

AGRI PROBE

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**2018 Prestige Agri
Worker of the Year
MEET ISAAC NTOTO!**

**Students unveil
new wines**



**Leandr  walks away with
top prizes as female farmer**



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cheese
® festival



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Setting the SCENE



by Joyene Isaacs
Head of Department



Dear agriculturists

As I am writing this message, I recall so many changes in the past year. There are some remaining challenges for 2019 and others that are under control. The collective response was and is: we can do it!

Disasters abound:

- The water crisis (averted somewhat)
- The fire in Knysna (rebuilding ongoing)
- The continued drought in regions in our province (some relief received and delivered)
- Avian influenza (rebuilding).

Despite this, there is a sense of resilience. And let's not forget the wonderful people across the spectrum who made a contribution. To all of you, a heartfelt thank you. I am glad to have you with me on this journey of continued growth in agriculture for the benefit of all.

The year 2018 will also be remembered for effective partnerships, and we should never take these relationships for granted. I believe that there were small and big victories for the sector, and we should celebrate that. However, it is important to renew our commitment to work together in 2019 to ensure that the current challenges, no matter how insurmountable they seem to be, get tackled with renewed vigour and new perspectives to find solutions. There is space for all of us to give creative inputs and to listen to one another in order to make the much-needed plans and to implement them.

So, rest well, reflect deeply and come back rejuvenated to take on the challenges to build a resilient agricultural sector.

Joyene Isaacs
Head of Department



4



10



18



24



29



40

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EDITORIAL

Setting the scene1

MINISTERIAL

Review of 2018 4

NEWS SNIPPETS

The mapping of agricultural commodities and infrastructure in the Western Cape (the second “flyover” project)8
Working towards a zero-hunger world by 203010
Western Cape programme proclaimed runner-up for an esteemed circular economy award12
Sixth annual CAWC “Jack Human” Conservation Agriculture Conference14
Taste the alternatives16

PEOPLE ON THE MOVE

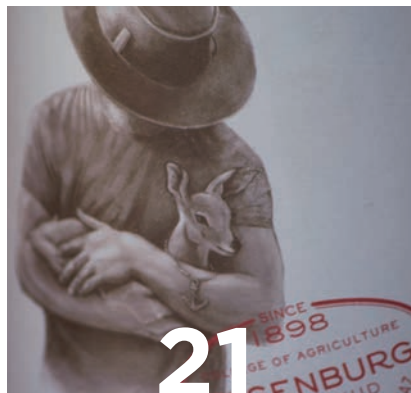
Celebrating women in agriculture.....18

Wine launch 2018..... 21

2018 Western Cape Prestige

Agri Awards: Isaac Ntoto takes

top honours.....24



ON OUR COVER

Meet Isaac Ntoto, the 2018 Agri Worker of the Year! Isaac works in Brandwacht, Mosselbay, as a technical manager at Garden of Eden Berries Farm. According to the owner, Gavin Lensley-Noakes, Isaac has the three P's - passion, purpose and personality.

Photo: © Kelvin Saunders

Also featured on the cover is Leandré Mitchley, provincial and national winner of the DAFF Female Entrepreneur Awards in the category Best Smallholder. She grows piglets into porkers and her plan is to expand and improve her infrastructure to include a fully-fledged sow unit.



CONTENTS

HUMAN CAPITAL DEVELOPMENT

- Students benefit from bilateral agreement between Western Cape and Upper Austria26
- Placement of unemployed graduates in agriculture.....29

ECONOMIC NEWS

- The 2018 AEASA Conference proves its relevance32

TAKING OUR SERVICES OUT THERE

- Empowering those first on the scene.....34
- Connect-Agri werp vrugte af38

RESEARCH NEWS

- Experts meet in Peru to discuss the noble potato..... 40
- Increasing biodiversity in dryland cropping systems.....44

OUR NATURAL RESOURCES

- Western Cape LandCare rewarded – but national soil conservation challenges remain.....48

ELSENBURG JOURNAL

- Are chickpeas the “nuts and berries” of the Swartland?.....53
- The flyover project: Tracking agricultural land-use changes in the Western Cape from 2013 to 2017.....58

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in the agricultural industry

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Review of 2018

by Minister Alan Winde

“Of course, this sector wouldn’t be where it is today without the more than 300 000 men and women who work in agriculture in our province.”





These statistics do not take into account jobs created in the agri-processing value chain.

While this year's wine harvest was smaller than last year's, the fruit produced was of excellent quality and we look forward to the wines that it will produce. Our efforts at increasing wine exports to Angola and China have also paid off.

Over the past year, several of our farmers and producers have headed overseas to market their products. In October we hosted the inaugural Africa Halal Week, presenting halal food and lifestyle to international buyers and investors from around the world.

The year 2018 will go down in the history books as one of the most challenging in the Western Cape's agricultural sector – confronted with drought, tough economic conditions across the country and avian influenza. But despite this, in true embodiment of the Western Cape's motto "Better together", government, the public, the private sector and NGOs banded together to build partnerships that yielded real results and some excellent highlights.

The drought forced everyone in the province to think about how they use water and to invest in their resilience. We are pleased to see agriculture doing the same, investing in water-saving and harvesting technologies, and conservation agricultural practices.

This, in turn, helped us to continue on the path towards meeting our Project Khulisa goals, to grow the agri-processing sector and create more jobs. While the year's challenges took their toll, we are happy to report that the job statistics for the second quarter of 2018 showed that we have gained an additional 2 000 jobs in agriculture in the past year.

"Our research into conservation agriculture continues at our research farms, providing us with a wealth of information as we mitigate the drought"

The department was also able to conduct and produce research reports that will help us shape agriculture going forward. The report on the Fourth Industrial Revolution in agriculture has mapped out a pathway for us to follow as we embrace the next technological revolution. The honey bee strategy will shape our efforts at ensuring food security through the protection of these important agricultural insects. Our research into conservation agriculture continues at our research farms, providing us with a wealth of information as we

mitigate the drought. Our alternative-crops research fund continues to look at high-value, labour-intensive export crops like cherries and berries, and in the past year, we have seen exports of these crops expand and grow in really exciting ways.

The annual BFAP report provided us with food for thought on the importance of policy certainty on land reform issues. A study conducted to determine the role of the Philippi Horticultural Area has shaped our response going forward. We believe that this important agricultural land and resource must be protected in order to ensure job and food security.

Of course, this sector wouldn't be where it is today without the more than 300 000 men and women who work in agriculture in our province. Each year when we run

the Female Entrepreneur Awards and the Prestige Agri-Worker Awards, we are overwhelmed by the hard work, passion and innovation of our agri-workers, farmers and entrepreneurs. We congratulate this year's winners for their sterling work and thank the province's agri-workers and entrepreneurs for their dedication.

By the time you read this, I will have been succeeded by a new minister in the Ministry of Economic Opportunities as I explore the new challenges of the Community Safety portfolio. I wish Minister Beverley Schäfer well in her new role. I would also like to thank the agricultural sector and the Department of Agriculture – the staff and HOD Joyene Isaacs – for their support, engagement and inputs during my tenure as Minister of Economic Opportunities. [AP](#)



The mapping of agricultural commodities and infrastructure in the Western Cape (the second “flyover” project)

by Dr Mike Wallace, mikew@elsenburg.com



The first comprehensive “flyover” project was undertaken in 2013 for the Western Cape. For the first time, highly detailed (and mapped) data about all agricultural commodities and all associated infrastructure became available. Due to the dynamic nature of agriculture, it was planned to update the data every four to five years. Therefore the second aerial survey was started during the winter of 2017 and has recently been completed. This provides agricultural data, statistics and intelligence for a wide cross-sector of stakeholders, planners and government departments. The update now also allows for comparisons to be made with the 2013 “baseline” and reveals interesting trends in regional production. The timing of this second flyover survey coincided with one of the worst droughts in the province’s history, which is inevitably reflected in some of the shifts in production.

The Bureau for Food and Agricultural Policy (BFAP) has undertaken a detailed analysis of the results, underlining some key fundamental trends in production and in the corresponding infrastructure. Some of the interesting changes evident are the shift to higher-value crops, a dramatic increase in shade netting in the fruit industry, an expansion of citrus plantations and an increase in tree nuts and berries. The area under wine vineyards has gradually decreased and vegetable production has decreased as a direct result of the lengthy drought.

Data from the flyover will in due time be made available on CapeFarmMapper and integrated with internal project management systems (AIMS), while the aggregated statistics will replace the current (municipal) statistics on the Agristats portal.



Also read the *Elsenburg Journal* article on page 58 of this edition of *Agriprobe* by agricultural economist Louw Pienaar, titled: “The Flyover Project: tracking agricultural land-use changes in the Western Cape from 2013 – 2017”

XHOSA SUMMARY

I Projekthi i “Flyover” engokuBalulwa kweeMveliso zoRhwebo kweZolimo kunye Nesiseko Soncedo eNtshona Koloni

iProjekthi yokuqala i “Flyover” epheleleyo yase Ntshona Koloni yeenziwa ngo 2013, icacisa iinkcukacha ezimalunga nazo zonke iimveliso zorhwebo ngezolimo kunye nesiseko esiluncedo. kusandul’ukugqitywa ukuhlolwa okwesibini komhlaba olinyiweyo, nokwenziwe ngo 2017. Ngaphandle kweenkcukacha ezintsha zezolimo kunye nobuntlola, kuzakuthelekiswa lo msebenzi nalowo wango 2013.

Olunye utshintsho olunika umdla nolubonakalayo ngokucacileyo kukuphucuka kwezityalo ezinexabiso, ukwanda kakhulu kokusetyenziswa kwezikhuseli zemozulu kwicandelo lokuveliswa kweziquhamo, ukwanda kokutyalwa kwemithi ye “citrus” kunye nokwanda kwimithi yamandongomane namaqunube. Uye usihla ummandla olima izidiliya zewayini nanjengokuba ihlile nemveliso kwimifuno ngenxa yokuthwaxwa yimbalela ixesha elide.

Zizakufumaneka kungekudala iinkcukacha ze “Flyover” kwi CapeFarmMapper (<https://gis.elsenburg.com/apps/cfm/>). 

World Food Day 2018 Mossel Bay



Working towards a zero-hunger world by 2030

by Adele Isaacs-Cloete, adelei@elsenburg.com

The World Food Day (WFD) is held annually around the world on 16 October in remembrance of the founding of the Food and Agriculture Organisation (FAO) of the United Nations in 1945, which is an organisation that deals with global food and agricultural issues. The World Food Day was proclaimed by the conference of the FAO in 1980 and therefore the year 2018

marked the thirty-eighth anniversary of the commemoration. The theme for this year is: "Our actions are our future. A #ZeroHunger World by 2030 is possible". The message is clear: the world can achieve zero hunger if we join forces across nations and sectors, and act on scientific evidence. Zero hunger is possible. Now is the time to act.

The Western Cape Department of Agri-

culture (WCDoA) held WFD on 24 October 2018 in Brand-wacht, a small town situated approximately 15 kilometres north-east of Mossel Bay. The 2018 event was hosted in partnership with the Department of Agriculture, Forestry and Fisheries, and the Garden Route and Mossel Bay municipalities. The aim of the WFD is to heighten public awareness of the world food problem and strengthen solidarity in the struggle against hunger, malnutrition and poverty.

The event kicked off with a march against hunger led by Minister Zokwana and Head of Department, Joyene Isaacs, where the community of Brandwacht and surrounding areas came together to declare their commitment to eradicate hunger.

A food mountain was built with sponsorships and donations from organisations and staff, which was symbolic of producing more food to feed the world. This initiative highlighted the importance of communities producing their own food instead of buying food. Vulnerable and poor households spend about 60% of their income on food, leaving them with very little disposable cash to fund basic amenities like water, electricity, clothing and school fees. Producing food for themselves will help them to save money to

spend on other important goods and services. The food mountain was collapsed after the event and the sponsored and donated food distributed to profiled indigent households in the respective areas of Mossel Bay.

As a contribution towards food security, the WCDoA supported households with a “suitcase” to enable them to produce their own food. This “suitcase” is mainly a food-production starter kit comprised of seeds/seedlings, garden tools, a water tank and a family drip irrigation system that uses recycled water for irrigation purposes. In addition, four community gardens were established to encourage food security and improve the welfare of the people of Brandwacht and adjacent villages. The initiative will enable the school and members of the community to provide nutritious meals for their learners on a daily basis.

