AGRI LABOUR census

PROJECT KHULISA: driving jobs and growth

WESTERN CAPE AGRICULTURAL employment trends
The Cabinet of the Western Cape Province has identified five Provincial Strategic Goals (PSGs) it wants to achieve before the 2019 election. One of these is PSG1 (Create opportunities for growth and jobs) and, after support from McKinsey was solicited, three priority sectors of the Western Cape economy were identified: agri-processing, tourism and oilrig repair.

The Provincial Government then went further and, through an intensive consultation (stretching from 20 March to 20 July 2015 and involving 183 individuals and companies) and analytical process, reached agreement on an aspirational target in terms of growth and jobs.

As part of the implantation plan three strategic intents with implementation plans, responsible persons, deadlines and budget allocations were developed and approved by Provincial Cabinet on 4 August 2015.

The three strategic intents are:

- **a.** Capture a larger share of the global Halal market.
- **b.** Increase exports of wine and brandy to China and Angola.
- **c.** Improve local production capacity for domestic and key strategic markets.

This edition of *AgriProbe* goes a long way to support the Province in reaching its agri-processing targets. The semi-scientific paper on employment helps us to understand trends and how to measure progress whilst the one on AGOA highlights the implications in changes in the international environment.

As water has been identified as a major constraint, the articles on the Water Act and effective irrigation support the mitigation of this constraint. The articles on Climate Change (adaption, solar lights) highlight particular challenges. As a number of municipalities have prioritised agri-processing in their Integrated Development Plans, it is important to take note of progress made with their needs.

Agri-processing cannot be a success without transformation and hence the papers on land reform success, partnerships and the small stock show are very important. Similarly, agri-workers (articles on the census, agri-worker competition, healthy lifestyles) remain the cornerstone of the Sector.

Finally, the agri-processing sector cannot grow if it is not internationally competitive and efficient. Hence, the articles on the visit by the FAO, Australia’s rangelands, partnerships, soil organic matter, sheep breeding, ostrich auction and the implications of selection practices support this important initiative.
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PUBLISHING TEAM
Publisher Erika Alberts
Creative director Carmen le Roux
Copy editor Aletta Pretorius-Thiart
Financial director Pat Botha
Around 900 high school learners from across the province attended the Department’s second Agricultural Career Expo, hosted in the run-up to Youth Month. The expo showcased the agricultural sector’s various career options. It was hosted in partnership with Boschendal Wine Estate.

All the programmes in the Department participated and put in a tremendous effort to make their exhibitions interesting, relevant and attractive to the teenage visitors. Apart from the various programmes within the Department, some of the other exhibitors included the Western Cape Education Department, the Cape Peninsula University...
Minister Alan Winde addressed the young people on the second day of the event and highlighted the importance of the agricultural sector.

of Technology and Stellenbosch University. Learners, ranging from grade nine to matric, came from schools in Paarl, Stellenbosch, Franschhoek and the Cape Metro.

During break-time children were entertained by, amongst others, hip-hop dancers. Phumi, the Department’s friendly mascot, also put in an appearance.

Minister Alan Winde addressed the young people on the second day of the event and highlighted the importance of the agricultural sector. “Agriculture is involved in almost everything we do. When you had breakfast this morning, agriculture was involved. Some of the clothes you are wearing, have links to agriculture. Even our venue today is a farm, which makes great products and sells them to the world.”

The learners enjoyed the experience immensely. Samantha Smith, a grade nine learner, said the exhibition opened her eyes to a new side of agriculture. “Many people only think of farming when they hear about agriculture.”

The exhibition was such a success that it will be duplicated in other regions. Later this year similar expos will be held in George and Prince Albert as part of the Department’s stakeholder engagement initiatives.
Key to the success of the annual Beaufort West Young Ewe and Slaughter Lamb show is the involvement of the private sector. The Western Cape Department of Agriculture (WCDoA) joined forces with the Red Meat Producers’ Organisation (RPO), BKB, Landbank and the Beaufort West Show Committee to ensure a top quality event.

Despite the fact that drought casted a shadow on the record entries of previous years, 90 smallholder farmers still entered, showcasing 250 animals. Entries from as far as the West Coast and Cape Winelands competed with the local farmers of Central Karoo and Eden.

The plan is to make the event inter-provincial to accommodate all livestock smallholder farmers, says Mogale Sebopetsa, Acting Chief Director for Farmer Support and Development (WCDoA). The whole programme goes beyond just being a competition and also includes extension, aimed at building capacity for smallholder farmers. This is also an opportunity for the farmers to interact with the industry and share successes among themselves.

John Durr, Chair of the RPO, echoed the sentiment of the holistic programme presented to the farmers: “This is a forum to equip them with up-to-date information. They cannot “google” information on the drought – here is the place where they can tap into scientific advice. Although the event is smaller than previous years, the farmers’ enthusiasm and the quality of their animals are still commendable.”

“BKB is a proud partner”, says Corne Nel, sheep and wool specialist. “The future of agriculture starts with smallholder farmers and we take agriculture and our producers seriously. That is why we also have a programme where they can buy rams interest free for six months and they use the programme extensively.”

The competition catered for 12 categories, providing for individual and group entries. Prizes ranged from BKB vouchers to livestock feed, and of course the honour of being a Beaufort West Young Ewe and Slaughter Lamb competition winner.

Jonathan Smith from Rietfontein (Ladismith), winner in the crossbreed category, only had praise for the initiative, “I’m not here for the prize, I’m here to learn. To know all the ways there is to farm sheep is the best form of management.” His advice to farmers: “Farming is a labour of love, it is not necessarily to make money. Every farmer must have endurance and spend a lot of time on his knees.”

The overall show winner, 28-year-old Frank Deidericks from Dassiesfontein (Beaufort West), said he learned his lessons from the previous two years he entered and those lessons won him the coveted title this year. “Competitions like these motivate us youth to stay in farming. It’s easy to give
The future of agriculture starts with smallholder farmers and we take agriculture and our producers seriously.

up, but you have to trust yourself and persevere.”

The competition also has an educational leg with sheep shearing demonstrations, carcass classification system tutorials, extension on different breeds’ standards and post mortem demonstrations.

Here is a list of this year’s winners:

<table>
<thead>
<tr>
<th>Group winners</th>
<th>Individual winners</th>
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<tr>
<td>Wool Dassiesfontein</td>
<td>Wool Dassiesfontein</td>
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<td>Dorper Swartrivier</td>
<td>Dorper Swartrivier</td>
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<td>Boer goats Bokkop (Komutu)</td>
<td>Boer goats Maans Group 2</td>
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<td>Crossbreed Rietfontein</td>
<td>Crossbreed Freddie Persensie</td>
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<tr>
<td>Angora Willey Boerdery</td>
<td>Angora Willey Boerdery</td>
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<tr>
<td>Slaughter lamb on the hoof Vaalkuil</td>
<td>Slaughter lamb on the hoof Vaalkuil</td>
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The event is held in March every year and smallholders interested in attending can contact Manie Grobler of the WCDoA on 079 699 1159.

For more information, contact Petro van Rhyn: petrovr@elsenburg.com
Die jaarlikse veiling van jong broeivolstruise, aangebied deur die Wes-Kaapse Departement van Landbou (WKDL), het ondanks die huidige ekonomiese klimaat en moeilike omstandighede waarin die volstruisbedryf homself bevind, weer goed afgeloop.

Sedert die aanbieding van die eerste veiling in 2004 het hierdie geleentheid ’n hoogtepunt op Oudtshoorn Navorsingsplaas se kalender geword, met die twaalfde agtereenvolgende veiling wat op 15 Maart plaasgevind het. Die jaarlikse veiling is deel van ’n omvattende navorsingsdienis wat die WKDL aan volstruisprodusente bied, en terugvoer deur kopers wat in die verlede volstruise gekoop het, is in die algemeen positief.

Alle jong broeivoëls is per katalogus met teeltwaardes vir reproduksie en liggaams-gewig aangebied. ’n Teeltwaarde is die beste voorspelling van ’n dier se potensiaal as ’n ouer van die volgende geslag. Dit maak dit moontlik om ’n potensiële teeltier met sy tydgenote te vergelyk, en gee dus ’n aanduiding van die intensiteit van seleksie wat bewerkstellig kan word indien spesifieke diere geselekteer word.

In die volstruisbedryf is tropparing die norm en aangesien stamboominligting en produksiedata in die meeste gevalle nie beskikbaar is nie, kan produsente gevolglik nie self volstruise selekteer nie. Die jaarlikse veiling is daarom van groot waarde omdat dit produsente die geleentheid gee om goeie, jong teelmateriaal te kry sonder dat hulle self al die insette hoef te maak wat nodig is om teelmateriaal te selekteer en genetiese
vordering te bewerkstellig (soos enkel-paring en deeglike rekordhouding).

Die veiling skep ook ’n bewustheid by produsente vir die waarde van goeie teel-
materiaal en genetiese vordering. Die broe-
volstruise wat aangebied is, is spesifiek
ge selekteer op grond van hul teeltwaardes
vir massa, eier- en kuikenproduksie met
die oog op die genetiese verbetering van
bestaande teeltkuddes.

Altesaam 11 kopers het vir die veiling
geregistreer en daar was ’n 100% verkoop-
syfer. Gesien teen huidige slagprys en die
potensiele langtermynwaarde wat ’n jong
broeivoël bied, het kopers goeie waarde vir
hul geld gekry.

Die aanvraag na jong wyfies was soos
gewoonlik hoër as vir jong mannetjies en
het tot gevolg gehad dat die prys vir wy-
fies (gemiddeld R4 203) heelwat hoër was
as dié van mannetjies (gemiddeld R2 642).

Die hoogste prys op die veiling behaal was
R6 000 vir ’n jong wyfie, terwyl die hoogste
prys vir ’n jong mannetjie R4 000 was. Die
gemiddelde prys vir die jong broeivolstruise
wat aangebied is, was R3 524.

Die koper met die hoogste omset vir die
dag was Joey Potgieter wat 43 volstruise
aangekoop het. Joey het ook die duurste
wyfie én mannetjie aangekoop. Die 18 ouer
broeimannetjies wat aangebied is, het ook
goed gevaar en is vir ’n gemiddelde prys
van R3 292 verkoop.

Oor die tydperk van 12 jaar is naastenby
1 400 broeivolstruise aan meer as 60 pro-
dusente verkoop. Gegrond op hierdie syfers
lyk dit dus asof daar steeds vertroue in die vol-
struisebedryf is. Die feit dat produsente bereid
is om te belê in beter teeltmateriaal is baie be-
moedigend vir die toekoms van die bedryf,
en is ’n verdere bewys dat die Departement se
navorsingsprogram vrugte afwerp. AP

Vir meer inligting, kontak
Dr. Zanell Brand. zanellb@elsenburg.com
A visit by a renowned official of the Food and Agriculture Organisation (FAO), an agency of the United Nations, confirmed the work of the Western Cape Department of Agriculture (WCDoA) is of national and international interest. In fact, it has the potential to inform the approaches of other nations tackling similar challenges in the agricultural sector.

