agricultural expertise within our region but also emphasise the spirit of innovation and inclusivity that defines Western Cape agriculture.

Brenton Maarman's article, "How to taste white wine?" takes us on a sensory journey, exploring the finer nuances of an industry that extends beyond the fields and into our glasses. Brenton's insights bridge the gap between agriculture and viticulture, highlighting the interconnectedness of our diverse agricultural practices.

"Southern Treasures": A wine brand proudly owned by humble agri-workers" by Recard Carelse is a testament to the power of community-driven enterprises. The article shines a spotlight on the hardworking agri-workers who have not only contributed to the success of Southern Treasures but have also become proud owners of this flourishing wine brand. This narrative exemplifies the shared prosperity that results from collaborative efforts in our agricultural community.

"First black female economist honoured by Agricultural Economists Association of South Africa" is an achievement underscoring the commitment to diversity and inclusion within our agricultural sector, recognising and celebrating the invaluable contributions of individuals from all backgrounds.

The BFAP Baseline 2023-2032, marking two decades of its existence, is a testament to the resilience and foresight of the Bureau for Food and Agricultural Policy. The article, "BFAP Baseline 2023-2032: Celebrating 20 years of BFAP Baseline", demonstrates the organisation's dedication to providing essential data and insights that guide our agricultural policies and practices.

Professor Stephanie Midgley's "Climate Change and Agriculture Youth Summit" brings attention to the next generation of agricultural leaders. As we bid farewell to this year with the Christmas edition, let us embrace a sense of optimism and pride in the collective achievements of the Western Cape's agricultural sector.

The 125th anniversary of Elsenburg College stands as a testament to our rich agricultural heritage and the enduring commitment to nurturing the next generation of agricultural leaders.

In closing, we extend our warmest wishes for a joyous festive season. May the spirit of collaboration and innovation continue to guide us as we work towards a food-secure and self-sufficient Western Cape for all. AP

Together, we sow the seeds of success that will yield a bountiful harvest for generations to come. **#ForTheLoveOfAgriculture**

Darryl Jacobs

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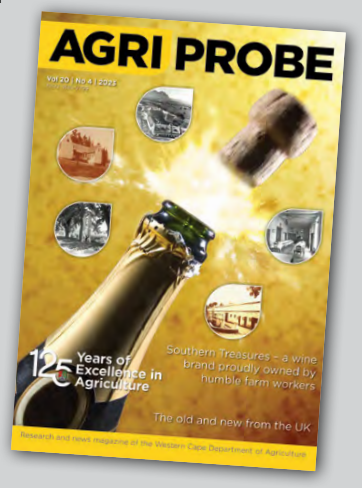
ON OUR COVER

As we joyously celebrate 125 years of excellence, raise a glass of Méthode Cap Classique (MCC) and join us in toasting the achievements of our institution. Much like the carefully crafted bubbles in MCC, our legacy sparkles with the dedication of those who contribute to the vitality of agriculture. From the traditional Champagne style to the South African touch of Sauvignon Blanc and Chenin Blanc, our journey, like fine MCC wines, has aged beautifully. Here's to a rich history and the relationships we have forged along the way.



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Ride the wave of goodwill

by Minister Ivan Meyer & Daniel Johnson

The Springboks have just been crowned Rugby World Cup Champions for the fourth time. Stronger together echoes through the hills and valleys of our beautiful South Africa. Team South Africa is invincible for the millions of rugby supporters across the nation!

There is a wave of goodwill sweeping across our country. It is infectious. The challenge is how we translate this positive energy into other spheres of our lives.

Scan the QR code or visit https://bit.ly/3MAoii5 to watch the video: 'Kfm 94.5 and Cape Town celebrate Springboks victory tour!'. Published by Kfm 94.5.

Milkwood (*Sideroxylon inerme*).
Photo © David Becking

I have the singular honour of working with an extraordinary group at Elsenburg. The sense of goodwill and pride they create under the leadership of the Head of the Department, Dr Mogale Sebopetsa, is often displayed when I meet farmers, producers, and agri-workers.

Let me share a few examples.

1 Two years ago, I challenged the Vroue-Landbouvereniging (VLV) to plant 1 000 trees. Within 18 months they achieved this goal. More importantly, however, is the impact that **Rudolph Röscher**, Acting Deputy Director: Land-Care, had on the VLV ladies. His knowledge, passion and commitment to the environment and the preservation and protection of our natural assets is infectious. The response of goodwill he engenders is reflected in the energy the VLV has put into planting indigenous trees at schools across the Western Cape.

> **"The value of the goodwill generated by colleagues is immeasurable."**

The tree planting initiatives by the Western Cape Department of Agriculture highlights the significance of planting indigenous trees for environmental conservation and ecosystem sustainability. Learn more about indigenous tree species suitable for reforestation: https://saforesttrust.com/trees/

2 Our Department commemorated World Food Day 2023 in Kranshoek at Plettenberg Bay on the Garden Route. The day was led by Jerry Aries, the Acting Chief Director of Agricultural Producer Support and Development, and the **food security team**. Described by many attendees as the best World Food Day event to date, feelings of gratitude, hope and prayerfulness characterised the day. As has become the norm, the "Food Mountain" took pride of place in the hall where the event was held.

The size of the food mountain reflected the volume of food that had been collected. It also, more importantly, captured the enormity of the goodwill of donors – particularly staff at Elsenburg. The goodwill shone brightly on the grateful faces of beneficiaries.

»

The Outeniqua Research Farm.

3 Dairy farmer Hanno Maritz recently attended the Outeniqua Information Day. His interaction with **Janke van der Colf** and **Sigrun Ammann**, both scientists at the Outeniqua Research Farm, is captured best in his words: "For us who work in the dairy industry, the Information Day is a highlight on the annual agricultural calendar. Thank you for your availability and willingness to help when we have questions and/or need information with regards to pastures."

> "The Information Day is a highlight on the annual agricultural calendar."

Learn more

Located southwest of George in the Eden district, the Outeniqua Research Farm serves the area from the Tsitsikamma to Caledon. Founded in 1953, the farm was established for agricultural research, providing science-based solutions in response to challenges faced by farmers in the area. Learn more! https://www.elsenburg.com/outeniqua-research-farm/

The value of the goodwill generated by colleagues such as Rudolph, the food security team, Janke and Sigrun is immeasurable. It is however underpinned by expertise, hard work, commitment and a burning desire to not only make a difference, but to be a difference.

During the first-ever Provincial Veterinary Services Week, the Western Cape Department of Agriculture showcased the work of vets and their support staff and participated in duties that its staff and private vets perform daily. Our visits to the abattoir, and the hosting of the Pig Farmers Days in Chatsworth, Malmesbury and Prince Alfred Hamlet in Witzenberg gave us a new sense of the value of the work our vets do to facilitate market access, promote food safety and advance food security. The rabies campaign also gave us a rare insight into how much pet owners appreciated the free vaccination service offered by our vets.

> **"Build a South Africa that embraces freedom, fairness, opportunity and diversity."**

As we draw the curtain on another year, I extend my gratitude to each of you for your contribution to growing the agricultural sector. As the Springboks have demonstrated, pride and goodwill are the fruits of success.

Ride the wave of goodwill. Use the upcoming holiday season to rest and strengthen your commitment and resolve to be like our Springboks. Build a South Africa that embraces freedom, fairness, opportunity and diversity.

I wish you a blessed holiday season.

#ForTheLoveOfAgriculture AP

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WC companies win at AFRICA'S BIG 7 exhibition

by Bukelwa Grwambi

The Gallagher Convention Centre is in Midrand, Gauteng.

As part of the Western Cape Department of Agriculture's (WCDoA) contribution to the Growth for Jobs Strategy, various agribusinesses were supported to promote their products at the Africa's Big 7 exhibition that was held at the Gallagher Convention Centre in Johannesburg in June.

Africa's Big 7 is one of the leading exhibition platforms for food and beverage retail business on the African continent. It offers a platform for suppliers in the food and beverage industry to launch new products, promote and make sales to key decision-makers and buyers, build long-lasting relationships and structure import and export deals. As part of their marketing campaign, Africa's Big 7 also promotes exhibiting companies on social media.

During registration, exhibitors were encouraged to enter the Exhibitor Listing Competition. This competition offered prizes for best overall exhibitor listing, best use of multi-media (including brochures, downloads, pictures and videos) and best sales pitch video.

Out of the three prizes that were up for grabs, two were taken by companies from the Western Cape.

Learn more
https://aloeunique.co.za/

Aloe Unique won the best overall exhibitor listing.

Spicy Bulldog took the prize for the best use of multi-media.

1 Aloe Unique, a proudly South African *Aloe ferox* skincare range company won the best overall exhibitor listing.

2 Spicy Bulldog, a company producing a range of chutneys, chilli sauces and wholegrain mustards, took the prize for the best use of multi-media.

The prizes included a free enhanced exhibitor listing, free mail shot, social media (LinkedIn, Facebook and X) post, an advert in the show guide and one free on-site announcement daily within the exhibition hall.

When asked how they felt when they were announced as winners and what the prizes meant to them, this is what Samantha Olckers, a representative of Aloe Unique, remarked: "I felt a mix of excitement and gratitude when we were announced as the winners. It was a moment of validation for the vision we had for Aloe Unique and the impact we wanted to make in the skincare and wellness industry. Winning the prize at Africa's Big 7 was an incredible honour for Aloe Unique. It not only recognised our dedication to producing high quality aloe products but also highlighted the importance of sustainable and ethical practices in the industry. This achievement is a testament to the hard work and passion of our entire team, and we are immensely proud of what we have accomplished. It encourages us to continue our mission of providing nourishing aloe products that benefit both our customers and the environment."

David Stephens, a representative of Spicy Bulldog, said: "I was really surprised when I received the award, but I did put in a lot of effort to publish everything. I also placed a post on Facebook with positive responses and congratulatory messages by followers. I really appreciated the recognition by Africa's Big 7 organisers. It only makes me work harder and keep a positive mindset."

The Africa's Big 7 team congratulated the winners for showing exceptional creativity and innovation in promoting their brands. The Western Cape Department of Agriculture also congratulates Aloe Unique and Spicy Bulldog for this remarkable achievement. AP

Watch this!
Scan the QR code or visit https://bit.ly/3MLtAaz to watch the video: 'Africa's Big 7 – 2023 Highlights.'

SAVE THE DATE
Accelerating the food and beverage retail business in Africa 11 – 13 JUNE 2024 | Sandton Convention Centre, Johannesburg, South Africa https://www.africabig7.com/

For more information, contact **Bukelwa Grwambi**: ✉ bukelwa.grwambi@westerncape.gov.za

Climate Change and Agriculture Youth Summit

by Ntokozo Ngwenya, Ayabonga Sibulali, Vanessa Barends-Jonas and Dr Stephanie J. Midgley




Oudtshoorn is home to the world's largest ostrich population, with a number of specialised ostrich breeding farms, including the Western Cape Department of Agriculture's very own research farm.
Photo © Alta Oosthuizen

The Theewaterskloof Dam was established in 1978 and is the largest dam in the Western Cape water supply system with a capacity of 480 million cubic metres. The dam mainly serves for municipal and industrial use, as well as irrigation purposes. Photo © F.J. Erasmus

In August this year, the Western Cape Department of Agriculture (WCDoA) hosted the Climate Change and Agriculture Youth Summit in Oudtshoorn. This two-day event offered opportunities to network and connect with industry players, young professionals and students. Discussing the latest trends, research developments and action plans, which included industry updates and sound insights from persistent challenges and success stories on Climate Change (CC).

The summit addressed the challenges and misconceptions and gave possible solutions to CC for the agricultural sector in the Western Cape Province (WC).

CC is more than an environmental problem. It is also a social, economic and health problem. The adverse weather conditions contribute to the loss of livelihoods and jobs. The general effects of disasters result in agriculture and food security being at risk, the loss of biodiversity, and greater risks for businesses. It is expected that the rising temperature levels will continue to give wet winters and dry summer weather patterns in the shorter term. By 2050, a drier climate and drier soils are expected for plants due to the rising temperature levels resulting in a changing rainfall regime.

The reduction of water availability is one of the biggest problems we face when it comes to CC-related factors.

Food security in Africa is vulnerable as the production of certain crops is affected by CC. There is a concern for the food basket, and better collaboration between all stakeholders is crucial so that the suppliers of our food are well-identified to secure future food production. A possible solution for food security and CC is to change what is in the food basket. »

Climate Change and Agriculture Youth Summit attendees.

Delegates participating in a Q & A session after the day's Climate Change presentations.

Dr Stephanie Midgley (WCDoA) said that agriculture has only a 2% energy consumption as compared to other sectors of the provincial economy. 80% of the greenhouse gas (CO_2 and others) emission problem is from the burning of fossil fuels. In South Africa, only 9% of greenhouse gas emissions come from the agriculture sector, which is mostly from methane and fertilisers. She added that agriculture could absorb CO_2 through the soil. This means agriculture is in a good position to be CO_2 net zero.

The main streams of CC action are mitigation and adaptation, and ensuring that solutions are promptly implemented to create opportunities for resilience development in developing economies. Better collaborations between the private and public sectors are critical to assist farmers and improve their responsiveness to disasters through the interchange of knowledge between farmers from different regions, learning from each other and understanding that the action of one farmer can affect the next farmer.

Early warning systems are crucial in managing disasters, and we thus have to create awareness and build capacity to manage CC disasters.

The Oudtshoorn Municipality was allocated a R47 million grant fund for drought intervention through the Municipal Disaster Relief Grant.

The Theewaterskloof Dam at approximately 12% capacity on 10 February 2018. Photo © Antti Lipponen

Through mitigation, preparedness and recovery strategies (disaster management integrated approach), society can create opportunities from disasters. There are several opportunities throughout the value chain as CC bridges between different disciplines. The Fourth Industrial Revolution (4IR) and innovation are going to disrupt agriculture. In using 4IR technologies, the power is in how they integrate to create a sustainable future. For agriculture to remain competitive new technology must be adopted and accessible for all stakeholders.

The youth were encouraged to find their careers through volunteerism and join NGOs to find where they can make a difference and contribute to their respective communities. The youth were advised to constantly seek assistance from government officials and their community members and create accounts on LinkedIn to have a professional online profile and access opportunities. AP

The youth should keep a lookout for the new CC internships that are planned by the WCDoA. There are also opportunities available for the youth at GreenCape, which is constantly advertised on LinkedIn. More programmes and opportunities will be advertised in the SmartAgri Barometer newsletter (https://bit.ly/49Gyyzq)

Get more information here: https://bit.ly/3R5ZvVS and www.greenagri.org.za. Other SmartAgri tools can be found on www.elsenburg.com.