Ms Joyene Isaacs led the order of proceedings and Minister Zokwana delivered the keynote address at the event, focusing on the theme of the year. Various government departments and food security stakeholders were invited to participate on this day, striving towards a zero-hunger world. Apart from the several community beneficiaries receiving food gardens, selected community-based organisations benefitted from the items that were donated from various business organisations and officials from the departments. Furthermore, three community gardens received attractive prizes from the FAO. **AP**



The WFD food mountain donated from various business organisations and officials from the departments.



Some winners of the school poster competition.

Western Cape programme proclaimed **runner-up** for an esteemed **circular economy award**

by Mike Mulcahy, mike@green-cape.co.za

GreenCape, a not-for-profit company that partners with the Western Cape Department of Agriculture to manage the Agri-desk and the GreenAgri portal, has been selected as runner-up for an international award.



GreenCape CEO Mike Mulcahy receives the runner-up award for WISP at the WEF Circulars Awards in Davos, Switzerland.

GreenCape's Western Cape Industrial Symbiosis Programme (WISP), a free facilitation service to companies, was selected as runner-up for the "Circular Economy: Public Sector" award at The Circularity 2018 awards ceremony, which took place at the World Economic Forum's annual meeting in Davos, Switzerland, on 22 January 2018.

This prestigious event, an initiative by the World Economic Forum (WEF), recognised notable contributions to the circular economy – where resources are kept and reused in the economy for as long as possible.

WISP was the first industrial symbiosis programme (ISP) established in Africa and was initially funded by the Western Cape Government. It is now supported by the City of Cape Town. WISP makes its contribution by connecting companies so that under-utilised or discarded resources of one company can be used by another.

Over the past four years, WISP has diverted more than **36 600 tonnes of waste from landfill**, generated R67,9 million in **economic benefits** for its members, and **created 140 jobs** in the local economy. The programme has **reduced greenhouse gas emissions by 147 700 tonnes CO₂e or the electricity use of 39 800 South African households**.

WISP was nominated as one of only two African finalists for the Circularity 2018. Vincent Biruta, Rwanda's Minister of Environment, was a finalist in the Leadership category for his efforts to support government institutions and private sector alignment for the circular economy in Rwanda.

"The benefits for the province and countries with such programmes can be significant. WISP fills a niche in the City of Cape Town's waste strategy, which creates notable social, economic and environmental benefits," says Mike Mulcahy, CEO of GreenCape. "The team unlocks cost savings and creates new business opportunities for the manufacturing members who participate, creating a truly circular economy programme."

WISP's success lies in its extensive network of manufacturing companies and its expert facilitators who can rapidly identify mutually beneficial exchanges. WISP provides what its members lack – capacity and technical expertise – to implement solutions that will make them more sustainable, and the ability to collectively address major environmental issues affecting the manufacturing sector.

"When we saw the success of similar programmes in the UK and elsewhere, we knew that a local programme had the potential to transform our economy. For that reason, we supported WISP in its early years", says former Minister of Economic Opportunities (now Minister of Community Safety and Premier Elect), Alan Winde of the Western Cape Government.



"The City of Cape Town is a proud WISP supporter and funder. The programme is an amazing celebration of innovation, resilience and creativity by local firms in Cape Town. The City embraces the challenge to think creatively about waste streams and WISP encourages us to see opportunity in resources that would otherwise be sent to landfill", said former Executive Mayor Patricia De Lille of the City of Cape Town. **AP**



See GreenCape's website (www.greencape.co.za) for more information on WISP.

Sixth annual CAWC “Jack Human” Conservation Agriculture Conference



During the second week of August, the Conservation Agriculture Western Cape (CAWC) association presented its sixth annual conservation agriculture (CA) conference, consisting of a lecture and practical day. The CAWC (BLWK in Afrikaans), was formed seven years ago and the association strives to enhance the knowledge base of CA in the Western Cape. The 2018 conference was presented in association with *Landbouweekblad*.

The lecture day was held at the Houwhoek Inn near Botrivier and the practical day at Tygerhoek Research Farm near Riviersonderend. The lecture day was attended by 225 people, including farmers, researchers, industry representatives and students, while 156 people attended the practical day. The list of speakers included

two Australian producers, Trevor Syme and Clint Della Bosca. Local producers were Hume Schönfeldt (Caledon), Andries van der Poll (Gouda) and Izak Dreyer (Vrede in the Freestate). Craig Galloway (sustainable pasture specialist), Lorren de Kock (BlueNorth) and Dr Hendrik Smith (GrainSA) completed the list of speakers (see photo below).

The day was well supported by the sector with the main sponsorships coming from Barenbrug, Equalizer, Nulandis, Rovic Leers, the Winter Cereal Trust and LandCare. Smaller sponsors included InteliGro, Advance Seed and SSK. Information on the SmartAgri plan and some of the work done on CA within the Western Cape Department of Agriculture, was distributed on memory sticks sponsored by Dr Ilse Trautmann, Chief Director Research and Technology Development. **AP**



Speakers at the 2018 CAWC "Jack Human" Conservation Week.
Back row fltr: Chris Burgess (chief editor – *Landbouweekblad*), Hume Schönfeldt, Craig Galloway, Andries van der Poll, Dr Hendrik Smith, Dr Johann Strauss (CAWC secretary),
Front row fltr: Clint Della Bosca, Lorren de Kock, Trevor Syme, Hopkins Uys (CAWC chairman), Izak Dreyer.



All the talks during the lecture day will soon be available on the CAWC website. Talks from previous conferences are also available at **www.blwk.co.za**.



Do you want to subscribe to the CAWC newsletter? Send an email to Dr Johann Strauss (**johannst@elsenburg.com**).



TASTE

THE ALTERNATIVES

Five-minute fruit ice cream

IN ONE WORD: SIMPLICITY



Ingredients

500 g frozen figs
115 g fresh figs
125 ml double thick cream
60 ml castor sugar
125 ml Kaapse Liqueurs honeybush
liqueur for serving
fresh figs, for garnish, quartered
(optional)

Method

Place the frozen figs, fresh figs, double thick cream, and castor sugar into a food processor.

Process at high speed until it reaches a thick creamy consistency.

Spoon into a container and place in the freezer for a minimum of 6 hours or overnight.

Serve with Kaapse Liqueurs honeybush liqueur on the side and garnish with fresh figs.

Serve with a fruit coulis of your choice.



INSPIRATION:

Voorskoot, p. 39 – Vyfminuut-mango-en-grenadellaroomys



MORE DELICIOUS **RECIPES**
will follow in the next editions of *AgriProbe*.



Scan the QR code or visit
www.elsenburg.com/resource-library/cape-made-taste-alternatives to download the recipe.



Citrus and raspberry margarita

A NEW TWIST ON AN ALL-TIME CLASSIC



Ingredients

ICE LOLLY

300 ml water
250 ml white sugar
100 g fresh raspberries

DRINK

300 ml lemon cordial
150 ml tequila (optional)
1 l sparkling water
mint leaves, for garnish

Method

ICE LOLLY

Place the water and sugar in a saucepan.

Heat over a medium heat, stir continually until the sugar is dissolved.

Bring to the boil and allow to boil for 2 minutes.

Remove from the heat.

Set aside and allow to cool down completely.

Place the fruit into ice lolly moulds.

Once the sugar mixture is cold, pour into the moulds with the fruit.

Place in the freezer and leave overnight.

DRINK

Prepare all the ingredients before assembling the drinks.

Pour 50 ml lemon cordial into each glass (use glass of your choice).

Pour 25 ml tequila into each glass (optional).

Place an ice lolly into every glass.

Pour 150 ml sparkling water into the glass.

Garnish with mint leaves.

Serve immediately.

Raspberries are a very good source of vitamin C, containing 40% of a person's daily needs.



INSPIRATION:

Voorskoot, p. 186 –
Lemoen-en-framboos-
margarita



- Mix all the ingredients in the glass and not in a jug.
- When measuring the ingredients, use a measuring jug instead of different size cups – less dishes to wash!

DAFF Female Entrepreneur Awards 2018



Celebrating women in agriculture

by Douglas Chitepo, douglasc@elsenburg.com

The Department of Agriculture, Forestry and Fisheries (DAFF) celebrates and honours women in the agriculture sector annually, during the month of August. The Female Entrepreneur Awards (FEA) Programme is a platform where female agriculturists from the various sub-sectors within agriculture have an opportunity to enter their farming enterprises. Entries are assessed and evaluated against a set of criteria and legislative compliance measures based on sound operational and governance practices. The Western Cape FEA Gala event was held on 7 August 2018 at Hudson's (Vredenheim Estate, Stellenbosch), where the provincial winners were announced. These winners went on to compete at national level, hosted by the Eastern Cape province on 23 August 2018.

Marta Klein, provincial winner in the category Best Female Worker amazed the adjudication committee with her skills, knowledge and insight into the farming operations, her commitment and dedication to her job, and also her caring nature towards her fellow colleagues, which shows in her passion for their development and training. In





Western Cape FEA 2018 winners with MEC Winde.

2009, the nominee was appointed as team leader responsible for the operations of the butchery, which included processing and packaging of red meat and game products. Marta also received previous accolades for her work and leadership within the agricultural sector in the Central Karoo district.

Magda Campbell, founder of Beacon Organics, started her garden project in December 2015 on the Cape Flats, Mitchells Plain. Her aim was to restore pride and dignity to those persons in vulnerable communities within her immediate environment. She engaged them to start growing vegetables as a means of becoming more food-secure. She created a “hub” for volunteers to help in the garden, thus creating employment opportunities. But most significant of this initiative, is the support this garden project has given to children with special needs, as well as to a programme that focuses on the rehabilitation of drug addicts, namely Victory Outreach. The project has received funding support from the Food Security Commodity Project Allocation Committee (CPAC) and has been a critical link in the food chain, not only for Magda’s own household needs, but also for sharing the produce with the

community at large. It has become a social structure for the needy in the area and has made Magda **the provincial winner in the Best Subsistence Producer category.**

Jeanne Groenewald, provincial winner in the category **Top Entrepreneur Processing**,

started in 1997, rearing free-range chickens in her backyard. After tasting her plump and healthy chickens, friends and family started placing orders. Jeanne knew she was onto something when she realised how great the demand was for humanely reared chickens, devoid of chemical enhancement and undue stress factors. Armed with a strong entrepreneurial spirit, Jeanne ultimately grew her small experiment into one of the South African poultry industry’s greatest success stories, while making a powerful contribution to the drive towards truly free-range poultry. In 2000 she established the state-of-the-art Elgin Poultry Abattoir in Grabouw, and today she supplies almost 75 000 free-range chickens per week to leading South African retailers, select deli’s and some of the Cape’s top restaurants. She has also opened several factory outlets for a wider reach of consumers across the province. Through her business, she has created a large number of »



employment opportunities, and has invested in development programmes for her staff and the provision of a crèche, among others. She is truly a remarkable agri-entrepreneur and an astute businesswoman, who has established a reputable and large footprint within the agricultural sector.

Leandré Mitchley, provincial and national winner in the category Top Entrepreneur Smallholder, started farming on municipal land around 2012 in a makeshift pig shed and obtained leased land in 2014. Currently, she grows piglets into porkers and has built up a reputable relationship with Roelcor abattoir. As a member of the South African Pork Producers' Organisation (SAPPO), she has gained valuable insight into the industry while fostering a mentorship relationship, all in good stead for her enterprise. She has received funding support from the Comprehensive Agricultural

Support Programme (CASP) and her plans are to expand and improve her infrastructure to include a fully-fledged sow unit and eventually her own abattoir.

Following her national award she said: "I'm feeling very blessed and happy about my prize. I really need the prize money as I lost most of my pigs (due to diseases) from 2015 to 2017. I will use the money to replenish my stock. I have worked very hard and suffered tremendously and God blessed me with this prize."

Minister of Economic Opportunities, Alan Winde said: "Leandre's hard work and commitment to her business, even when times were tough were some of the attributes that made her a natural winner for the provincial prize. We are delighted that the national panel saw the same attributes, and we hope that this recognition and prize money will catapult her business to new heights."

Liebre Jacobs, provincial winner of the MEC's Special Award (Young Female),

started her home-made style jams in 2014 with a small production capacity of 5 000 jars per month. Today the enterprise, Fruitlips, produces 15 000 jars per month with ten permanent staff members and three casual workers, thus providing employment stability for women in the West Coast district (Piketberg). Raw materials are received, cut and peeled to produce condiments, fruit syrup, and traditional jams with a twist. The product is marketed via a major retail store, as well as on farms and other speciality outlets. This young entrepreneur has big and exciting ideas in mind and is working on expanding the business.

