College reigns in new hands

Alternative Crops Fund

NEW DROUGHT PORTAL
Drought information in one click

Research and news magazine of the Western Cape Department of Agriculture
“Die Kwik Styg”, ’n nuwe weeklikse program oor klimaatsverandering en die gevolge daarvan, word deur Lizma van Zyl aangebied en Vrydae uitgesaai om 12:45 op RSG.

“Die aarde is kosbaar; kom ons bewaar dit.”

Meer inligting oor die programreeks is beskikbaar op www.rsg.co.za en die uitsendings kan ook afgelaai word.
Amazingly we are already at the beginning of the second quarter of 2018! June is associated with youth and this year we are going big with Elsenburg College (Elsenburg Agricultural Training Institute) turning 120 years! Together with our alumni, current students and the sector, we will be celebrating this milestone anniversary, notably at our Wine Launch (October 2018) and the end-of-year graduation ceremony.

Numerous communities celebrate Earth Day on 22 April each year. The practice of environmental protection at individual, organisational and governmental levels cannot be emphasised enough. Together with the focus on Youth Month, it is a good time to reflect on the words of Dr Jane Goodall (well-known British primatologist and anthropologist), who said, “Young people, when informed and empowered, when they realise that what they do truly makes a difference, can indeed change the world.” Our youth is a critical target group to be informed about climate change, sustainable resource management and environmental protection.

The different programmes in the Western Cape Department of Agriculture work collaboratively together in order to prepare the farmers of tomorrow. Farmer Support and Development (FSD) delivers essential services to especially smallholder farmers, also focusing on the youth but not excluding the commercial sector. Together with FSD and Rural Development, all training needs are made known to Elsenburg College in order to ensure that we respond to the training demands of the sector. Sustainable Resource Management, best practices on water harvesting and irrigation methods and awareness of climate change are amongst the courses presented at the Institute. The collaboration with Research and Technology Development strengthens the resources of Elsenburg College, as subject specialists act as guest lecturers and external moderators.

The Operational Support Services unit of the department implements human capital development opportunities in order to transform and increase the sector’s potential employee pool. You can read all about our external development initiatives for young people in this issue.

Hope you enjoy this edition of AgriProbe as much as we enjoyed putting it together.

Labeeqah Schuurman
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ON OUR COVER

We are always proud when young people grace our cover and this time is no exception. Meet (from left) Karabelo Masoleng, Michaela Burke and Howard Owies – Elsenburg College students. What makes the moment even more memorable is that they are just as enthusiastic and eager to learn as the first students who started way back in 1898! These three are an example and true testimony of how far the College has come in 120 years – not only in academic excellence, but also in diversity.

Here’s to the next 120!
“Among the priorities Minister Alan Winde identified in his speech, were the impact of the drought on agriculture and the issue of land reform.”
Among the priorities Minister Alan Winde identified in his speech, were the impact of the drought on agriculture and the issue of land reform. He also focused on the valuable partnerships between all bodies in the sector in tackling these issues.

Minister Winde said: “We estimate that the impact of the drought on the agriculture sector will run up to R5.9 billion, with total production volumes likely to be 20% smaller this year. Agriculture is one of the major employers in the rural areas of our province and for many agri workers, their jobs are their lifeline.”

He said the department had requested R136 million in drought relief funding from the national government for the 2018/19 year and detailed how R100 million in relief funding has been used in the previous year to buy feed for livestock farmers to ensure they are able to keep farming, and to drill boreholes to provide drinking water in some rural areas.

Going forward, the Department of Agriculture will also be engaging with national government on the use of the Expanded Public Works Programme to create temporary work opportunities for affected agri workers in drought-stricken areas.

On the issue of land reform, he said: “Much of the debate around land reform centres around the availability of land. But agricultural land means nothing without access to water to irrigate it. The current drought crisis in which we find ourselves, only serves to highlight this.”
We are grateful that the national government has moved to declare the drought a national disaster and we are aware that R6 billion in funding has been made available for the drought-stricken provinces. While it is yet unclear how much of that will be coming our way, our plea is that funds are also allocated towards the Brandvlei and Clanwilliam Dam projects," he said.

"The Brandvlei project is likely to cost around R15 million but will allow for the irrigation of a further 4 400 hectares and the creation of up to 8 000 jobs. This project is about land reform as much as it is about water."

The Western Cape uses a commodity-based approach to land reform.

The R834.34 million budget has been allocated as follows:

<table>
<thead>
<tr>
<th>PROGRAMMES</th>
<th>BUDGET: R834.34 million</th>
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<tbody>
<tr>
<td>1 Administration</td>
<td>R124.49 million</td>
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<td>2 Sustainable Resource</td>
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<td>Management</td>
<td>R91.134 million</td>
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<td>3 Farmer Support and</td>
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<td>Development</td>
<td>R278.5 million</td>
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<td>4 Veterinary Services</td>
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<td>R96.85 million</td>
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<td>5 Research and Technology</td>
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<td>Development</td>
<td>R126.28 million</td>
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<td>6 Agricultural Economics</td>
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<td>Services</td>
<td>R27.92 million</td>
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<td>7 Structured Education and</td>
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<td>Training</td>
<td>R65.01 million</td>
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<td>8 Rural Development</td>
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<td>R24.13 million</td>
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The Clanwilliam Dam Project which, aims to double the capacity of the dam, is scheduled to proceed in October 2018.

The Western Cape uses a commodity-based approach to land reform.

"We are grateful that the national government has moved to declare the drought a national disaster and we are aware that R6 billion in funding has been made available for the drought-stricken provinces. While it is yet unclear how much of that will be coming our way, our plea is that funds are also allocated towards the Brandvlei and Clanwilliam Dam projects," he said.

“The Brandvlei project is likely to cost around R15 million but will allow for the irrigation of a further 4 400 hectares and the creation of up to 8 000 jobs. This project is about land reform as much as it is about water.”
Minister Winde announced that together with HORTGRO, the fruit sector has been awarded a R600 million loan facility by the Jobs Fund to provide value chain finance to black-owned entities with more than 51% black ownership.

“This will help fast track black economic empowerment in the fruit value chain and will be targeting the fruit, wine and table grape sectors in the Western Cape and five other provinces.”

“We have also identified 50 black commercial farmers who will receive dedicated support in the coming years to solidify their commercial status. This will be done with the full support of commercial agriculture through the commodity approach,” Minister Winde said. AP

Minister Winde also announced that a new, external study to gauge the progress of land reform will take place this year. The last such study indicated a 62% success rate among land reform projects in the province. The new goal is 70%.

The Western Cape uses a commodity-based approach to land reform, which since 2014 has seen 173 mentors partner with smallholder farmers to guide them and offer advice at no cost to the small-scale farmer.

For more information, contact Bianca Capazorio: bianca.capazorio@westerncape.gov.za
It’s that time of the year again...

The BFAP Baseline Launch

by Andrew Partridge

The Cape Town leg of the Bureau for Food and Agricultural Policy’s (BFAP) annual Baseline Launch will take place on 17 August 2018 at the Lord Charles Hotel in Somerset West. If previous launches are anything to go by, it promises to be an informative day providing valuable knowledge to everyone working in or with South Africa’s agricultural sector.

The Baseline is an annual publication compiled by BFAP in collaboration with its local and international partners, including the Western Cape Department of Agriculture through the department’s Agricultural Economics Services programme. It contains
forecasts of agricultural production, consumption, prices and trade for South Africa for the next ten years, compiled using models that have been developed and refined by BFAP’s expert team over the past decade and a half. In addition to these forecasts that are conducted at a detailed agricultural product level, as well as corresponding in-depth analysis thereof, the Baseline also features a special focus chapter that looks at a different issue each year based on what the most pressing issues are for South African agriculture at the time.

The launching of the Baseline is an important date for those working in South Africa’s agricultural sector as the publication provides knowledge critical for effective planning in the sector. This is especially so as the sector faces a future where, at least in the short-term, there is expected to be increased pressure to utilise resources sparingly, whilst at the same time profit margins are squeezed as the strengthening of the Rand means lower international prices for final products and increased prices for imported production inputs.