Dr Magdalena Blum from the Research and Extension Unit at the FAO, specialising in extension systems, was recently hosted on a mission at Elsenburg, WCDoA headquarters. Her aim was to learn more about the Department’s extension approach, systems and tools. She also shared her extensive experience in the field. Key areas of interest included the reorientation of extension services, the importance of embracing the more modern and cross-cutting term “advisory” services vs “extension” services, creating a pluralistic, demand-led system supported by innovation on the information and communication technology front and strength-
Mogale Sebopetsa (WCDoA Acting Chief Director: Farmer Support and Development) explains how her visit came about. “Toni Xaba (WCDoA Acting Chief Director: Rural Development) and I undertook a development study tour to the FAO headquarters in Rome in 2013. Our aim was to engage on matters relating to rural development, land reform and extension services. From our interactions with representatives from various units at the FAO, rural youth development, rural social cohesion initiatives, farmer associations and cooperative arrangements, private sector partnerships and extension approaches stood out as areas for further collaboration.

“During our discussions, Dr Blum became intrigued by what we do here in the Western Cape with regard to the extension approach, particularly the use of the smart-pen technology. She decided to schedule a mission to South Africa to gain first-hand experience.”

Dr Blum also thought it proper that the WCDoA’s experiences be documented so that the recipe for success could be shared with others. The FAO subsequently contracted the University of the Free State to assist with the evaluation of the Department’s extension approach, with the emphasis on understanding critical principles for success. The aim of the evaluation is to explore what makes the WCDoA’s approach better than other extension approaches so that lessons learnt can be shared with other nations.

During her six-day visit Dr Blum engaged with management, extension officials across all relevant programmes (directly and indirectly interfacing with coalface extension and advisory service delivery) and the Elsenburg College students to share extension lessons and broaden their understanding of extension and advisory services.

According to Mogale, Dr Blum’s visit highlighted the fact that extension and advisory services (to subsistence, smallholder and commercial farmers) play a crucial role in agricultural and rural development.

“Moreover they are central to realising the potential for agricultural innovation, critical as we implement the Agriculture Policy Action Plan. Dr Blum was extremely impressed with the Department and the work that we do,” he added.

What makes the WCDoA’s extension approach so unique? “Everything rises and falls on leadership,” says Mogale. “Our leadership here in the Department is not afraid of trying new things, and believes in strategic partnerships to enhance the interest of the sector. Our Commodity Approach is a good example of such partnership, where government and the private sector work on the same plan towards achieving the same outcomes.

“Very importantly, we equip our extension officials with sufficient resources so that they can deliver quality services to farmers. We are also innovative in our approach. For instance, we have a skills audit system, which is unique to our extension approach. The process aims to ensure alignment between the skills gap identified and the training interventions delivered, thereby resulting in strategic deployment of limited resources.”

The results of the study will be published by the FAO in September 2016 and will subsequently be shared with the rest of the world. It is sure to attract much positive, worldwide media coverage for the Western Cape and contribute to the development of agricultural support services elsewhere. Another feather in the WCDoA’s cap!

For more information, contact
Giselle Terblanche: gisellet@elsenburg.com or Mogale Sebopetsa: mogales@elsenburg.com
A group consisting of three members of the small rangeland research team in the Chief Directorate: Research and Technology Development Services was privileged to visit Australia’s outback to attend the Australian Rangelands Society’s 18th biennial conference in Alice Springs, Northern Territory. Nelmié Saayman (Rangeland Scientist), Hannes Botha (Control Technician: Rangeland) and Christie Rheeder (Farm Manager of Nortier Research Farm), also met with several researchers and farmers in South Australia and New South Wales on veld management, indigenous seed production and other relevant topics.

The theme of the conference was “Innovation in the Rangelands” and it focused on how people of the rangelands have adapted to the challenges of living productively from rangelands. The importance of partnerships was emphasised, with research innovations that are increasingly led by natural resource management groups, industry, communities and research contributing partners. Monitoring of veld, livestock, ecosystems and people (culturally and socially) and the use of technology, such as remote sensing and applications (apps), were mentioned in many of the papers and posters presented.

The group attended a pre-conference...
workshop, facilitated by Dr Peter Scarth (Senior Research Scientist, Joint Remote Sensing Research Program, The University of Queensland), on ‘Spatial resources and tools to support rangeland condition and trends’. The workshop focused on the importance of the use of remote sensing to monitor veld condition, as well as other tools that were developed to assist land users in their management decisions.

Farms in the outback are huge (>400,000 ha) and sparsely populated. Therefore this type of technology is really helping them in their decision-making. Most of these farms don’t have fenced camps and the farmers sometimes only see their animals once a year when they gather them to sell. There are also very few farmers that apply rotational grazing management practices due to a lack of fenced camps and the large farm sizes.

The group also visited the Old Man Plains Research station outside Alice Springs with Pieter Conradie (previously a pasture scientist in the Eastern Cape, currently Manager Pastoral Productions) and Chris Materne (Pastoral Officer) from the Northern Territory Department of Primary Industries and Fisheries, where they are doing research on different grazing systems to show the farmers the benefits of rotational...
grazing versus continuous grazing as practiced by most.

Even in New South Wales where properties are much smaller (320 000 ha) with low rainfall (220 mm), rotational grazing management is only slowly gaining ground. Here the group visited two farmers, Angus Whyte and Annabel Walsh, who both practise planned adaptive grazing management with the overall goal to improve the veld condition through the improvement of the organic carbon content of the soil using hoof action and grazing. Both have improved their land from being basically bare to having a cover of shrubs and annual grasses, striving to increase the perennial grass cover. It is however a slow process in the low rainfall area.

From New South Wales the group travelled to the Adelaide Hills area in South Australia and specifically Mount Pleasant where they met with Bob Myers, a local farmer, and Andrew Fairney (Grassy Groundcover Restoration Project Officer, Upper Torrens Land Management Project). Andrew is responsible for the propagation of grass and for seed of indigenous species for restoration purposes. He showed them ways to multiply seed of grasses and harvest basically clean seed. Bob also showed them how to prop-

The group learned about alternative methods and technologies that are available and that can, with some adaptation, be used in the South African context to do rangeland research more efficient and effectively.
agate red grass seed (*Themeda triandra*). Red grass is one of those species that does not germinate easily when harvested and the timing should therefore be perfect.

The group also met with Dr. Jason Emms, a Senior Research Officer with the Enrich: Multi-purpose Shrub-based Grazing Systems Project of SARDI (South Australian Research and Development Institute) near Adelaide where they evaluated over a 100 native Australian shrub species’ production potential, grazing preferences and palatability, in order to determine which of these species have potential to use as alternative indigenous fodder source in marginal cropping areas. There is such a need in the Overberg region of the Western Cape.

The Australians (scientists and land users) do a lot of work with very few people and to a large extent make use of volunteers as well as different types of technology to assist them.

The group learned about alternative methods and technologies that are available and that can, with some adaptation, be used in the South African context to do rangeland research more efficient and effectively.

*Themeda triandra* is a perennial grass widespread in Africa, Australia, Asia and the Pacific. In Australia it is commonly known as kangaroo grass. In eastern and South Africa it is known as red grass and red oat grass, *rooigras* in Afrikaans.

For more information, contact

Nelmarié Saayman: nelmares@elsenburg.com
In September 2015, Dr Johan Labuschagne attended the fifth International Symposium on Soil Organic Matter at the Georg-August-Universität in Göttingen, Germany. The main objective was to investigate recent approaches and technologies related to soil organic matter research and strategies to develop a better understanding of soil organic matter and the driving forces that ensure sustainable soil productivity.

Dr Labuschagne and co-authors presented two posters, namely “Effect of tillage and crop rotation on soil organic carbon on the shale derived soils of the Western Cape, South Africa” with co-authors Willie...
Langenhoven and Heinrich van Zyl, and “Long-term effect of tillage and crop rotation practices on soil organic C in the Swartland, Western Cape, South Africa” by Glenn Cooper, Ailsa Hardie and Johann Strauss.

The conference was subdivided into several sessions with themes related firstly to “Methods of determining and tracing soil organic matter and soil organic carbon”. These sessions dealt mainly with tracing different sources of soil organic carbon and isotopes. Multiple labelling enable scientist to even trace the different pathways of different carbons from the same compound through the system.

The second theme was “Processes and interactions” where the shoot/root interactions, priming effects, soil organic matter turnover hotspots, soil organic matter in sub-soil and soil organic matter stabilisation were covered. Much emphasis was placed on root growth and the contribution of roots to soil organic matter as well as exudates from roots as energy source for the soil microbial population.

The third theme was “Relevance and functions”, where carbon dynamics, sequestration, soil organic matter physical functions, stable soil organic matter and soil organic matter as key factor in soil and ecosystem
productivity were discussed. Various presentations and posters emphasised the importance of ecosystem diversity even at soil microbiological level.

A very important conclusion drawn from several contributions at the symposium is that in practice carbon build-up can reach an “optimum or platform” for a specific area (ecosystem). These optimum values are site specific and influenced by soil characteristics, especially the clay and fine sand fraction, as well as climate. Once this optimum is reached the soil carbon content must be managed to balance carbon inputs and carbon outputs.

A one-day excursion to the Halle region was also undertaken and a few research farms visited. The Tereno Soilcan project comprises 128 lysimeters spaced over a climate gradient (temperatures and rainfall). Crops grown in lysimeters include grassland, peas, winter barley, canola, oats and winter wheat.

The Global Change Experimental Facility (GCEF) investigates the consequences of climate change on ecosystem processes in different land-use types on large field plots. The focus here is on the impact of climate change on ecosystem functions under different land-use regimes, influences on community structure, especially food web structure and species interactions, effects on soil functions, especially structure and function of the soil microbial community.
and processes related to nutrient cycling and the importance of effects of genetic diversity.

The Static Fertilisation Experiment Bad Lauchstädt is one of the oldest long-term experiments laid out in 1902. The main objective was to examine the effect of organic and mineral fertilisation on yield and quality of crops as well as on soil fertility. The experiment consists of eight fields rotated with sugar beet-spring barley-potato-winter wheat grown parallel in the fields.

A very important conclusion drawn from several contributions at the symposium is that in practice carbon build-up can reach an “optimum or platform” for a specific area.

For more information, contact Dr Labuschagne: johanl@elsenburg.com
ELSENBURG’S contribution to SHEEP BREEDING acknowledged

by Prof SWP Cloete

The Dormer and South African Mutton Merino Breeders’ Associations recently acknowledged the contribution of the Elsenburg studs to the establishment of their respective breeds by presenting certificates commemorating 63 years of stud breeding. Dr Buks Olivier, Research Manager of the Directorate Animal Sciences, received the certificates on behalf of the sheep research team.

Here follows a brief history of these breeds at Elsenburg: In 1932, the then SA Wool Board seconded Mr GJ Schuurman (the chief training officer of the Union of South Africa) to Europe to investigate market opportunities for local wool. Upon his return to South Africa Mr Schuurman proposed research on the German Merino meat sheep, resulting in the import of 10 ewes and a ram in 1932. These animals adapted well to their new environment and further imports followed in 1936, 1937, 1949 and 1954.