The Western Cape female entrepreneurs have been doing exceptionally well. Since the launch of this programme, they have benefitted greatly in terms of their personal development, but more importantly, the respective enterprises have received a much-needed financial boost. AP



Leandré Mitchley, provincial and national winner in the category Top Entrepreneur Smallholder.

Wine launch 2018

by Lorraine Geldenhuys, lorraineg@elsenburg.com



The annual wine launch of the Elsenburg Wine Cellar took place on 18 October 2018 and celebrations of the new wines kicked off with a “sabrage” at the Manor House on campus. “Sabrage” is when a sword is used to open a bottle of sparkling wine, and this was expertly done by one of the final-year students, Inge Bruwer.

The event was attended by key industry role players and partners who collaborate with the Department of Agriculture. This

well-established partnership facilitates the practical experience the students gain by doing the course in Cellar Technology. The day is about creating a platform for young winemakers to network and meet others within the wine industry. It is also a way of giving back to the industry by acknowledging the vital contribution it makes to the education of the Elsenburg students.


The menu consisted of a food and »



“We would like to look at ways that we can make the wines commercially available”
– Joyene Isaacs, HOD.

wine pairing with the wine produced by the students. Each student got a chance to present a wine and gained valuable experience in public speaking. The wines produced by the students were also available to taste. “The wines are of a remarkable quality, considering that it is produced by students at their first attempts”, said Don Miller from Imvusa Stainless, “We are proud to be working with the team of the Elsenburg Wine Cellar”.

During the event, Ms Joyene Isaacs (Head of Department) announced that the wines could be for sale in the near future. “We would like to look at ways that we can make the wines commercially available. By next year’s wine launch we would like to have a plan in place.”

Elsenburg Agriculture Training Institute also celebrated its hundred-and-twentieth anniversary in 2018, although a specific course for winemakers was only introduced in 1976. 





2018 Western Cape Prestige Agri Awards **ISAAC NTOTO TAKES TOP HONOURS**

by Brighton Shumba, brightons@elseburg.com



Isaac Ntoto won the 2018 Western Cape Prestige Agri Worker of the Year award during a prestigious gala ceremony hosted in November 2018 at Nederburg Wine Estate in Paarl. The event was the culmination of 16 regional competitions, with an astounding 1 318 agri-workers competing across different categories. More than 700 guests attended the gala event.



The competition, the only one of its kind in South Africa, is presented annually by the Western Cape Department of Agriculture (WCDoA). Shoprite has taken hands with the

Department and has been a valued partner for the past seven years.

Isaac, originally from Motherwell, Port Elizabeth, works in Brandwacht, Mossel Bay, as a technical manager at the Garden of Eden Berries Farm.

Following the announcement, Isaac conveyed a message of hope: "I'm very grateful and happy about this award. I feel very privileged to live in this day and age and to be part of a good story in South Africa. There's still hope in South Africa and for agriculture. People in agriculture work hard to make our country great." Isaac also had a special message for his fellow agri-workers: "The work that you do is important. Thank you for putting your energy into producing food for people's tables every day."

The MEC for Economic Opportunities, Minister Beverley Schäfer, congratulated Isaac Ntoto on his well-deserved win and said that she looked forward to engaging with him and hearing his thoughts on issues that affect agri-workers.




Isaac Ntoto on the farm,
Garden of Eden Berries.

The owner of the Garden of Eden Berries Farm, Gavin Lensley-Noakes, believes Ntoto won because he possesses "the three P's: passion, purpose and personality. Isaac loves working with berries, so the passion is there. He has a purpose – he knows where he wants to go, and he is very driven. His personality shines when he works with people. He is always smiling and encouraging his team, but can be firm at the same time."

Apart from the coveted title, Isaac also walked away with a handful of prizes, including R25 000 cash sponsored by WCDoA, a R20 000 Shoprite voucher, an iPad Air inclusive of data sponsored by Daleen Turner Consultancy, and an overseas study trip to Amsterdam and Berlin, sponsored by WCDoA, from which he recently returned.

The study trip was not only his first time abroad, but also his first time flying, and he could hardly contain his excitement. He was equally impressed by the European transport systems. He found the differences in agricultural methods very interesting, especially in terms of mechanisation and the use of advanced technology, compared to South Africa that relies heavily on agricultural workers for labour. Isaac indicated his appreciation for the opportunity to meet wonderful people and experience new things and different cultures. He plans to apply the knowledge he gained from this experience in practice back at the Garden of Eden Berries Farm. "Now I have a good story to tell whilst also having more aspiration, thanks to the award and the wonderful opportunity afforded me by the Department."

Isaac joins the competition's previous winners as a member of the Prestige Agri-worker Forum of the Minister for Economic Opportunities. They meet quarterly to discuss agriculture workers' and sector-related issues. 



Students **benefit** from bilateral agreement between Western Cape and Upper Austria

by Gareth Williams, garethw@elsenburg.com

Mr Gareth Williams from the Western Cape Department of Agriculture (WCDoA) travelled to Upper Austria to coordinate a student exchange programme between the two regions.

For the first intake of students from the Western Cape in 2018, eight students and two teachers attended the Upper Austria student exchange programme. Mr Hubert Huber, Head of the Department of Agriculture

in Upper Austria and coordinator of the exchange programme, was the host of the delegation.

The programme lasted two weeks, and covered agricultural theory and hands-on practical training in specific areas. This included agricultural practical training and agri-processing on-farm training. In addition, farm visits and excursions were arranged as a means of experiencing agriculture in a

foreign country. The visits also provided an opportunity to see on-farm agri-processing at selected farmers and agri-businesses.

The exchange programme emanated from the Memorandum of Understanding signed by Minister Hiegelsberger, Minister of Agriculture, Upper Austria and Minister Winde, former Minister of Economic Opportunities (now Minister of Community Safety and Premier Elect), during November 2016.

One of the areas for bilateral interaction between the Western Cape and Upper Austria was human capacity development. Minister Hiegelsberger and his delegation visited the Western Cape during November 2016, where he co-signed a Memorandum of Understanding between the two regions. The aim was to develop and implement concrete possibilities for agricultural student exchange, which was expected to commence in 2018. The student exchange programme in Upper Austria would help to transfer knowledge and best practices in agriculture and the food industry (primary

and agri-processing) at an educational level.

Two study venues were provided for students. The eight students were based at agricultural schools during the programme: four students were hosted by HLBLA St. Florian and four students by HLBLA Elmberg. The programme ran from 23 June to 6 July 2018.

The first group of students from Upper Austria will travel to South Africa during the first half of 2019, after an earlier visit by their Austrian counterparts in 2018. In essence, the content of the arrangement and programme will be reciprocal.



South African students on the exchange programme, meeting with members of the Western Cape Provincial Parliament at the Upper Austrian Parliament.





South African students on the exchange programme, meeting with Minister Hiegelsberger, Minister of Agriculture, Upper Austria and Hubert Huber, Head of Department Ministry of Agriculture, Upper Austria.



“...improving the effectiveness of leadership of youth within these sectors and ensuring a new generation of well-equipped and informed leaders”

One of the highlights of the student exchange programme was the two days spent visiting farms in Upper Austria with some members of the Western Cape Provincial Parliament. The students had the opportunity to engage with South African leaders to strengthen the relationship between the two regions. This will lead to the strengthening of young professionals within the agricultural and agribusiness professions, and in so doing, “improving the effectiveness of leadership of youth within these sectors and ensuring a new generation of well-equipped and informed leaders”. Moreover, it will facilitate better policy- and decision-making and contribute towards economic development

and the solving of the challenges facing South Africa’s agricultural sector. The continuation of such a programme will be highly beneficial for the development of the next generation of farmers within the Western Cape region. Lessons learnt and the experience of agriculture in a foreign country are invaluable and will inspire future generations of farmers.

The Western Cape and Upper Austria are partners in the Regional Leaders Forum and have committed to cooperating on areas of mutual importance. In this case, the exchange of students from both regions will be the focus with the aim of supporting human capacity development in agriculture in both regions. **AP**

PLACEMENT OF UNEMPLOYED GRADUATES IN AGRICULTURE

by John Constable, johnc@elsenburg.com



**Agricultural graduate
benefitting from the graduate
placement programme.**

The Western Cape Department of Agriculture (WCDoA) in conjunction with the National Department of Agriculture, Forestry and Fisheries (DAFF) implemented a two-year graduate placement programme in the Western Cape.

In order to reduce the unemployment rate among youth, unemployed graduates in agriculture are placed on farms or agricultural entities for entrepreneurial development. The Head of Department,

Ms Joyene Isaacs, approved the appointment of 120 unemployed graduates in agriculture with host employers and agricultural entities, through the Comprehensive Agricultural Support programme (CASP).

The department aims to increase employment and reduce poverty through this project by:

- providing unemployed agricultural graduates with opportunities to gain on-the-job experience;

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**Agricultural economist: Maliviwe Makeleni seated
In front with graduate interns (ltr): Babalo Mbuque;
Zikhona Sigubuand Athenkosi Mbaba.**



- contributing to accelerated food production through development of a pool of competent young producers;
- bridging the gap of ageing producers and reducing unemployment and poverty among youth;
- providing a platform for active participation of youth in the agriculture value chain; and
- creating an enabling environment to support the establishment of youth-owned and/or -managed enterprises and by linking youth entrepreneurs with entities that support the development of entrepreneurs.

Apart from reducing unemployment, the initiative targets a minimum of 50% women and 60% youth (18 to 35 years). Unemployed graduates from agricultural colleges receive first priority.

The first group of 91 graduates was placed with external host employers (farmers/agricultural entities and the Department of Correctional Services) for entrepreneurial development. The Memorandum of Understanding (MOU) was signed with the Department by 41 host employers. They will be responsible for:

- training placement for unemployed graduates;
- provision of mentors to supervise the training programme; and
- exposing graduates to a variety of on-the-job training (e.g. farm management, production, health and safety, business and entrepreneurship).

The Department, host employers and graduates were invited to attend a

briefing session explaining the project and the roles and responsibilities of the different participants.

This was followed by a briefing session for the graduate interns who were successfully matched and placed with respective host employers. Preference was given to graduates of the Elsenburg Agricultural Institute.

There were 376 applicants from across the country who applied for the Graduate Placement Programme, of which 185 applicants from the Western Cape were prioritised. Applicants' qualifications ranged from diplomas to doctorates.

While most of the applicants were from the metro area, accommodation became a challenge. The department intervened, where possible, to assist with the arrangement of accommodation.

This initiative is not new to the department; it also runs a similar project for internships on farms with external host employers. The Agricultural Partnership for Youth Development (APFYD) project was shortlisted for the Premier Service Excellence Awards and won silver in the "Best Implemented Project" category and silver in the National Department Centre for Public Service Innovation: "Innovative Service Delivery Institution" category. The graduate placement project was implemented based on this successful model.

Host employers eagerly embraced and supported the concept to reduce unemployment and poverty in the sector. This commitment was sealed with the signing of 41 new MOUs between the department and new host employers. **AP**



The 2018 AEASA Conference proves its relevance

by Jacques Murdoch, jacquesm@elsenburg.com



Prof. Ferdi Meyer (Bureau for Food and Agricultural Policy, University of Pretoria).

In 1961, the Agricultural Economics Association of South Africa (AEASA), the professional organisation of agricultural economists in South Africa was founded, and the first annual conference was held the following year. In 2018 the conference was held at the Lord Charles hotel in Somerset West from 25 to 27 September. As usual, it not only provided the tightly-knit community with the opportunity to reunite and reconnect, but also to share past lessons and future ambitions.

The conference provided a platform for young and upcoming agricultural economists to showcase exciting new studies, and also for experienced ones to share their wisdom, which often leads to deep and interesting discussions afterwards.


With the theme being “Practicing agricultural economics in an uncertain neighbourhood”, the many plenary and parallel sessions over the course of the three days highlighted how aware the

“the three days highlighted how aware the agricultural economist must be regarding the influence of politics on the sector”

agricultural economist must be regarding the influence of politics on the sector. Four of the plenary sessions were focussed on the role of agricultural economists in different work environments, notably in policymaking, agribusiness and government, as well as in the wine and horticultural industries. The fifth panel discussed growth and investment in the agricultural sector in the context of the uncertainty related to land reform.