In addition to presentations from the BFAP team on the Baseline contents, there are also presentations conducted by senior officials in highly regarded international organisations, such as the United Nation’s Food and Agricultural Organisation (FAO) and the Food and Agricultural Policy Research Institute (FAPRI). Top provincial government officials also deliver addresses, with MEC of Economic Opportunities Alan Winde’s charismatic addresses being a highlight of previous events.

Then lastly, but by no means least, the event provides an excellent opportunity for agricultural stakeholders to engage, to touch base with existing networks and to establish new relationships. These relationships and support networks can end up being the difference as to whether the future agricultural landscape is navigated with success or failure. 

DON’T MISS OUT

Seats are limited so it is advisable to get in there early!

For more information on the BFAP Baseline Launch and to book your seat, please contact Dalene Flynn at BFAP: dalene.flynn@up.ac.za.
Communication remains a pivotal part of any sectors’ success and sustainability, and with the prevailing drought and its challenges, communication and information dissemination should go beyond the “usual” and “normal”.

In an effort to support farmers and agricultural stakeholders with up-to-date information on the drought and drought-related topics, the department recently launched a new Drought Portal. It serves as a single point of entry for easy access to information. This portal aims to provide up-to-date, practical and useful support in the form of research information, weather warnings, disaster survey forms, Western Cape dam levels, toolkits, lessons learnt, current news, radio podcasts and drought-related links. It also contains links to partners and other sources of drought information.

The portal will be updated regularly. We also invite our stakeholders to please let us know if they have information we can share on our portal.

For more information, contact Dr Ilse Trautmann: ilset@elsenburg.com

Visit us at: www.elsenburg.com/drought/
The department’s Directorate of Animal Sciences and the Department of Animal Sciences at Stellenbosch University delivered their first MSc focusing exclusively on ostrich welfare at the March 2018 graduation ceremony. Pfunzo Tonny Muvhali, who conducted his studies at the Oudtshoorn Research Farm, received his MSc for his thesis titled “Improving ostrich welfare by developing positive human-animal interactions”.

Welfare only recently gained momentum as a potential tool to alleviate major problems still plaguing the ostrich industry (i.e. high chick mortality, low egg output, a wild demeanour and failure to adapt to the production environment).

Tonny established that regular and gentle interactions with ostrich chicks from a young age benefitted important characteristics like weight gain, survival, immunity and resistance to stressors. Birds habituated to human presence also produced more eggs at two years of age than birds only exposed to humans for the provision of food and water. Finally, he demonstrated that ostriches discriminated between familiar and unfamiliar handlers and adjusted their behaviour accordingly. Slight changes of management could thus not only benefit the welfare of ostriches, but also the occupational safety of agri workers.

He was supervised by Dr Maud Bonato (Stellenbosch University), Prof Schalk Cloete (Directorate of Animal Sciences, Elsenburg) and Prof Irek Malecki (University of Western Australia).

Tonny will now apply his “ostrich whispering” skills to a challenging PhD project on the establishment of an operational ostrich artificial insemination programme.
Die klimaatsveranderings-prentjie lyk donker, maar daar is altyd die spreekwoordelike lig aan die einde van die tunnel.

’n Nuwe weeklikse program oor klimaatsverandering en die gevolge daarvan vir mens, dier, die omgewing en die landboubedryf het op 6 April 2018 afgeskop. Die program, Die Kwik Styg, word Vrydae om 12:45 op RSG uitgesaai en gaan vir 52 weke interessante onderwerpe bespreek met ‘n verskeidenheid kennis as ateljeegaste.

Volgens dr. Ilse Trautmann, Hoofdirekteur: Navorsing en Tegnologie-ontwikkeling en koördineerder van Die Kwik Styg-reeks, is hierdie inisiatief ‘n uitvloeisel van die Wes-Kaapse Departement van Landbou se SmartAgri-plan en gaan dit poog om ‘n groter bewusmaking van ons “nuwe” klimaatsomgewing by luisteraars te bewerkstellig. Die reeks word deur die departement vervaardig en befonds.

“Die klimaatsveranderingsprentjie lyk donker, maar daar is altyd die spreekwoordelike lig aan die einde van die tunnel.”

In die reeks gaan aanbieder Lizma van Zyl met mense van regoog die spektrum gesels en kennerwenke in- en oor toepaslike maatreëls om Suid-Afrika meer klimaatsveerkragtig te maak.

Lizma is ‘n veteraan radiojoernalis en nuusredakteur met ‘n meestersgraad in Joernalistiek. Sy is ook die stigter van Smile 90.4 FM en bied die kykNET-program Hond se gedagtes aan.
Die klimaatsveranderingsprentjie lyk donker, maar daar is altyd die spreekwoordelike lig aan die einde van die tunnel. Voorsorg, beplanning, integrasie en die vermoë om aan te pas, sal, soos daar in Die Kwik Styg uitgelig sal word, ’n beduidende bydrae lever om te verseker dat Suid-Afrikaners hul lewensgehalte en landbou sy volhoubaarheid kan behou.

Die reeks sal ook groot klem plaas op die verantwoordelikheid van elke landsburger. Soos Lizma in haar weeklikse groet opmerk: “Die aarde is kosbaar; kom ons bewaar dit.”

Vir meer inligting oor die nuwe program op RSG: rsg.co.za

Vir aflaai van potgooie:
http://www.rsg.co.za/potgooi-soek.asp?ProgramID=331

“Die aarde is kosbaar; kom ons bewaar dit.”
– Lizma van Zyl
NOG ’N SUKSESVOLLE PRODUKSIEVEREILING

deur Dr. Zanell Brand | Foto © Arie van Ravenswaay

Die Oudtshoorn-navorsingsplaas se jaarlikse produksieveiling van jong broeivolstruise het ten spyte van die huidige ekonomiese klimaat en moeilike omstandighede waarin die volstruisbedryf homself bevind, weer eens goed afgeloop.

Sedert die aanbieding van die eerste veiling in 2004, het hierdie jaarlikse veiling ’n hoogtepunt op die Oudtshoorn-navorsingsplaas se kalender geword, met die 14de agtereenvolgende veiling wat op 13 Maart plaasgevind het. Die jaarlikse veiling is deel van ’n omvattende diens wat die Wes-Kaapse Departement van Landbou aan volstruisprodusente bied en terugvoer deur kopers wat in die verlede volstruis gekoop het, is in die algemeen positief. PA Geldenhuys van Klein Karoo (Edms) was die afslaer.

Alle jong broeivolstruise is per katalogus met teelwaardes vir reproduksie en liggaamsgewig aangebied. ’n Teelwaarde is die beste voorspelling van ’n dier se potensiaal as ’n ouer van die volgende geslag. Dit maak dit moontlik om ’n potensiële teeldier 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, is produsente gevolglik nie in staat om self volstrui die selekteer nie. Die jaarlikse veiling is daarom van groot waarde aangesien dit produsente die geleentheid gee om goeie, jong teelmaterial te selekteer en genetiese vordering te bewerkstellig (soos enkelparing en deeglike rekordhouding). Dit skep ook ’n bewustheid by produsente van die waarde van goeie teelmaterial en genetiese vordering. Die broeivolstruise wat dus aangebied is, is spesifiek geselekteer op grond van hul teelwaardes vir massa, eier- en kuikenproduksie met die oog op die genetiese verbetering van bestaande teelkuddes.

“Die hoogste prys op die veiling behaal was R4 100 vir ’n jong wyfie, terwyl die hoogste prys vir ’n jong mannetjie R4 000 was.”

Altesaam 13 kopers het geregistreer vir die veiling en daar was ’n 100% verkoopsyfer. Gesien teen huidige slagpryse en die potensiële langtermyn-waarde wat ’n jong broeivolstruise bied, is die kopers goeie waarde in hul geld gekry. Daar is vanjaar meer jong wyfies (39) as jong mannetjies (23) aangebied, want histories was die aanvraag na wyfies hoër. Die gemiddelde prys vir wyfies was R3 023 en die van die mannetjies R3 057. Die hoogste prys op die veiling behaal was R4 100 vir ’n jong wyfie, terwyl die hoogste prys vir ’n jong mannetjie R4 000 was. Die koper met die hoogste omset vir die dag was J. Barnard, wat 33 volstruise aangekoopte. Barnard
Ostrich auction 2018 – A resounding success

The 14th annual ostrich auction was recently held at the Western Cape Department of Agriculture’s Oudtshoorn Research Farm. This farm boasts the only ostrich research facility and programme of its kind in the world and has attracted many international research collaborators over the last number of years.