Initially German Merinos were used in crossbreeding experiments, but they also performed admirably as a pure breed. A pure flock was thus established at Elsenburg. Animals from this flock was used by industry and led to the establishment

From left: Davey Marang, Prof Schalk Cloete, Annelie Kruger and Zonwabile Stentyi.
of the SA Mutton Merino breed in South Africa. The breed is the dominant dual-purpose breed in the country at present.

During the early 1940s officials at Elsenburg decided to combine the carcass quality and growth performance of the Dorset Horn with the adaptability of the German Merino to local conditions. This cross led to the establishment of a composite breed, which was named the Dormer.

The intention was to use this new breed as a terminal sire breed to improve the carcass quality of lambs produced by the most common ewe breed at that stage, the Merino. Commercial breeding of Dormers followed and the breed is currently the dominant terminal sire breed in South Africa.

Flocks of both these breeds are still being maintained at Elsenburg, although influx from industry flocks to ensure linkages were common over the last two decades.

Being maintained on a research farm, the Elsenburg Dormer and SA Mutton Merino flocks were used extensively for research and led to several postgraduate studies by eminent animal breeding scientists, including PhDs by the late Dr Lammie Vosloo, Dr Ronnie van der Merwe and Prof Japie van Wyk. The flocks have also contributed to MSc studies by Klaas Kritzinger, Dr Mike Fair and Eyob Zemuy. The flocks are still being used in several research projects of importance to the local sheep industry, including studies on the comparison of breeds constituting the South African ovine genetic resource.

The appreciation by industry of the historic and present contribution of the flocks to scientific knowledge on sheep breeding is thus not unprecedented.

KATEGORIE-WENNER
VERRAS SY MENTOR
deur Jacqueline Cornelissen

Een van die pryse wat Joram met hierdie titel losgeslaan het, was ’n aansienlike koopbewys van ons borg, Shoprite.

Ons bedank Joram en Chicken vir die voorbeeld wat hulle stel en wens hulle ’n lang en suksesvolle samewerkingsverhouding toe.

Joram Simbarashe, ’n werknemer van die plaas Mouton’s Valley by Piket-Bo-Berg is tydens die 2015 Wes-Kaapse Prestige Landboutoekennings (voorheen bekend as die Plaaswerker-van die Jaar-kompetisie) aangewys as die provinsiale landbouwerker wat die beste potensiaal tydens die kompetisie getoon het. Een van die pryse wat Joram met hierdie titel losgeslaan het, was ’n aansienlike koopbewys van ons borg, Shoprite.

Joram, ’n besproeijingstegnikus, noem dadelik dat hy nie sommer met die intrapslag
op die plaas hierdie werk gedoen het nie. Hy moes van heel onder begin. Om bo uit te kom het hy die leiding en raad van ander persone nodig gehad. Die persoon wat hom gehelp het om hierdie sukses te behaal, beskryf hy as ’n “ou hand op die plaas” by name van Andreas “Chicken” Arries.

Volgens Joram het Chicken van die begin af ’n leidende rol gespeel in sy ontwikkeling deur as sy mentor op te tree en hy het die geleentheid om by hom te leer met ope arms aangegryp.

Ná die ontvangs van sy toekenning by die gala-aand, wat op 7 November 2015 op die Nederburg Landgoed gehou is, het Joram besluit om Chicken te verras.

Op ’n Saterdagoggend het hy vir Chicken genooi om saam met hom na die plaaslike Shoprite op Piketberg te gaan. Daar het Joram vir Chicken gesê hy kon koop wat hy wou. ’n Verbaasde Chicken het ’n mandjie geneem en wou vinnig ’n paar kruideniersware daarin gooì. Joram het hom gestop en bedui hy moet ’n groot trollie gaan haal. Chicken en sy vrou, Lizle, was heeltemal oorbluf en kon nie glo dat Joram “se hart so goed kon klop nie”. Ná afloop van hul aankope kon Chicken en sy familie met geruste harte die Kersseisoen ingaan met kaste vol kruideniersware.

Intussen gaan Chicken voort met sy mentorskap en Joram leer elke dag ’n bietjie meer. Die gesegde dat dit beter is om te gee as om te neem, het Joram voorwaar uitgeleef. Die kompetisie, aangebied deur die Wes-Kaapse Departement van Landbou, het nie net Joram se eie omstandighede verbeter nie, maar hom ook in staat gestel om ’n positiewe invloed op ander se lewens te hê – ’n eienskap van ’n ware leier en winnaar!

Ons bedank Joram en Chicken vir die voorbeeld wat hulle stel en wens hulle ’n lang en suksesvolle samewerkingsverhouding toe.

Joram (links) en sy mentor, Andreas “Chicken” Arries.

Vir meer inligting, kontak Jacqueline Cornelissen: jacquelinec@elsenburg.com
Women play a critical role in agriculture and their contribution to food security and job creation, especially on a local level, is significant.

Since 1999, the DAFF Female Entrepreneur Awards aspired to recognise, encourage and enhance the involvement of women in the agricultural sector. It is an empowerment platform to honour and award the entrepreneurial skills of women, young women and disabled women.

What better way to honour a number of Western Cape Female Entrepreneur winners than capturing their stories of success in a beautiful book? This is exactly what the Western Cape Department of Agriculture has done. Read the inspiring stories of 16 women who have made agriculture their career choice in the latest Abundant Harvest: Women at Work.

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The book can be downloaded at www.elsenburg.com or ordered by emailing info@elsenburg.com (use title of book as subject line).

For more information, contact Petro van Rhyn: petrovr@elsenburg.com
By taking hands with the private sector, government can achieve so much more than on its own – to the benefit of both parties. A case in point is a recent “partnership” between the Elsenburg Agricultural Training Institute (Elsenburg College) and a privately owned farming enterprise, Rennie Farms situated near Paarl. This family-run vegetable farm, which supplies top quality vegetables to retailers such as Woolworths, was the first to directly approach the College with employment offers for students who had completed learnerships. They are also giving students studying towards a Diploma in Agriculture the opportunity to gain valuable workplace experience.

Jake Rennie, one of the owners of the farm, is full of praise for the Elsenburg students. “The students that come here are keen and much better prepared for the working environment (in comparison to those from other institutions). It is clear they understand how things work on a farm.” He is so impressed by their work that he plans to recruit Elsenburg learnership graduates on an annual basis going forward.

The students are equally enthusiastic about the quality of their learning experience at Elsenburg and the resulting employment opportunities provided by Rennie Farms. Phozisa Lewu (25) completed her learnership programme last year and embraced the chance to work when the offer came from Rennie Farms. “The learnership prepared me well for the workplace,” she says. She so enjoyed studying at Elsenburg that she plans to return next year for a Higher Certificate in Agriculture.

Adrian Heffenaar (31) was born on the farm. (His father was employed by the farm for many years.) He began working on the farm as a general worker in 2015. He was later promoted to a driver and then machine operator. “Mr Rennie told me they see potential in me, but would like me to first complete the learnership programme before promoting me further.” He says the first month at the College was an adjustment, but he received much assistance from the lecturers. “They went out of their way to
support and motivate me.” After completion of the learnership programme he was promoted to production manager. He feels completing a learnership at Elsenburg vastly improved his knowledge and confidence and he’s grateful to Rennie Farms for giving him the opportunity to utilise his new skills.

Eddie Boois (26) and Keith Thyssen (24) are two of the Elsenburg Diploma graduates who are currently doing an internship at the farm in order to complete their studies. Jake Rennie was so impressed with the two of them that he quickly promoted them to managers of the cucumber section. They are responsible for the planting and growing of the cucumbers and manage a group of workers. “My studies at Elsenburg prepared me well and during my time here I’ve learned a lot of new things, adding to my knowledge and experience. I’m enjoying every second on the farm.”

The arrangement is clearly beneficial to both the farmer and students: The Rennies are gaining quality employees and the students get the chance to utilise their skills through gainful employment.

Maritjie Cornelissen, acting director: Further Education and Training (FET), says they continuously engage with more farmers to come on board by not only recruiting farm children with an interest in agriculture from the rural areas, but also networking with farmers and farm managers to accommodate other students for workplace integrated learning.

The Rennies are gaining quality employees and the students get the chance to utilise their skills through gainful employment.

Farmers who are interested can contact Maritjie Cornelissen on maritjiec@elsenburg.com

WHAT DOES THE LEARNERSHIP PROGRAMME ENTAIL?

A learnership is a 10-month learning programme that empowers the student with an occupational qualification. It includes theoretical learning, practical and workplace experience. It is offered at no cost to the student and funded by the Western Cape Department of Agriculture. On successful completion of the learnership, the student is awarded a certificate in Agriculture.

Learnership enquiries can be directed to the Learnership Coordinator, Catherine Matthyse, at Catherinem@elsenburg.com

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Adaptation to CLIMATE CHANGE

by Jan Theron

Climate change has highlighted the vulnerability of agricultural production systems towards this natural phenomenon. It also reminds us that agriculture provides the raw materials required for human existence, namely food and fibre.

Value chains have been developed to different levels worldwide and they somehow disguise the origin of the product to the urban consumer. However, shortages of foodstuffs with price hikes that follow because of inadequate supply seemingly are alerting communities and populations about our fundamental dependence on agriculture.

It could be argued that we got insurance
in the global integrated food provision system but this has preconditions of affordability and availability when worldwide shortages are experienced. National food security, which is more based on domestic supply, apparently becomes more important in such cases.

Whilst comparable advantage and competitiveness are being used to determine the viability of agricultural production from a pure economic perspective, “national imperative” could become a more important part of the equation and refers to the bodily, social and cultural requirements of a nation.

Climate models that predict expected changes can be used to identify the risk profile of an agricultural commodity in a certain production region under such circumstances. Ongoing production of a commodity that is high on a vulnerability index, would then have to be reviewed.

The following questions would be relevant: Should new technologies and methodologies be pursued or should and could this specific crop or animal be replaced? There are quite a number of factors that will influence the answers.

From a national perspective some elements might be the use of the crop, the economic and domestic/social value thereof, and the estimated investment needed to uphold sustainable production. Substitution could be considered when another crop or animal would provide similar nutrients regarding quantity and quality (safe, nutritious) as well as a reasonable income on farm level.

Water requirements of crops become especially important in this regard. For every cubic meter of water applied in cultivation,
the potato produces 5,600 calories of dietary energy compared to 3,860 in maize, 2,300 in wheat and just 2,000 in rice (year of the potato; 2008).

This raises the argument: Should a crop or animal in future rather be evaluated on its efficiency to produce calories, protein, vitamins and minerals? Market preference naturally would be a challenge if the characteristics of the product were significantly different according to consumer preference. Alternatives will be applicable in cases where the new crop or animal represents another use or market. The choices made would have got significant implications in most instances for all stakeholders.