Included in the programme were also two

invited panels, one discussing food security and agriculture and the other the African continental free trade area. Staying current with technology, short electronic presentations that proved popular among many were introduced, instead of the usual paper-poster presentations.

With the high standard that these conferences achieve, next year's conference in Bloemfontein is not to be missed and should prove to be exciting. 





EMPOWERING those **first on the scene**

by Dr K Botha, cathyf@elsenburg.com

An exceptional initiative was instituted at the Oudtshoorn State Vet Office on 17 August 2018 – the very first workshop about animal first aid and biosecurity. The workshop was organised by state veterinarian, Dr Catherine-Anne Fox, and presented by Dr Karlien Botha, compulsory community service (CCS) veterinarian. It was enthusiastically attended by local welfare organisations from the Klein Karoo district, including Animal Care Team South Africa (ACTSA), Oudtshoorn Dogs in Need (ODIN) and Calitzdorp welfare organisations.

The aim of the workshop was to educate welfare volunteers in the basic principles of animal first aid in the field, the prevention of the spread of zoonotic diseases and the implementation of proper biosecurity principles. Diseases such as rabies, scabies, toxoplasmosis, tapeworms, and giardiasis (to name but a few) are highly infectious and transmissible to humans. In order for welfare workers to ensure application of basic animal care, animal health and well-being, as well as promoting the link between human and animal health, these topics are crucial. By creating awareness and educating welfare volunteers, they are empowered to spread the message to the local community to assist animal owners with basic animal care.

The module on animal first aid in the field covered all aspects of first-line animal emergency care and precautions in performing animal first aid. All volunteers learnt how to assemble a DIY first-aid kit, how to use it when faced »



with emergency cases and how to follow a step-by-step approach on managing these cases until arriving at the vet. Common emergency scenarios were discussed, from identification of the problem to initial stabilisation of the patient. An overview of animal emergency cases was provided at the workshop, including what to do in the case of a seizure, bleeding, dehydration, shock, poisoning and snake bite, as well as how to manage wounds and fractures. Basic wound care and bandaging techniques were demonstrated and practiced on props. The participants had the chance to perform

cardiopulmonary resuscitation and even the Heimlich manoeuvre. After the session each person was empowered to handle emergencies calmly and efficiently when arriving first on the scene, avoiding unnecessary hysteria.

Following in-depth discussions of first-aid management, emphasis was also placed on biosecurity and its importance in preventing the spread of disease. Biosecurity entails the essential measures taken to enhance security from exposure to harmful biological agents. The implementation of proper biosecurity principles forms a key role in the “one health” concept (human-animal-environmental health). Good infection control, common disinfection errors and steps to ensure protection from animal diseases were discussed. With the knowledge gained, the welfare volunteers will also be able to provide much-needed advice to animal owners. With the recent canine distemper outbreaks throughout the Karoo district, application of these principles would prove extremely important in reducing future outbreaks.

A special informative session was presented on the current rabies situation in South Africa,



Dr Fox and Dr Botha demonstrating bandaging techniques.



in preparation for World Rabies Day on 28 September 2018. Raising awareness and educating local communities about effective rabies prevention is the key to eliminating human deaths caused by rabies.

Welfare volunteers were informed on:

- outbreak distribution;
- disease management;
- modes of transmission;
- clinical signs commonly seen in rabid animals and human cases;
- life-saving preventative measures for both humans and animals; and
- safe and effective vaccination and immunisation.

Despite being a preventable disease, lethal human cases of rabies are still reported, particularly in underserved communities. Through strategic mass dog-vaccination campaigns, disease transmission is prevented among dogs, and from dogs to humans, thereby hopefully reducing human rabies cases to zero. Dog behaviour and warning signs of aggression were also among the practical tips shared. With these facts in mind, multisectoral involvement in rabies prevention is crucial.



A guest speaker from a well-known veterinary pharmaceutical company also educated workshop attendees about vaccination and ectoparasite control, since these concepts form an integral part of primary animal health care and welfare.

This was a fine example of successful collaboration between public and private entities learning from each other and sharing knowledge on the intricacies of human-animal health interactions. **AP**



MSD: Sr. Meghan Skinner provided a product advertisement and some free goodies for attendees.



Dr Botha (CCS Vet) gaining valuable presentation skills.

CONNECT-AGRI WERP VRUGTE AF

deur Japie Kritzinger, japie@elsenburg.com

“Connect-Agri” is teen hierdie tyd ’n bekende woord op die lippe van amptenare werksaam by die Wes-Kaapse Departement van Landbou. Daar is egter goeie rede om te glo dat dit ook onder die breër landbou- en landelike gemeenskappe begin bekendheid verwerf.

Sedert die afskop van die program in Augustus 2016 tydens die George Landbouskou, het die departement al wye draaie in die res van die Wes-Kaap gemaak.

Hierdie program het hoofsaaklik ten doel om die jeug bewus te maak van die verskillende loopbaangeleenthede in die landbousektor, maar poog terselfdertyd ook om die dienste wat die departement aan die breë landbougemeenskappe bied, bekend te stel. Die Connect-Agri-span van die Departement het sedert die landbouskou by ’n verdere sewe geleenthede die loopbaan- en dienste-uitstalling aangebied. Dit sluit landbouskoue vanaf Beaufort-Wes in die

Sentraal-Karoo tot Villiersdorp in die Overberg en Clanwilliam in die Weskusdistrikte in.

In 2018 het die Connect-Agri-program groot suksesse behaal op die Swartlandskou op Moorreesburg van 5 tot 8 September en op 11 tot 13 Oktober by die Agri-Expo Livestock-geleentheid wat by Sandringham gehou is. Tydens hierdie twee geleenthede het ’n totaal van 1 591 mense die departementele uitstalling besoek en met amptenare gesels. Verder het 700 leerders (graadneges en -elfs vanaf twaalf skole) hierdie geleentheid bygewoon as deel van ’n skoleprogram; voorwaar ’n suksesverhaal wat die relevansie van hierdie program bevestig.

’n Blyk van waardering word uitgespreek teenoor alle amptenare vir die afgelope twee jaar se harde werk om van hierdie agt geleenthede ’n groot sukses te maak. Intussen word oorweging geskenk aan waar die volgende Connect-Agri-geleentheid in die 2019/20 finansiële jaar sal plaasvind. **AP**



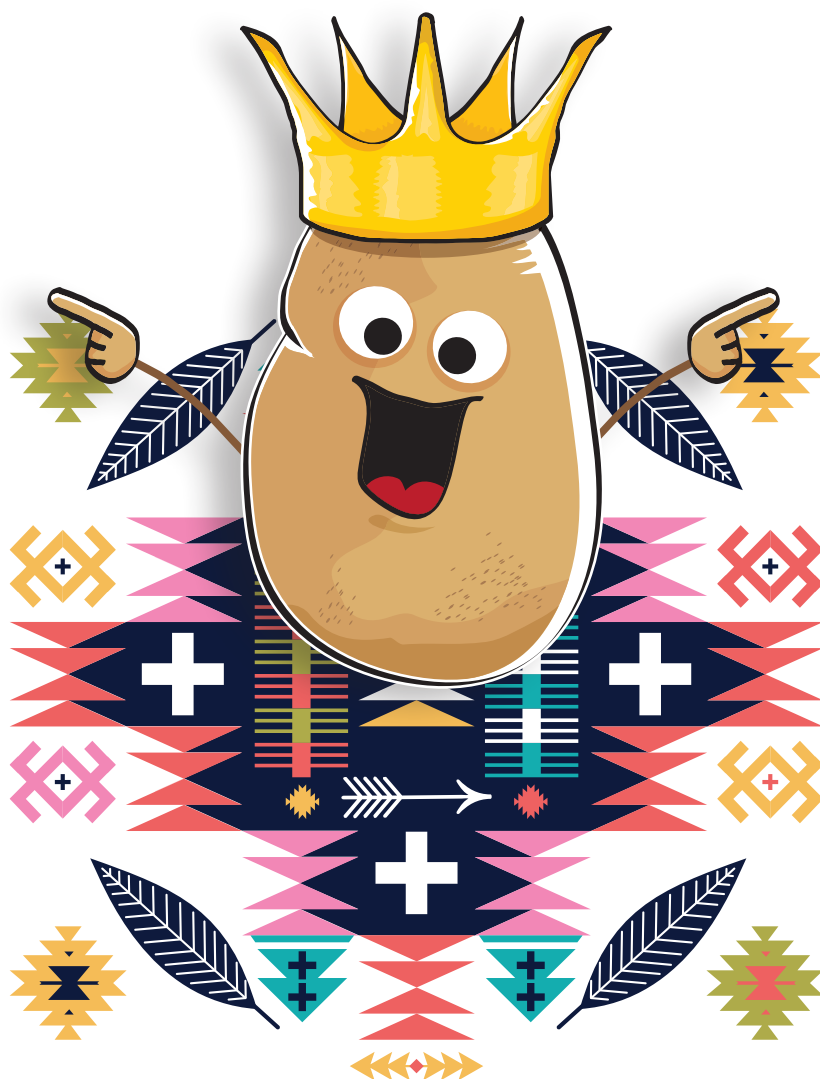
Dr Meiring van der Merwe interesseer leerders in veeartsenykunde as 'n loopbaan.



Dr Ilse Trautmann in gesprek met Burgemeester Von Schlicht en raadslid Florence van die Kaapse Wynland Distriksmunisipaliteit.

Experts meet in Peru to discuss the **NOBLE POTATO**

by Dr Jacques van Zyl, jacquesvz@elsenburg.com



Cusco, the former capital of the Inca Empire, hosted the 10th World Potato Congress, in conjunction with the XXVII Latin American Potato Association Congress. It was the first time that the congress was held in Latin America, which is the home to more than 4 000 varieties of native potatoes, some of them dating back to the era of the Incas.

The congress was organised around seven technical themes:

- Climate change and potato agri-food systems
- Trends in potato consumption and markets
- Potato variety development and biotechnology
- Potato pests and diseases
- Potato crop management
- Post-harvest and processing technology
- Potato biodiversity and its relation to breeding, nutrition and health

The congress highlighted the contribution of different improved and native potato varieties to global food security, the development and implementation of pest and disease management technologies – especially in the climate-change scenario – as well as the development of technologies for post-harvest and processing. Potato

crop management also received attention, especially water consumption for production.

The congress brought together 900 attendees representing 50 countries. South African delegates presented three papers, of which one was from the Western Cape Department of Agriculture, entitled: “Conservation farming practices for potato production in the Sandveld region of South Africa – a four-year review”. Of the 164 abstracts presented, 67,8% were from Latin America, 18,8% from Europe, 1% from Oceania, 5,6% from Asia and 6,8% from Africa.

Delegates also visited the Andenes Experimental Station of 50 ha; located in the district of Zurite in the Anta province of Cusco. Andenes is one of the National Institute of Agriculture Innovation’s 14 experimental stations. Andenes has 33 terraces and these allow the conducting of research in several crops such as potatoes, quinoa, corn, kiwicha, barley, grasses, forages, root and tuber crops and medicinal plants. The research focus is on genetic breeding, seed production, genetic resources and conservation. Several new potato varieties have been found due to Andenes research, which include Chaska, Valicha, Kori-INIA, Pallay Poncho, Puca Lliclla and Antenita.

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Welcoming to Potato Park, the Andean way.





Varieties of native Andean potatoes.





The following research and related work are conducted at this station:

- Efficient growing systems – hydroponics, aeroponics and conventional systems
- Diversity in potato wild relatives
- National register of native potatoes
- Precision agriculture
- Genotyping of *P. Infestans*
- Molecular diagnoses under field conditions
- Diversity of native potatoes
- Conservationist farmer techniques
- Biofortification, especially Zn and Fe
- New potato varieties with resistance to late blight and heat tolerance
- Participatory potato varietal selection
- Selection of clones for resistance to frost
- Mixed-crop systems

Potato Park was visited during a field trip, which highlighted the origin of potatoes. The Park is essentially a community initiative of potato conservation and sustainable usage which brings together six Quechua communities in Písaq, who have combined their community lands to celebrate the diversity of the Andean potato in its centre of domestication. Quechua farmers in the

communities of Amaru, Chawaytire, Cuyo Grande, Pampallaqta, Paru Paru and Sacaca cultivate around 1 400 varieties of native potato in an area that covers more than 9 000 hectares. The visit led to the sharing of the communities' experiences and learnings of conservation in situ and the development of the native Andean potato. The visit also gave some insight into the dissemination of knowledge and information regarding the governance of genetic, biological and cultural diversity related to the Andean potato, and the contributions of this model to sustainable development. The visit took place in five different communities and was based on five themes:

- Andean potato origins and ecology
- Potato genetic diversity
- Local usage, benefits and livelihood
- Participatory research
- Knowledge management

The congress was a huge success because scientific advances and industry experiences were shared. This interaction could ultimately lead to sustainable potato production in order to enhance world food security. **AP**

Increasing biodiversity in dryland cropping systems

by Dr Johann Strauss, johannst@elsenburg.com



There is worldwide concern about the loss of biodiversity and consequently, ecosystem services. This is especially true for agricultural landscapes. Monoculture production is still practiced on a large scale across the world, although the adoption of conservation agriculture principles has turned the tide on this practice. Current estimations are that the practice is growing by 6 million hectares per year, currently 180 million hectares in total.