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From vintage charm to creamy delights

Renovating a historic building into a creamery

by Marguerite van Niekerk

The Old Mill House was built in 1761.

Here at the Elsenburg Agricultural Institute (also known as the Elsenburg College), we are fortunate to have a campus with rich history and beautiful old buildings. Preserving history and combining it with artisanal dairy products seems like the perfect pair.

Elsenburg historic dairy.

Unveiling the beauty of the past

The creamery building has been used as an office in recent years, but originally it was used as a mill house in the late 1700s. It was known as the new mill house (Serfontein, 1986) and was built in 1761 by Martin Melck, owner of Elsenburg during that time. The old mill house is the building opposite the Elsenburg rugby fields, built over the water canal. Half-burnt red bricks and dagha (mortar) were made from Elsenburg's golden yellow clay, which was Melck's building material. The initial step in renovating a historic building into a creamery is to honour and respect its historic integrity.

> "Preserving history and combining it with artisanal dairy products seems like the perfect pair."

The exterior evokes a sense of nostalgia while the interior incorporates modern functionality. The creamery has an open layout design, a cooling room was installed, new epoxy floors were laid, and new washing basins installed.

i Martin Melck (above) developed Elsenburg into one of the Cape's finest farms during the latter half of the 18th century. In 1898 Elsenburg was acquired by the Victoria College (now the University of Stellenbosch) as an agricultural college.

Elsenburg Manor House.

Outfitting the area with the correct equipment ensures the highest standards of quality and hygiene are met while preserving the authenticity of traditional production methods.

From left: Students Anri Terblanche, Kyle Laity and Emma Claassen in the process of making Gouda cheese.

Some of the dairy products made during the students' practicals.

> "It is a journey that blends the best of the past with the flavours of the present."

We have a 100-litre milk vat where we can pasteurise the milk and use it to produce feta and Gouda cheese. We also make use of traditional equipment, from wooden cheese presses to a hand buttermilk churn.

Currently, the students were only exposed to the making of butter, cream cheese, feta and Gouda as a practical demonstration. This year the goal is to optimise the utilisation of the space and for students to be more involved. There are, however, some challenges and one of them is to source fresh milk for the practical production of these products.

The future

The goal that we are striving for is to involve the students at events such as the annual South African Cheese Festival, where students can showcase their products and our College to the broader community. The vision of the creamery is to expand the dairy production modules by incorporating a micro-dairy managed by the students at Elsenburg and therefore completing the value-adding chain. There is big potential for the expansion of artisanal cheese in South Africa.

The skills are learned with the hopes

of widening the students' scope for the job market, especially as small-scale cheesemakers.

Renovating a historic building into a creamery is a journey that blends the best of the past with the flavours of the present where students learn more about the artistry of dairy craftsmanship!

With plenty of fantastic artisanal breads, micro-breweries and good wine, the opportunity for locally produced dairy products at small-scale level is significant.

Elsenburg students.

Bibliography

Serfontein, J. (1986). Elsenburg. Stellenbosch: Department of Agriculture. AP

> "Renovating a historic building into a creamery is a journey that blends the best of the past with the flavours of the present."

For more information, contact **Marguerite van Niekerk**:
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Continued cooperation with CALIFORNIA

by Dr Dirk Troskie

In order to cement the memorandum of understanding between the Western Cape Department of Agriculture and the California Department of Food and Agriculture (See page 27 of *AgriProbe*, Vol 20, Issue 1) and to set the ball rolling, the Western Cape Minister of Agriculture, Dr Ivan Meyer, led a delegation to California from 26-30 September 2022. The other members of the delegation were Daniel Johnson (Ministerial Media Liaison Officer), Ashia Petersen (Director: Sustainable Resource Use and Management) and Dr Dirk Troskie (Director: Business Planning and Strategy).

The purpose of this article is to share the highlights of this visit with the readers of *AgriProbe:*

A One theme regularly mentioned during numerous meetings was the importance of climate change (CC) and CC adaptation. According to Secretary Crowfoot (Californian National Resource Agency) and team, CC is not somewhere in the future, but is happening in practice. They argued that this reality can be observed in the recent occurrences of droughts, wildfires, heat waves and flooding in California. In other discussions the sentiment was expressed that, although society and the agricultural sector will probably adapt to the changed environment, individual farmers will go under with serious implications.

B The first time CC was raised, the idea of organising a CC Summit of Mediterranean Countries was conceptualised. This proposal received general acclaim at all subsequent meetings. At the final meeting with Secretary Ross (California State Secretary of Food and Agriculture), this proposal received full support.

Western Cape Agricultural Minister Dr Ivan Meyer with CDFA Secretary Karen Ross.

Learn more!
https://bit.ly/3QDOhqp

C Another recurring theme was the complexity surrounding irrigation water. The California Water Rights System was only established in 1914, leading to an extremely complex system of seniority of subsequently allocated water rights.

California bell peppers. Photo © Rob Bertholf

80% of available water goes to agriculture (some say that nature's share is 50%, agriculture gets 40% and domestic and industry take up the remaining 10%).

D Following the request during the Cabinet meets Agriculture event (15 September 2022 in Bredasdorp) that urgent attention is required to combat the polyphagous shot-hole borer (PSHB) outbreak in the Western Cape, meetings with Californian experts in this field were organised. PSHB, native to Vietnam and other South-East Asian countries, was already detected in California in 2013 and commitment to knowledge exchange in this field was secured.

E Various other opportunities, ranging from Driscoll's investment in Western Cape blueberry farms, exchanges in the field of Fourth Industrial Revolution (4th IR) Technologies and the exchange of interns, were secured.

F These opportunities were all discussed, confirmed and endorsed during a meeting between Minister Meyer and Secretary Ross on the last day of the visit.

> "Climate change is not somewhere in the future, but is happening in practice."

The main observations during the visit were:

A In the State of California, the farming and food production sector is responsible for 2,8 million jobs. In addition, it generates more than US$370 billion in direct economic output. Furthermore, farmers in California are responsible for 20% of the total food supply of the USA, as well as more than 60% of all fruit, vegetables and tree nuts consumed in the country.

B Wildfires are much more prominent in California than in the Western Cape. However, the question is whether the Western Cape will experience the same situation in a few years.

C There is significant conflict and mistrust between producers and the public/environmentalists in California. It is also clear that this conflict is increasing.

If any *AgriProbe* reader is interested in the full report or additional information, they are more than welcome to contact the author.

Watch this!
Scan the QR code or visit https://bit.ly/3QD7S9U to watch the video: 'CDFA OEFI Climate Smart Agriculture 1: Rossow Farms'. Published by California Department of Food and Agriculture.

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Communal farming: Observations from Kampung Ranca Kuning

by Dr Dirk Troskie

View of Kampung Ranca Kuning with rice fields in the foreground, fishpond in the middle-centre, kalangan (hutch for dove sports) and cattle pen in the left background. The rice field in the foreground is about 30 m x 40 m and is a common size for a smallholder's property.

Farming in Kampung Ranca Kuning is predominantly focussed on the production of rice in water-logged paddies using manual labour for planting, continuous weeding, as well as the application of fertiliser and chemicals. The labour is provided by smallholder families[1] or through sharecropping. Land is inherited by all children in equal parts (irrespective of gender). This unfortunately leads to farming units getting progressively smaller and owners exploring other careers whilst renting out their land.

A community member fishing in the rice paddies. Even boundary walls are considered common property.

At a population of 1 196 persons per km^2, Java is home to 151,6 million people. It is one of the 18 110 islands of the Republic of Indonesia and globally the most populous island. At 128 297 km^2, the island is just a little smaller than the Western Cape Province (129 462 km^2) with its population of 7,2 million people. The island of Java shares close historical and cultural[2] ties with the Western Cape.

During June 2023 I was fortunate to spend a three-week holiday in and around Kampung Ranca Kuning, a community where traditional farming practices prevail. Without trying to generalise, absolutise or extrapolate, it is interesting to present some observations of relevance for the Western Cape. »

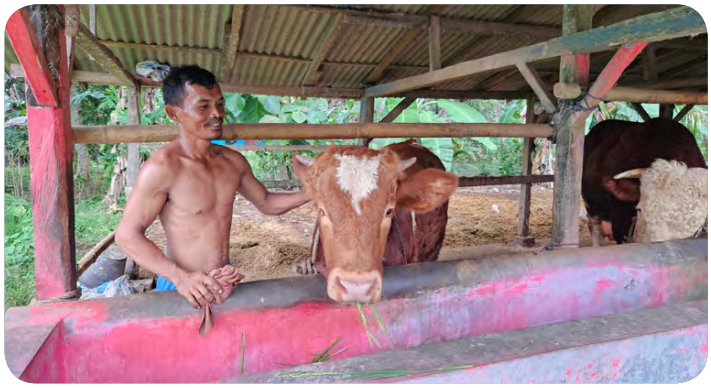
Yes, there are really fish in the rice paddies!

Indigenous chickens running around freely in and around the rice paddies. A featherless neck is a common genetic trait of some Kampung chicken breeds.

Kampung ducks feeding off the verge of a rice fields.

Freshwater fish is common in the paddies and its survival during the dry season is secured by a central breeding pond. Community members use fishing rods or traps to fish in the paddies and may, with the permission of the pond-owner, even fish in the central pond with rods (no traps or nets are allowed in the pond). Interesting examples of integrated systems exists where a "eating house"[3] is built over the pond (usually part of the owner's residence). Your meal is freshly caught whilst you wait, and the scraps are returned to the pond.

Chickens and ducks run around freely but return to their pens at night[4]. Cattle, sheep and goats are stabled, and their



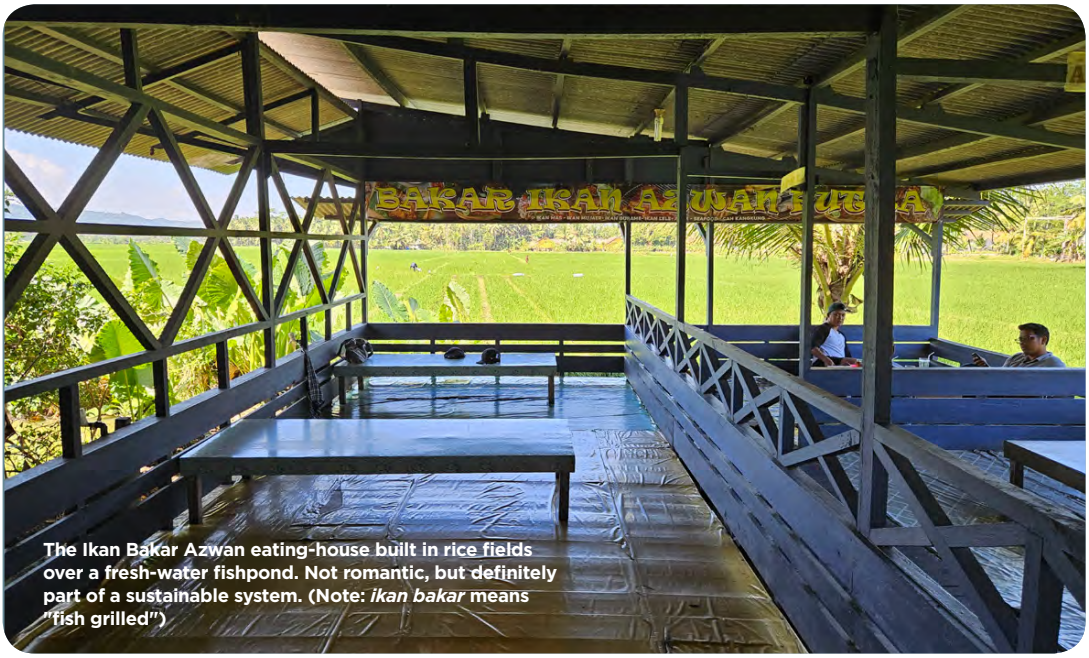
Kampung cattle with their owner. He cuts the grass and feed them. Although the cattle are stabled all day, it is clear the carer has a great affinity for them and here he is in the process of their individual grooming.

caretakers cut grass from common areas to feed them[5]. Again, a profit-sharing arrangement may exist between the owner and the caretaker through which offspring or the proceeds from sales are shared.

Marketing channels are usually uncomplicated and direct. Farm products are either sold directly to other households via the local fresh produce markets or by other households making a living out of preparing and selling food through a *warung*[6]. In all instances earned trust and established loyalties often determine which specific trader will be frequented.

Neighbouring Pangandaran, a well-known domestic beach resort, adds to demand. »

Kampung sheep never leave their pens, but receive fodder cut by their carer.



The Ikan Bakar Azwan eating-house built in rice fields over a fresh-water fishpond. Not romantic, but definitely part of a sustainable system. (Note: *ikan bakar* means "fish grilled")

Below are some of the main observations of relevance to the Western Cape:

a) All land is used – quite often generating more than one source of livelihood to different people in the community.
b) There is a solid and generally accepted social institutional framework. The local system of *Adat* ("the way things are done") is applied to solve any challenges.
c) Although the land is communal, user-rights are clear and is "common knowledge" in the community. This can be equated to a traditional society embedding block-chain technology as a social construct – the more people in the community who can testify of a certain right, the more secure it is.[7]
d) The implication of (c) often leads to frustrations amongst Western businesspeople. Whereas a piece of paper (contract or deed certificate) is considered proof of transaction in a Western context, community-accepted rights normally trump the piece of paper.
e) Although technology advancements

A grilled fish (caught while you wait) with local vegetables and rice – quite affordable at R50. The rests get returned to the pond.

Hence, living in a community, spending time understanding the social norms, is better (and cheaper) than shuttling in and out whilst relying on a court of law.

Fresh produce stalls at the market in Pangandaran.

are present (e.g., mechanised ploughs have largely replaced animal traction (water buffaloes) as power source for cultivation), only traditional methods may be used in communal spaces. This is largely in line with the findings of Nobel Laureate Elinor Ostrom. For instance, only fishing rods may be used to catch fish in the fresh-water ponds in rice fields.
f) A whole range of existing points of sale exist throughout the community. It follows that "market access" and challenges with accessing "formal markets" are unknown concepts in these communities.

A local *warung* specialising in *pecel* with *saus kacang* (vegetables with peanut sauce), *bala-bala* (deep-fried dough encrusted vegetables) and rice. A filling meal can be had at R20.

g) Product yield, as return to own labour (i.e., through cultivation of rice, sharecropping or caretaking of animals), is often the only income derived by households.
h) Food is quite affordable and very tasty. Although the value chains are short, the affordability to the consumer means that margins are low throughout.
i) Young people react to this by embracing all opportunities towards alternative career development.