Contributions and ideas for solutions should not be the domain of “the most important stakeholders” only. The farmer, commodity organisations, input suppliers, agricultural corporates, governments, engineers (infrastructure and logistics),
climatologists, agricultural researchers, extensionists, trainers, market experts, consumer educators and awareness facilitators as well as financial institutions are examples of stakeholders that should be seen as of equal importance.

New ventures and initiatives should strive to obtain the input and commitment of all of the relevant stakeholders as required by each case. Farmers should be involved as primary custodians and not as the suppliers of raw materials only. This would lead to better collaboration, better-defined objectives and better efficiencies within an environment of healthy competition.

Governments should play a pivotal role in this respect by providing more support to research and development and functioning as the core, impartial enabler of agricultural adaptation programmes.

The Western Cape Department of Agriculture has taken the initiative for the compilation of the “Development of the Western Cape Agricultural Sector Climate Change Framework and Implementation Plan, also called SmartAgri.” The Department of Environmental Affairs and Development Planning is a partner in this project and two universities and a host of experts from different disciplines contributed towards this. Important inputs from other sources of information were gathered when intensive workshops were held with all relevant stakeholders, including farmers and commodity representatives (refer to p.44 for a full article on SmartAgri). The report provides a picture of the apparent vulnerability to climate change of different commodities in various agricultural regions within the province. AP

For more information, contact Jan Theron: jant@elsenburg.com
On 23 and 24 February 2016 the Programme: Rural Development hosted a workshop at Elsenburg to update stakeholders on the progress made with the Agri-worker Household Census and to share important findings made to date.

All Western Cape municipalities and provincial departments were invited to share the value of the census data and how it can help direct more effective and needs-focused responses by the respective role players.

The Agri-worker Household Census was initiated in 2011 by the Sub-programme: Agri-Worker Development, with the pilot survey done in the Overstrand and Theewaterskloof municipal areas of the Overberg district. The devastating agri-worker protest actions at the end of 2012 and the beginning of 2013 underlined the importance of having relevant and reliable information about agri-workers and their needs.

In reaction to the protests the Department managed to obtain additional funding for the expansion of the census across the province. Furthermore, during November 2015 the Western Cape Cabinet endorsed the census methodology undertaken as well as the participation of provincial departments, district and local municipalities in planning, information sharing and the development of action plans in response to findings.

The Cabinet Resolution makes specific reference to assistance related to the following six themes, i.e. Human Settlements, Rural Youth, Education and Skills Development, Health and Substance Abuse, Unemployment, and Social Grants and Social Participation. The census data will therefore also be utilised as baseline to address rural and economic development imperatives of the Provincial Strategic Plan, related to Provincial Strategic Goal 1 and 4.

It is important to mention that this census is the first of its kind in the country and perhaps even the world. From the information gathered through the census approximately 1 000 variables are covered and it is possible to delineate the data on district, local municipality, ward and even farm level. With the information gathered, government will be able to plan better and put measures in place for future generations.

To date the Cape Winelands and Overberg districts have been completed and the service provider, FEM Research Consultants, will have completed data collection and reporting of the Eden and West Coast districts by the end of June 2016. The final two districts, Central Karoo and Cape Metropole, will be completed during the 2016/17 financial year.

The nature of the data collected requires continuous updating to ensure the information remains relevant. It is therefore foreseen that the census will be an ongoing initiative supported by the Department through its Agri-Worker Development sub-programme.

There is no doubt the Agri-Worker Household Census provides valuable and credible information about the needs of agri-workers in the Western Cape. This information will however be meaningless if it remains in its current state. For the data to come to life it requires the development of localised and relevant action plans to ensure the identified needs of agri-workers are addressed in a collaborative and synergistic manner by all three spheres of government.

The challenge therefore lies in continuing to break down the silos in government operations, to build collaborative relationships and to keep the momentum of working together to improve the lives of our agri-workers and their family members.

A follow-up article on the full census will be published later this year.
Badisa Saron is een van die organisasies wat deur die Wes-Kaapse Departement van Landbou se Sub-program: Agri-werker-ontwikkeling gedurende die 2015/16-finansiële jaar befonds is.

Een van die doelwitte van hierdie ophefingsprojek is die bewusmaking van die negatiewe gevolge van alkohol- en dwelmisbruik op die individu, die gesin en die gemeenskap as geheel. Opleidingssessies in Saron is deur ds. William Cloete gefasiliteer en gevalle wat dringende ingryping geverg het, is onder die aandag van die organisasie se maatskaplike werker, Bieanca Arendse, gebring.

Sedert hierdie projek op 12 Junie 2015 afgeskopo het, was daar deurgaans positiewe terugvoering van die faciliteerders sowel as die deelnemers. Die uitstekende kundigheid, vriendelikheid, enthousiasme en behulpzaamheid waarmer die personeel van Badisa: Saron die projekbestuurder deurgaans ondersteun het, het grootlik bygedra tot die suksesvolle implementering van hierdie projek. Dit bekrachtig ook die Wes-Kaapse regering se leuse, “Beter Tesame”.

Die projek is op 6 Maart 2016 afgesluit met ’n seremonie waartydens die deelnemers elkeen met ’n medalje en ’n sertifikaat beloon is. Hulle was baie ingenome en trots met wat hulle bereik het. ’n Paar het ’n spreekbeurt gehad waartydens hulle getuig van die waarde en toepaslikheid van die kursus se inhoud op hul daaglike lewens, en hoe dit hulle bemagtig het om in die toekoms beter besluite te kan neem.

Gegewe hul omstandighede is agri-werkers se opoffering en aktiewe deelname om hierdie programme te ondersteun be-slis noemenswaardig. Baie van die sessies is na-ure aangebied, en dit nadat heelwat van die deelnemers ’n volle dag se harde werk in die wind en weer moes trotseer. Hierdie toegewyding is die deurslaggewende element wat bygedra het tot die sukses van die projek. En dit bewys net weer, waar daar ’n wil is, is daar ’n weg.
When the activities of the Intergovernmental Relations Framework Act (13 of 2005) commenced during August 2005 a new era in the way the three spheres of government should interact was introduced. The main objective of this piece of legislation was to establish a framework for the national, provincial and local governments to promote and facilitate intergovernmental relations. In response to the above developments, the Department of Local Government took up this responsibility by introducing round-table engagements with all 30 municipalities in the Western Cape.
At an early stage it was agreed that a District Indaba event would be hosted bi-annually for each of the five districts. These engagements have become known as IDP Indaba I and IDP Indaba II. The objective of these engagements is to give effect to the legislative requirements introduced by the IGR Framework Act, namely to create a space for all three spheres of government to engage around important common matters of public interest.

The first indaba was rolled out during October 2010 in the Eden District and all eight municipalities in the district were present. In addition, senior officials from all 12 Provincial Sector Departments were present to engage with municipalities. Subsequent to this ground-breaking engagement, the Department of Local Government has continued to facilitate these IDP Indabas with municipalities every year.

Over the past two financial years (2014 and 2015) the IDP Indaba engagements yielded a total of 65 short-term agreements (commitments made by the Department) between the Department of Agriculture and the 29 local and District municipalities (excluding Cape Town, which is being addressed in a different way). These agreements include a wide range of aspects from merely information-sharing agreements to solving problems and agreeing on common short-term deliverables.

Typical problems that were discussed included water as a limiting factor for economic growth, while challenges experienced by emerging and small-scale farmers also featured prominently throughout the engagements. A short summary of the agreements per municipality is reflected in the accompanying chart.

The Department has showed significant progress with the agreements made with municipalities and 55 of the 65 agreements were fully addressed. The remaining 10 are being attended to. AP

For more information, contact Japie Kritzinger: japiek@elsenburg.com
In South Africa, access to and redistribution of land is one of the most important development imperatives to secure democratic stability. The need to instil a national identity, shared citizenship and autonomy-fostering culture of service delivery is the primary reason why the State must continue to invest in the transformation of land reform in our country. The National Development Plan (NDP) emphasises the need to reintegrate rural areas into mainstream economic development. This would allow rural dwellers to share in the dividends of South Africa’s overall economic growth and prosperity.

Land reform within the context of the NDP is geared towards ensuring agricultural development and subsequent inclusive rural economic growth is a central outcome of the reform processes.

The Western Cape Department of Agriculture (WCDoA) is committed to making land reform work and one of its key strategic goals focuses mainly on ensuring success of agricultural land reform projects across the Province. It is widely believed that one of the major causes of the collapse of land reform projects is the lack of capacity of entrant farmers in many aspects of running farming as a business.

To understand the status of agricultural land reform projects, the WCDoA commissioned an external evaluation study aimed at evaluating performance of the 246 land reform projects that had been supported by the Department during the period 2009 – 2013, through the Comprehensive Agricultural Support Programme (CASP) and/or Ilima-Letsema.

Three broad categories (environmental, socio-economic and economic outcomes) were used to gauge the success of land reform projects. Under these categories a total of 39 sub-indicators were used to measure success in the complex environment of agriculture and land reform, and criteria for determining success in land-reform projects were determined. See classification in table 1 (above). Questions asked and information

One of the key interventions after the evaluation is the integration of the environmental sustainability into the extension messaging delivered through extension and advisory services.
sought in the evaluation aimed to determine performance in the following areas of farming practice reflecting criteria deemed critical to the success of land reform projects:
1. Compliance with labour and tax laws;
2. Access to markets;
3. Existence of updated business plans;
4. Ability of projects to re-invest finance into the business; and
5. Whether projects maintained sound production and sales records.

Accordingly, the study revealed the Western Cape enjoyed a 62% success rate in a sample of 153 projects evaluated. The Department attributes this success to the strategic partnerships created with 11 commodity formations aimed at ensuring effective support to land reform projects, namely the commodity approach.

The commodity approach seeks to ensure new farmers gain access to markets and mentorship support through existing commodity networks.

Of the three dimensions, the environmental dimension under-performed with an average score of only 38%. The socio-economic dimension scored on average across farms of only 48%, reflecting limited attainment of the ideal scenario score. The economic viability dimension obtained the highest scores of all three dimensions with an average score of 59%.

Access to markets, presence of updated business plans, infrastructure conditions, conflict resolution ability and engagement in human capacity development were identified as the main determinants of success in land reform projects.

The holistic evaluation approach that was followed provided a comprehensive picture of the complex reality of land reform and smallholder agriculture in the Western Cape. This is described and shown to provide reason for a re-examination of the factors that should be addressed as priorities in improving success of farming in the context of land reform processes.

Consequently, an improvement plan was developed and is being implemented to address some areas that had been identified by the study.

One of the key interventions after the evaluation is the integration of the environmental sustainability into the extension messaging delivered through extension and advisory services.

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Table 1. Project success classification

<table>
<thead>
<tr>
<th>SCORE</th>
<th>LABEL</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>73% -100%</td>
<td>Highly successful</td>
<td>Currently thriving and sustainable</td>
</tr>
<tr>
<td>53% - 72%</td>
<td>Moderately successful</td>
<td>Doing well, above average, potential for sustainability</td>
</tr>
<tr>
<td>33% - 52%</td>
<td>Challenged</td>
<td>Struggling, below average, potential for improvement</td>
</tr>
<tr>
<td>0% - 32%</td>
<td>Failed</td>
<td>Not successful, not to be supported further</td>
</tr>
</tbody>
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For more information, contact Jerry Aries: jerrya@elsenburg.com
Solar energy plays an essential part in the shift towards cleaner energy production. This holds true for the emergent South African solar photovoltaic (PV) industry that is showing increased promise given irradiation potential, falling PV prices, tax incentives, current trends in energy consumption and constraints in energy generation.