Data from around the world underline the improvement of cropping systems when at least three crop types are used in rotation. Results from the long-term trial at Langgewens Research Farm support the findings worldwide. The systems tested at Langgewens are shown in Table 1.

The average wheat yield in a monoculture over a 20-year period is 2 566 kg/ha. With the introduction of a single canola crop, the average increased to 2 925 kg/ha (Figure 1), but with each consecutive wheat-on-wheat crop following the canola, the average yield dropped by 216 kg/ha for the second year of wheat, and 292 kg/ha for the third year. The introduction of legumes, either as a cash crop or legume pasture, increased the yield even further (see Figure 2).

Dryland wheat forms the backbone of cereal production in the Western Cape. Rotation crops include barley, canola, oats, lupine, medics and lucerne, depending on the specific area within the province. This diversity is not sufficient. No-till and crop

rotation have improved our soil carbon content over the past 20 years and yields have increased along with these results, but it seems like we have hit a plateau in our production. The question now is, what next?

Regenerative agriculture is aimed at the improvement of biodiversity in cropping systems by the inclusion of multispecies cover crops and animals. This extension of conservation agriculture is making serious headway in the mid-western states of America. Results from the Brown's farm showed an improvement in soil carbon when no-till was introduced; another improvement followed when crop rotation was introduced. The introduction of single-species cover crops showed no real further improvement of the soil carbon content. It was only with the inclusion of multispecies covers that the carbon content showed improvement again and the improvements increased significantly after the inclusion of animal grazing on the cover crops. Ecosystem services have improved to such an extent that they are no longer applying any fertiliser or artificial control of diseases or insects in their cropping systems.

Under local conditions there are two ways in which to increase the biodiversity of the system. The first is to introduce new cash crops or pastures into the system or secondly, to include multispecies cover crops. The inclusion of new cash crops could improve the spreading of risk for our dryland producers, but will need testing in



Table 1: Cropping sequence within the eight-crop rotation systems tested at Langgewens Research Farm.

System	Crop sequence			
WWWW	wheat	wheat	wheat	wheat
CWWW	canola	wheat	wheat	wheat
LWCW	lupine	wheat	canola	wheat
LCWW	lupine	canola	wheat	wheat
MCMW	medic pasture	canola	medic pasture	wheat
MWMW	medic pasture	wheat	medic pasture	wheat
MkCMkW	medic/clover pasture	canola	medic/clover pasture	wheat
Mk+SCMk+SW	medic/clover pasture + saltbush	canola	medic/clover pasture + saltbush	wheat

Figure 1: The effect of crop sequence on the yield of wheat.
(W = wheat, C = canola, L = lupine and Mk = medic or medic/clover pastures)

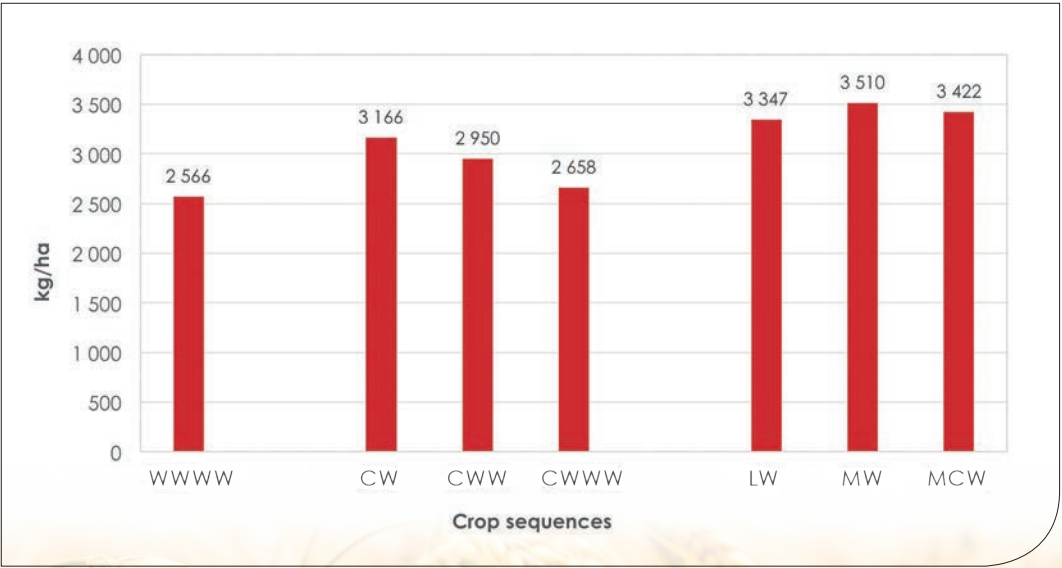
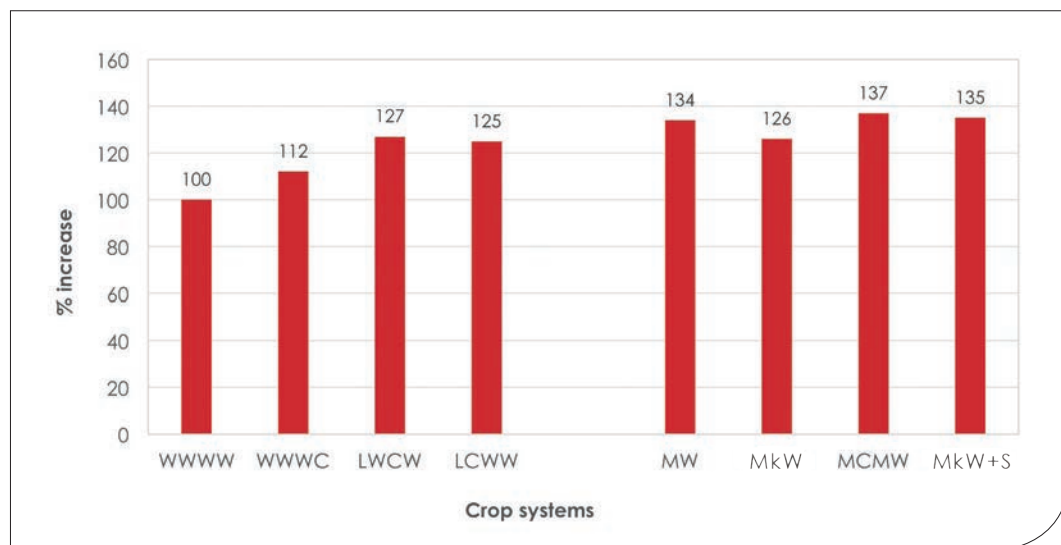


Figure 2: The average percentage wheat yield increase in different crop-rotation systems compared to wheat monoculture as tested at Langgewens. (W = wheat, C = canola, L = lupine, M = medic, Mk = medic clover and S = saltbush).



order to evaluate the production feasibility and market availability. The inclusion of cover crops appears to be the easier route, but the question remains how the producer benefits financially from the inclusion of cover crops, because profitability is still an integral part of sustainable farming.

Several projects that include cover crops have been launched by the Western Cape Department of Agriculture in the past four years. The search was for possible combinations of multispecies cover crop mixes and management practices of such cover crops. The impact of these are also measured in terms of follow-on crop production in wheat and barley. The aim of this project is to evaluate both winter and summer cover crops.

Results from these studies have shown improvements of yield when compared to normal production practices. One example comes from Tygerhoek Research Farm where barley was produced in 2017 on the same area where different cover crop mixtures were planted in 2016. The barley yield was

almost double following the different mixed cover crops compared to the control.

An interesting observation from the trials is that foliar diseases usually associated with the individual crops are non-existent in the mixtures. This aligns with findings at the Minoken research farm in North Dakota, where a mixture of wheat, barley and oats was planted next to strips of the individual crops. The single crop strips showed disease problems while the combined strip was healthy.

An MSc study on the effect of three different cover crop management strategies (grazing vs mulching vs haying) on succeeding wheat production showed varying yields (between 2,1 t/ha and 2,6 t/ha) but no statistical difference between treatments.

Conclusion

The utilisation of cover crops can enable smallholder and commercial farmers to incorporate cover crops and livestock into cropping systems. This will improve diversity in cropping systems and spread the economic risks over different commodities. **AP**



Western Cape LandCare rewarded – but national soil conservation challenges remain

by Francis Steyn, franciss@elsenburg.com

The Western Cape farming sector is getting its approach to LandCare right. This was highlighted at the National LandCare Conference, held in Bloemfontein in September 2018.

Farmers and others involved in agriculture from the Western Cape were major winners at the conference's awards ceremony. The Western Cape won 12 awards, taking home a third of the prizes for sustainable natural resource management actions.

The Junior LandCare schools and schoolchildren also scooped up a number of prizes at the event.

According to Francis Steyn, LandCare Manager in the Western Cape, this shows how farmers and land users in

the province are protecting their natural resources.

"The Western Cape has so many examples of farmers protecting their water, their soil and their biodiversity, while becoming more productive. **This is what LandCare is all about.** And we're pleased that they are rewarded at this prestigious event."

LandCare and other officials from the Department of Agriculture, Forestry and Fisheries, including Minister Senzeni Zokwana, attended the three-day event. Agriculture officials from other African states, including the Kenyan Ministry of Agriculture Cabinet Secretary, Mwangi Kiunjuri, also joined the discussion on the role of LandCare.



The impact of climate change was highlighted during the event, as well as the lack of support for farmers to deal with these challenges.

Minister Senzeni Zokwana said that the department had only 3 000 agriculture officials to provide guidance and support to farmers across the country.

“We need a good leadership corps that can increase jobs and can implement progressive conservation agriculture programmes. Soil that has been degraded and eroded must be restored, so that it can be farmed again,” he said. He added that funding made available for soil conservation must not be channelled into other activities.



“The renewed focus on soil conservation nationally is timely – and vital”, said Steyn.

Globally, statistics suggest agricultural soils have lost between 30% and 75% of their carbon – with billions of tonnes of carbon dioxide added to the atmosphere, contributing to a changing climate.

This degraded soil then becomes increasingly unproductive. “Around 30% of cropland around the world has been abandoned in the past 40 years as a result of soil decline”, says Dr Christine Jones in *EcoFarmingDaily*.

“That puts pressure on productive land,” said Steyn. “In the Western Cape, we’ve learnt that land productivity is optimised only when our natural resources function as they should. This message was clear at the conference.”

New energy in the African LandCare Network

According to Steyn, the conference also breathed new life into the African LandCare Network. This network represents LandCare programmes across the continent, including countries like Kenya, Uganda and Tanzania.

“With representatives of the African LandCare Network attending the conference, there is now new life and energy here. The network has already spread its wings, and now we are convinced we’ll get even more member states to join in the next two years – until eventually, all countries across the continent are participating in LandCare.”

LandCare is a sub-programme of the Department of Agriculture, Forestry and Fisheries. It is tasked with promoting the sustainability of natural resources to improve productivity, and food security, and to create jobs – critical in climate-change adaptation and mitigation. Steyn says it is most successful when it is community-driven.

“In order to achieve sustainability in the agricultural sector, farmers must be at the centre of the journey, and must lead the process. The LandCare model is where local people identify concerns, set the future vision of their home, prioritise and implement, and we as partners enable this vision to become a reality.”

“That’s exactly what our Western Cape winners have done – and why they have been rewarded accordingly.”