Researchers from the Directorate Animal Sciences carefully selected birds on breed values and functional aspects and potential buyers could view the birds prior to the auction. A total of 77 birds were offered for sale of which 15 were older breeding birds (average sale price R2 367) and the remainder young breeding birds (average sale price R2 989).

Under the current climatic and agricultural conditions (avian flu and export embargo) the prices were fair and the department significantly contributed to the genetic foundation of the ostrich industry. Some buyers came from as far as the Eastern Cape, whilst one of the producers commented that, “this year’s offer was most probably the best in terms of genetic quality”.

Vir meer inligting, kontak
Dr. Zanell Brand: zanellb@elsenburg.com
From left: Quinton Maans (Maans Group 2) and Marshal Edwards (Vaalkuil Farm) competed in the category Boer Goat Individual and achieved first and second prizes respectively.

Farmers who show together, GROW TOGETHER

by Frederick Mpona

During March 2018, the department together with the Beaufort West Show committee and industry stakeholders hosted the ninth annual Young Ewe and Slaughter Lamb Competition in Beaufort West. The first showcasing of breeding ewes was done in 2010, as a joint initiative between the department’s Farmer Support and Development programme and Veterinary Services, with BKB and Land Bank as local sponsors.

This extension initiative aimed to focus on individual progress of small stock breeding management methods as well as the importance of selection to settled land reform beneficiaries and other smallholder farmers in the Central Karoo District.

Growing from strength to strength

The Young Ewe Development Show has grown into a provincial event, with participation from the Garden Route, Little Karoo, West Coast, Cape Winelands and Overberg Districts.

In 2010, 29 ewe groups (five ewes per group) were entered representing 22 different farms/projects from the Central Karoo District.

In 2018, entrants grew with nearly 100% to 58 ewe groups (five ewes per group)!

More than 300 animals in total entered from Central Karoo, Eden, Little Karoo, Overberg and Cape Winelands, representing 33 projects.

The event showed steady growth over the nine-year period, despite factors such as the Rift Valley Fever outbreak of 2010 – 2011 and the current prevailing drought in the Western Cape.

The Young Ewe and Slaughter Lamb competition does not only serve as a tool to measure project progress and herd improvement, but also creates a platform for farmer networking and industry participation.

“The competition creates a platform for farmer networking and industry participation.”

More than a competition

The 2018 event was combined with the department’s ConnectAgri programme. An agricultural career exhibition was held over three days, attended by a number of schools in the Central Karoo District. In addition the department also hosted a technology and services exhibition, sharing the latest innovation tools and information on the department’s services.

For more information, contact Frederick Mpona: frederickm@elsenburg.com
Elke jaar gedurende die Livestock Expo by Sandringham, Stellenbosch, gee SA Stamboek se Elite-toekennings vir die Wes-Kaap-streek erkenning aan toegewyde telers en die diere wat hulle teel. Hierdie toekennings dien as ’n maatstaf van uitmuntendheid in diere-aantekening in die Suid-Afrikaanse veebedryf.

SA Stamboek gee erkenning aan melkkuddes wat deelneem aan die Logix Melk-program deur kuddes wat by hulle melkaantekeninge doen, op ’n nasionale grondslag in rangorde te plaas. Brons-, silwer- en goue toekennings word dan toegeken. In die geval van melkbeeste, word die rangorde van Logix Melkkuddes saamgestel deur te kyk na sekere faktore oor ’n tydperk van een jaar, bv. kuddesamestelling, gemiddelde laktasie-lengte en genetiese mariete van die kudde.

Met die toekennings in September 2017 het Elsenburg sowel as Eenkant se melkkuddes albei Elite Brons-toekennings verwerf in die Suiwelbeesteler van die Jaar-kategorie. Dit dui op ’n uitstekende standaard van aantekening van registra-siedata en produksiemetings van ons diere. Die toekenning sou nie moontlik gewees het sonder die hele Elsenburg-melkspan wat elke dag onverpoos werk om die twee kuddes uitnemend te bestuur nie.

Afwesig: Tony Geduld, Halalisani Lelizwe Mbatha en Wena Draai

Bronswinnaars in melkbeeste.
Van regs: Marline Burger (Departement van Landbou), Jonathan Barry van Lismore Trust Jerseys en Francois Conradie van JD Rossouw Boerdery saam met Abrie Groenewald van Barnlab wat die sertifikate namens SA Stamboek oorhandig het.

Vir meer inligting, kontak
Marline Burger: marlineb@elsenburg.com
AgriProbe had an in-depth interview with Labeeqah to introduce her to our readers.

**Q: Tell us about your academic and work background?**

**Labeeqah:** My first degree was a BA degree, obtained from the University of Cape Town (UCT), followed by a Postgraduate Diploma in Higher Education. Subsequently I did a BTech in Tourism Management and an MTech in Tourism and Hospitality Management at the Cape Peninsula University of Technology (CPUT). In 2015, I completed a Postgraduate Diploma in Future Studies at the Stellenbosch University Business School. I recently graduated with a MPHil in Future Studies. (Future Studies entail looking at how to design preferred futures and managing an organisation/destination to get as close as possible to that preferred future).

I’ve worked for the Western Cape Government for 14 years at the Department of Economic Development and Tourism. I was responsible for tourism and later for the other sectors in the department, in addition to tourism. Agri processing was one of those. Prior to that I spent nine years in academia, three of those were at CPUT. In all my positions, I’ve always taken on

“The first level of change is with regards to the College’s core mandate of providing education and training.”

Labeeqah Schuurman, a uniquely talented, inspirational and accomplished woman, has been appointed as the new principal at Elsenburg College. Her official position is Chief Director: Structured Agricultural Education and Training (SAET) and she will guide the Institute, known for the high-quality graduates it produces, through its next chapter.
additional responsibilities over and above my main portfolio.

**Q: Why did you decide to join the WCDoA?**

**Labeeqah:** It gives me the opportunity to combine my knowledge and experience of academia and government. One can say my “two worlds have come together”. I’m very excited about that. I can also see my skills being further strengthened and developed in the department.

**Q: What is your impression of the WCDoA thus far?**

**Labeeqah:** Everyone I’ve encountered in my time here has been so welcoming. It is my impression that everyone works as a team here. I am so proud to be part of the department and very happy to be here.

**Q: What is your vision for the College? What would you like to achieve?**

**Labeeqah:** Every environment experiences change and the College is no different. At the College, there are two levels of change we need to respond to. The first level of change is with regards to the College’s core mandate of providing education and training. We will work as a team to continue “making ourselves better” in what we do and become more efficient in the way we do things. We must ensure we are prepared for the future. The College has a big responsibility towards youth and the existing labour force (in the form of short courses). I will also manage the curriculum in the next five years, with an understanding of what jobs and skills are needed in the sector and ensure that we respond to it. I will be working closely with Elsenburg’s academic team, the department and the sector on this.
The second level of change will be to manage the possible shift of the College into a national space and to keep the College stable throughout the transition process. Nothing is definite yet, but there will be change in some form or other. I will guide the College and its staff through this process under the leadership of the department.

“The College has a big responsibility towards youth and the existing labour force.”

**Q: What message do you have for the students of the College?**

**Labeeqah:** I urge them to participate fully in all the classes, tutorial programmes and extra-curricular activities in order to have a balanced and quality-of-life experience as a student. I also encourage them to keep the channels of communication open, so that we as staff are able to provide them with the necessary support and assistance.

I also encourage a culture of respect and togetherness in engaging with fellow students, so that they build on their individual strengths by co-contributing to a positive learning environment. Stay dedicated, enthusiastic and passionate about your studies and know that wherever you may find yourselves in the future, what you learn during this time will always count and add value.