In terms of renewable energy, solar PV technology as a sub-industry is developing swiftly. Power Quality & Renewable Services (PQRS), solar PV technology specialists, notes that in South Africa (SA), the total locally installed PV capacity is approximately 83,000 installations (more than 83 MW). PQRS lists 56 and 36 installations for agriculture at a national level and in the Western Cape (WC) respectively.

Furthermore, awareness initiatives for energy efficiency and savings are certainly growing in WC agriculture with a notable uptake in the region of 6,000 kW in the fruit and wine sectors for applications to pack-houses and wine cellars, as solar PV can generate electricity to support the high energy demand components of the value chain. With a lifespan of 20-25 years, the low maintenance technology is an attractive option to support agricultural activities, if the capital outlays of an appropriate system can be financed with suitable financial returns.

Therein is the question: What happens to the solar panels once they reach the end of their lifespan? Being a fairly new technology, there is limited research on the disposal of PV products and information on the amount of PV waste already in the WC waste stream could not be found. Now might be an opportune time to consider the life cycle of PV products, before the products go to landfills that are already capacity constrained. The impacts a decade from now is critical for policy and industry players.
Recycling & disposal

Recycling is key to the amount of waste that ends up in landfills. PV modules contain substances such as glass, aluminium and semiconductor materials that can be successfully recovered and reused, either in new PV modules or for other products. Despite waste volumes being small, for now, the good news is that recycling of PV products is already taking place across Europe.

Electronic waste (e-waste) in SA is a fast-growing waste stream and there are organisations set up for the collection and recycling of e-waste, albeit mostly computers. Electronics recycling firms confirm that solar panels are currently not being recycled in SA; however, safe disposal at a hazardous landfill is currently offered at R3.50/kg.

That being said, in 2013 Mintek and the eWaste Association SA signed a five-year memorandum of understanding to jointly tackle the growing challenges of e-waste and to unlock potential for the creation of local green jobs.

As we promote the use of cleaner technology, we may need to be thinking about how partnerships such as these, together with government processes, can develop practical and sustainable solutions for the recycling and reuse of these products.

Regulation to meet design

More recently, in February 2016, the South African PV Industry Association in collaboration with the South African Renewable Energy Technology Centre (SARETEC) engaged with members to map the way forward in terms of the development and implementation of minimum national standards, training programmes and installer quality assurance.

Recently published in Engineering News, SARETEC director, Naim Rassool, highlighted the importance of organisations aligning to industry needs and taking a value chain approach to considering quality assurance. Waste streams should form part of the standards as there is a need to develop the infrastructure in order to recycle and dispose of solar PV products.

There may be a need to pool resources and fund innovation for designing quality, clean products and materials throughout the supply chain that are compatible with recycling and safe disposal.

Perhaps there is a space to think about obliging producers to clearly label their products with information on how consumers can dispose of the PVs, provided there is infrastructure for local disposal.

Given that the South African energy regulations are being modified and the solar PV industry is fairly new, government has an opportunity to be part of making the industry expand in the right way. This may be by affecting manufacturing (and installation) firm accreditation and influencing design – generally impacting the life cycle of solar PV products. These opportunities may be well couched under the auspices of the Western Cape Government Energy Efficiency & Waste projects the province is embarking on. There is the opportunity to be part of designing the solution as we set the scene for our environment decades from now.

For more information, contact Nicole Wagner: nicolew@elsenburg.com

For more information on successful PV recycling, see the PV Cycle Programme on www.pvcycle.org
WATER & ENVIRONMENTAL MANAGEMENT ACTS — how do these apply to farmers?

WATER ACT

The National Water Act of 1998, Act 36 of 1998, (NWA) defines different types of water uses that may require registration and/or authorisation by the Department of Water and Sanitation (DWS).

A water use may involve any one or more of the following:

- Abstraction of water from a water resource, i.e. borehole, river, inter alia.
- Storing water in e.g. dams.
- Activities that reduce the stream flow, i.e. commercial forestry.
- Discharging waste or water containing waste into a water resource.
- Disposing of waste in a manner that may detrimentally impact on surface or ground water resources.
- Controlled activities like irrigation of any land with waste water from any commercial activity such as dairies, composting heaps, piggeries, chicken housing, municipal waste water treatment works, etc.
- Changing the physical structure of rivers, streams or wetlands by construction of any infrastructure or structures impacting on a river, stream or wetland, such as pipelines, weirs, bridges, dams, etc.

The NWA regulates these water uses through the registration of the water use

This article is of a general nature and onsite activities and requirements must be considered. This should be used as a guideline for landowners to possible Environmental and Water Use requirements and authorisations, license and/or permit requirements. This does not include a full list of legal authorisations, permits and licences that may be required. An Environmental Assessment Practitioner or environmental manager/lawyer should be contacted to assist and assess each situation.

PLEASE NOTE
and through different types of authorisation all issued by the DWS. It is the landowner’s responsibility to ensure all water uses on the property have been identified, registered and/or authorised by the DWS.

Water users who do not register their water use(s) risk losing their water use entitlements. Any person who contravenes, e.g. does not comply with the NWA, is guilty of an offence and can be prosecuted in a court of law.

**ENVIRONMENTAL MANAGEMENT ACT**

Now let’s look at how the National Environmental Management Act, Act 107/1998 (NEMA) EIA 2014 Regulations can possibly apply to farmers.

The Department of Environmental Affairs amended the Environmental Impact Assessment Regulations, 2014 in GN R.982 published in GG 38282 on 4 December 2014. The different types of listed activities that may require environmental authorisation from the Department of Environmental Affairs or Department of Mineral Resources are contained therein.

There are many activities applicable to agricultural land uses that require environmental authorisation, of which the following are examples:

- The development of a dam where the highest part of the dam wall, as measured from the outside toe of the wall to the highest part of the wall, is 5 metres or higher or where the high-watermark of the dam covers an area of 10 hectares or more.
- The development of facilities or infrastructure for the off-stream storage of water, including dams and reservoirs, with a combined capacity of 50 000 cubic metres or more.
- Infrastructure exceeding 1 000 metres in length for the bulk transportation of water, storm water, sewage, effluent, waste water with an internal diameter of 0.36 metres or more; or with a peak throughput of 120 litres per second or more.
- The generation of electricity from renewable resources and infrastructure for the transmission and distribution of electricity outside urban areas.
- Infrastructure for the slaughter of animals.
- Feedlots, poultry facilities and hatcheries or agri-industrial facilities.
- The development of canals, bridges, jetties, slipways, boardwalks.
- Moving of any material of more than 5 cubic metres within or from a watercourse.
- Any activity including the operation of that activity which requires a prospecting right in terms of section 16 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002).
- The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation.

The NEMA regulates these activities through prior authorisation, and it is the responsibility as landowner to ensure all activities on the property have been identified, registered and/or authorised by the competent authority.

Landowners who do not have authorisation for these activities risk losing their right to continue with these activities, prosecution and fines. Any person who contravenes or does not comply with any NEMA and regulations is guilty of an offence and can be prosecuted in a court of law.

An Environmental Assessment Practitioner can assist you to identify and have authorised all the relevant activities on your property and/or obtaining required authorisations from the competent authorities for existing and proposed water uses in order that you may on the basis of advice manage your risks.

* This article was written by Nicolaas Hanekom from Eco Impact Legal Consulting (Pty) Ltd and condensed for publication in Agriprobe by André Roux from the Western Cape Department of Agriculture.
Creating awareness in terms of the sustainable utilisation of our scarce resources is one of the key focus points of the programme Sustainable Resource Management (SRM). The involvement of our youth in this regard is of cardinal importance, hence our annual Junior LandCare projects to inform and create awareness amongst the primary school learners. These efforts need to be extended to our more senior learners and the first phase of this process is to involve the senior learners at the three agricultural schools in our province.

While the country is suffering a water crisis, wider growth and awareness of technical and agricultural skills in irrigation and water use will help to ensure water is used optimally in the future.

During 2014, SRM appointed the SA Irrigation Institute (SABI) to present a course on the principles of irrigation and effective water use at the Oakdale and Boland Agricultural schools in Riversdal and Paarl.

SABI’s mission is to effectively boost optimum irrigation practices and water conservation in South Africa and on the continent.
Their training programmes are a large part of their activities in this regard and it thus made sense to appoint them for the training. Fanus Fourie, the teacher involved, gave this feedback: “We had 38 candidates that took Agricultural Technology as a matric subject and we are very proud of the 10 ‘A’ results we achieved in this subject. Thank you for your contribution to our success, it is highly appreciated.”

This training continued during 2015 and the Augsburg Agricultural Gymnasium in Clanwilliam was also included in the training programme. The training consists of a two-and-a-half-day course followed by a written exam to determine the effectiveness of the training and create the necessary commitment from the learners.

In 2015 a total of 113 learners attended the training. They gained knowledge that will assist them when pursuing a career in agriculture.

As an additional motivation to learners it was decided to annually name the top learner at each school and to present an award to the overall best performing learner. The top learner from each school received a certificate, whilst the overall best performing learner received a trophy and a cash prize of R1 000 from SABI. Matthys Mouton from Augsburg Agricultural Gymnasium took home the top accolade, with the winning trophy sponsored by the companies Lindsay and Wilo pumps. The winners received their accolades at an event in Somerset West in February 2016. Smiling parents and cheerful youths were the order of the day.

Due to the success achieved the training will be continued on an annual basis to get the agricultural youth on board with optimising agricultural water use.

For more information, contact André Roux: andrer@elsenburg.com
“SmartAgri project forging ahead” (Agri-probe, Vol. 12, No. 4, 2015, p.39) set the scene for one of the most significant events on the agricultural calendar of the Western Cape – the launch of the Western Cape Climate Change Response Framework and Implementation Plan for the Agricultural Sector, also known as the SmartAgri plan. This not only marked the end of a 20-month-long project by the Western Cape Department of Agriculture, in partnership with the Department of Environmental Affairs and Development Planning, but also landed a plan of proposed action to lead our sector to being more climate change resilient.

The Framework and Implementation Plan was developed by a team of experts from the African Climate and Development Initiative (ACDI) at UCT.

After identifying the four Strategic Focus Areas (SFAs)* in the framework, the implementation plan was developed. The SmartAgri plan is strongly premised on collaborative and co-ordinated planning and action within and between the public and private sector, including National, Provincial and Local Government, organised agriculture and commodity organisations, individual farmers and local farmer organisations, agri-processors and agri-businesses in the value chain, labour and civil society, as well as research and academic institutions.

“The impact of drought starts at agriculture, but carries across to every single citi-
zen in terms of food prices and water scarcity,” said Alan Winde, Minister of Economic Opportunities, at the launch.