Some more fresh produce stalls at the market in Pangandaran.

The on- and off-farm systems in Kampung Ranca Kuning are well-established and ensconced in traditional practices leading to sustainability. More often than not similar systems do not exist in the Western Cape and local social norms and individual aspirations prevent its replication.

»

FOOTNOTES:

1. Only women are entrusted with planting rice and only wise old women have the wisdom to collect the seeds for next year's crop.

2. For instance, the double negative as well as repetitive words (*gou-gou*, *nou-nou*, *kort-kort*) used in Afrikaans can be traced back to Bahasa Indonesia. Further, most Afrikaans-speaking families have at least one ancestor originating from Batavia.

3. Literally, a place to eat. Not to be confused with the cozy setting of a restaurant.

4. The ultimate democratisation of animal husbandry – by selecting their resting place for the night, poultry "choose" their owners!

5. Hence, the vegetation on road verges remains well maintained!

6. Traditional roadside eatery often specialising in one or two products.

7. As usual, agriculture is so far ahead while people think we are behind.

Local tourists setting off in a traditional boat from the beach in Pangandaran. And no, the Blue Bulls have not started a local franchise!

A team of about 12 local fishers (men and women do the same work) bringing in their net.

There is no shortage of entrepreneurs. A vendor preparing grilled food on a portable stove for local tourists.

isiXhosa summary

Kwihlabathi liphela, i Java sisona siqithi sina bantu abaninzi nesobelana ngembali esondeleyo kule yeNtshona Koloni kwakunye nezithethe eziyeleleneyo. Ngaphandle kokuquka, zinika umdla iindlela zakudala zokulima nokufuya nezisetyenziswa ngabantu kwindawo ekuthiwa kuse "Kampung Ranca Kuning". Eyona nto ininzi elinywayo yi "rice", ze ilandelwe kukukhulisa iintlanzi emanzini (kususela kwintsimi ye rayisi, iye etafileni, ze amathambo entlanzi agalelwe emanzini ukuze zikhule) konke oku kwenzeka ngeli xesha iinkukhu (imileqwa) kunye nemfuyo zibenza bube ngcono ubomi. Iindlela zokurhwebelana azindanga, kuthengiselwana ngokunikana ngezandla yaye wonke loo msebenzi uxhomekeke ekuthembaneni kwa bantu.

Our host family: Agus (right), works at the local government and his wife, Tuti (second to left), is standing next to her sister, Desi. Raka (back) and Ray are Agus and Tuti's children. (Surnames are non-existent in parts of Indonesia). Raka, who studies architecture at a university in Bandung, and Desi, who studies commerce at a university in Ciamis, were at home for the end-of-term holiday.

Ezona zinto sizibukileyo, ziquka:

a) Wonke umhlaba uyasetyenziswa – ikakhulu abantu bayahlangeneyo.
b) Kukho indlela elawula ukuhlalisana kakuhle kwawo wonke umntu.
c) Umhlaba ungowabantu abahlala ndaweni inye, kodwa ilungelo lokuwu-sebenzisa licacile yaye "lulwazi olu-qhelekileyo".
d) Amaziko ase luntwini ayayidelela imithetho ebekiwetyo yaye ukuqonda amaziko olawulo nale luntwini kukona kubalulekileyo kubahambi abenza ushishino.
e) Nanjengokuba ibubuchule bakudala qha obamnkelekileyo, usizi lwabantu abange nto luyathintelwa.
f) Iindawo ezisigxina zokwenza iintengiso (urhwebo) zibonakalisa ukuba akuyo ngxaki ukungena kurhwebo.
g) Imveliso evunwa kwiindima ezincinane, okanye ibathwana le mfuyo, zizo kuphela ezingenisa imali.
h) Ukutya akubizi mali ininzi yaye kune ncasa, kodwa imali ayininzanga kuyo yonke imigangatho yorhwebelwano.
i) Abantu abasena mandla /ulutsha bazi/ luzi lungiselela ezinye iintlobo zemisebenzi yokwenggesho.

Ezi ndlela zaziwa ngumntu wonke zixhasa uzinzo azobonelwanga kwimeko yase Ntshona Koloni.

Enjoying a freshly picked coconut for which Raka (left) just scaled a coconut tree.

For more information, contact **Dr Dirk Troskie**: ✉ dirk.troskie@westerncape.gov.za

The old and new from the UK

by Annemarie van der Merwe

In an era of unprecedented technological advancement, the agriculture sector must stay abreast of innovation to remain sustainable. A recent expedition took four Western Cape Department of Agriculture officials, Dr Johann Strauss, Annemarie van der Merwe, Rens Smit and Arie van Ravenswaay, on a journey to the United Kingdom to visit cutting-edge agri-tech solutions. From Thriplow Farms and the Rothamsted Conference to the Agri-EPI Hub and Harper Adams University, this working trip was intellectually stimulating and showcased new technologies for the future of farming.

Harper Adams University, founded in 1901 as Harper Adams College, is a public university located close to the village of Edgmond, near Newport, in Shropshire, England. Established in 1901, the college is a specialist provider of higher education for the agricultural and rural sector.

Dr Johann Strauss in a faba bean field at Thriplow Farms.

Thriplow Farms: A sustainable paradigm shift

The excursion started at Thriplow Farms, a working crop farm applying conservation agriculture principles, where officials encountered the integration of processed sewage slurry as a nitrogen source. This unorthodox method yielded astonishing results, boosting wheat yields by one ton per hectare.

Integrating urban waste management and agricultural productivity offered a glimpse into innovative circular economy practices that could be transplanted to the Western Cape.

However, Thriplow Farms was not limited to fertilisation innovations alone. The government-backed initiative to conserve natural vegetation, establish flower strips and support bird habitats underscored the potential for agriculture to harmonise with biodiversity preservation. This approach revealed how ecological stewardship could become financially viable by offering grants that bolster farm cash flow. »

Learn more:
https://bit.ly/3Gm2yTX

The archive at Rothamsted that preserves seed and soil samples from 1840.

Between 1843 and 1856, Sir John Lawes and Sir Henry Gilbert established several long-term field experiments at Rothamsted Research (Harpenden).

Rothamsted Conference: Meeting future challenges

At the Long-term Experiment Conference at Rothamsted, the team presented two posters and a presentation of our trials in the Western Cape. The discussion sessions were focused on solutions to the challenges of long-term trials. This research institute has state-of-the-art facilities for agricultural research and a museum and archives of seeds and soil samples dating back to 1840.

The oldest trial at Rothamsted is the longest-running agricultural trial in the world and was initiated by two farmers.

The long-term trials of the Western Cape Department of Agriculture are part of a Global Long-Term Experiment Network (GLTEN) established in 2018. The purpose of this network is to share data and expertise worldwide. Attendees had an opportunity to interact with researchers managing similar long-term trials at the conference. Long-term trials are essential for studying the sustainability of cropping systems over more extended periods and modelling future scenarios for changing weather patterns. The crop rotation and tillage trials at Langgewens and Tygerhoek Research Farms have been running for 16 years. The crop rotations include medics, wheat, canola and lupines in different combinations. Each plot is subdivided into one of four tillage treatments: zero-till, no-till, minimum and conventional.

Norman is an autonomous tractor built at Harper Adams University with remote sensor systems that enable it to provide information to farmers, such as plant growth, crop pests and diseases.

The long-term Conservation Agriculture (CA) crop rotation trial is the only one in the world that currently incorporates grazing animals with pasture and cash crop systems. The size of the trial plots is also unique.

Harper Adams University: Robots cultivating innovation

Harper Adams University was the first to showcase the potential of using robots in agriculture by establishing a one-hectare field cultivated and harvested entirely by robots for a year. This tangible testament to the fusion of hardware, software and communication systems demonstrated the power of automation in redefining farming practices. Discussions around using lasers to weed and autonomous spray vehicles underscored the importance of computer vision and technological integration.

The university's innovative strides inspired the Western Cape to embrace these technological leaps and pave the way for a future where robots collaborate with farmers in cultivating abundance.

Watch this!
Scan the QR code or visit https://bit.ly/3QFxAe3 to watch the video: 'Hands Free Farm'. Published by Agri-EPI Centre.

The dairy at the South West Dairy Development Centre integrates robotic milking with precision grazing.

A demonstration of flower strips at the Groundswell Agriculture show. Flower strips attract insects that are beneficial for pollination and pest control and are an important source of biodiversity.

Agri-EPI Hub: Robotics and precision

At the Agri-EPI Hub, the team saw robotics and precision agriculture technologies that can revolutionise farming. Autonomous dairies operated by robots, sensors and machine learning systems showcased a harmonious future where efficiency, animal welfare and environmental sustainability coexist. They met machines like Frodo, an autonomous robot capable of adapting its size as needed through innovative scaffolding pipes to move over crops to weed. A robot cleaned the dairy floor using less water than the traditional system.

Watch this!
https://bit.ly/3G3nBdK to watch the video: 'South West Dairy Development Centre stars in new 5G film'. Published by Agri-EPI Centre.

Arie van Ravenswaay, Annemarie van der Merwe and Rens Smit with a typical English background.

Groundswell Agricultural Show: A kaleidoscope of possibilities

The Groundswell Agricultural Show provided an immersive experience of regenerative agriculture. There were talks, demonstrations and exhibitions highlighting the principles of minimising soil disturbance, increasing crop diversity, protecting the soil surface, integrating livestock and maintaining living roots. There were a variety of implements, biostimulants, consulting agencies and soil testing technologies on display.

The show also demonstrated novel crops, like hemp, chia and Ahiflower, posing alternative solutions for economic diversification and sustainable growth. The importance of integrating cover crops, livestock and soil biology was shown.

The trip to the UK highlighted the global agricultural community's inherent interconnectedness, where farmers' challenges are universal and innovation knows no borders.

Photo © Simon Kohli

> "We saw the oldest ongoing agricultural trials in the world as well as autonomous tractors and sprayers working in a field without any humans present."

The path to sustainable agriculture is possible with collaboration, adaptability and a willingness to embrace transformative technologies. The officials hope to use the new connections and knowledge to improve food security in the Western Cape. AP

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Daniël van der Merwe awarded a bronze medal

by Prof. Tertius Brand

Dr Daniël van der Merwe has recently achieved his PhD from the Stellenbosch University, where he conducted research under the expert guidance of Prof. Tertius Brand. His doctoral research centred on modelling the growth, feed intake and back fat deposition in eight distinct South African sheep breeds.

Daniël's research journey was primarily based at the Department of Agriculture in the Western Cape, located at Elsenburg. The majority of his research activities took place at the Langgewens research farm near Moorreesburg.

In recognition of the outstanding quality of his work, Daniël was recently honoured with a bronze medal by the South African Society for Animal Science, acknowledging his significant contributions to the field of animal science.

Daniël is a dedicated and highly motivated professional animal scientist. He currently serves as the Technical Services Manager at Kemin Sub Sahara Africa. His focus is on conducting applied research to benefit the industry and make a substantial

Dr Daniël van der Merwe (left) received his medal from Dr Trevor Dugmore, president of the South African Society for Animal Science.

contribution to the improvement of the livestock sector. He possesses a strong technical understanding of animal nutrition and production and is proficient in the use of computer software, internet applications and mathematical modelling of animal production and nutrition.

Daniël completed his thesis in 2020 and published seven manuscripts in peer-reviewed, internationally acclaimed journals. Additionally, he presented his research at six different conferences, both locally and abroad.

The models and results obtained in his studies can be used to simulate feedlot rearing scenarios for eight different South African sheep breeds, allowing for predictions of possible outcomes. This information can help producers determine ideal slaughter weights that align with market specifications while optimising profitability. The results also shed light on the product quality of meat, wool and leather from various breeds, aiding producers and processors in shaping their marketing strategies for maximum profitability.

Daniël's work stands out as the first to describe the fat accumulation patterns in different South African breeds, as well as the leather characteristics of South African sheep breeds raised under similar conditions. It is evident that, besides his significant contributions to scientific knowledge, the practical application of his work in the industry is highly valued.

Furthermore, part of his work will be used to develop a computer model that will assist small-stock producers in predicting the ideal slaughter weight of lambs from the different breeds studied.

His dissertation is based on comprehensive studies that aimed to develop models describing growth, feed intake, back-fat deposition, wool growth, and meat, wool and leather quality characteristics of lambs from different breeds. The breeds included in these studies comprised ewes and rams from Dohne-Merino, Dormer, Dorper, Meatmaster, Merino, Namaqua Afrikaner, South African Mutton Merino (SAMM), and White Dorper sheep

Learn more! Scan the QR code or visit https://bit.ly/40OBnKS to download the published article.

Acknowledgements

Daniël's research work was supported by Cape Wools South Africa as well as the Western Cape Agricultural Research Trust. AP

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CELEBRATING 125 YEARS

by Sandile Mkhwanazi and Zenovia Parker

125 YEARS OF MILESTONES

The Elsenburg Agricultural Training Institute, commonly known among the agricultural colleges as Elsenburg, has had a journey dating to over a century of great strides Here are just few of its milestones.

1899 The first students were enrolled. The first ever academic year ended in June with 5 graduates. For the first 14 years, the college averaged 44 students on its campus.

1926 The birth of the collaboration between Elsenburg College and Stellenbosch University. A two-year Diploma was formally introduced to students and farmers that had training needs. The Diploma was later replaced with a one-year course, with the college honing the practical aspect of training.

1976 An industry-renowned qualification, the Diploma in Cellar Technology, was established and still remains the most revered qualification in the industry, with most winemakers in the industry having received their training at Elsenburg College.

2004 The collaboration with Stellenbosch University was re-ignited. In association with Stellenbosch University's Agri-Sciences faculty, the Bachelor's in Agriculture was offered at Elsenburg College. In the same year, Elsenburg College was renamed to The Cape Institute for Agricultural Training and in 2009 to the Elsenburg Agricultural Training Institute.

2019 Within the sub-programme: Higher Education and Training, the two-year Higher Certificate and the one-year Diploma courses were phased out and accreditation was obtained in October 2019 for a new three-year Diploma. The first intake for the three-year Diploma was in January 2020. The three-year diploma includes Workplace Integrated Learning during the final year of the qualification.

2022 Within the sub-programme: Agricultural Skills Development, the one-year Learnership Programme (National Certificate in Plant Production and National Certificate in Animal Production) will be phased out in 2024. Accreditation for the Occupational Certificate: Orchard and Vineyard Foreman (NQF Level 04) and Occupational Certificate: Livestock Farmer (Livestock Farm Supervisor) NQF Level 03 were obtained in July 2022. The Occupation Qualifications will replace the Learnership Programme. This will allow students to follow a career path against the backdrop of the National Qualifications Framework.