**QUICK-FIRE QUESTIONS**

**Q: What makes you happy?**

**A:** My two children – my family life. I also love being in nature, which is why I love that my new office is situated on a farm!

**Q: What are you currently reading?**

**A:** I read a lot, especially to keep up to date with current events. I read a variety of magazines and newspapers on a regular basis. I also enjoy books on leadership and mentorship.

**Q: If you could have dinner with anyone in the world, dead or alive, who would it be?**

**A:** My mom, who passed away at a young age. I would love to have one last conversation with her.

For more information, contact **Giselle Terblanche**: gisellet@elsenburg.com
Fusarium head blight (FHB) and Fusarium Crown Rot (FCR) of wheat are among the most destructive diseases of wheat globally. Comprehensive surveys were conducted to identify Fusarium species and mycotoxins associated with the diseases in South Africa. Field resistance to pathogens associated with FHB and FCR was determined and fungicides were identified that reduce disease incidence and toxin levels in grain.

This represents the first comprehensive study of FHB and FCR in South Africa, and provides a basis for future studies on the integrated disease management of FHB through host resistance and the optimal use of fungicides.

“Dr Van Coller formally started this research project in 2013 and received part of the funding from the Winter Cereal Trust, confirming the importance of this research to the small grain industry. His supervisor at the university was Prof Altus Viljoen and his co-supervisor was Dr Sandra Lamprecht, a Specialist Scientist in Plant Pathology at the Agricultural Research Council (Plant Protection Research Institute) in Stellenbosch."

For more information, contact Annelene Swanepoel: annelenes@elsenburg.com
Every year the Department of Agriculture gives an opportunity to 30 interns to be appointed on the Premier’s Advancement of Youth (PAY) project for one year. On completion of the internship, interns with an interest to further their studies in agricultural-related field studies are then awarded bursaries. The department has a success rate of 70% of interns going into further studies after completing their one-year internship.

The eighth intake of the PAY interns was appointed on 1 April 2018 followed by a one-week work readiness training session conducted by the Department of the Premier. A total of 30 interns arrived at the department following the initial training and commenced with a one-week orientation programme. In preparation for their placement in the different programmes the orientation included a two-day jam-packed programme varying from team building sessions, communication skills, diversity management and relationships training to presentations by all the programmes.

This department’s take on the PAY project gives matriculants an opportunity to experience various work environments.
to understand what is involved in each of the department’s programmes. By exposing the interns to all programmes on a rotational basis ensures that this goal is achieved. This internship programme is continually being updated to stay abreast with changes in the sector. A new addition this year includes training in agri processing. Their entrepreneurial skills are tested and built through yogurt, cheese, juice and chutney making, vegetable pickling and bread baking.

The programme also aims to cultivate a strong focus on social responsibility and giving back to those less privileged. The interns will therefore visit Camphill Village on a monthly basis. Camphill Village is a community working with intellectually challenged adults, where they are cared for in a natural farm-setting environment that produces quality products. This allows the interns to experience primary agriculture from planting to harvesting whilst at the same time giving back to the community. The start of this part of the programme aptly commences on Mandela Day, after having received awareness training on disability in the workplace.

Abongile Feni – from PAY intern to Young Professional Person (YPP)

Among the first group of interns in 2012 was a young girl named Abongile Jackie Feni from Khayelitsha. Coming from a single-parent household she matriculated from Matthew Goniwe Memorial High School with excellent matric results. Financially not in a position to access further education she applied for the PAY internship. Fitting perfectly into the PAY programme’s objective she applied and was accepted by the department. Not knowing this at the time, it was an internship that will eventually change her life forever.

It was clear from the start that she was dedicated and focused. Going about in her quiet manner she performed her tasks with precision and dedication. On completion of her PAY internship, she was awarded a bursary to study B Agric. at the Elsenburg Agricultural Training Institute. Abongile soon proved to be an excellent student and completed her B Agric. within the minimum study period. She graduated in December 2015. In 2016 she was awarded a graduate internship at HORTGRO to gain work experience with an external host employer. On the successful completion of her one-year internship she was awarded a second bursary by the department to study a postgraduate diploma in Agronomy at Stellenbosch University. She successfully completed her studies in the required one year in 2017. Currently she is registered with Stellenbosch University to complete her Masters’ Degree in Sustainable Agriculture.

A BUDDING ENGINEER

Michael Appolus is another proud product of the department’s human capital development programme. He was assisted since grade 11 and passed grade 12 with flying colours, achieving no less than seven distinctions! He completed his B.Sc. Engineering degree and is in the process of completing his MSc Engineering degree as a YPP.

The YPP programme strives to promote transformation in the sector and specifically empowers previously disadvantaged young people who have been accepted by a recognised Higher Education Institution for Masters and Honours degrees.

For more information, contact John Constable: johnconstable@elsenburg.com Beki Jaca: bekij@elsenburg.com
The establishment of the first School of Agriculture in South Africa, as part of the Victoria College in Stellenbosch, and the later inclusion of the Oenology School of Great Constantia, played a significant role in the history of the Elsenburg Agricultural Training Institute (EATI), as it is known today.

The Cape Government bought Elsenburg Farm from Frank Myburgh in 1898 to increase the opportunity for practical exposure and improve the quality of agricultural education and training. On 1 September 1898 all ties with the Victoria College were cut when the School of Agriculture and Viticulture of the Victoria College was moved to Elsenburg. During the first year of the Elsenburg Agricultural School, 27 students were registered and at the end of the first academic year in June 1899, five graduates received their diplomas.

In 1926 the Elsenburg Agricultural School amalgamated with Stellenbosch University and both the Agricultural degree and diploma programmes were offered.

“The Institute has secured an outstanding track record in agricultural education and training.”
HUMAN CAPITAL DEVELOPMENT

“The Cape Government bought Elsenburg Farm from Frank Myburgh in 1898 to increase the opportunity for practical exposure and improve the quality of agricultural education and training.”

This was the beginning of a 47-year-long partnership, which ended in 1973 when the Elsenburg Agricultural School again resided under the jurisdiction of the Department of Agriculture.

In South Africa, the Institute has secured an outstanding track record in agricultural education and training. An important milestone in 1976 was the establishment of the Diploma in Cellar Technology. Many of South Africa’s winemakers today received their agricultural training at Elsenburg.

The Higher Education and Training programmes offered by the Elsenburg Agricultural Training Institute are

- B Agric degree (offered in association with Stellenbosch University’s Agri-Science Faculty since 2004)
- Diploma in Extension/Cellar Technology/Agriculture
- Higher Certificate in Agriculture
- Equine studies

The Learnership Programmes and short skills courses offered by the Agricultural Skills Development Sub-Programme of the Institute accommodates the youth of the rural communities and agri workers of the Western Cape agricultural sector, amongst others.
The Institute takes pride in the educational opportunities provided to students and the sport offerings in terms of the rugby, soccer, netball and golf. During the annual PANNAR Rugby Week, where all Agricultural Training Institutes of South Africa compete, the Elsenburg Team is always welcomed with anticipation as we contribute most to the festive atmosphere. Elsenburg has won the PANNAR Rugby Week 39 times out of the 49 times this event was hosted!

Participation in the annual rag festivities at Stellenbosch University forms part of the induction period held for all first-year students at Elsenburg. It also gives them the opportunity to interact with other students and make new friends. The annual graduation day held at Elsenburg closes off each academic year, allowing students to celebrate the end off a memorable part of their lives.

Strengthening partnerships and maintaining long-term relationships form an integral part of the daily operations at the EATI. It also ensures that all training offerings are in line with industry’s needs. As part of the agreement between the Western Cape Government and the Bourgogne France Comte region in France, students and staff members get the opportunity to improve their tertiary education and interact with colleagues and stakeholders globally. The EATI annually accommodates a minimum of 10 French viticulture students at the Institute, where they are introduced to the Western Cape’s wine industry. Furthermore nominations from the Western Cape’s wine industry are received, of which a maximum of eight cellar workers from previously disadvantaged communities are given the opportunity to experience the harvesting season in France during September each year. This group also includes protégé students from the Winemakers Guild.
The wine launch of October 2018 will include birthday celebrations and proud Elsenburg Cellar Technology students will be presenting their wines. The celebration of 120 years of quality education and training will continue at the 2018 graduation ceremony, signifying the pride and joy of all staff, students and stakeholders for being part of the well-known and prestigious EATI!