According to Dr Ilse Trautmann, Chief Director: Research and Technology Development Services and Chairperson of the Steering Committee who managed the project, the SmartAgri plan presents the road map for the agricultural sector to travel towards a more productive and sustainable future, despite the uncertainties around specific climate projections. The plan is a joint effort that seeks to ensure the continued growth and competitiveness of the entire agricultural value chain. Through its focus on innovation, the plan allows the climate change challenge to serve as the

The SmartAgri project provided real and practical information and support, and should inspire the sector in a manner that optimises decision-making and ensures sustainability at a local level.
catalyst for realising a new socially and ecologically just and productive agricultural sector.

According to Minister Winde “SmartAgri means government not only takes risks seriously, but we also equip the agricultural sector to develop the necessary resolution to find new operational models under growing resource constraints and rapidly-evolving global markets.”

Six Priority Projects have been developed, both to deliver climate resilience to agriculture over the short- to medium-term, and to begin the transformative process required for long-term resilience and sustainability at a time when the climate will have changed significantly.

The six Priority Projects are:

1. Conservation Agriculture for all commodities and farming systems.

2. Restored ecological infrastructure for increased landscape productivity, socio-ecological resilience and soil carbon sequestration.

3. Collaborative integrated catchment management for improved water security (quality and quantity) and job creation.

4. Energy efficiency and renewable energy case studies to inspire the transition to low-carbon agriculture.

5. Climate-proofing the growth of agri-processing in the Western Cape.

6. Integrated knowledge system for climate smart agricultural extension.

The Priority Projects have been prioritised by a range of stakeholders and are supported by the current scientific understanding of urgent actions needed. A number of the projects will link with key provincial strategic projects over the next five years and
can thus benefit from existing high levels of support and resourcing. Jointly these projects will accelerate the implementation of the SmartAgri plan.

The SmartAgri project provided real and practical information and support, and should inspire the sector in a manner that optimises decision-making and ensures sustainability at a local level.

Several documents have been developed as part of SmartAgri, including the Framework, Implementation Plan, 16 briefs and six case studies. These can be downloaded in pdf format from www.greenagri.org.za (click on ‘SmartAgri’). A creative video explaining SmartAgri in simple terms can also be viewed by clicking on “media”. AP

For more information, contact Dr Ilse Trautmann: ilset@elsenburg.com or +27 (0)21 808 5012.

Scan the QR code or visit www.youtube.com/watch?v=1HRnJwMkJNc to watch the video: Climate-Smart Agriculture in the Western Cape.

STRATEGIC FOCUS AREAS

1. Promote a climate-resilient low-carbon production system that is productive, competitive, equitable and ecologically sustainable across the value chain.
2. Strengthen effective climate disaster risk reduction and management for agriculture.
3. Strengthen monitoring, data and knowledge management and sharing, and lead strategic research for climate change and agriculture.
4. Ensure good co-operative governance and institutional planning for effective climate change response implementation for agriculture.
Does selecting for finer wool result in higher incidence of creeping belly in the South African Dohne Merino sheep breed?

P Naidoo, JJ Olivier, J Morris and SWP Cloete

Employment trends in Western Cape agriculture

AG Partridge

How important is AGOA to South African agriculture: an economic assessment

L Pienaar and AG Partridge
Does selecting for finer wool result in higher incidence of creeping belly in the South African Dohne Merino sheep breed?

P Naidoo¹, JJ Olivier¹,* J Morris² and SWP Cloete¹²

¹Directorate: Animal Sciences: Western Cape Department of Agriculture, Private Bag XI, Elsenburg, 7607
²Department of Animal Sciences, Stellenbosch University, Private Bag XI, Matieland, 7602
# Corresponding author: bukso@elsenburg.com

Take home message
One of the breeding objectives of the Dohne Merino breed in South Africa is to decrease fibre diameter while maintaining fleece weight. It was postulated that selection for fine wool would increase the incidence of creeping belly (a condition where belly fleece encroaches into the woolly area of the sheep’s body) and as a result decrease the financial value of the fleece. This study found that selection for finer wool with high wool quality score can result in a higher incidence of creeping belly and it is therefore important to place a cap on clean fleece weight selection and monitor the incidence of creeping belly.

Keywords: Dohne Merino, reproduction, wool quality, dual-purpose sheep breed.

Introduction
Small stock farming uses the large proportion of agricultural land in South Africa (SA) that is not suitable for intensive agricultural production (Schoeman et al., 2010). Extensive small stock production in the large arid areas of SA contributes about 8% to the total gross value of animal products (Cloete et al., 2014, Schoeman et al., 2010). While the monetary contribution of the sheep industry is relatively minor in comparison to other animal products, the industry is important in the regional context and of strategic importance in rural areas of South Africa (Cloete and Olivier, 2010, Cloete et al., 2014).

The Merino industry produces wool for the international market and meat for local consumption, with mutton providing 60-70% of gross income to a commercial Merino enterprise depending on fluctuations in the meat:wool price ratio (Olivier, 1999). The result of this dual-purpose enterprise is that South African breeders favour dual-purpose breeds.

The dual-purpose Dohne Merino breed was established (ca. 1939) locally as a hardy and versatile genotype from a cross between the Merino and the German Mutton Merino (now known as the SA Mutton Merino) (Cloete et al., 1998, van Wyk et al., 2008). Although originally bred for semi-intensive farming in the Eastern Cape grassland regions, the Dohne Merino’s ability to thrive under various conditions has resulted in the breed’s popularity and expansion to other areas in South Africa (Cloete et al., 1998, van Wyk et al., 2008). The Dohne Merino breed accounts for 27.8% of the recorded portion of the South African small stock genetic resource as represented by weaning weight records submitted to the National Small Stock Improvement Scheme (NSSIS) (Cloete et al., 2014). Dohne Merinos have also been exported to other major sheep producing countries.

In a study of the across-flock genetic parameter estimation for body weight and fleece traits in the South African Dohne Merino population, van Wyk et al. (2008) concluded that wool quality and quantity...
may not be compromised as a correlated response to selection for meat production traits. However, the demand for finer wool for the clothing industry has led to more emphasis being placed on the production of finer wool in the Dohne Merino breed (Olivier, 2009).

There is a tendency for belly type wool to creep up the sides of the animal into the fleece wool in dual-purpose and wool breeds (Snyman and Olivier, 2015); thus reducing the economic value of the wool. Olivier et al. (2010) reasoned that the threshold for selection for decreased fibre diameter within the Grootfontein Dohne Merino flock had been reached due to the higher incidence of creeping belly (assessed subjectively using a linear scale) and low staple strength estimated in their study. The occurrence of creeping belly has also been assessed in the Carnarvon Afrino sheep flock (Snyman and Olivier, 2002).

Selection for finer wool is one of the main breeding objectives for the South African Dohne Merino industry. Current estimates of genetic parameters are required to construct genetic improvement plans for the industry to improve viability, productivity and profitability (Snyman and Olivier, 2002). This study evaluated objectively-assessed production traits and subjectively-appraised creeping belly (CBS) and wool quality (WQS) scores for the Dohne Merino stud maintained at Mariendahl Experimental Farm of Stellenbosch University (South Africa) with the intention to address the question: does selecting for finer wool result in a higher incidence of creeping belly in the South African Dohne Merino sheep breed?

**Materials and methods**

Data used for this study was collected from the Dohne Merino stud maintained at the Mariendahl experimental farm of the Stellenbosch University. A seven-trait linear-threshold animal model was fitted to the data (n = 2290), with live weight (LW), clean fleece weight (CFW), mean fibre diameter (MFD), staple length (SL), coefficient of variation of fibre diameter (CV) and subjectively-appraised creeping belly (CBS) and wool quality (WQS) scores as variables.

Production year, sex, birth type and dam age were the fixed effects considered and direct, additive animal effects were the only random effects considered in this analysis. The objectively-assessed production traits were included as linear traits; with the subjective scores defined as binary traits with two categories (1 depicted as unacceptable score and 2 as acceptable scores in both cases). As the data contained both categorical and continuous traits, THRGIBBS1F90 and POSTGIBBSF90 software (Misztal, 2008) were used for the analyses.

Descriptive statistics for objective production traits in Dohne Merino yearlings (Table 1)

<table>
<thead>
<tr>
<th>Trait</th>
<th>Number of observations</th>
<th>Mean ± SD</th>
<th>Coefficient of variation</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW (kg)</td>
<td>2290</td>
<td>51.1 ± 10.2</td>
<td>20.0</td>
<td>26.0 – 87.0</td>
</tr>
<tr>
<td>CFW (kg)</td>
<td>2291</td>
<td>3.09 ± 0.41</td>
<td>13.3</td>
<td>1.79 – 4.83</td>
</tr>
<tr>
<td>MFD (μm)</td>
<td>2291</td>
<td>18.6 ± 1.2</td>
<td>6.5</td>
<td>15.3 – 23.3</td>
</tr>
<tr>
<td>SL (mm)</td>
<td>2291</td>
<td>60.1 ± 19.7</td>
<td>32.8</td>
<td>30.0 – 140.3</td>
</tr>
<tr>
<td>CV (%)</td>
<td>1972</td>
<td>18.4 ± 3.2</td>
<td>11.4</td>
<td>13.1 – 30.0</td>
</tr>
<tr>
<td>CBS</td>
<td>2291</td>
<td>1.18 ± 0.38</td>
<td>32.2</td>
<td>1 - 2</td>
</tr>
<tr>
<td>WQS</td>
<td>2291</td>
<td>1.09 ± 0.30</td>
<td>27.5</td>
<td>1 - 2</td>
</tr>
</tbody>
</table>

Results and Discussion
Table 2. Direct additive and residual variance components (\(\sigma^2_a\) and \(\sigma^2_e\) respectively) and (co)variance ratios for live weight (LW), clean fleece weight (CFW), mean fibre diameter (MFD), staple length (SL), coefficient of variation of MFD (CV) and subjectively-appraised creeping belly (CBS) and quality scores (WQS) of Dohne Merino yearlings

<table>
<thead>
<tr>
<th>Trait</th>
<th>LW</th>
<th>CFW</th>
<th>MFD</th>
<th>SL</th>
<th>CV</th>
<th>CBS</th>
<th>WQS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variance components</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(\sigma^2_a)</td>
<td>9.97</td>
<td>0.0645</td>
<td>1.054</td>
<td>23.9</td>
<td>2.893</td>
<td>0.185</td>
<td>0.765</td>
</tr>
<tr>
<td>(\sigma^2_e)</td>
<td>14.28</td>
<td>0.1082</td>
<td>0.418</td>
<td>40.9</td>
<td>2.01</td>
<td>1.010</td>
<td>1.006</td>
</tr>
<tr>
<td>PSD for (\sigma^2_a)</td>
<td>1.45</td>
<td>0.0106</td>
<td>0.105</td>
<td>3.3</td>
<td>0.359</td>
<td>0.047</td>
<td>0.263</td>
</tr>
</tbody>
</table>

(Co)variance ratios (\(h^2\) on the diagonal, rg above the diagonal and re below the diagonal)