2023 An evaluation of the employability of the graduates of Elsenburg Agricultural Training Institute was finalised and is available on the website of the Western Cape Department of Agriculture (https://t.ly/hV1jh).

For more information!
Scan the QR code or visit: https://rb.gy/9sj4rx for more information on the College and courses offered.

2023
A year of sport excellence at the College


The year 2023 was a year of great achievement for the Elsenburg Agricultural Training Institute, hosting both the 2023 Pannar and NACSANO Sport Weeks. With fierce competition from the other agricultural colleges, Elsenburg was able to reach the finals in all sporting codes, going for gold in the rugby, soccer and golf tournaments and the netball team finishing second in a hard-fought final.

The Western Cape Department of Agriculture is proud of our students' hard at work.
Asinalo Uvalo Thina! We Have No Fear!

Elsenburg rugby team, winners of the SA Agricultural Colleges Rugby Week.

Elsenburg soccer team, winners of the soccer tournament during the NACSANO Sport.

Elsenburg Netball team, runner-up of the netball tournament during the NACSANO Sport Week.

The Elsenburg winners of the golf tournament during the NACSANO Sport Week.

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Pippa Karsen awarded her PhD

by Pippa Karsen

The Doctorate of Philosophy of Agricultural Science (PhD) will mark Pippa Karsen's third degree in Horticultural Science from the Stellenbosch University. She completed her BSc in Horticultural Science in 2000 and her master's degree on the rooting of buchu (*Agathosma* species) in 2004 under the guidance of Prof. Gerhard Jacobs.

Her PhD entailed a novel study on rooting dynamics and establishment of honeybush, which is critical for the sustainability of this fledgling South African Herbal Tea Industry. Reliance on wild harvesting of this endemic fynbos plant puts pressure on natural populations and thus our indigenous flora and biodiversity, making the shift to cultivation essential to ensure a constant supply of premium quality tea that is sustainably sourced. This research offers insights into propagation, rejuvenation and nutrient requirements, driving the shift from wild harvesting to cultivation. Its scientific significance lies in providing valuable knowledge for long-term cultivation and conservation, highlighting its potential as an indigenous crop in the Western and Eastern Cape.

Thus far, she has published three papers from her PhD as "A Horticultural Review" in the *American Journal of Plant Science*. https://doi.org/10.1002/csc2.20752 and a research paper, in the *South African Journal of Botany* titled "Rooting dynamics of 'kustee' honeybush (*Cyclopia genistoides*) as affected by seasonality and the manipulation of stock plant characteristics" https://doi.org/10.1016/j.sajb.2023.10.014.

Currently one of her research papers is at press in the *South African Journal of Plant and Soil*, namely "Rooting potential of 'vleitee' honeybush (*Cyclopia subternata*) as affected by growth season and manipulation of stock plant characteristics".

She has also presented six papers at various congresses and presented her PhD findings to the South African Honeybush Tea Association and at farmers' days in the Langkloof and Bitou areas. AP

Presently, she is a scientist specialising in alternative crops at the Western Cape Department of Agriculture in the Research and Technology Development Services Programme.

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Insight into some selected **agricultural economic data tools**

by Riaan Nowers

Access to timely, accurate and useful datasets is arguably one of many heated discussions within agricultural economic circles.

When looking into the availability of such data the cost factor nearly always plays a role as well as the sensitivity and ownership of some data and information systems.

Without going into an academic discussion into what agricultural data and information is, and which is the most user-friendly, cost-effective and of use practically within primary agriculture, this article would simply like to share some agricultural economic tools or datasets that are free to use, and which really is of value not only at farm level but also for policymakers and policy planners in general.

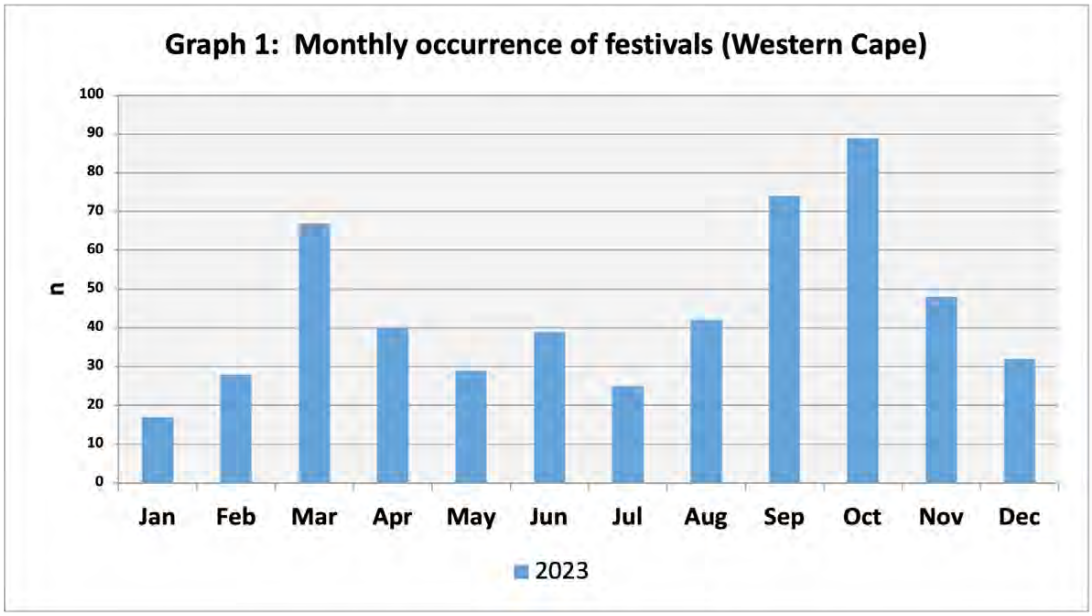
Some of these "tools" available are databases on:

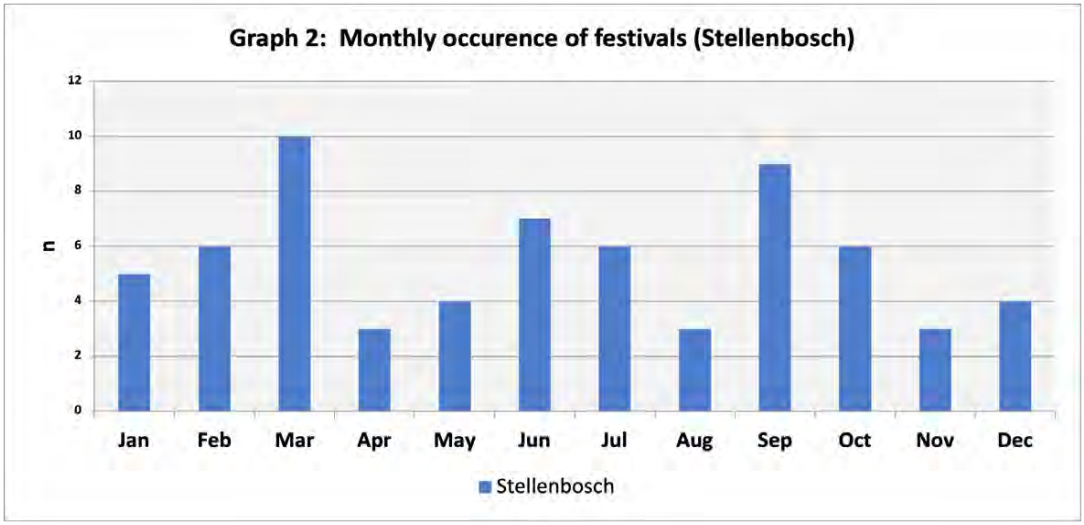
- Western Cape festivals
- Western Cape sporting events
- Regional agricultural land prices
- Game industry growth and species prices
- Livestock breed price performances »

One of the positive spinoffs of the agri-tourism database the Western Cape Department of Agriculture manages, is the sourcing of a list of rural festivals per town, which is extremely valuable to rural tourism developers and managers.

This database of 521 festivals keeps track of the various festivals taking place across the province. When manipulating it to show the monthly spread per town, an interesting flow of events taking place in each town is shown.

When interrogating Graphs 1 and 2 it becomes evident which months are popular for festivals and which not. This is important to take cognisance of since the tourism manager can use this tool to plan the province or specific town's tourism offering in order to get more feet at rural level to enhance rural development.



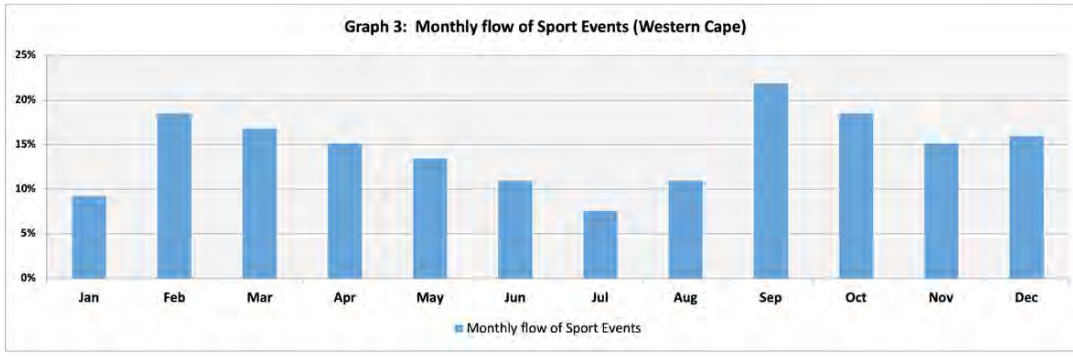


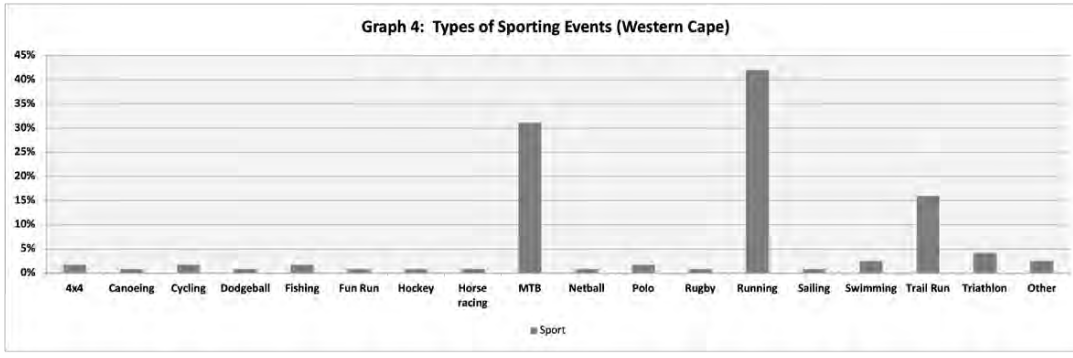
Graph 4 shows that running, mountain biking and trail runs are the most popular regional sporting events in the Western Cape. Photo © Roger de la Harpe

This graphical display of festivals can also be extrapolated to that of sporting events within the Western Cape.

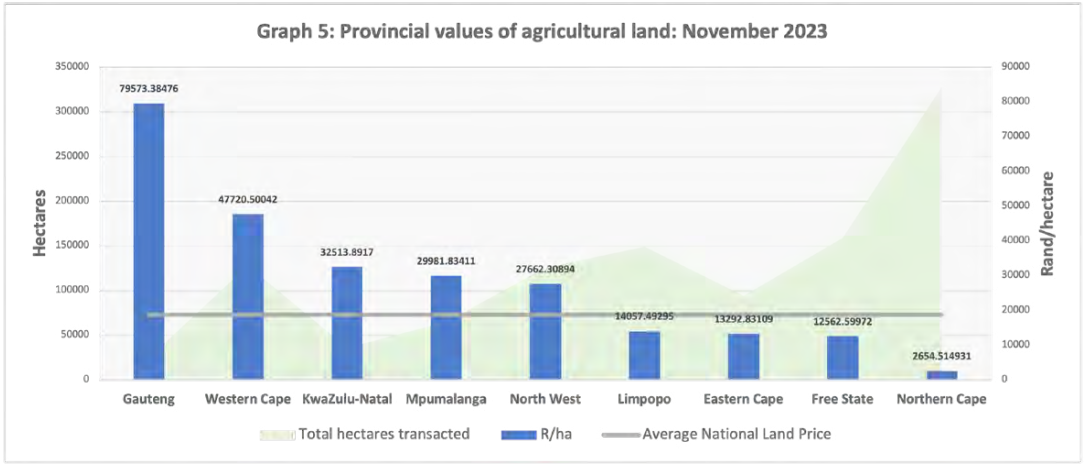
From Graph 3 it is clear that the months of January and July are not so popular for these events, and when scrutinising Graph 4 it becomes evident that running, mountain biking and trail runs are the most popular regional events.

It is therefore a practical tool to determine in which months certain events should be organised, as well as in which town(s), as this data is available per town in the Western Cape. »

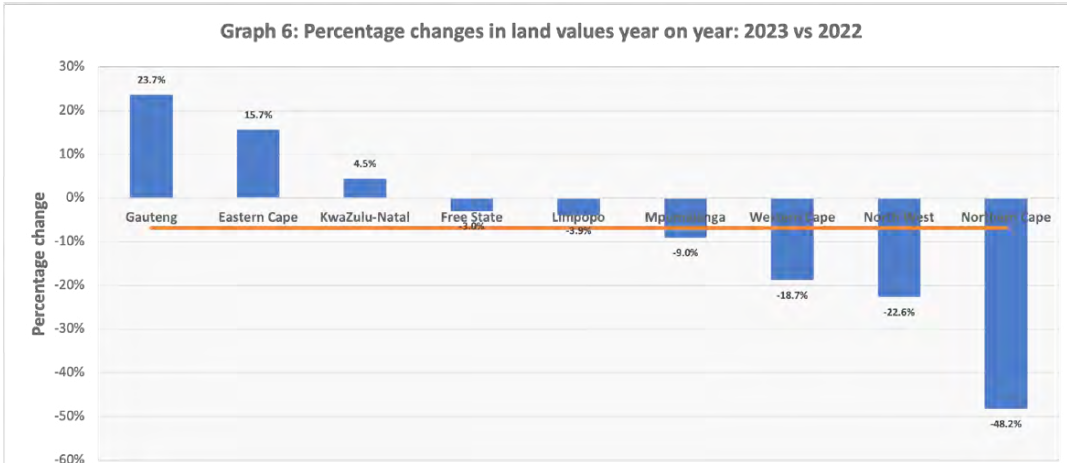




One of the most exciting agricultural economic tools is the database on agricultural land prices, which is not only available to the Western Cape but also for all other eight provinces. These agricultural land prices are the result of actual land transactions that are taking place. It also shows results for small, medium and large farms taking into consideration the differentiation in farming types per region, i.e., extensive versus intensive farming areas.