Brenda Schoepp, a motivational speaker and former farmer, said: “My grandfather used to say that once in your life you need a doctor, a lawyer, a policeman and a preacher, but every day, three times a day, you need a farmer.” To our former students, current students and future students, thank you for what you have done and still do to continue building on our proud legacy and for ensuring we provide what is needed three times a day! AP

For more information, contact Maritjie Cornelissen: maritjiec@elsenburg.com or visit www.elsenburg.co.za

An important milestone in 1976 was the establishment of the Diploma in Cellar Technology.

The Elsenburg Agricultural Training Institute, the first centre for agricultural training in Africa, was established in 1898. The Institute has secured an outstanding track record in agriculture and especially in the field of agricultural training.

Source: Historical information taken from the book Elsenburg by Dr Jozua Serfontein.
“British farmers are positioning themselves to become bigger and hence to make use of economies of scale to face Brexit.”
Neil Gourlay used to farm with cattle and sheep in the hills of Scotland. He now added wind, water and people to his enterprises by using current EU subsidies to establish a wind generator and six micro hydro-electrical plants on his farm. As he said: “Aye, in the hills of Scotland we have no shortage of wind and water.” In addition to selling the electricity back into the grid, he is also using the power for the eco-friendly guesthouse on his farm and in this way a number of additional income streams were established to Brexit-proof his business.

Another example is Bowhill Estate in the Scottish Border Region. They are planning to add a deer component to their farm and in this way move away from its current reliance on sheep and beef.

Scottish red deer (Cervus elaphus scoticus).
Photo © Andrew Swinbank
Property consultant Charles Dudgeon expects that about a third of British farmers are positioning themselves to become bigger and hence to make use of economies of scale to face Brexit. Another third will adapt their current businesses to become more efficient or by adding a new enterprise. The final third will not be able to survive resulting in a net effect of bigger, but more efficient farms.

From a labour perspective, John Reed (Cargill Meats Europe) argues that the weakening of the Pound/Euro exchange rate has already resulted in migrant workers from Eastern Europe having 30% less money to save or send back to their families. Hence, the UK has become less attractive as a destination for migrant workers. Indeed, Billy Logan (owner of WR Logan farms) has indicated they employed about 30 Eastern Europeans (some for as long as 20 years), but a number of these people are now returning to their countries of origin and have to be replaced by local people. Tim Bridgstocke (Bridgstocke and Associates) argues that, due to the huge image problems associated with farm labour, local people do not want to work on farms. Thus, it is clear that Brexit is already having an impact on farm labour; even before negotiations on the conditions of Brexit and its implications on the free movement of people have even started.

“More progressive farmers are preparing themselves by either expanding their operations or by diversifying in industries that may be less prone to disruption.”
It is clear that farming plays an important role in British society and that certain consequences of Brexit are already having an effect on farming in the UK. An example is the availability of relatively affordable labour from Eastern Europe. Although the actual Brexit negotiations are still to start, there are (slightly unfounded) high hopes that it will result in a favourable outcome for British farmers. In the meantime, more progressive farmers are preparing themselves by either expanding their operations or by diversifying in industries that may be less prone to disruption. 

An interesting observation was how the role of colonial master and servant has been reversed. During a number of presentations and discussions reference was made to New Zealand’s technology, farming systems, their approaches and new product developments. New Zealand has become the role model, not only for British rugby players, but also for the farmers; particularly on how to face Brexit (or farming without subsidies). One could argue that South African farmers could similarly be used as a role model and perhaps there may be an opportunity for agri tourism entrepreneurs to invite UK farmers to South Africa.

For more information, contact Dr Dirk Troskie: dirkt@elsenburg.com
Small-scale farmers show off their champion livestock

by Marius du Randt

On 12 April 2018 the fourth Clanwilliam Small-Scale Farmer Expo took place at the Clanwilliam showground. This event forms part of the annual Clanwilliam Expo and it has grown into a vibrant and popular occasion that is one of the highlights on the calendar of small-scale farmers in the northern part of the West Coast district.

Small-scale farmers from all over Cederberg and Matzikama brought sheep and goats to compete in the event. There were even entries from Garies in the Northern Cape – an indication of the popularity of the event. A total number of 242 people registered for the event.

There were 60 classes in which the farmers could enter their animals. A total of 26 farmers entered the competition. The animals included Merino, Dorper, Boergoat, Persians and crossbreed animals. Five prizes per class were awarded and were sponsored by Johan Christiaans, Andries Slinger, Agri-Expo and Landbank.

The fourth Clanwilliam Small-Scale Farmer Expo was hosted by Agri-Expo from 12 – 14 April 2018.
The following farmers walked away with the highest accolades

- Champion Merino Ram – **Gert Zimri** from Citrusdal.
- Champion Dorper Ram – **Johan Mannel** from Ebenhaeser.
- Champion Boer Goat Ewe – **Stewart van Rooy** from Wupperthal.
- Champion Persian Ram – **Gert Syster** from Wupperthal.
- Champion Boer Goat Ram – **Vernon Granville Sochop** from Garies.

The excellent judging panel consisted of Ettiene van Wyk, Keith Coetzee, Joubert van der Merwe and Breyton Milford. The judging process was in itself an educational experience and of great benefit to the farmers because the judges communicated throughout the competition, explaining the reasons for the placement of animals.

The event also enabled farmers to network with input suppliers, breeders, businesses active in the agricultural environment and other farmers.

One of the noticeable characteristics of this event is the positive energy and buzz between farmers and the crowd. This was wonderful to see, especially in the light of the extremely difficult circumstances the farmers are facing due to the prevailing severe drought. It was specifically mentioned by the judges that the quality of the animals at the competition improved remarkably over the years.

Over the past number of years, Riana van Rensburg, extension official at the department’s Clanwilliam office, has worked tirelessly to establish the event. Excellent partnerships with various role players were established with the different organisations, each playing their part to make it a memorable event.

The partners are the Western Cape Department of Agriculture, Clanwilliam Expo, Cederberg Municipality, Stuart van Rooy and small-scale farmers from this region. It is heartening to see that the community and farmers identify with this event and assisted in many different ways to ensure the success of the day. This is yet another example of doing things “Better together”. AP

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GROWING CHERRY MARKETS
Alternative Crops Fund – boosting the cherry industry
by Drs Ilse Trautmann and Dirk Troskie

The Alternative Crops Fund (ACF) of the Western Cape Department of Agriculture (WCDoA) (refer to article in the Agriprobe, Vol 14, No 3 “ACF supports climate smart production, job creation and economic growth – a progress report”, and the article in Agriprobe, Vol 15, No 1 “Exploring the world of a cherry grower – a sweet success story”) has just concluded its fourth round of funding and the impact of the fund has been widely acknowledged by all the smaller industries receiving support. In this article, the support to the cherry industry has resulted in a sweeter than sweet success story!

To access the digital editions of Agriprobe referred to above, scan the QR code or visit www.elsenburg.com/resource-library/agriprobe
**A short background on the fund**

In a first for South Africa, the WCDoA launched a R3 million per annum dedicated research fund in 2014 to boost exports and bolster land reform around the province’s alternative crops. Alternative, smaller crops include cherries, berries, fynbos, honeybush and pomegranates. These crops have high market value and are export-orientated. Alternative crops are mostly water smart and would therefore be preferred crops against the current and most probable dryer conditions in the Western Cape and the rest of South Africa.

Over the past four financial years the WCDoA has implemented the ACF and a significant impact was made over this period for the modest investment of R6,9 million.