<table>
<thead>
<tr>
<th>Trait</th>
<th>LW</th>
<th>CFW</th>
<th>MFD</th>
<th>SL</th>
<th>CV</th>
<th>CBS</th>
<th>WQS</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW</td>
<td>0.41±0.06</td>
<td>-0.0530.11</td>
<td>-0.0330.09</td>
<td>-0.0730.10</td>
<td>-0.0630.10</td>
<td>0.5630.14</td>
<td>0.2030.15</td>
</tr>
<tr>
<td>CFW</td>
<td>0.3430.05</td>
<td>0.37±0.06</td>
<td>0.2330.10</td>
<td>0.3830.11</td>
<td>-0.0730.11</td>
<td>-0.2930.16</td>
<td>0.2430.17</td>
</tr>
<tr>
<td>MFD</td>
<td>0.3330.07</td>
<td>0.2830.05</td>
<td>0.72±0.07</td>
<td>0.2930.09</td>
<td>-0.2930.08</td>
<td>0.1630.12</td>
<td>0.3630.14</td>
</tr>
<tr>
<td>SL</td>
<td>0.2130.05</td>
<td>0.1330.05</td>
<td>0.1030.07</td>
<td>0.37±0.05</td>
<td>-0.0530.10</td>
<td>0.1230.12</td>
<td>0.2430.14</td>
</tr>
<tr>
<td>CV</td>
<td>0.1030.06</td>
<td>0.0530.06</td>
<td>-0.100.09</td>
<td>-0.1230.06</td>
<td>0.59±0.07</td>
<td>-0.4530.13</td>
<td>0.3430.14</td>
</tr>
<tr>
<td>CBS</td>
<td>-0.1430.05</td>
<td>-0.2630.05</td>
<td>-0.3630.07</td>
<td>0.0230.05</td>
<td>0.1930.06</td>
<td>0.16±0.04</td>
<td>-0.5530.27</td>
</tr>
<tr>
<td>WQS</td>
<td>0.0730.09</td>
<td>-0.0630.09</td>
<td>0.0430.12</td>
<td>-0.0430.08</td>
<td>0.1130.10</td>
<td>0.0330.09</td>
<td>0.43±0.15</td>
</tr>
</tbody>
</table>
Further, the genetic correlation between wool quality and creeping belly scores were fairly strongly negative (-0.55 ± 0.27) indicating that sheep with acceptable quality scores would tend to have poorer scores for creeping belly on the underlying liability scale. The most concerning genetic correlation was between CBS and CFW (-0.29 ± 0.16) as this shows that selecting for lower clean fleece weights can result in a higher incidence of creeping belly. Comparable genetic correlations of creeping belly score with softness, crimp definition and evenness across the fleece amounted to respectively -0.52, -0.67 and -0.27 in Afrino sheep when both traits were assessed on a 50-point linear scale (Snyman and Olivier, 2002).

Conclusion

In conclusion, this study found that selection for finer wool with high WQS can result in a higher incidence of CB and it is therefore important to place a cap on clean fleece weight selection and monitor the incidence of creeping belly.

References


Employment trends in Western Cape Agriculture

Author: AG Partridge

Programme: Agricultural Economics Services, Western Cape Department of Agriculture, Private Bag X1, Elsenburg, 7605, South Africa

This short brief looks at the recent employment trend in the Western Cape Agricultural Sector using the Quarterly Labour Force Surveys (QLFS) administered by Statistics South Africa (Stats SA, 2016). The analysis indicates a significant recovery following the decline in employment immediately after the global recession of 2008 and 2009, as well as significant progress towards important national development goals.

South Africa’s National Development Plan (NDP), released in 2011, lays out the country’s vision for where it wants to be by 2030. In the plan, South Africa in 2030 is more equitable and a country where the lives of everyone have been improved. A key component of this vision is the creation of 11 million new jobs in the economy, 1 million of which are targeted to come from the country’s agricultural sector (NPC, 2011).

The government of the Western Cape has endorsed the direction of the NDP, creating opportunities for growth and jobs as the first of five Provincial Strategic Goals. Of particular mention is Project Khulisa, an interdepartmental initiative that looks for big gains in economic growth and employment through expansion of three key sectors: tourism, agri-processing and rig repair (WCG, 2014). The Western Cape Department of Agriculture has been given the lead in terms of reaching the province’s potential around agri-processing, thus taking a central role in achieving provincial, and by extension national, employment targets.

Agricultural production, and as a result employment, is subject to seasonal variations as weather conditions change throughout the year (Hall, 1986; Alderman & Sahn, 1989). In order to account for the seasonal variation in quarterly employment data, four-period moving averages are calculated and used as the basis of the analysis. From here on out “seasonally-adjusted employment” refers to the four-period moving average of that particular employment series and will be used as the main measure of employment.

The QLFS began in 2008, hence the period analysed is from the first quarter of 2008 to the fourth quarter of 2015, a period covering eight full years. Due to the nature of moving averages, they can’t be calculated for the beginning of 2008. Therefore the analysis focuses on changes that have occurred over the seven-year period from the first quarter of 2009 to the fourth quarter of 2015.

Employment in this analysis is calculated as the weighted sum of all working age individuals who are classified as employed and are in the agricultural sector according to Stats SA’s industry codes. Employment in the QLFS relates only to market production activities, thus employment trends will not pick up livelihood improvements through subsistence activities (Stats SA, 2008).

Figure 1 shows the seasonally-adjusted employment in the South African agricultural sector as well as the share of employment relating to individuals who reside in the Western Cape (measured on the right-
There was a clear drop in national agricultural employment following the global recession of 2008 and 2009. However, since this drop there has been a significant recovery of agricultural employment, with employment at the end of 2015 approximately 9% higher than the beginning of 2009 as a result of an increase of 35% since the beginning of 2011.

The Western Cape’s share in national agricultural employment, shown by the bars in Figure 1 as measured on the right-hand axis, has been up and down for the period under review. The share rises to a peak in 2010 before declining and then increasing again since 2013 to reach the highest share for the period in the last quarter of 2015, where it was in excess of 26%.

The recent strong employment performance of Western Cape agriculture can be further illustrated by looking at the seasonally-adjusted employment trend in Western Cape agricultural employment. This is done in Figure 2 (see page 57), which shows a declining trend after the global recession that began in 2008, to 2012 despite a slight recovery at the beginning of 2010. Since 2012, employment in the Western Cape Agricultural Sector has been rising and particularly so for the past year where it has grown substantially. Between the beginning of 2009 and the end of 2015, employment grew from 151 thousand to 231 thousand. This is an increase of approximately 53%, equating on average to over 11 thousand jobs being added each year.

The sharp jump from the last quarter of 2014 to the first quarter of 2015 was also evident in Figure 1 for national employment, but is more pronounced for the Western Cape. The phenomenon is partly attributed to the introduction of a new master sample in line with the 2011 census information and is expected to stabilise going forward (Stats SA, 2015).
It is only partly attributable because if this was the only reason it would be a widespread national phenomenon. Whilst it is observable at the national level this is driven primarily by the Western Cape, where it has been shown that approximately a quarter of the country’s agricultural employees reside. Between the fourth quarter of 2014 and the first quarter of 2015, seasonally-adjusted agricultural employment outside of the Western Cape increases from 611 thousand to 639 thousand, an increase of only 5%. This increase is reasonably standard, especially seeing as the previous two quarter-on-quarter changes were 5% and 11% (Stats SA, 2016). This suggests that whilst part of the jump can be attributed to the changing of the master sample, the Western Cape has still made significant gains in agricultural employment and at least part of the jump should be attributed to positive progress in the province.

When looking at employment performance, employment growth needs to be considered in tandem with the changes in the structure of employment. In addition to setting employment targets for the country, South Africa’s NDP highlights the need to improve economic access for marginalised groups, specifically black individuals, women and the youth. The plan also recognises the lack of economic access for rural communities and the high incidence and intensity of poverty in these areas (NDP, 2030).

The QLFS gives evidence of significant progress in terms of improving economic access to marginalised groups. This is illustrated in Table 1, which shows the percentage shares in provincial seasonally-adjusted agricultural employment for the first quarter of 2009 and the fourth quarter of 2015. All targeted groups exhibited an increase in their share of employment, and as already illustrated employment has increased significantly over that period, so the increases in Table 1 (see page 58) show an increasing share of an increasing total.

Figure 2: Seasonally-Adjusted Quarterly Employment in Western Cape Agriculture, 2008-2015

Source: Compiled Using Data from Stats SA (2016)
Conclusion

The QLFS data points to a very positive performance of the Western Cape’s agricultural sector in recent years. The province should take confidence from significantly increasing agricultural employment in the recovery period following the global recession. In addition to this, there have been significant gains in terms of integrating black individuals, women, the youth and rural communities into the labour force, showing the commitment of agriculture in the province to achieving national development goals.

Going forward it is important to continue striving for growth in the agricultural sector, which will continue the good employment performance. This will not be easy, the implications of the 2015/2016 drought are really starting to become evident in the country’s agricultural sector and going forward it is expected that the strain on production will lead to job losses in the sector (BFAP, 2016). However, despite the hardships expected in the sector, through targeting expansion in sectors with high job potential with initiatives such as Project Khulisa in the Western Cape, the country can prevent large job losses in the sector and continue moving on towards the vision set out in the NDP.

### Table 1: Shares in Seasonally-Adjusted Agricultural Employment in the Western Cape

<table>
<thead>
<tr>
<th>Group:</th>
<th>2009 Quarter 1</th>
<th>2015 Quarter 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural</td>
<td>57%</td>
<td>66%</td>
</tr>
<tr>
<td>Female</td>
<td>33%</td>
<td>36%</td>
</tr>
<tr>
<td>Black</td>
<td>289%</td>
<td>94%</td>
</tr>
<tr>
<td>Youth</td>
<td>14%</td>
<td>19%</td>
</tr>
</tbody>
</table>

Source: Compiled Using Data from Stats SA (2016)

2 Here “black individuals” are defined according to the Broad-Based Black Economic Empowerment (B-BBEE) Act of 2003, which states “‘black people’ is a generic term which means Africans, Coloureds and Indians” (RSA Presidency, 2003, p. 4; RSA Presidency). The definition was amended in 2013 to include the qualification of being a South African citizen (RSA Presidency, 2014). The QLFS does not capture individuals citizenship status so this analysis had to take the pre-amendment definition without the citizenship qualification.

3 Youth = 15 - 24 years old
References


Introduction

In the latter part of 2015, renewed emphasis was placed on the trade relationship between South Africa and the United States of America (USA). This was mainly due to the fact that the African Growth and Opportunity Act (AGOA) was set to expire at the end of 2015 and there were uncertainties around its renewal. The Act enables greater trade and economic development by offering preferential market access for eligible African countries into the USA. Up until 2015 South Africa has qualified for AGOA benefits, however the country’s future eligibility has been cast into doubt. It was decided to extend AGOA for another 10 years, but with the allowance to conduct a special review to determine whether beneficiaries should continue to be included in the list of AGOA-eligible countries.