Graph 5 above shows that Gauteng and the Western Cape have unsurprisingly the most expensive agricultural land while the Northern Cape has the least expensive land for agriculture.



Graph 6 indicates that year on year the biggest growth in land prices was in Gauteng with all other provinces showing a decline in land prices from last year. Remember, these figures are only up to the end of May (2023), and it must and will change as the year progresses.

The number of transactions per province is also relevant and of importance to the policymaker as it indicates the relative vitality and market sentiment in the various provinces.

There are obviously various reasons for these differences in provincial sales. Looking into these reasons will be of interest to economists and eventually policymakers to explain the impact of both external and internal economic stimuli that influence these farm/land transactions.

Graph 7 shows that the North West, Free State and Limpopo provinces have an above-average number of farm transactions with the other provinces somewhat below the average number of annual land transactions. »

Graph 7: Transactions and hectares transacted of agricultural land up to November 2023

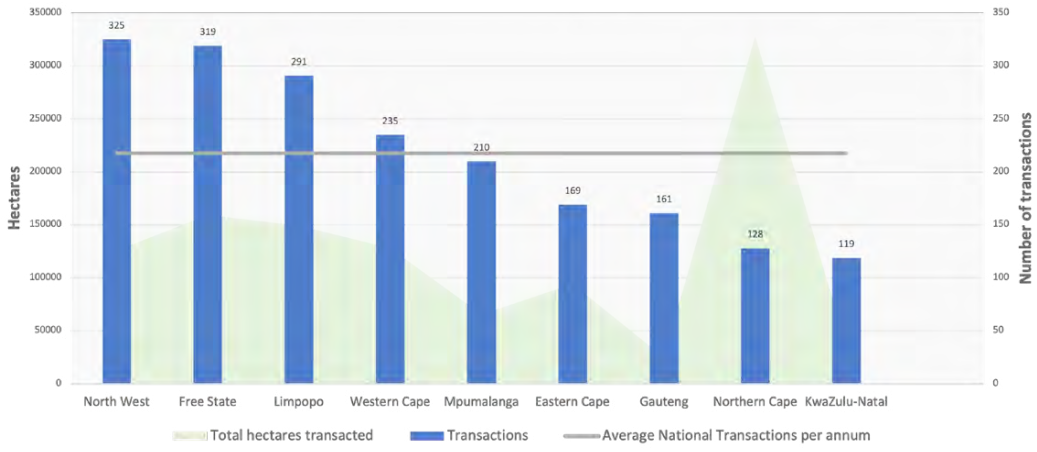


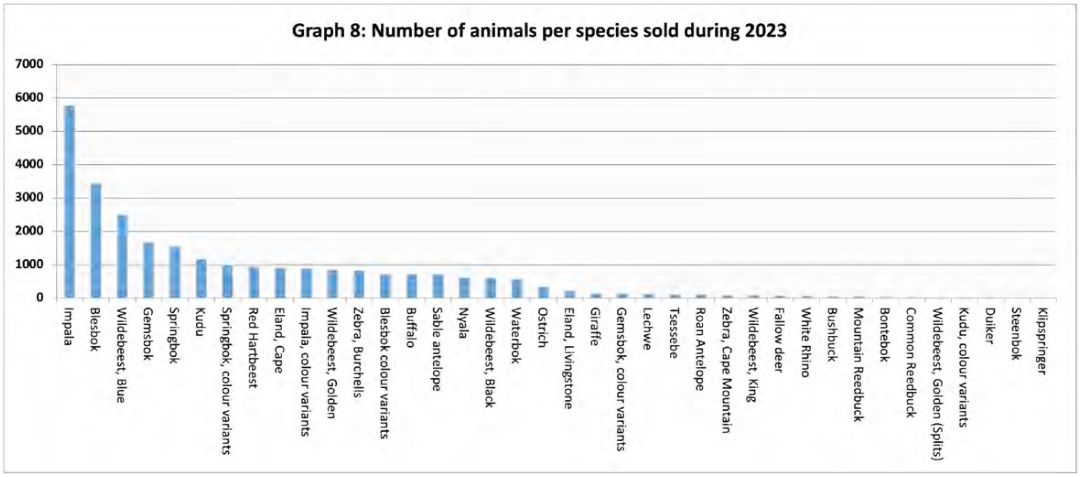

Photo courtesy of
Oldenburg Wine Estate

Springbok (*Antidorcas marsupialis*).
Photo © Willem van Rooyen.
Courtesy of *Jules of the Karoo*.

Another tool that is of value to the agricultural sector as a whole is the database on game species prices that are available on game auctions across South Africa. More than 1 500 categories of game species' weighed and highest values per annum are available and from these the most popular game species and most expensive/valuable game species can be quantified and qualified. This tool also assists the game auction industry to monitor its turnover and animal sales per year, and to identify any structural changes that may have taken place.

Graph 8 is but one of a number of graphs that are available to show what is currently happening in the growing game industry.

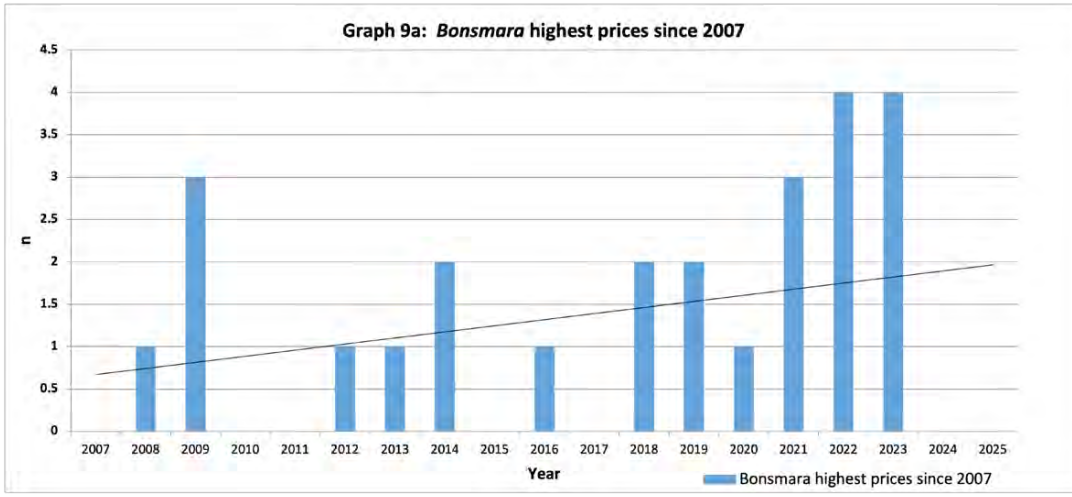
The Department also keeps track of most

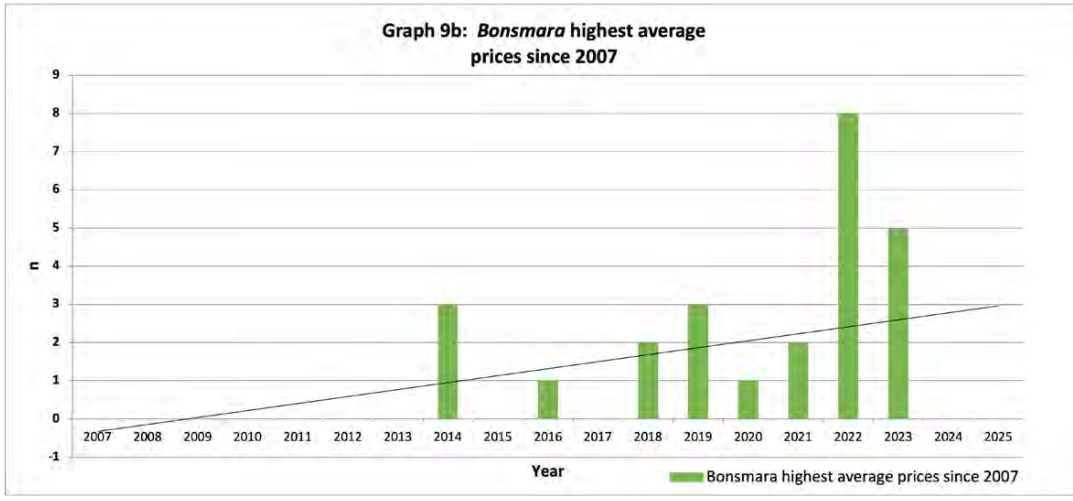


*** Data up to May 2023**

livestock breed auctions that are taking place. Where possible, auction results are captured within databases that cover the average and highest prices paid per category within each livestock breed. This covers auction results for cattle, sheep and goats. For example, cattle breed auction price data is kept for 42 breeds (from Afrigus, Afrikaner, Afrisim, Angus and Ankole up to Sussex, Tuli and Wagyu breeds). In the same way sheep breed data is kept for 21 breeds (Afrikaner sheep to White Dorpers).

These price datasets are not only used in enterprise budgets but also provide wonderful insights into each breed's price performances, which is valuable for the new farmer who wants to invest in a specific breed.





Most people will look at the highest prices of animals realised (Graph 9a) but it is argued that decisions should rather be based on the performances of the average prices (Graph 9b) within each breed when compared to previous years.

This data and information are freely available from the Western Cape Department of Agriculture (https://shorturl.at/aiAJ8). AP

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Southern Treasures

A wine brand proudly owned by humble agri-workers

by Recardo Carelsen and Mariana van der Merwe

Numerous building blocks for rural developmental projects are crucial for the successful implementation of such a project. These building blocks include tenure security, mentoring, willing beneficiaries and capital, as well as production input investments. Akkedisberg Boerdery Pty (Ltd) proves to be a case in point.

Being situated in the heart of the Overberg District wine capital between the southern mountains, allows this group to be part of such an economic beneficial environment. After ten years since its inception the project is now a proud owner of its own wine product, Southern Treasures Pinotage 2021.

A group of 20 beneficiaries whose resilient attitude stood the test of time through Covid-19, a number of drought seasons and heavy rains, has prevailed and the group's members are now prospering into successful businesspeople.

The beneficiaries negotiated a 30-year lease agreement of 20ha with the Dreyer family (owner of the land), of which 16ha are fully planted with different wine cultivars. The remainder of the land consists of roads and part of the dam on the farm.

A number of stakeholders participated and contributed during the registration of the long-term lease agreement at the National Department of Agriculture during 2015/2016. The vineyards were established over time and therefore the beneficiaries were liable to pay the lease for the land that was cultivated. The landowner doesn't want to limit the group to 16ha cultivated, and instead allows for more land to be available for the group. However, this land is currently undergoing an EIA process in order to be cleared for cultivation.

Secondly, the current tenure arrangements opened other doors for the group that allowed them to gain access to funding for some production inputs and related support, especially during the COVID-19 pandemic period. The SA Wine Industry Transformation Unit (SAWITU) supported the group with R500 000 for production inputs during COVID-19. The Wine Commodity Project Allocation Committee through the Comprehensive Agricultural Support Programme is one of the major funders of the project.

The Western Cape Department of Agriculture (WCDoA) started to support the project during the initial stages (2014/15 financial year) with capital investments that include 3ha of wine yards, irrigation infrastructure and production inputs. The support of the WCDoA continued throughout the establishment of a total of 16ha of wines.

PRODUCTION RECORDS

BLOCK	ha	YEAR	VINTAGE YEAR 2018*	VINTAGE YEAR 2019*	VINTAGE YEAR 2020*	VINTAGE YEAR 2021*	VINTAGE YEAR 2022*	VINTAGE YEAR 2023*
Pinotage	2.93	2015	9	12.15	27.836	28.339	25.349	21.402
Malbec	1.75	2015	9.2	9.6	13.080	11.550	21.000	12.300
Sangiovese	2.32	2015	14	6.5	15.960	10.250	30.000	10.450
Cabernet Sauvignon	4.7	2018					6	18
Merlot	3.2	2019						
Cabernet Franc	1.1	2019						
TOTAL	16		32.2	28.25	56.876	50.139	82.349	62.152

*Tonnes of grapes harvested

Other than infrastructural support, a tractor, pick-up bakkie and implements were included in the support granted by the WCDoA. Altogether, a total of R6,1 million Comprehensive Agricultural Support Programme grant support was allocated.

The history of the Overberg District proves that mentors are one of the essential ingredients for the successful recipe for business development. Josef Dreyer, wine maker of RAKA and a member of the Dreyer family, is the mentor for Akkedisberg Boerdery Pty. Ltd. "I can't sit with my hands folded and do nothing. I have to roll up my sleeves and get my hands dirty." These are the wise words of Josef, who unselfishly delivers an excellent mentoring service without expecting anything back in return. »

Agri-workers from Akkedisberg Boerdery Pty (Ltd) at the launch of their first product, Southern Treasures Pinotage 2021.

Akkedisberg Boerdery Pty Ltd recently appointed a new director and together with the mentoring services available the business is heading in the right direction. All the beneficiaries are "hands on" when it comes to the caring and maintenance of the wine yards.

The beneficiaries are dedicated and hard-working with the aim of succeeding in their endeavour to be proud owners of a successful wine business. At the launch of their product, one of the humble beneficiaries said to me: "Now you must help us with the marketing of our wine. I want to be part of the marketing team when our wine is marketed to overseas companies." The marketing of their product will indeed enhance their success going forward.

SAWITU and the NAMC are already actively playing their part on the marketing side of the business. SAWITU has started to plan and budget for Akkedisberg to participate in wine expos and other programmes available to the group. Their mentor facilitated access to three retail outlets, Wine Village in Hermanus, Onrus Liquors in Onrusrivier and Eastcliff Tops, to sell their product.

The programme Agricultural Economics, together with APSD Overberg, will also proactively include the project as part of the Smallholder Horticulture Empowerment and Promotion (SHEP) implementation in the Overberg district. AP

Southern Treasurers Pinotage 2021 has successfully made its debut on the national platform. During the South African National Wine Challenge 2023 competition, the Southern Treasurers Pinotage 2021 won a double gold award.