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**Table 1: Support from the ACF per industry over the last four funding cycles**

<table>
<thead>
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</tr>
</thead>
<tbody>
<tr>
<td>Honeybush</td>
<td>R723 223</td>
<td>R220 113</td>
<td>R407 600</td>
<td>R250 000</td>
<td>R1 600 936</td>
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<tr>
<td>Cherries</td>
<td>R122 500</td>
<td>R327 890</td>
<td>R20 000</td>
<td>-</td>
<td>R470 390</td>
</tr>
<tr>
<td>Cape flora</td>
<td>R1 082 955</td>
<td>R334 000</td>
<td>R741 000</td>
<td>R295 000</td>
<td>R2 452 955</td>
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<tr>
<td>Persimmons</td>
<td>R145 000</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>R145 000</td>
</tr>
<tr>
<td>Figs</td>
<td>R80 000</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>R80 000</td>
</tr>
<tr>
<td>Pomegranates</td>
<td>R125 000</td>
<td>R240 000</td>
<td>R255 456</td>
<td>R235 831</td>
<td>R856 286</td>
</tr>
<tr>
<td>Berries</td>
<td>-</td>
<td>R80 000</td>
<td>R420 000</td>
<td>R164 163</td>
<td>R664 163</td>
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<tr>
<td>Prunes</td>
<td>-</td>
<td>R327 000</td>
<td>-</td>
<td>-</td>
<td>R327 000</td>
</tr>
<tr>
<td>Guavas</td>
<td>-</td>
<td>R299 000</td>
<td>-</td>
<td>-</td>
<td>R299 000</td>
</tr>
<tr>
<td>Pecan nuts</td>
<td>-</td>
<td>-</td>
<td>R20 000</td>
<td>-</td>
<td>R20 000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>R2 278 678</strong></td>
<td><strong>R1 828 003</strong></td>
<td><strong>R1 864 056</strong></td>
<td><strong>R944 994</strong></td>
<td><strong>R6 915 731</strong></td>
</tr>
</tbody>
</table>

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“The international competitiveness of South African fresh cherries has increased by 2 526% over the period 2012 to 2015.”
THE IMPACT OF THE ACF ON THE CHERRY INDUSTRY

Overview of the cherry industry
The first South African cherries were produced in 1890 in Ceres and the first cherries from a commercial orchard were picked in 1904 in Clocolan in the Free State. Today there are about 230ha of cherries in South Africa of which 51% is in the Western Cape, 38% in the Free State, 6% in the North West and 5% in the Mpumalanga Province. During a recent survey cherry farmers have indicated that, on condition that key

Table 2: ACF’s support to the cherry industry over the last four funding cycles

<table>
<thead>
<tr>
<th>YEAR</th>
<th>CONSTRAINT</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014/15</td>
<td>Phytosanitary package</td>
<td>R122 500</td>
</tr>
<tr>
<td></td>
<td>Industry statistics</td>
<td></td>
</tr>
<tr>
<td>2015/16</td>
<td>Rootstocks</td>
<td>R327 890</td>
</tr>
<tr>
<td></td>
<td>Minor crop registration of chemicals</td>
<td></td>
</tr>
<tr>
<td>2016/17</td>
<td>Industry statistics</td>
<td>R20 000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>R470 390</td>
</tr>
</tbody>
</table>

Source: International Trade Centre (2018)

Figure 1: International trade in cherries

Source: International Trade Centre (2018)
constraints can be alleviated, they intend to increase the hectares by 500ha over the next five years. To a certain extent this intention was driven by the fact that global imports of cherries has increased by 177% from R13,49 billion in 2012 to R37,44 billion in 2016.

In order to alleviate some of the key constraints, the cherry industry submitted applications during the first three calls for proposals of the ACF. The constraints identified by the industry, as well as the amounts allocated are provided in Table 2.

**Trade perspective of the South African cherry industry**

As some of the key constraints could be removed, the international competitiveness of South African fresh cherries has increased by 2 526% over the period 2012 to 2015. This growth places the cherry industry amongst the top 20 South African agricultural industries as measured by an increase in competitiveness (out of a total of 1 353 industries measured at HS Code Level 6). The result is that South African exports of fresh cherries has increased from R2,62 million in 2012 to R28,18 million in 2016. This increase of R25,56 million in exports is a growth of 974% over five years. The result is that South Africa’s share of global trade in fresh cherries has increased from 0,019% to 0,080% over this period. Although our exports remain a tiny part of global trade, our share of global trade has increased by 313%, leaving excellent scope for further growth.

The country focus of cherry imports is provided in Figure 2. It is clear that more than 50% of imports of fresh cherries goes to China (31%) and Hong Kong (21%). This is followed by Germany (6%) and Korea (another Asian country at 5%).

South Africa’s main export destination for fresh cherries remains its traditional market in the UK (61%). However, its second most important market is Hong Kong (6%), after which the Netherlands (6%)

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1 As measured by Relative Trade Advantage (RTA) by the Stellenbosch University. A full report is available on request.

**Source:** International Trade Centre (2018)
and Malaysia (5%) follow. South Africa’s direct neighbours, such as Botswana (3%), Namibia (2%) and Lesotho (2%), are also significant markets.

The question arises as to why China does not feature more prominently in the South African export basket. The answer can probably be found in the fact that the necessary protocols between China and South Africa have not yet been finalised. It follows that the conclusion of this protocol will open new and significant markets for the cherry industry.

The impact of the growth in the cherry industry on government objectives

It is clear that the South African cherry industry has grown significantly over the past few years. However, what does this hold for the achievement of government objectives as stated in the NDP?

The growth in the industry led to renewed confidence amongst farmers. The result is that the Du Toit Farms, for example, intend to expand their current area under production; a clear foundation for economic growth. Due to the fact that cherry farming is significantly more labour intensive than other forms of deciduous fruit farming, they intend to increase their labour force from the current 800 to 1 500 as a result of the expansion of area under cherry farming. Furthermore, as the cherry picking season is adjacent to the harvesting time for other

Charli van Rooyen, senior extension officer at the Western Cape Department of Agriculture, with a bumper cherry crop in the orchard. A group of senior managers and officials from the department visited one of the farms of the Du Toit Group in Ceres as part of their “hands-on” experience of alternative crop growing and the challenges these farmers experience.
fruit, the implication is that seasonal workers will have a longer period of employment.

It must be mentioned that the average picker earns as much as R300 per day and some even earn an income as high as R500 per day. Given 22 working days in a month, the average wage amounts to R6 600 per month, which is significantly higher than the R3 500 per month national minimum wage approved by Cabinet on 1 November 2017.

As cherries use about half the amount of water than apples, the implication is that cherries are much more resilient to climate change than other forms of deciduous fruit. This is of the utmost importance for the Western Cape given the current drought being experienced.

“*At the hand of the cherry industry, it has been shown how the ACF could unblock growth in one of these industries.*”

From a land reform and social responsibility perspective growth in this industry allows for interesting opportunities. Although there are a number of relatively large players, no single player dominates the industry. It follows that this is the ideal opportunity to introduce new entrants with the support of established farmers. The industry has also shown willingness to support other transformation strategies, such as skills development, and to provide product to other players for agri processing purposes. In the case of the latter the range of opportunities are abound.

An industry that will keep on blooming

The National Development Plan has identified small-scale, labour intensive agriculture as one of the key avenues towards creating one million jobs in rural areas. By launching and implementing an ACF, the WCDoA has created a mechanism to remove obstacles preventing growth in some of these industries. At the hand of the cherry industry, it has been shown how the ACF could unblock growth in one of these industries. It was further indicated that this growth is translating into not only more jobs, but also better quality and better paying jobs. Additional opportunities for transformation have also been created. AP

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The 11th World Congress on Genetics Applied to Livestock Production (WCGALP) was held in February 2018 at the Aotea Centre in Auckland, New Zealand. Every four years WCGALP provides an opportunity to take stock of global research efforts involving livestock breeding. WCGALP congresses are thus a must on the calendar of all those seriously interested in the genetic improvement of farm animals. This year it was linked to the meeting of the International Committee on Animal Recording (ICAR), which took place prior to the WCGALP congress.