In the process, South Africa’s inclusion as a beneficiary of AGOA has come into question from the USA as they have noted several impediments hindering market access for their products into the South African market, particularly poultry, beef and pork.

In an attempt to better understand the current trade environment and to have a concrete bearing on how trade agreements impact on the South African economy, research was undertaken by the Agricultural Economics Services Programme at the Western Cape Department of Agriculture (Partridge & Pienaar, 2016). This was done in order to analyse the economic impact if South Africa were to lose its tariff preferences under AGOA for its agricultural exports and measure the wider economic impacts throughout the economy. In this paper, the main results of the study will be summarised and discussed to inform trade policy and to stimulate dialogue in preparation for post-AGOA negotiations with the USA.

AGOA and the trade dispute

Since its introduction, AGOA has marked a significant and fundamental shift in the USA’s policy towards African countries, away from emergency relief and poverty alleviation towards more economic development and trade (Nauman, 2015). AGOA essentially grants preferential market access to beneficiary African (Sub-Saharan) countries on a non-reciprocal basis with only a set of eligibility criteria as decided upon by the USA. In return, these beneficiaries are committed to improve their economic policy environment, participate in globalisation, promote political and economic stability and foster human rights (Nouve & Staatz, 2003).

The AGOA trade preferences are exclusive to eligible African countries, but the exporting country is still required to comply with the USA’s technical as well as sanitary and phyto-sanitary requirements (DAFF, 2009). These measures can often limit obvious opportunities for agricultural trade to expand under the current AGOA arrangement. South Africa, and particularly its agricultural sector, have benefitted from the agreement since 2000 and is currently the biggest exporter of agricultural goods to the USA of all the beneficiaries (ITC, 2016).

Figure 1 shows that total value of agricultural exports to the USA under AGOA...
grew from R881 million in 2001 to more than R1.9 billion in 2014, an annual increase of 6% over this period. Thus, the majority of agricultural exports were traded under AGOA at a zero tariff rate, while much smaller values were traded under the Generalised Scheme of Preferences (GSP) and also under no preference scheme. The GSP also provides preferential duty-free treatment into USA markets for a limited number of products and eligible developing countries since 1976 (USTR, 2013).

Though these figures indicate the importance of AGOA to the agriculture sector, it should also be noted that the USA has strong interests in South African markets, particularly for their meat exports. It is primarily disputes on these products that have led to renewed tensions on the bilateral relations between the two countries.

Ultimately, South Africa contends that certain USA meats are a risk to the economy due to various economic and health concerns. The USA contends that these claims are illegitimate and unnecessary barriers to trade exist and is therefore threatening to withdraw South Africa’s preferences under AGOA for agricultural products. These processes and the main reasons for the dispute are well documented in other reports (Partridge & Pienaar, 2016; Nauman, 2015) and will not be discussed in more detail in this paper.

Whatever the current state of the negotiations is, it is clear that South Africa is at risk of losing AGOA preferences for agricultural products and will need to plan for a renewed bilateral trade agreement with the USA in the near future. The rest of this paper will focus on analysing the scenario where South Africa loses its preferential tariffs for agricultural products under AGOA and will seek to calculate the direct and indirect impacts on the economy.

**Direct impacts**

In losing AGOA preferences, the obvious direct cost to the economy will come in the
form of additional tariffs to producers and exporters. Important to note is that both countries are part of the General Agreement on Tariff and Trade (GATT), as signed under the 1994 Marrakesh agreement established by the World Trade Organisation (WTO, 2015). This implies that if South Africa were to lose its tariff preferences under a preferential tariff scheme, they will face the Most Favoured Nation (MFN) tariff rate as administered by the WTO.

Table 1 below shows all South African agricultural exports to the USA under AGOA that are currently facing zero-tariffs. Citrus (mostly oranges), nuts (macadamias) and wine (non-bulk) were the biggest export-ed products under AGOA, while agri-processed products such as fruit juice, canned fruit and edible ice had sizable values of export. This latter group had particularly high MFN-tariff rates, which will be of concern to remain competitive in the USA market.

In total, agricultural exports under AGOA were valued at R1.9 billion, while the average (MFN) tariff that South Africa will face without AGOA on these products is approximately 2.8% (USITC, 2015). Thus, the total direct cost to the economy will be R53 million in additional tariffs, based on the value of exports in 2014.

Together with these additional costs to the supply of products in the USA market, South Africa will also face relative higher tariffs compared to the country’s main competitors. For instance, South Africa will face a tariff of 1.52% on the exports of citrus without AGOA benefits, whilst all other competitors will face an average preferential tariff of 0.04 due to specific agreements between them and USA (USITC, 2015).

In this case, countries such as Chile, Mexico and Australia will seek to expand their share of exports to USA, while South Africa will have to compete in the same market.

<table>
<thead>
<tr>
<th>Product</th>
<th>Export value, 2011 (R mil)</th>
<th>Export value, 2014 (R mil)</th>
<th>Average MFN tariff (%)</th>
<th>Current tariff under AGOA (%)</th>
<th>Total tariff cost without AGOA (R mil)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citrus</td>
<td>375.20</td>
<td>563.27</td>
<td>1.53</td>
<td>0</td>
<td>8.63</td>
</tr>
<tr>
<td>Nuts</td>
<td>204.55</td>
<td>398.40</td>
<td>0.39</td>
<td>0</td>
<td>1.57</td>
</tr>
<tr>
<td>Wine</td>
<td>267.46</td>
<td>379.10</td>
<td>1.36</td>
<td>0</td>
<td>5.17</td>
</tr>
<tr>
<td>Un-denatured ethyl (Alcohol)</td>
<td>146.19</td>
<td>183.88</td>
<td>2.50</td>
<td>0</td>
<td>4.60</td>
</tr>
<tr>
<td>Fruit juice</td>
<td>97.57</td>
<td>128.97</td>
<td>8.01</td>
<td>0</td>
<td>10.33</td>
</tr>
<tr>
<td>Prepared or preserved fruit</td>
<td>37.72</td>
<td>90.78</td>
<td>10.54</td>
<td>0</td>
<td>9.56</td>
</tr>
<tr>
<td>Edible ice</td>
<td>62.02</td>
<td>63.52</td>
<td>17.00</td>
<td>0</td>
<td>10.80</td>
</tr>
<tr>
<td>Dried fruit</td>
<td>22.76</td>
<td>56.02</td>
<td>1.18</td>
<td>0</td>
<td>0.66</td>
</tr>
<tr>
<td>Other</td>
<td>2.80</td>
<td>18.62</td>
<td>1.19</td>
<td>0</td>
<td>0.22</td>
</tr>
<tr>
<td>Fruit paste and puree</td>
<td>0.37</td>
<td>6.59</td>
<td>10.00</td>
<td>0</td>
<td>0.66</td>
</tr>
<tr>
<td>Sub-tropical fruit</td>
<td>2.82</td>
<td>4.54</td>
<td>1.53</td>
<td>0</td>
<td>0.07</td>
</tr>
<tr>
<td>Mushrooms (incl. dried)</td>
<td>1.56</td>
<td>2.28</td>
<td>17.17</td>
<td>0</td>
<td>0.39</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1221.02</strong></td>
<td><strong>1895.98</strong></td>
<td><strong>2.78</strong></td>
<td><strong>0</strong></td>
<td><strong>52.67</strong></td>
</tr>
</tbody>
</table>

Source: USITC, 2015
with higher expenditure costs that will put pressure on businesses. From a Western Cape perspective, these impacts will even be more pronounced seeing that the majority of citrus exports to the USA originates from the province due to its status of being free of the citrus black spot (CBS) disease (BFAP, 2013).

**Indirect impacts**

In the scenario where South Africa loses its preferential treatment for agricultural products under AGOA, it will also translate into wider economic impacts on the South African economy. To measure this impact, a Computable General Equilibrium (CGE) model developed for South Africa is utilised (Davies & Thurlow, 2011; Thurlow & van Seventer, 2002; Lofgren et al., 2002). The shock is modelled as an increase in the export tariffs in line with the last column in Table 1. It should be noted that in an attempt to isolate the impact from an agricultural perspective, only the tariffs on the agricultural products in the table are affected. In reality, the loss of all benefits under AGOA will also have significant implications for other industries such as motor vehicles and parts; and iron and steel (Nauman, 2015). Since the shock is therefore only affecting agricultural product, and only exports to the USA, the economy-wide impacts are not expected to be substantial.

The main results from the analysis are given in Table 2 above, indicating the impact on key macroeconomic variables of losing AGOA benefits for agricultural products. Based on the current assumptions in the model, South Africa’s nominal GDP will drop by 0.0009%. This may not sound like a lot but based on the International Monetary Fund’s (IMF) GDP projections this will equate to a loss of over R40 million (IMF, 2015).

The modelled shock results in upward pressure on the exchange rate and downward pressure on the prices producers receive for their produce resulting from the need to pay the additional tariffs whilst still supplying the market at the market price. Wages remain unchanged for most labour classifications as the high levels of unemployment mean labour adjusts in accordance with the change in labour requirements. However, the wages of highly skilled labour are expected to decline in response to the tariff.

Primary agricultural production is expected to decline in response to the tariff, with the biggest loser in terms of the value of output being fruit and vegetables. However, it is the downstream industries that suffer the most, particularly beverages and tobacco. It is important to point out that these industries and their respective value-chain linkages are major contributors to economic growth and employment in the Western Cape economy. As a result there is also a significant decline in the value of output from auxiliary industries for agri-processing, such as glass, plastics and paper. Similarly, but to a lesser extent, there is expected to be a decline in the value of output of important agricultural inputs such as fertilisers, pesticides and animal feeds.

### Table 2: Changes in key macroeconomic variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP: Nominal</td>
<td>-0.0009%</td>
</tr>
<tr>
<td>GDP: Real</td>
<td>-0.0007%</td>
</tr>
<tr>
<td>Exchange Rate</td>
<td>0.0082%</td>
</tr>
<tr>
<td>Domestic Producer Price Index (DPI)</td>
<td>-0.0487%</td>
</tr>
<tr>
<td>Wages: Highly skilled workers</td>
<td>-0.0777%</td>
</tr>
</tbody>
</table>

**Source:** own calculations from CGE
Conclusion
South Africa has benefited from AGOA trade preference in recent years, accounting for most exports to the USA. If the country is to lose its AGOA status for agricultural products, there will be new tariffs imposed on certain products. These tariffs ranging from 0.39% to 17.17% and based on current trade flows imply a total additional tariff cost of approximately R53 million. If producers are unable to improve their cost effectiveness accordingly, this will lead to a decline in GDP and will affect not only agriculture and agri-processing, but also important auxiliary industries in agricultural value chains.

It should be noted that all these impacts discussed assume the current trade regime remains as it is. If, instead, exporters can successfully divert exports to markets in more cost-friendly countries, the negative impact of the shock can be reduced and even eliminated.

In conclusion, the outcome of the trade debacle between South Africa and the USA will have an impact on agricultural production in South Africa. Whatever the decision will be, there will be some winners and some losers.

Bibliography


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