Learn more
southerntreasureswine.co.za

For more information, contact **Recardo Carelsen**: ✉ recardo.carelsen@westerncape.gov.za

BFAP Baseline 2023 – 2032 Celebrating 20 years of BFAP Baseline

by Ntokozo Ngwenya, Ayabonga Sibulali and Vanessa Barends-Jones

The year 2023 marks the twentieth anniversary of the **Bureau for Food and Agricultural Policy (BFAP) Baseline**. The BFAP Baseline presents a ten-year outlook for the South African agricultural sector (trade, markets, prices, production and consumption for different industries), including global economic changes.

The yearly BFAP Baseline Launch benchmarks what is most likely to occur under a set of economic, environmental, political and social expectations and measurable assumptions.

The BFAP Agricultural Outlook for 2023-2032 was presented over two days in August – a hybrid national launch followed by an in-person provincial launch. The in-person launch took place in the Western Cape with attendance of major stakeholders (WCDoA and ABSA), esteemed guests and industry representatives. The WCDoA has been working in collaboration with BFAP over the years and the collaboration has grown strong in supporting the industry. Furthermore, BFAP has been instrumental in sharing knowledge and skills with the agricultural economists of the WCDoA.

The BFAP Baseline 2023-2032 takes stock of recent industry developments and presents market-related information, mega-trends, macroeconomic indicators, interventions and policies influencing the industry to better decision-making. Given the set of economic assumptions, the Baseline forecast is developed to highlight partial equilibrium in agricultural markets of selected commodities. »

The BFAP Baseline touched on the complexities that affect the local and global economies: China's recovery post-African swine fever, the Covid-19 pandemic, trade policies, Russia's invasion of Ukraine, weather events, and stock levels and tradability. In 2022, the gross domestic product of the agricultural sector declined to 0.3% based on year-on-year change, as it was projected in the 2022 Baseline. Animal products were leading again for the real gross value of agricultural production in South Africa for the 2022 period, followed by field crops and horticultural products. The Baseline's growth projection for horticultural crops will exceed the field crops from 2023-2032.

The **outlook for field crops** revealed that producers have reinvested in this sub-sector. South Africa is producing a surplus of soybeans and expects close to 100 000 ha (> 208 million tonnes) growth in 2023, while the expected growth of canola in 2032 is 60 000 tonnes due to new technology adoption. The oilseeds see demand increases from human consumption, their use in animal feed, biodiesel, and their favourable relative prices. Sugar cane areas are said to decline by 4% in 2023 and by 5% in 2024, which means that 1 630 smallholder cane farmers are at risk. In 2023, the maize crop will produce 16 million tonnes and surpass 3.7 million tonnes in exports.

The **outlook for animal products** has shown that the market's sub-sector is faced with pressure on its profitability, similar to the global market. The outlook revealed that the Agriculture and Agro-processing Master Plan (AAMP) has had an impact on the production of chicken for the domestic market. Exports declined as the sub-sector was faced with many cases of biosecurity and animal diseases outbreaks (animal foot-and-mouth disease). The total consumption of meat increased in the past ten years, driven by consumers purchasing affordable protein products, such as poultry and pork, which increased by 4% and 21% respectively per capita consumption. The beef slaughter


Photo © Dewald Kirsten

number does not look great, but the industry was successful in controlling imports. Beef supply is expected to increase, which will increase the per capita consumption by 4.1% in 2032.

The **outlook for horticultural products** showed that the significant price pressure, changing unfavourable weather conditions and higher stages of loadshedding affected its profitability, thus decreasing the total area of production for the horticulture sub-sector. This sub-sector is export-focused, expecting a large share of trees that are still non-bearing for the export market.

For the deciduous fruits, the forecast is a nominal gross production value of R54.5 billion, and for citrus, subtropical fruit and nuts the forecast is R89.7 billion for 2032. In 2022, the wine industry regained its consumption to levels close to the averages of 2017-2019, yielding a producer revenue value of R7.4 billion and exports at R10 billion (-3%).

The key takes were:

- Impact of loadshedding – negatively affects the profitability of horticultural products and livestock.
- Consumers under pressure – local consumers purchase according to affordability.
- Animal health – significantly restricted livestock exports, as there were frequent disease outbreaks.
- Infrastructure investment – the need for improved port capacity and efficiency, and improved roads increase exports for field crops and horticultural products.
- Cane smallholder farmers – to reduce the risk loss, these farmers need more investment to remain profitable.
- Agriculture is the common denominator – what sets the AAMP apart from the National Development Plan? As it is, it is more specific to the agricultural industry.

> "It is pivotal that data is analysed and used to draw foresight for the possible trajectories of the agricultural sector."

With more data and a more integrated world, it is pivotal that data is analysed and used to draw foresight for the possible trajectories of the agricultural sector.

Having such Baselines helps inform the stakeholders in the agricultural sector to aid their decision-making on investments, markets and policies. AP

Learn more

Download the full 2023 baseline report here: https://bit.ly/3R8DwgX

For a recap of the BFAP Baseline 2023-2023 Launch, visit BFAP Baseline 2023 - 2032 - YouTube. You can also find more information here: https://baseline.bfap.co.za/

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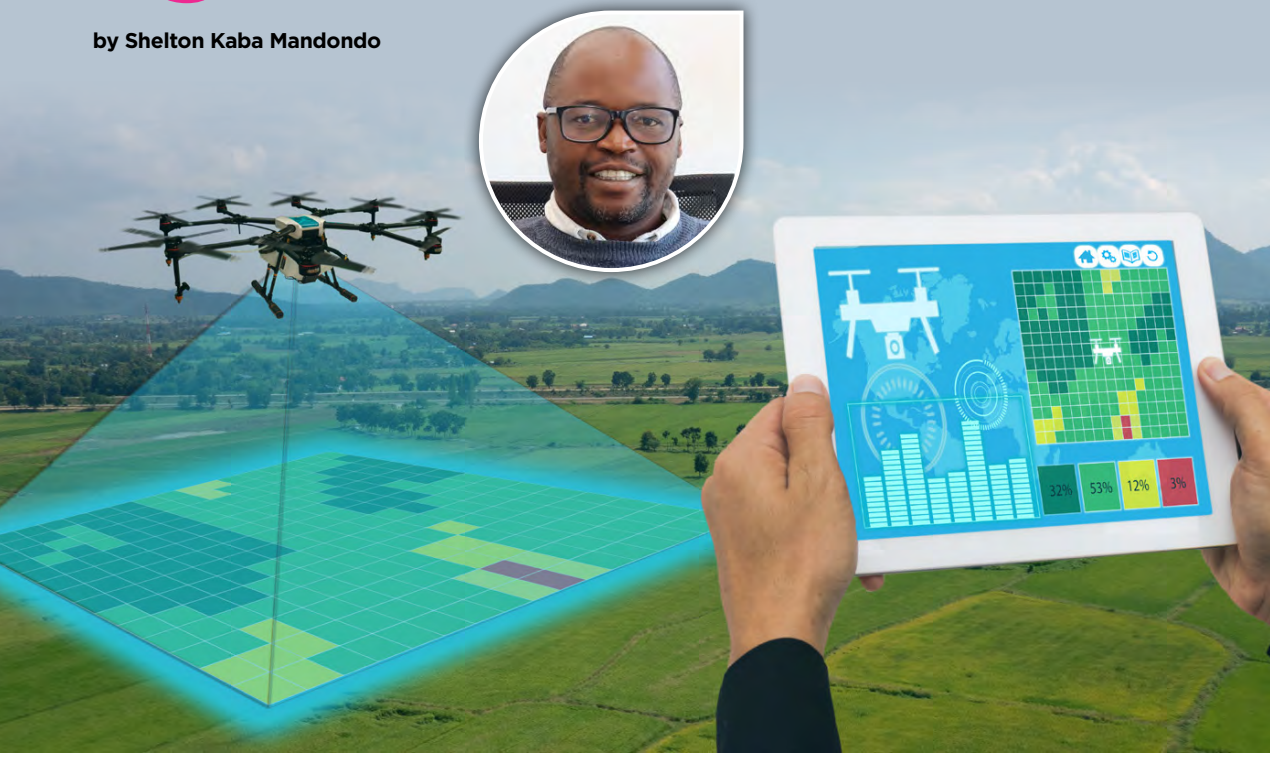
WCDoA embeds **drone technology** in **agricultural schools**

by Shelton Kaba Mandondo



In *Agriprobe* volume 19 (nr. 2 of 2022) it was reported that agriculture and agribusiness stakeholders urged the Department to reach out to schools and support educators embedding drone technology training in their study syllabus. The message was hammered deeper during the drone training intake of farmers and agriworkers wherein 33% of applicants were educators and only one teacher was enrolled due to limited capacity.

This was followed by a plight from the principal of Swartberg High School in Prince Albert. The principal indicated that the school was offering Agricultural Technology as a subject in Grade 11 and it has two drones lying idle due to a lack of capacity to utilise them.

On further enquiry, it emerged that over the past few years, the number of schools with Agricultural Technology as subject has increased to 33 and the Western Cape Department of Education (WCDE) had acquired one or more drones for each of the 33 schools currently offering Agricultural Technology.

The educators that responded to the WCDoA clarion call for drone training.

However, educator capacity to teach the subject to learners remains a thorny issue and a case was made for the Department to intervene.

As a responsive Department, WCDoA collaborated with the WCDE to embed the drone technology in agricultural schools. A four-day drone induction workshop for the educators was convened during April 2023 at Elsenburg. A delegation of 40 officials graced the Elsenburg Percheron hall for this workshop. In attendance was the Dr Ivan Meyer (Minister of Agriculture), Dr Mogale Sebopetsa (Head of WCDoA), and representatives from the WCDE. The workshop content was buttressed by various presenters, including the University of Western Cape's Centre for Future-Innovation Programme, WCDE Curriculum Management and Teacher Development and the WCDoA Business Planning and Strategy Director.

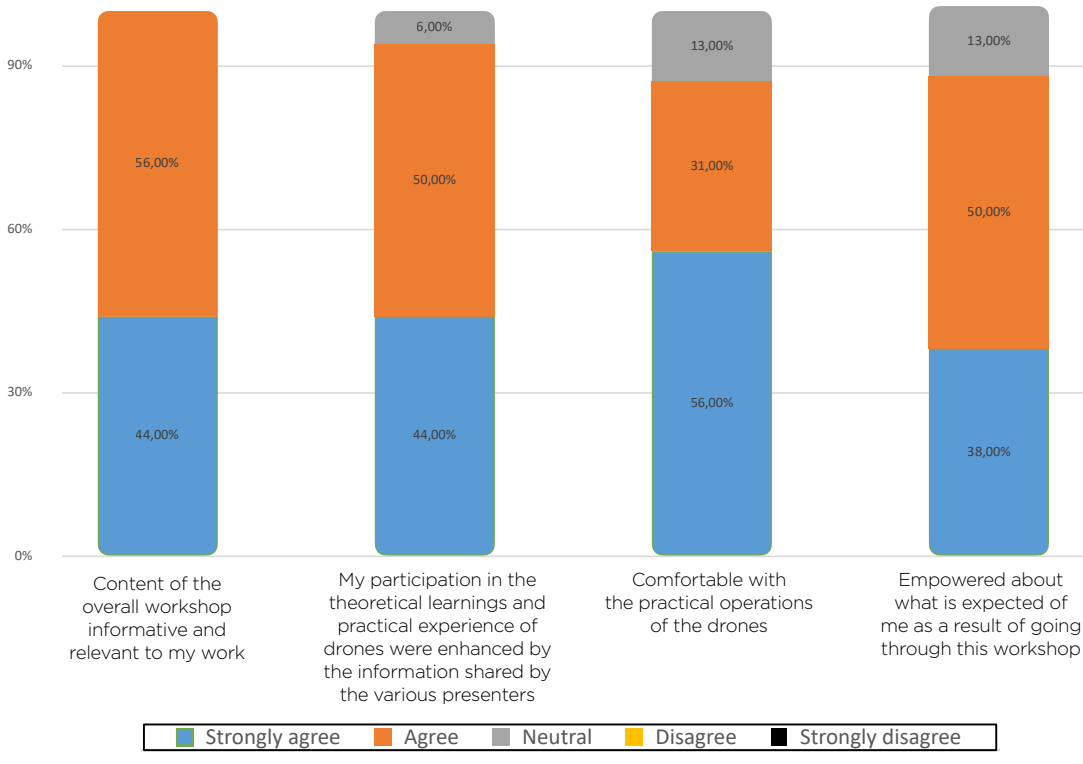
The full course content addressed the following:

- Types of drones
- Types of cameras and attachments
- Basic knowledge of the construction of a drone
- Operation, maintenance and repair
- Software around applications
- Basic programming
- Data collection
- Data analysis safety
- Law
- Practical – Learn to fly a drone

»

Map showing the catchment area where the educators came from.

The outcomes of the feedback from the drone workshop evaluation.



Using the course content as a guide, the participants completed a post-workshop evaluation to provide feedback and reflections on the usefulness of this exercise and for the Department to understand what went well and what needs improvement for future workshops.

Furthermore, the educators identified the following as most the important learning areas from this workshop:

- Importance of drones and the array of data that can be generated using the software
- Data analysis, data processing and safety imperatives
- Legal matters – aviation laws, rules and regulation governing flying drones
- Use of drones in agriculture, confidence in flying control and patience
- Pre-flight inspections and mapping the flight routes
- Drone technology and farming symbiosis

As they reflected on the workshop outcomes, educators identified potential barriers that could defer the drone application dreams at their schools:

- Schools located within the flight-restricted areas and dangers of using drones
- Shortage of hardware and software and class sizes
- Leaners not adhering to rules and apathy due to inadequate drones
- Financial constraints to procure additional drones for work purposes
- Fear of crashing the drones
- Legal matters, software procurement and drone maintenance

For every barrier there are solutions. The following interventions were proposed for consideration:

- Engaging local authorities and the WCDE to identify and create appropriate space or getting authorisation for practical demonstrations.
- Raising awareness on the purpose, benefits of practical training and experience in communities they live.
- Motivating school principals to buy drones for schools.
- Flying under hobby rules and using open-source processing websites for software and further education.
- Forging partnerships with private sector.
- Designate areas for flying with minimum flight height within the school premises.
- Buying cheaper drones and integrating the drone maintenance technology as part of the grade 11 examined practical in the curriculum.

The educators expressed gratitude to the WCDoA for embracing this drone technology at Elsenburg and the Department's unwavering commitment to support this province to embrace new technology brought in by the Fourth Industrial Revolution era.