In total, 1423 delegates from 70 countries attended the joint WCGALP/ICAR meetings. A total of 873 papers were presented
at these events. The South African delegation consisted of 36 researchers and students from the Agricultural Research Council, SA Studbook, the Grootfontein Agricultural Development Institute, the Western Cape Department of Agriculture (WCDoA) and the Universities of South Africa, Stellenbosch, North West, Pretoria, Tshwane and the Free State. WCDoA scientists attending the congress were Dr Anel Engelbrecht and Prof Schalk Cloete from the Directorate Animal Sciences and Dr Jasper Cloete from the Elsenburg Agricultural Training Institute.

Topics covered at the conference during the concurrent sessions included: Biology (growth and development, reproduction, behaviour, disease resistance, feed intake and efficiency); Methods and Tools (prediction, software, models and computing strategies, genome-wide association studies and imputation); Molecular Genetics; Genetic Gain (genotyping and phenotyping strategies, breeding strategies, breeding objectives and economics of selection schemes and strategies for local breeds); Theory to application; Knowledge (education and training); Technologies (gene editing, genotyping and novel phenotypes); and Challenges (species conservation and genotype by environment interactions).

Trends detected at the 10th WCGALP, held in Vancouver, Canada in 2014, included an increased reliance on genomic methods. A trend was also detected for groups from developing countries to present fewer oral contributions. Only a single paper from South Africa was chosen for oral presentation on this occasion.

The Southern African region was represented by 36 delegates at the 11th WCGALP. Here 24 of them assembled for an official group photo.
The New Zealand congress boasted a substantially larger contribution from South African scientists to oral presentations in theatre, amounting to six in total. This represents a significant increase from the previous WCGALP. Dr Engelbrecht gave a 15-minute theatre presentation entitled: “Breed differences and crossbreeding effects for ostrich meat traits” during the “Species: Other” session. Prof Cloete likewise presented in theatre on behalf of Dr Lise Sandenbergh during the “Challenges: Breeding conservation” session. The title of this presentation was: “Assessing the occurrence of hybridisation in endangered indigenous sheep”. Prof Cloete also acted as the moderator and chair of the “Species: Ovine” session. Dr Cloete presented a poster with the title: “The genetics of meat traits in South African sheep” in the “Species: Ovine” session. Prof Cloete was also a co-author on the paper by Dr Annelin Molotsi from Stellenbosch on her poster entitled: “Identification of selection signatures in South African sheep populations using HAPFLK and Bayesian $F_{ST}$ approaches” in the “Molecular Genetics” session. It thus seems that the local scientific fraternity is bridging the gap towards greater representation as far as the recent techniques are concerned.

Monetary and human resources supporting livestock genetics research in the developing world make it difficult for scientists from these countries to compete with peers in the developed world. According to presentations at WCGALP, genomic selection is routinely applied in animal recording in most developed countries. Experiences gained in these countries could assist in easing the transition from breeding values based on pedigree information to genomic breeding values in South Africa, as is already starting to happen. There is a lot of goodwill among international peers to become involved in training of colleagues/students from developing countries. Against this background, Elsenburg scientists had fruitful discussions with Australian colleagues at the University of New England and the Animal Genetics and Breeding Unit at Armidale (NSW) to become involved in the local research effort. The natural resource and

The first crosses made to establish the Dormer as a composite breed were in 1941-42 at Elsenburg in Stellenbosch. For more information on the presentation, refer to the publications on the website.

South African ostrich (*Struthio camelus australis*). For more information on the presentation, refer to the publications on the website.
ovine breed composition of Australia and South Africa are similar, thereby favouring such collaborative efforts.

Finally, occasions like WCGALP allow local scientists to interact with peers and peer groups abroad. Although modern communication methods allow for close interaction of people from different countries and continents, it is difficult to replace occasional personal contact with collaborators. A meeting like WCGALP provides an excellent opportunity to meet potential future collaborators and to renew and reinforce existing collaborative efforts. Departmental research efforts greatly benefited from such meetings in the past, and are likely to also do so in future.
Eight years later and FruitLook continues to grow

by Caren Jarmain, Ruben Goudriaan and Roan Naude

Satellites have been orbiting the Earth’s surface for many years capturing information we cannot see with the naked eye. Such information can be of great use to farmers, for example in describing crop growth vigour or soil water content. In 2010 farmers in the Western Cape started to reap the benefits of satellite-derived information for the first time through the GrapeLook initiative. This initiative supported wine and table grape producers with information to improve their on-farm water use efficiency. Today this initiative is known as FruitLook and has expanded to provide the wider agricultural sector with weekly updates on crop growth, real crop water use and plant nitrogen. All aimed at supporting farmers to produce “more crop per drop”!
Over the past eight years, the initial GrapeLook webportal has been transformed into a multi-facetted FruitLook portal and service, available at no cost to the user. Today FruitLook is fully funded by the Western Cape Department of Agriculture. FruitLook data is available free of charge to all registered users, who can build their own data base containing information on their fields of interest to them. The program not only provides information in a spatial way (via a picture), but since the data is updated weekly, seasonal trends can be studied. It allows users access to all historical data (2010-2018), enabling them to compare data from past seasons to attain a better understanding of their block or farm performance.

With all this data, it is not surprising that FruitLook currently has 700 regular users, including producers, consultants and researchers. Users are benefitting from data available for approximately 9 million hectares of the Western Cape, covering a wide range of fruit crops (grapes, pome, stone, citrus, alternative), vegetables, grains, pastures, industrial crops and others.

In a recent survey conducted online, 63% of users indicated that FruitLook made their water management at least 10% more efficient.

Some users have been benefitting from this service for up to five years and more. It proves to be an effective tool for planning, monitoring and evaluating farming activities:

**Planning:** FruitLook data can be used to draw up water budgets and prioritise water allocations in terms of block water use efficiency.

**Monitor:** FruitLook data can assist with water management (how much water should be applied where and when), probe placement, selective sampling prior to and during harvesting and general problem detection through deviations in the spatial pictures and data trends, and in subscribing to FruitSupport.

**Evaluate:** FruitLook allows users to do a post-seasonal analysis, relating crop yield to the FruitLook data, analyse changes implemented and planning for the future.
One success story is that of Hendrik Schoeman from Lochlo farm in Villiersdorp. He registered on FruitLook about five years ago and immediately drew in all the blocks from his farm to access the FruitLook data. Since FruitLook provides “historical” data (a week after it was captured), he uses FruitLook data together with weather data to plan for the week ahead. For example, if he notices that the coming week will be as warm as the past one was and the FruitLook data shows that the water he gave during that week was optimal, he will typically stick to the same irrigation strategy. Hendrik indicated that when he compares the farm’s productivity over recent years of using FruitLook, he saved water through effective water management. He changed from a five-hour water cycle to a three-hour cycle and the impact on his yield was positive with an increase of 30%! Additionally, he recently introduced probes to monitor soil water content as an additional tool to improve his water management, especially for the fields that present challenges in terms of irrigation. Hendrik especially uses the water use efficiency data from FruitLook.
Hands-on training on FruitLook is recommended for optimal use of this program. Training sessions are presented bi-weekly at Elsenburg, while regional training sessions are presented upon request. During these training sessions, users have the opportunity to look at a known field through the FruitLook “lens” and get a better understanding of what is “visible” through FruitLook and what actions can be derived. FruitLook TechCoaches based in the Western Cape are also available to assist with general queries, on-farm assistance or any clarification on the service.
Given the present drought conditions, the appetite for knowledge of water saving methodologies has never been more pronounced and will hopefully go a long way to ensuring South Africans continue to save water once water supplies are abundant again.

Creating awareness in terms of the sustainable utilisation of our scarce resources is one of the key focus points of the department’s 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 high school students and the first phase of this process is to involve the senior learners at the agricultural schools in our province.

During 2017, SRM once again appointed the SA Irrigation Institute (SABI) to present a course on the principles of irrigation and effective water use at the Oakdale (Riversdal), Boland (Paarl) and Augsburg (Clanwilliam) agricultural schools. The De Rust Futura Akademie near Grabouw was also included in the training schedule for the first time.

The mission of SABI 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. The schools programme includes basic foundations on various irrigation technologies as well as irrigation scheduling and system evaluation topics.

No less than 121 learners attended the training. Valuable knowledge was gained that will assist those who want to pursue a career in agriculture. The initiative received wide attention from agricultural schools in other provinces too.