Gold medallists

- Christie Lourens – Best LandCare Coordinator
- Upper Breede Collaborative Extension Group – Best LandCare Committee – District Level
- Jacky Goliath – Best Woman LandCarer
- Bevan Thomas – Best Out-of-School JuniorCare

Silver medallists

- Berry Wessels – Individual LandCare Champion
- Andries van der Poll – Best Conservation Agriculture Advanced Smallholder Farmer
- Keisie Primary School – Best In-School JuniorCare
- WWF-South Africa – Best Civil Society

Bronze medallists

- Titus van der Heyden – Best Conservation Agriculture Beginner Smallholder Farmer
- Koup IV Special Management Area – Best VeldCare
- Central Breede River Water Users' Association – Best WaterCare
- Koup Area Wide Planning Project – Best Community LandCare

Junior LandCare medallists

- Lisa Mentz won silver in the Best Poster category
- Belhar Primary School won bronze in the Best Drama/Play category
- Liana Human won bronze in the Best Speech category



Western Cape participants also led the winning teams in the Amazing Race category, including children from Belhar Primary, WA Joubert Primary, Ethafeni Primary and Slot Van Die Paarl Primary School. **AP**

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Tracking agricultural land-use changes in the Western Cape from 2013 to 2017

L Pienaar

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Some say there are only two certainties in life: death and taxes. Researchers at Elsenburg could add a third certainty: every decade there will be at least one formal investigation into alternative crops for the Swartland. In previous editions of *AgriProbe* numerous articles appeared on nuts, berries and cherries as alternatives for local irrigation farmers. These farmers are now in an enviable position: South Africa has an increasing share of international trade in a growing world market.

What are the nuts, berries and cherries of dryland farmers in the Swartland? During a recent meeting between officials from the Western Cape Department of Agriculture and representatives of the Wheat Industry, it was suggested that chickpeas might play such a role. In this paper, trade patterns and opportunities for chickpeas will be investigated.

A cursory glance at global trade in chickpeas (HS 071320: dried, shelled chickpeas (garbanzos), whether or not skinned or split, reveals that its exports increased from R5,5 billion in 2008 to R36,6 billion in 2017. The increase of R31,1 billion represents a growth of 562% over this decade. In quantitative terms global trade has increased from

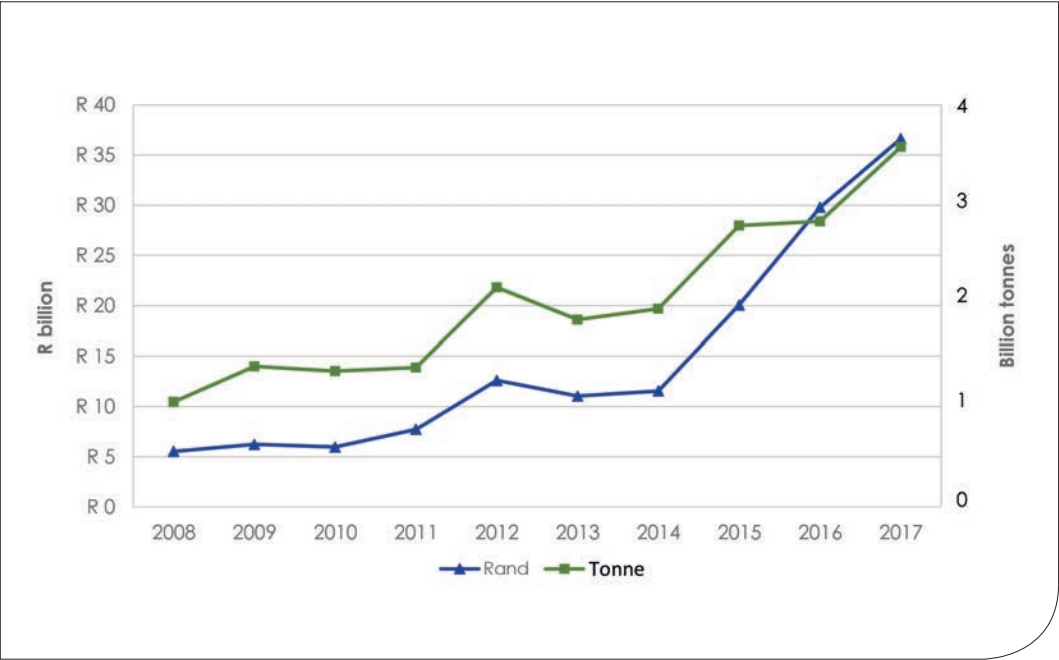
0,9 million tonnes to 3,1 million tonnes over the same period; an increase of 2,2 million tonnes (242%) (Figure 1).

At just over 50% of the R36,6 billion chickpeas exported globally during 2017, Australia is the dominant player. Mexico (7%), Argentina (6%), the USA (6%) and Canada (6%) are also important chickpea exporters. Countries in the Indian subcontinent are collectively responsible for 61,5% of chickpea imports. India (41,7%) is dominant, followed by Pakistan (14,4%), Bangladesh (4,4%) and Sri Lanka (1%). Other key importers include Muslim-majority populations such as the UAE (4,8%), Algeria (4,5%), Turkey (4,2%) and Saudi Arabia (2%) (Figure 2).

It comes as no surprise that 90% of Australia's R18,4 billion chickpea exports end up in the Indian subcontinent (Figure 3). Mexico, the world's second largest exporter, has a much more balanced portfolio with Muslim-majority countries such as Algeria (26%), Turkey (25%) and the UAE (7%) being important destinations.

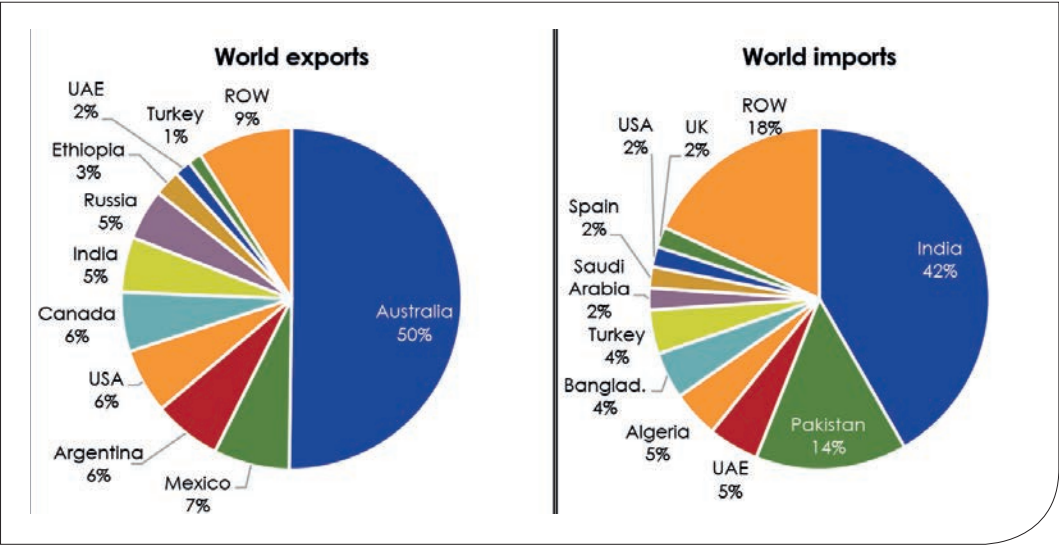
Conversely, Australia (90%) is the dominant source of chickpeas imported by India. Although Australia (62%) is a little less dominant in Pakistan, it still remains the

Figure 1: Global chickpea exports



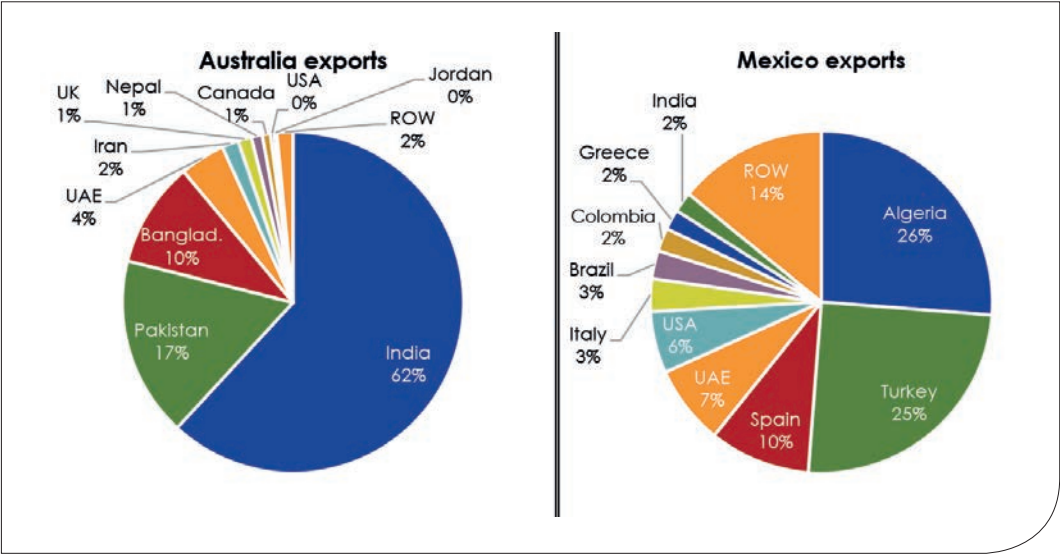
Source: ITC (2018)

Figure 2: Global chickpea imports and exports per country (2017)



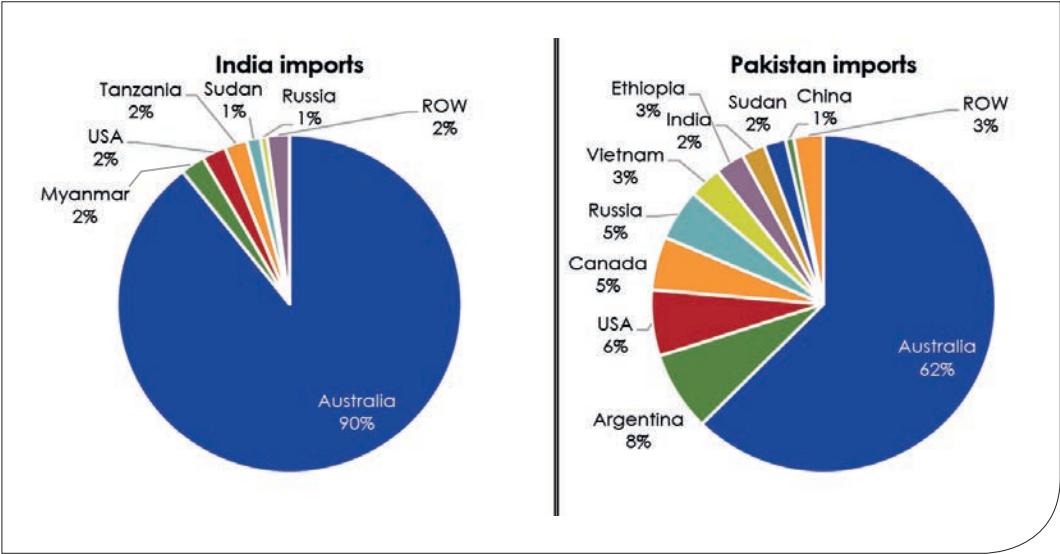
Source: ITC (2018)

Figure 3: Destination of chickpea exports for the two biggest exporters (2017)



Source: ITC (2018)

Figure 4: Destination of chickpea exports for the two biggest exporters (2017)



Source: ITC (2018)

source of almost two-thirds of Pakistani chickpea imports. Other countries such as Argentina (8%), the USA (6%) and Canada (5%) also have a foothold in this market.

South African imports of chickpeas closely follow global import patterns. In 2008 South Africa imported chickpeas to the value of R10,4 million. The value of chickpea imports grew by R28,6 million to reach 39,1 million in 2017; an increase of 274% over the decade (Figure 5).