For sure drone training charity work started at Elsenburg and did not end there – the tentacles have touched the four corners of the Western Cape province via schools. **#ForTheLoveOfDronesInAgriculture**. AP

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Breaking down silos

by Albie Storm

The worldwide trend of joint ventures and collaboration between governmental institutions and the public, with emphasis on influential, established and passionate role-players, has proven itself to be highly successful. Government has the willingness, resources and personnel, and when different skill sets are brought to the table and used correctly, together with public-funded interest, a shared objective and an efficient team, results are achieved and the client greatly benefits. Competence to have the ability and capacity as civil servants, together with responsiveness to work hand in hand with the public, form an integral part of collaborative ventures as well as the core values of the Western Cape Government.

While striving to achieve our mission as public servants the Programme Veterinary Services and the State Vet Office in Oudtshoorn collaborated with BKB as well as other programmes in the Western Cape

Representatives of BKB and the WCDoA at the event.

Department of Agriculture (WCDoA), including Agricultural Producer Support & Development (APSD) and Research & Technology Development Services (RTDS), in order to host a successful farmers' day at the Oudtshoorn Research Farm in May this year.

The need for a platform to convey information, give extension and interact with the farmers grew over the last few years as farmers' days and agricultural shows declined post-COVID-19. The planning committee wanted to rejuvenate this in the Klein Karoo area and motivate farmers whilst conveying necessary information on diseases and other aspects of livestock farming.

This linked in perfectly with the WCDoA's core value of Innovation, whereby the planning committee had to use new ideas and develop a resourceful solution. The WCDoA involved the agri-culture-related sector of the area and collaborated to improve service delivery.

The idea was to invite a wide range of local farmers ranging from the large commercial farmers to the enthusiastic smaller farmers and resource-poor agricultural producers.

BKB played an important part by providing educational material, presenters, supplies, printing and much more. Various companies were part of the day by either having a speaker, exhibiting their services and goods or just supplying hand-outs and lucky draw prizes for the farmers. APSD assisted with their skillset of arranging lunch, exhibition material and other necessities for a day of this magnitude.

Dr Ilse Trautmann, the Deputy Director General: Agricultural Research and Regulatory Services, opened the day and dignitaries from BKB also attended.

The day covered a variety of topics, including biosecurity, poisonous plants of the Klein Karoo, an overview of livestock diseases in the area, animal psychology, viral diseases – the threat and a new hope for treatment, supplementary feeding for the relief of stress and other production challenges, roll-out of the new 3D Cape Farm Mapper, the use of drones (with a practical demonstration), as well as wool and livestock market tendencies. Added to these highly interesting and well-prepared talks, 12 companies exhibited products and services ranging from implements, tractors, feed and feed supplements, to veterinary medicines, agricultural insurance, vehicles and much more.

Through a joint vision and sharing of information between agricultural stakeholders, an excellent farmers' day was achieved.

Moving out of our silos **#ForTheLoveOfAgriculture.** AP

Learn more

Scan the QR code or visit https://sg.zinio.com/za/agriprobe-m40279 to download *AgriProbe* Vol 20 Issue 3. Refer to the article following a presentation at this Farmer's Day, "Are you killing your livestock?", page 59.

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How to taste **white wine**

by Brenton Maarman

Photos courtesy of Leopard's Leap

White wine has existed for at least 4 000 years. But what exactly is white wine? It is white grape juice that has been fermented with yeast (see flowchart on page 67). White wine can also be made from red grapes but that is a discussion for another day.

There are different white wine grape varietals throughout the world. The grape varietals are also known as cultivars. The most popular white grape varietals in South Africa are Chenin blanc, Colombar, Sauvignon blanc and Chardonnay.

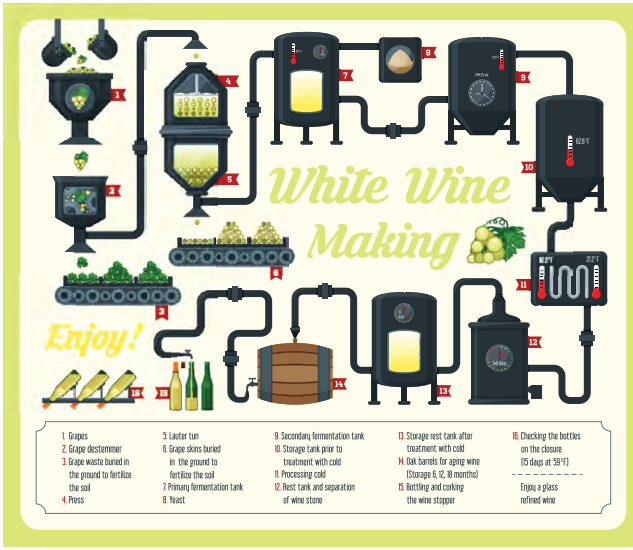
There are different white wine styles, such as still wine (table wines), sparkling wine and dessert wines (sweeter wines, served at the end of a meal). The focus of this article will be on still wines.

White wines can differ in colour – from pale straw to deep brown. (see image on page 68)

Four basic wine tasting steps

Visual appearance: Pour 75-90 ml white wine into a wine glass and look at the colour, clarity or transparency of the wine.

White wine production



Remember that white wine deepens in colour as it ages. Make sure that there is no haziness in the wine. It should be clear.

Smell: Bring the glass of white wine to your nose. The distance between the glass and your nose must be approximately 2cm. Smell is picked up by the olfactory tissue that in the upper portions of the nasal passages. Volatile compounds may reach the olfactory epithelium via the nostrils or from the back of the throat. The latter route – the combination of both taste and olfactory sensations – is especially important in the generation of flavour. Each nasal cavity is further subdivided into turbinate bones. These increase the contact surface area between the air and the epithelial linings of the nasal passages. Studies suggest that lateral nasal glands in the nose may discharge an odour-binding protein into the air as it passes into the nose (see image on page 68).

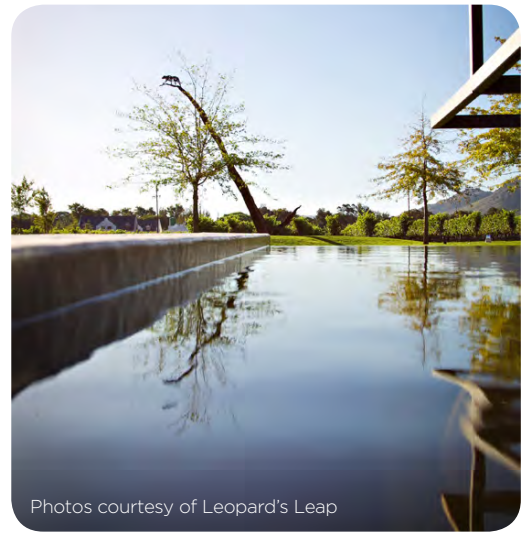
Learn more

Scan the QR code or visit https://rb.gy/v0l7pw to watch the video: 'How To Taste Wine'. Published by Wine Folly.

The aromas of wines can be classified into three categories. This includes primary aromas that come from the grapes. Secondary aromas originate from alcoholic fermentation where the grape juice is converted to wine. Tertiary aromas are formed during maturation (ageing of wine) in barrels or stainless-steel tanks.

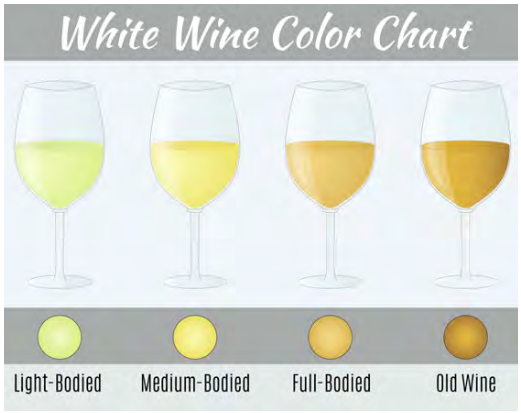
Taste: There are five basic tastes: sweet, salt, bitter, sour and umami (savoury taste). Mouth feel is another factor that is of paramount importance when tasting wine. It can be classified according to astringency (dry, pucker, dust-in-the-mouth sensation), burning sensation (wines high in alcohol cause a burning sensation in mouth), temperature (aromas are better perceived at cool temperatures – 7-12°C) and body of the wine (a combination of several factors: grape variety, alcohol level and even sweetness level). Australian researchers found that individuals could have different sensorial experiences with wines due to different enzymes in their saliva.

Think/Conclude: The most important aspect is that you decide whether you like the wine or not. »

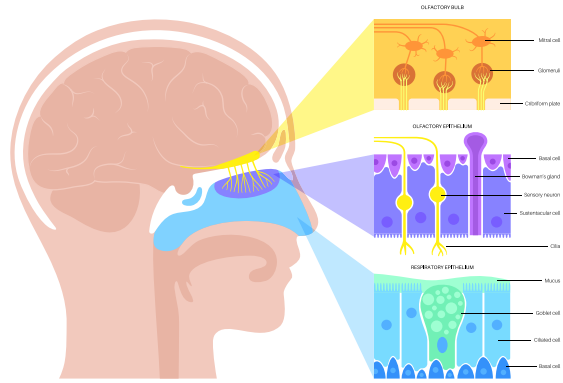


Photos courtesy of Leopard's Leap

The basic colours of white wine



Enlarged view of olfactory receptors



White wine grape varietal	Aromas	Food pairing
Chenin blanc The most planted varietal in South Africa. It is versatile and can be made as dry, sweet and sparkling wines. It can also be used for distilling brandy and spirits.	Yellow apple, quince, pear, baked apple and passion fruit.	Chicken, pork, trout and smoked salmon. It also pairs well with cheddar cheese, brie and cream cheese.
Colombar(d) This cultivar has good acidity and a pleasant fruity flavour. Also used for distilling of brandy and blended with other grapes to produce easy-drinking wines.	Green apple, honey dew, white peach and almond are associated with this cultivar.	Salads and sushi.
Sauvignon blanc It is a popular cultivar with high acidity that is loved for its “green” herbal flavours.	Characteristic aromas are gooseberry, green pepper, passion fruit and asparagus.	Chicken, pork, salmon, oysters and calamari. Goat cheese, mozzarella and parmesan pair well with this wine.
Chardonnay It is the world’s most popular grape. The style can vary from sparkling to creamy white wine aged in oak.	Aromas of yellow apple, pineapple, vanilla and butter.	Oysters, sushi, lobster and pork tenderloin. Brie cheese is recommended with this wine.

You have the knowledge, now for the taste. Happy tasting! In an upcoming issue we will focus on tasting red wine.

Photos courtesy of Leopard's Leap

Leopard's Leap offers a wine tasting in their Wine Tasting Room, presented by one of their passionate Wine Tasting Ambassadors. The tasting consists of examples of stalwart South African wines – Chenin blanc and Pinotage in a variety of styles – and one of South Africa's most iconic dishes – the *braaibroodjie*!
Learn more https://leopardsleap.co.za/pages/wine-tasting

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A series of **Conservation Agriculture** events bolster **WC agriculture**

by Dr Johann Strauss

August is the start of the "silly" season in the Western Cape cereal production scene. This time of the year is consumed by a series of information days aimed at improving farm life. The Western Cape Department of Agriculture (WCDoA) and numerous partners feature strongly in these events.

The annual Conservation Agriculture Western Cape (CAWC) Jack Human Conference is where the season starts, followed by three farmers' days later in August and early September. The CAWC conference is a partnership between the CAWC, WCDoA and *Landbouweekblad* magazine. The 11th edition of the conference was held at Elsenburg and Langgewens Research Farms in the beginning of August this year and aimed to promote conservation agriculture in all its facets. The lecture day was sold out, and 250 participants listened to five local and one international speaker on various topics. A total of 120 people attended the practical day at Langgewens Research Farm near Moorreesburg. The annual conference has been well attended since 2012.

We look forward to 2024 when the conference will form part of the 9th World Conference on Conservation Agriculture in July in Cape Town.

Learn more!

Scan the QR code or visit https://rb.gy/dly8m8 to watch the video: 'Conservation Agriculture bid video South Africa 2024'. Published by Bewaringslandbou Wes-Kaap. Registration opens on **1 October 2023**! Read more about it: https://wcca9.org/

We hope to see a strong South African contingent at the conference next year.

CAWC lecture day at the Pecheron Hall.

CAWC practical day at Langgewens Research Farm.

The next event was the SSK Winter Cereal Day at Riversdale. This is probably the best-attended farmers' day in the small-grain industry. With 370 attendees, this year was no exception. The day is conducted as a partnership between the Department, SSK co-op and Janpha Farms. The Directorate Plant Sciences of the WCDoA is responsible for planning the trial site and the execution of 99% of the trials on view. SSK takes responsibility for advertising the event and organising the sponsorships. Jan-Hendrik Joubert of Janpha Farms is the gracious host on whose farm the trials are conducted. »

Busy in the shed during the SSK Winter Cereal Day.

In the field during the SSK Winter Cereal Day.

The SKOG Farmers' Day was up next. For a number of the Department staff, it is a mad dash from one end of the production area to the other. The Department teamed up with Overberg Agri, KaapAgri and the Protein Research Foundation to host the event. It showcases research in wheat, canola, legumes and pastures. The new format of choosing which trials to visit has sparked a revival in attendance. The final number that registered at the event reached 250. Langgewens Research Farm was dressed in its finest for the day and the rain stayed away, resulting in an informative day for all.

SKOG view across the trials.

Blackleg research with Dr Gert van Coller (left).

The final event in the series of Conservation Agriculture events was the Hopefield Farmers' Day in September. This is the baby of the family and was presented for the fourth time. One of these was online presentations during Covid-19. Gideon Melck's farm hosted the event, which is still small, with 65 attendees this year. We believe this event will grow as time goes by. All the trials showcased possibilities for crops and crop production in sandy soil. This year, everybody could experience why the farm is called Waterboerskraal. It was wetter than wet, but everyone still enjoyed the day.

Rens Smit (left) talking about cover crops.

Canola trials at Hopefield Famers' Day.

ACKNOWLEDGEMENTS

The WCDoA would like to thank everyone who contributed to the success of the silly season. The Protein Research Foundation and the South African Cereal Industry Trust for their funding contribution to the trials conducted and the support of the CAWC conference. Our agribusiness partners in SSK, Overberg Agri and KaapAgri are committed to serving the small grain industry in the Western Cape by co-hosting the events. A big thank you also goes to the industry for joining hands in the trials so that producers have something to view. We also thank all the producers who support these events by attending these special days. It is for you that we do it. AP

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Karakterisering van die weigewoontes en gedrag van vleisbeeste

Wilmie Hough en prof. Tertius S Brand

Background study on embryonic losses in South African sheep

Josephine E Cilliers and Prof. Tertius S Brand

Karakterisering van die **weigewoontes** en gedrag van **vleisbeeste**

deur Wilmie Hough[1] en prof. Tertius Brand[1,2,#]

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Beperkte inligting is beskikbaar oor die weigewoontes van herkouers in ekstensiewe toestande. Onlangse tegnologiese vooruitgang bied gelukkig waardevolle geleenthede om plantseleksie, weipatrone en verwante aspekte te bestudeer. Die verkryging van meer kennis in hierdie domeine kan vleisbeesprodusente bemagtig om goed ingeligte bestuursbesluite rakende veldbiodiversiteit en verbeterde produksie te neem.

Groot dele van die beskikbare grond in Suid-Afrika is ongeskik vir bewerking, wat dit ideaal maak vir herkouerbeweiding. Gegewe die dringende uitdagings van klimaatsverandering en bevolkingsgroei, word dit van kardinale belang om die produktiewe gebruik van hierdie gebiede vir veeboerdery te maksimeer. Hierdie optimalisering kan slegs bereik word met 'n omvattende begrip van die natuurlike plantegroeigehalte en produsente wat ingeligte keuses rakende drakrag en byvoeding maak.

Verder speel die seleksie van veerasse wat gehardheid teen die strawwe plaaslike toestande toon terwyl bevredigende produksievlakke gehandhaaf word, 'n deurslaggewende rol in die bewaring van die biodiversiteit van natuurlike plantegroei.

Om die ideale rasse te identifiseer wat geskik is vir hierdie uitdagende omgewings, is deurlopende monitering van dieregedrag en weidingsgewoontes noodsaaklik. Hierdeur kan boere produktiwiteit én volhoubaarheid in hul veeproduksiepraktyke verseker.

Die primêre doel van hierdie navorsingsprojek is tweeledig.

1 Eerstens om nuut ontwikkelde tegnologie te gebruik om die weigedrag van twee afsonderlike vleisbeesrasse onder ekstensiewe weidingstoestande te ondersoek en te vergelyk.

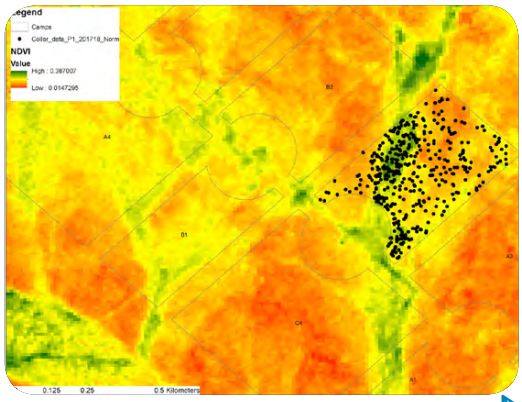
2 Tweedens om 'n beter begrip te kry van die invloed van klimaatsveranderlikes op fluktuasies in die gehalte van natuurlike weidings.

Alle proewe sal uitgevoer word op die Nortier Navorsingsplaas, geleë by Lambertsbaai aan die Weskus van Suid-Afrika. Twaalf vleisbeeskoeie, waarvan ses **Bonsmara** en ses **Nguni**, sal waargeneem word. »

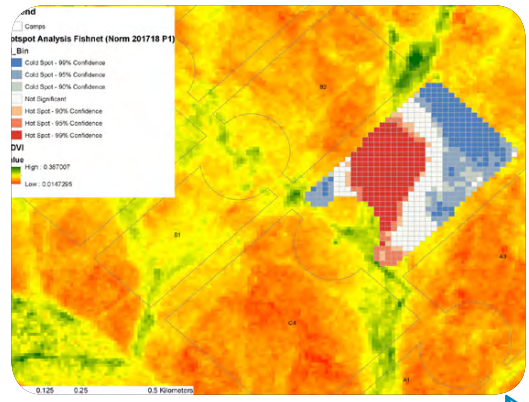
Bonsmara-beesras. Foto © Erich Sacco

Nguni-koei met elektroniese SenseHub-oorplaatjie.
Foto © Wilmie Hough

Die FeedCam-prototipe getoets op 'n Bonsmara-koei.
Foto © Wilmie Hough



Voorbeeld van GPS-koördinate oorgetrek op 'n 'NDVI'-kaart. Foto © Christiaan Harmse, PhD-projek, Noord-Kaap.



Voorbeeld van ontleding wat voorkeur-weidingsareas identifiseer. Foto © Christiaan Harmse, PhD-projek, Noord-Kaap.

Die kudde wei op die natuurlike Strandveld-plantegroei en elke koei sal toegerus word met 'n *Long Range Global Positioning System Ultra High Frequency*- (LoRa (GPS/UHF)) beeshalsband, verkry vanaf Africa Wildlife Tracking (AWT).. Hierdie halsbande sal elke koei se ligging op 'n uurlikse grondslag aanteken, wat ruimtelike datakartering deur lengte- en breedtegraad verskaf. Die GPS-koördinate sal gebruik word om kaarte te skep en *hotspot*-ontleding vir die hele kudde uit te voer, asook afsonderlik vir elke ras. Voorkeurweidingsgebiede sal dan geïdentifiseer word deur hierdie *hotspots* te vergelyk met die *Normalised Difference Vegetation Index*- (NDVI) data, soos verkry »

Nguni-beesras.

vanaf die Copernicus Sentinel-2-satelliet wat inligting verskaf oor plantegroei se gehalte en groeistadiums. Gevolglik sal dit lig werp op die invloed van plantegroeigehalte op weidingsgedrag, asook hoe dit tussen die twee vleisbeesrasse verskil.

Elk van hierdie 12 koeie sal toegerus wees met 'n materiaalharnas, waaraan 'n klein kamera geheg word. Hierdie kameras sal oor die verloop van minstens 'n jaar vir twee opeenvolgende dae elke maand geaktiveer word. Foto's word elke vyf minute vasgelê, en die foto's word vervolgens deur 'n plantkundige ontleed om die plantspesies te identifiseer wat die koeie verkies. Hierdie metode het ten doel om data oor dierplantvoorkeur in te samel sonder die behoefte aan indringende tegnieke, soos die gebruik van 'n slukdermfistel, terwyl 'n vergelykbare vlak van akkuraatheid gehandhaaf word.

Hierdie koeie sal ook toegerus wees met elektroniese oorplaatjies van SenseHub™ Beef. Hierdie oorplaatjies benut markbewese algoritmes wat die ontleding van dieregedrag moontlik maak om die monitering van individuele koeie en vergelykings tussen die twee rasse te vergemaklik. Die stelsel sal spesifiek herkou-, eet- en aktiwiteitstye en -duur monitor, asook die sensitiwiteit en aanpasbaarheid vir hittestres tussen die twee rasse vergelyk. Boonop spog die stelsel met ongeëwenaarde

estrussiklusopsporingsakkuraatheid, wat die vergelyking van vrugbaarheidseienskappe tussen die twee rasse moontlik maak.

Laastens is maandelikse monsters van 18 eetbare struikspesies, verteenwoordigend van die natuurlike plantegroei van die Strandveld, versamel en aan chemiese ontleding onderwerp. Statistiese ontleding sal op die monsters uitgevoer word om te bepaal tot watter mate variasies in voedingswaarde deur klimaatveranderlikes, jaar en seisoen beïnvloed word. AP

Oor die algemeen het hierdie navorsingsprojek die potensiaal om veeprodusente in te lig en landboupraktyke in die Strandveld-area te verbeter deur volhoubare veebestuur te bevorder, terwyl die natuurlike omgewing en sy diverse ekostelsels bewaar word.

Wilmie Hough het in 2017 haar hoërskoolloopbaan aan die Augsburg-landbougimnasium op Clanwilliam voltooi. Sy het in 2021 haar Baccalaureus Scientiae-graad in Landbou met lof (cum laude) aan die Universiteit Stellenbosch verwerf. Tans is sy ywerig besig met haar meestersgraad aan die Universiteit Stellenbosch en is gebaseer by die Wes-Kaapse Departement van Landbou by Elsenburg. Haar navorsing is onder leiding van prof. Tertius Brand van die Wes-Kaapse Departement van Landbou by Elsenburg, Christiaan Haremse van die Noord-Kaapse Departement van Landbou en dr. Brink van Zyl van die Universiteit Stellenbosch.

Vir meer inligting, kontak **Prof. Tertius Brand**: ✉ tertius.brand@westerncape.gov.za

Background study on **embryonic** losses in **South African sheep**

by Josephine E Cilliers[1] and Prof. Tertius S Brand[1,2]

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The projected global population of 9.6 billion people by the year 2050 poses significant challenges in meeting the increasing demand for high-quality protein, sustainability, and improved production systems. In South Africa, livestock production plays a pivotal role in the agricultural sector, contributing approximately 42% of the overall agricultural output value during the 2020/2021 period. However, nearly 70% of the country's agricultural land is unsuitable for crop cultivation, making livestock farming, particularly sheep farming, a sustainable practice, especially in arid regions. The sheep industry in South Africa holds significant economic importance, supporting both small-scale and commercial farming.

Embryonic losses remain a persistent issue across all mammals, and the causes of their occurrence often remain unknown. The production of lambs is a critical component of the sheep industry, and as such, any factor that can even slightly improve reproductive performance has the potential to significantly enhance the efficiency of animal protein production. Estimates suggest that up to 30% of all fertilised ova in sheep can result in mortality. While embryonic losses and their various causative agents have been researched extensively worldwide, limited research on this topic has been reported in South African literature.

This study aims to quantify the effects of dietary energy and protein supplementation, as well as the impact of genetic selection for the number of lambs weaned on embryonic losses in South African ovine. The study also investigates the analysis of serum progesterone levels between two selection lines.

Additionally, it provides a unique opportunity to explore the effects of dietary energy and protein supplementation levels on colostrum quality and composition, as well as milk quality and yield in sheep that were fed throughout their pregnancy.

Furthermore, the study examines the influence of dietary energy and protein on milk quality and yield and how this impacts the subsequent growth of lambs.

Regarding the study investigating the effect of dietary energy and protein supplementation, 240 Dohne Merino ewes were employed. The ewes were assigned to an experimental diet within a 2x2 factorial design, with energy and protein supplementation levels as the main effects. Maize (400g/ewe/day versus 0g/ewe/day) and canola oilcake meal (COCM) (250g/ »

ewe/day versus 0g/ewe/day) were used as energy and protein supplementary feeds in a high-energy (HE) and low-energy (LE) diet, with high protein (HP) or low protein (LP) added to the supplementary feed mixture.

Pregnancy confirmation and foetal counts were repeated several times from approximately day 25 to day 80 of pregnancy. The ewes were fed throughout the entirety of their pregnancy and until the lambs were weaned at ca 90 days of age.

Immediately after lambing, colostrum samples were collected and analysed for % fat, % protein, % lactose, % total solids, % brix, viscosity, milk urea nitrogen (MUN) concentration, and somatic cell count (SCC). A 24-hour milk yield was estimated on day 25 after lambing using the weigh-suckle-weigh method, and milk samples collected on the same day were analysed for % fat, % protein, % lactose, % total solids, milk urea nitrogen (MUN) concentration, and somatic cell count (SCC). The lambs were weighed every other week, and the average daily gain of the lambs was calculated using the weight gained from birth to weaning for each of the treatment diet groups.

In the study on the effect of genetic selection for the number of lambs weaned on embryonic losses, 255 Merino ewes were utilised, consisting of 185 ewes from the high line (HL) and 70 ewes from the low line (LL). These two lines, originating from a common base population, have undergone divergent selection since 1986, employing maternal ranking values as selection criteria. The high line (HL) was bred for an increased number of lambs weaned per joining (NLW), while the low line (LL) underwent selection against NLW per joining. The outcomes of this selection experiment have been extensively documented in the past.

Skilled veterinarians conducted pregnancy confirmation and foetal counts from day 25 to day 45 of pregnancy using transrectal and transabdominal ultrasonography. Blood samples were also collected from a selected sample group and analysed for serum progesterone concentrations.

This study aims to contribute to the literature on embryonic losses in sheep, particularly in South African ovine, and takes advantage of the opportunity to investigate the effect of dietary energy and protein supplementation on colostrum and milk composition, as well as colostrum quality and milk yield. AP

Josephine Cilliers was raised on a dairy farm near Humansdorp in the Eastern Cape. In December 2021, she successfully completed her Bachelor of Science degree in Animal Science at Stellenbosch University. Presently, she is immersed in her master's research, which focuses on investigating embryonic losses in sheep. Her study encompasses an analysis of the influence of nutrition on colostrum composition and quality, milk composition, milk yield, and their subsequent effects on lamb growth until weaning and an examination of how genetic selection and nutrition impact these losses. Her research is being conducted within the Western Cape Department of Agriculture at Elsenburg under the supervision of Professors Tertius Brand and Schalk Cloete. Her co-study leader is Dr Brink van Zyl from Stellenbosch University.

For more information, contact **Prof. Tertius Brand**: ✉ tertius.brand@westerncape.gov.za

First black female economist honoured by AEASA

Bongiswa Matoti (Director: Agricultural Economic Services) was invited to present the prestigious Agricultural Economics Association of South Africa (AEASA) Tomlinson Lecture. The annual lecture commemorates the life of the late Professor F. R. Tomlinson, renowned agricultural economist who is considered to be the father of agricultural economics in South Africa. Every year only one person is selected to present a lecture on a specific topic within agricultural economics. This is a very special recognition for the contribution someone has made in this field.

It was a historic moment for Bongiswa to become the first black female agricultural economist and only the third female to be given the opportunity to present this lecture since 1961.

Significantly the lecture, at Stellenbosch University, was held on 28 August during Women's Month, marking major strides towards gender and racial inclusivity. She dedicated her lecture to women that had and are still working the land to feed their families while their husbands are away to look for greener pastures elsewhere. "My mother is one of them... after all it's still Women's Month," she said.

Bongiswa's parents were subsistence farmers in the rural areas of the Eastern Cape and she is a proud product of agriculture.

Bongiswa Matoti

The lecture Bongiswa delivered stemmed from her saying: "I had to dig deep, do introspection and ask myself a hard question as to why do I exist as an agricultural economist in the space."

Fittingly, the theme of the lecture was "The Role of the Agricultural Economist in the Public Sector" and Bongiswa insightfully touched on the key roles within the sector.

One of the key take-outs she presented is how agricultural economists must continually adapt to changes in socio-economic challenges and opportunities, as supported by the application of new information and communication technologies, in order to remain relevant.

"The fact that Bongiswa was invited to present the 2023 lecture is not only a feather in her cap, but also recognises the fact that the Department employs individuals who are respected by their peers throughout the country," says Dr Dirk Troskie, Director: Business Planning and Strategy. AP

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