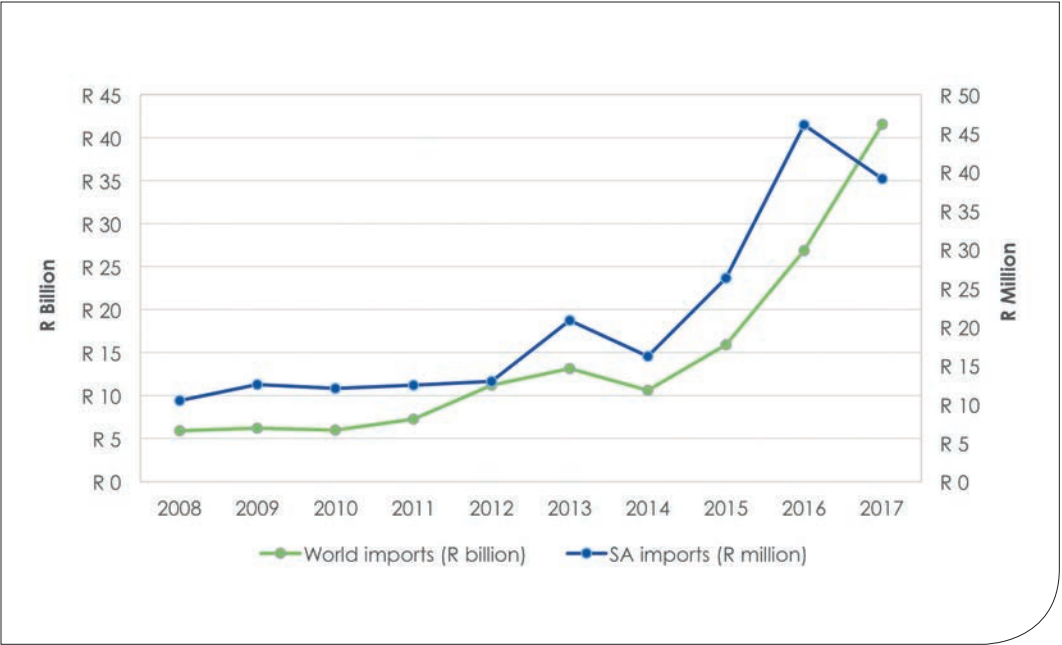
For South Africa, the dominant source of chickpea imports is also Australia (43,8%), with Argentina (16,3%) second. India (9,6%), being the biggest importer of chickpeas globally, is the third most important chickpea exporter to South Africa. This is probably due to value-added niche products being exported to certain cultural groups in South Africa (Figure 6).

South Africa exports small quantities of

chickpeas with 91,8% of its R1,46 million worth of exports going to neighbouring countries. Botswana (38,2%) is first, but exports to second-placed Lesotho (25,5%) fluctuate wildly. In 2016 chickpeas worth R1,2 million (60% of South Africa's exports) went to Lesotho, but in 2017 only R0,373 million.

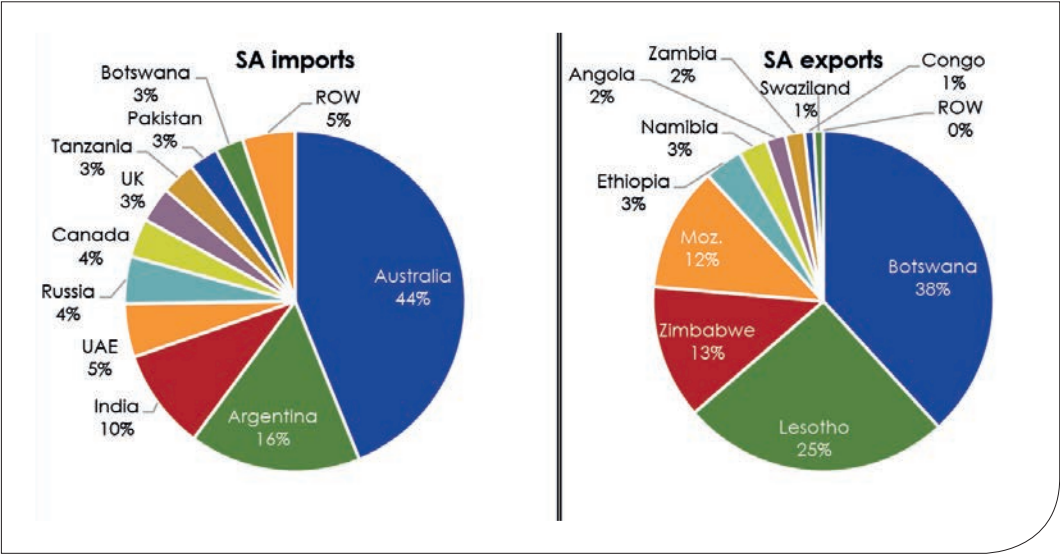
It is clear that international trade in chickpeas is growing rapidly and that Australia is the dominant exporter. With parts of Australia having a similar climate to the Western Cape, it follows that the Province could look at its production practices and farming systems for lessons to be learnt. The Indian subcontinent is the dominant importing region, but Australia is so dominant in this market that it might be difficult to find a foothold. It may make more sense to use neighbouring countries as a springboard by developing a market for ethnic groups originating from the Indian subcontinent.

Figure 5: World and South Africa's chickpea imports



Source: ITC (2018)

Figure 6: Origin and destination of South Africa's chickpea trade (2017)



Source: ITC (2018)

References



ITC (2018) International Trade Centre, Geneva. <http://www.trademap.org> **AP**

THE FLYOVER PROJECT:

Tracking agricultural land-use changes in the Western Cape from 2013 to 2017

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INTRODUCTION

Land resources are finite, fragile and non-renewable, and form the basis for human and other terrestrial ecosystems, as well as agricultural production. The importance of land and its particular usage is fundamental to any country's development trajectory towards sustainable growth (Kareem, 2018). Its use depends on a wide range of localised factors and detecting such changes is extremely important for development planning and sound decision-making, since it has far-reaching consequences for farmers' welfare, as well as the environment. Agricultural development in the Western Cape has been earmarked to drive the main objective of creating jobs and economic growth by means of increased productivity and expansions in high-value fruit exports (NPC, 2011; WCDoA, 2015). Additionally, the Western Cape Department of Agriculture (WCDoA) also seeks to achieve Provincial Strategic Goal 4, which is to enable a resilient, sustainable, quality and inclusive living environment (WCG, 2015). In order

to achieve such goals in the agricultural sector it is important to have insight into land-use changes and trends over time. However, since information on agricultural output is both limited and outdated, the need for information at a sufficient level of geographic disaggregation was the reason the department embarked on the so-called "Flyover Project", an aerial census of all agricultural fields in the Western Cape.

The aim of this paper is to briefly explain the process of collecting the flyover information and the value added to the agricultural sector. This will be followed by providing the aggregate changes in land-use across the Western Cape at industry-level. These changes will be explained within the current economic context and will, therefore, provide important insights into what is driving farm-level decisions and will be concluded with some final thoughts.

LITERATURE REVIEW

Any understanding of land-use change should set out from the premise that

virtually all resource allocations take place on land, and land in itself is a scarce resource (Hubacek & Vazquez, 2002). Agricultural land-use decisions are influenced by a host of economic, social, political and bio-physical factors, as well as the multi-functional nature of the agricultural sector. Indeed, since South African farmers compete in globalised and relatively open markets, land-use also depends on spatial location, scale, associated cost, technology, distance to markets and existing land uses among others. There is also ample evidence that the demand for land has been increasing over time and is set to continue in the midst of increasing competition for land (Kareem, 2018). The scarcity created by the competition for land in various sectors such as agriculture, mining, urban and residential expansion, requires the optimal use of land. As incomes grow along with population growth and urbanisation around the world, opportunities exist to invest in land to supply agricultural produce to consumers both locally and internationally. Recent land-use changes are also reflective of managing and protecting land resources as producers are seeking to mitigate the impacts of climate change and the degradation of soils (Wang *et al.*, 2017).

At farm level, farmers make dynamic decisions on their crop and/or livestock mix for their respective farming systems. This takes place within the context of mitigating risks inherent in the agricultural sector (weather, water supply, prices and exchange rate volatility, policy impacts etc.) in order to compete in the market. Ultimately, agricultural land-use decisions and competitiveness are based on prices and production volumes per unit. Since the Western Cape has a unique winter-rainfall climate (Vink & Tregurtha, 2001), it is able to produce more than 70 different crop types and is also home to a decent livestock population. Most of the fruit and wine grape enterprises require a long-term

decision-making framework supported by access to lucrative markets at favourable tariff lines. This is to enhance and maintain a high degree of competitive performance with regard to trading in the global marketplace. Innovation is paramount to supply quality produce consistently, of which constant market innovation plays a pivotal role.

OVERVIEW OF THE FLYOVER

One of the key challenges in understanding land-use changes in South Africa (as well as in the provinces) emanates from the lack of updated statistics on agricultural production. Indeed, the last time Statistics South Africa (StatsSA) conducted a census of the agricultural sector was back in 2007 (StatsSA, 2007). Not only is there a need for updating this census, but the survey methodology is also compromised by missing information and details on smaller/alternative crops. To this end, the WCDoA embarked on an extensive project in 2013 to map all agricultural fields in the entire province using an aerial survey captured by using low-flying aeroplanes. This mapping exercise was conducted to provide a baseline of agricultural production activities and to locate all infrastructure related to agriculture. The project is also unique in the sense that it includes the type of irrigation systems utilised on irrigated areas as well as production under tunnels and shade nets. The flyover census for the 2013/14 and 2017/18 seasons captured agricultural land-use both for the summer and winter periods. As a result of the nature of annual crops such as vegetables, additional information on annual area planted was collected by means of telephone interviews with farmers. All the information is compiled into databases hosted within the department and are in the process of being utilised beyond the findings of this analysis.

A final note on the overview of the Flyover Project relates to the timing of the 2017/18 survey period – one of the worst drought

seasons ever recorded in the Western Cape. This provided a challenge to analyse trends of annual crops since it was heavily impacted by the drought; yet analysts could also understand the drought impact on land-use, especially vegetable production. The following section will provide the results from the survey within the current economic context.

RESULTS FROM THE FLYOVER PROJECT

Fruit and wine grapes

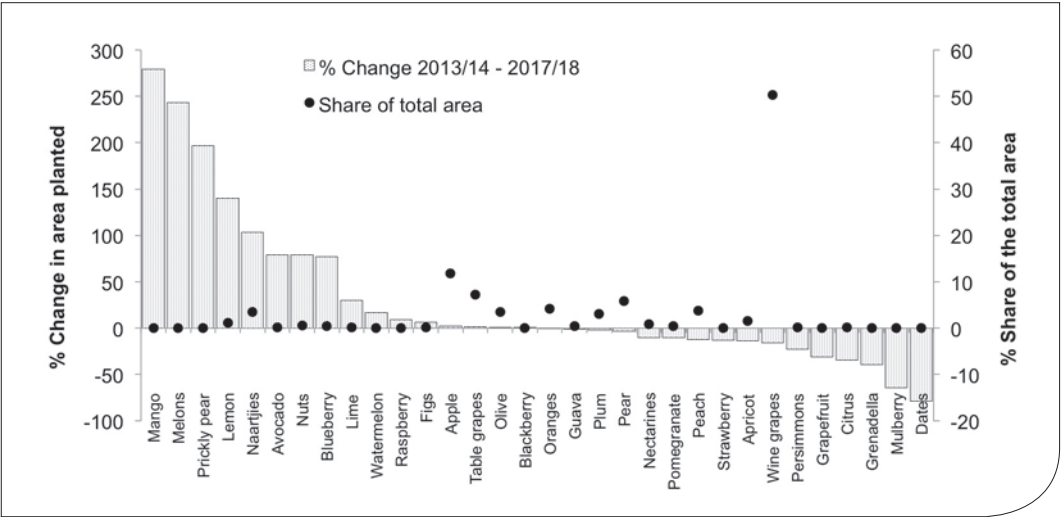
Starting broadly with the fruit and wine grape industries in the Western Cape, Figure 1 gives both the percentage change from 2013/14 to 2017/18, as well as the relative size of each crop type to the total. One can clearly see that the most significant horticultural expansion took place in crops that make up a small percentage of the total area. The industry with the biggest expansion throughout this period was that of citrus, with lemons (1 161 ha) and naartjies (3 168 ha) showing significant increases. These citrus expansions were mainly located in the Cederberg and

Langeberg municipal areas, whilst prickly pears are mostly produced in the Beaufort West and Hessequa municipalities.

The berry industry also showed remarkable growth with especially blueberries growing from 464 ha in 2013/14 to 823 ha in 2017/18; an annual average increase of 12% in area planted. This industry is extremely capital-intensive, reaching around R1 million in establishment costs per hectare when produced under netting structure, but these also realise significantly higher prices per unit.

Some of the bigger and more traditional industries such as pome and stone fruit had relatively stable growth rates over the period under review, with wine grapes being the notable exception. The total area under vineyards used for winemaking has declined by around 16 000 hectares and there is no municipal area where any expansions have been recorded. The land-use changes listed above can generally be explained by the medium-term price realisation for the different fruit types and farmers choosing crops with higher returns per hectare.

Figure 1: Irrigated fruit area planted in the Western Cape, 2013/14 to 2017/18



Source: WCDaA, 2018

Table 1: Area planted for vegetables in the Western Cape, 2013/14 to 2017/18

Crop	Hectares		Absolute change (hectares)	% Change
	2013/14	2017/18		
Potato	6 705	5 369	-1 336	-19,93
Onions	7 500	4 207	-3 293	-43,91
Carrots	1 227	1 329	102	8,32
Butternut	1 102	808	-294	-26,67
Tomato	1 036	696	-339	-32,78
Cabbage	1 157	579	-578	-49,97
Broccoli	500	540	40	8,03
Lettuce	435	509	74	16,90
Cauliflower	841	491	-350	-41,60
Other	4 527	3 718	-809	-17,87
Total vegetables	25 030	18246	-6 784	-27,10

Source: WCDoA, 2018

Vegetables

The results for the area planted under vegetables were clearly impacted by the drought, with producers generally prioritising orchards at the expense of annual crops. Table 1 provides the breakdown of these changes showing a 27% decline in land used for vegetable production. The most notable declines were that of the two major vegetable crops, potatoes and onions, with a combined decline of 4 630 hectares. These declines were mainly concentrated in the main vegetable-growing regions such as the Sandveld, Olifants River and Ceres.

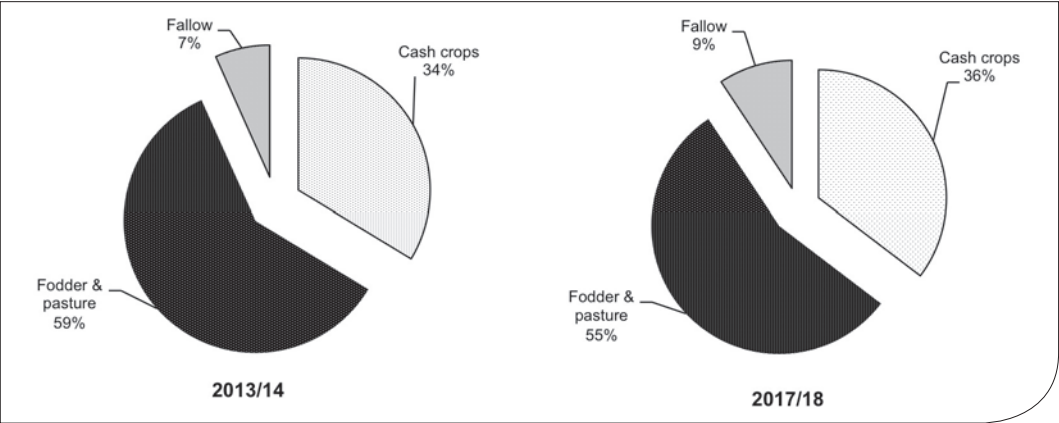
Grains and oilseeds

The Western Cape is particularly known for its winter grain production of wheat in both the Swartland and Southern Cape regions. Figure 2 gives the crop mix for each year, as farmers decide on the allocation between fodder, cash crops and fallow land. The

planting of cash crops (annual) increased from 511 000 hectares in 2013/14 to around 538 000 hectares in 2017/18, pushing the relative share up by 1,7%. The substantial increase in fallow land, as well as a decline in land used for fodder and pasture, is mainly attributed to drought.

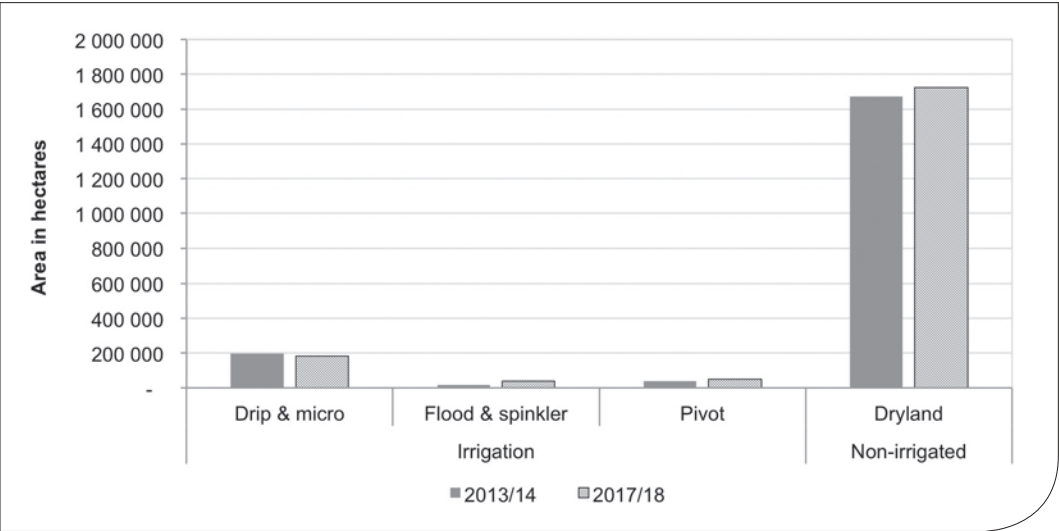
Some of the changes in oilseed area planted can also be explained by profitability considerations, with canola being such an example. Canola area planted has increased from 71 864 hectares in 2013/14 to 90 522 hectares in 2017/18. These increases have coincided with additional crushing capacity in South Africa since 2012. This has led to better price realisation for producers over the past few years with more farmers choosing to use it as part of their rotation systems (BFAP, 2018). However, looking ahead, growers will need to make efficiency gains to push yields higher in order to compete with comparable international growers who

Figure 2: Western Cape crop mix, 2013/14 vs 2017/18



Source: WCDaA, 2018

Figure 3: Type of Irrigation utilised in the Western Cape



Source: WCDaA, 2018

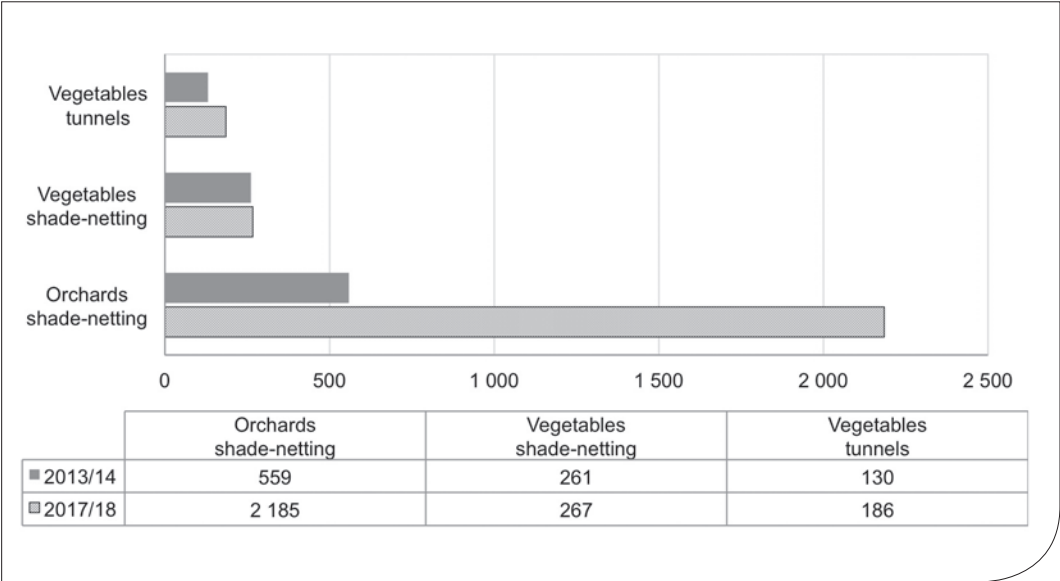
are able to produce at around 3 tonnes per hectare. The average across the winter grain area of South Africa is currently 1,1 tonne per hectare (Crop Estimates Committee, 2018).

Livestock

The flyer did not only include the information of the area planted under crops but also

included livestock production by means of capturing any field that had livestock grazing on it. As expected, the drought has also significantly impacted the 2017/18 findings in this regard as many farmers were forced to give fodder to animals instead of the normal practice of grazing in the fields. Various farmers have also been forced to reduce

Figure 4: Production under cover for orchards and vegetables



Source: WCDaA, 2018

their herd size in an attempt to mitigate financial losses. Further analyses of the livestock information from the flyover are still in progress.

On-farm investments

The results from the Flyover Project that relate to the types of irrigation systems utilised for all irrigated fields are given in Figure 3. In total, the area under irrigation has increased by 22 067 hectares in the past four years, whilst expansion in dry-land production is also noted. The increases in the former occurred mainly in the form of pivot and flood irrigation for lucerne in the Kannaland and Oudtshoorn municipalities. The decline in hectares for crops under drip and micro irrigation can be attributed to a significant decline in wine grape area planted rather than be interpreted as a decline in the use of these more efficient systems. The loss of hectares under vineyards had not been completely offset by the expansions in

other fruit types due to their relatively higher water requirement per hectare. Therefore, for every hectare of wine grapes pulled out, only a smaller share was replaced with other irrigated crops such as table grapes, citrus, stone and pome fruit as a result of the higher per unit usage of these more profitable crops.

Looking at the growth of crops under shade nets and vegetables produced in tunnels, Figure 4 shows the significant changes since 2013/14. Most notable is the increase of 290% of orchards under nets, whilst the area of vegetables in tunnels increased by 43%. These developments are clearly a result of the continued drive of producers seeking to manage climate-related risks such as drought, wind, sunburn and hail. The increase in shade net and tunnel area is encouraging in the sense that it shows farmers are still willing to invest directly into their farming systems in the quest for improved productivity going forward.

CONCLUSION

The results from the latest flyover initiative provided important insights into the changes in the use of agricultural land. Although the total area under orchards has declined marginally, there has been a clear shift into higher-value and alternative crops (e.g. blueberries, nuts) and crops with higher water demand per hectare (e.g. soft citrus vs wine grapes). This expansion in irrigated crops came mainly at the expense of wine grape farming, which has declined by 15% over the review period. There has also been a sharp increase in the use of shade nets and tunnel structures resulting in the more efficient use of water across various parts of the Western Cape.

The land usage for vegetable production has declined by around 27% on average from the baseline set in 2013/14 and should be interpreted in the context of drought conditions in many of the main vegetable-

growing regions such as the Sandveld, Olifants River and Ceres. Overall, cash crops (wheat, barley, canola etc.) cover 34% of the field crop area and this portion has increased marginally since 2013, with the portion of fodder crops declining marginally from 59% to 55%. Finally, the total area of fallow land increased markedly by around 40 000 hectares.

The results and in particular the baseline of information gathered from analysing two rounds of the Flyover Project over the four-year period give valuable insights to decision makers and planners, as well as farmers on the development of the sector. This report has set out to track and explain aggregate agricultural land-use changes in the Western Cape within the current economic climate. The Flyover Project will continue to assist the sector at large to align its activities to support jobs and growth in the future. **AP**

References

- BFAP, 2018. *BFAP Baseline: Agricultural Outlook 2018-2027*. Pretoria: Bureau for Food and Agricultural Policy.
- Crop Estimates Committee, 2018. *Winter Cereal (2017): Final Production Estimate*. Pretoria: South African Grain Information Service Department of Agriculture, Forestry and Fisheries.
- Hubacek, K. & Vazquez, 2002. *The economics of land use change*. Interim Report: IR02-015. Laxenburg: International Institute for Applied Systems Analysis.
- Kareem, O., 2018. The determinants of large-scale land investments in Africa. *Land Use Policy*, 75, pp.180-90.
- NPC, 2011. *National Development Plan: Vision for 2030*. Pretoria: National Planning Commission.
- StatsSA, 2007. *Census of Commercial Agriculture: Financial and production statistics*. Pretoria: Statistics South Africa.
- Vink, N. & Tregurtha, N., 2001. *Agriculture and Mariculture: Structure, performance and future prospects*. Elsenburg: Western Cape Department of Agriculture.
- Wang, T. et al., 2017. Determinants of Motives for Land Use Decisions at the Margins of the Corn Belt. *Ecological Economics*, 134, pp. 227-37.
- WCDa, 2015. *Strategic Plan for the fiscal years 2015/16 - 2020/21*. Elsenburg: Western Cape Department of Agriculture.
- WCDa, 2018. *The Western Cape mapping of agricultural commodities and infrastructure 2013 and 2017*. Elsenburg: GIS Services Western Cape Department of Agriculture.
- WCG, 2015. *Strategic Plan 2015/2016 - 2020/2021*. Elsenburg: Western Cape Department of Agriculture.

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