SABI has presented the course at schools in the Western Cape since 2011 and recently, thanks to the Adopt-A-School initiative, more schools in other provinces are signing up for the Grade 11 irrigation course, which is a two-and-half-day event. Basic concepts of irrigation are covered during the course, with in-depth presentations and practical exercises.

A similar training course is now presented annually at Marlow Agricultural School in the Eastern Cape. In 2018 a number of schools will also be part of this initiative, started in the Western Cape, including Jakobsdal Landbouskool, Bekker Landbouskool (Maga-liesburg), Wagpos Landbouskool (Brits) and Weston Agricultural High (Moorivier).

As an additional motivation to learners, it was decided to annually name the top learner at each school and then also present an award to the overall top learner. The top learner from each school received a certificate, whilst the overall top learners received a trophy and a cash prize of R1 000 from SABI.

The individual top performers in 2017 were Robin Hess from De Rust Futura Akademie, Jan Ernst Brink from Oakdale Agricultural School, Elzette van Schalkwyk from Augsburg Agricultural Gymnasium and Arno Loots from Boland Landbou.

The best performing learner for the year was Elzette van Schalkwyk. She is the first girl to take home the top accolade, winning trophies sponsored by Wilo Pumps. The winners received the awards at an event in Somerset West earlier this year. Smiling parents and cheerful youths were the order of the day.

“The mission of SABI is to effectively boost optimum irrigation practices and water conservation in South Africa and on the continent.”

Felix Reinders, president of the International Committee on Irrigation and Drainage (ICID), gave the key note address at the event, congratulating all involved in the SABI schools training initiative. He gave an overview of the importance of irrigation on a worldwide scale. “Many people in the world live in dire conditions of water scarcity,” said Felix. “The day zero scenario unfolding in Cape Town comprises conditions that millions of people live in every day. Time that could be spent on worthy pursuits, such as education and productive work, is expended on carrying water from water sources.”

“More people in the world have cellphones than taps,” related Felix. There is much potential for the development of irrigation and water infrastructure in the world and new tools are developing all the time, such as virtual water and water footprinting.

Due to the success achieved, the training will be continued on an annual basis to get the youth on board with optimising agricultural water use. A secondary outcome of the training programme is that career opportunities in irrigation planning and design for the agricultural sector are brought under the attention of the youth.

For more information, contact Peter Keuck: peterk@elsenburg.com
The WCDoA, in partnership with the Bureau for Food and Agricultural Policy, conducted a study to determine the potential impact of the current drought on the Western Cape agricultural economy. This Drought Policy Brief estimates that the farming sector is set to lose around R5.9 billion in value added to the economy and around 30 000 job losses are expected. The BFAP Baseline will also feature some updated drought scenarios to demonstrate its full impact.

Here are some of the findings from the initial drought report.

**Figure 1:** Potential 30% decline in provincial GDP for the agricultural sector.

**Job losses due to the drought**

- 218 000 jobs in the agricultural sector
- 30 000 jobs lost due to the drought
Income losses per industry due to the drought

Table 1: Number of jobs lost per industry.

<table>
<thead>
<tr>
<th>Industry</th>
<th>Total production 2016/17</th>
<th>Estimated Total production 2017/18</th>
<th>Drop in production (%)</th>
<th>GVA shock 2016/17 vs 2017/18 (R million)</th>
<th>Employment losses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wine grapes</td>
<td>1 599 728</td>
<td>1 279 782</td>
<td>-20.0</td>
<td>-591.21</td>
<td>-2 809</td>
</tr>
<tr>
<td>Table grapes</td>
<td>186 772</td>
<td>153 000</td>
<td>-18.1</td>
<td>-787.36</td>
<td>-4 019</td>
</tr>
<tr>
<td>Pome fruit</td>
<td>1 376 279</td>
<td>1 256 773</td>
<td>-8.7</td>
<td>-898.26</td>
<td>-9 635</td>
</tr>
<tr>
<td>Stone fruit</td>
<td>319 424</td>
<td>293 288</td>
<td>-8.2</td>
<td>-458.26</td>
<td>-2 070</td>
</tr>
<tr>
<td>Citrus</td>
<td>311 955</td>
<td>287 887</td>
<td>-7.7</td>
<td>-259.24</td>
<td>-1 280</td>
</tr>
<tr>
<td>Alternative fruit*</td>
<td>7 693</td>
<td>7 037</td>
<td>-8.5</td>
<td>-36.35</td>
<td>-220</td>
</tr>
<tr>
<td>Major vegetables**</td>
<td>1 104 580</td>
<td>881 280</td>
<td>-20.2</td>
<td>-78.73</td>
<td>-2 716</td>
</tr>
<tr>
<td>Grains***</td>
<td>1 558 200</td>
<td>986 928</td>
<td>-36.7</td>
<td>-2 812.97</td>
<td>-7 482</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>6 464 630</strong></td>
<td><strong>5 145 975</strong></td>
<td><strong>-20.4</strong></td>
<td><strong>-5 922.37</strong></td>
<td><strong>-30 230</strong></td>
</tr>
</tbody>
</table>

Table 2: Water stored in major dams comprising Western Cape Water Supply System (WCWSS). In order to show the severity of the drought one can use the dam levels over the past few years as illustration.

<table>
<thead>
<tr>
<th>MAJOR DAMS</th>
<th>STORAGE</th>
<th>% CAPACITY</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MI</td>
<td>16 July 2018</td>
<td>Previous week</td>
<td>2017</td>
<td>2016</td>
<td>2015</td>
<td>2014</td>
<td></td>
</tr>
<tr>
<td>BERG RIVER</td>
<td>130 010</td>
<td>84.7</td>
<td>67.8</td>
<td>36.9</td>
<td>42.8</td>
<td>60.6</td>
<td>100.3</td>
<td></td>
</tr>
<tr>
<td>STEENBRAS LOWER</td>
<td>33 517</td>
<td>55.9</td>
<td>46.5</td>
<td>29.9</td>
<td>41.1</td>
<td>56.1</td>
<td>76.8</td>
<td></td>
</tr>
<tr>
<td>STEENBRAS UPPER</td>
<td>31 767</td>
<td>97.0</td>
<td>94.6</td>
<td>63.1</td>
<td>77.3</td>
<td>65.2</td>
<td>100.4</td>
<td></td>
</tr>
<tr>
<td>THEEWATERSKLOOF</td>
<td>480 188</td>
<td>40.7</td>
<td>30.4</td>
<td>19.4</td>
<td>36.8</td>
<td>55.6</td>
<td>100.6</td>
<td></td>
</tr>
<tr>
<td>VOËLVLEI</td>
<td>164 095</td>
<td>54.6</td>
<td>37.6</td>
<td>19.9</td>
<td>31.1</td>
<td>40.6</td>
<td>84.7</td>
<td></td>
</tr>
<tr>
<td>WEMMERSHOEK</td>
<td>58 644</td>
<td>84.9</td>
<td>71.2</td>
<td>36.8</td>
<td>54.8</td>
<td>53.2</td>
<td>92.1</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL STORED</strong></td>
<td><strong>898 221</strong></td>
<td><strong>494 589</strong></td>
<td><strong>383 263</strong></td>
<td><strong>225 608</strong></td>
<td><strong>353 920</strong></td>
<td><strong>483 192</strong></td>
<td><strong>864 256</strong></td>
<td></td>
</tr>
<tr>
<td><strong>% STORAGE</strong></td>
<td><strong>55.1</strong></td>
<td><strong>42.7</strong></td>
<td><strong>25.1</strong></td>
<td><strong>39.4</strong></td>
<td><strong>53.8</strong></td>
<td><strong>96.2</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: www.capetown.gov.za/damlevels
Energy Services: The basic principles of ESCos
Inge Kuschke, Michael Leighton

Beef cow efficiency
HJF Grobler
Energy Services: The basic principles of ESCos

Inge Kuschke1, Michael Leighton2

1Agricultural Analyst at the GreenCape Sector Development Agency
2Energy Analyst at the GreenCape Sector Development Agency

Energy is one of the largest inputs to a business. There is a strong business case for investment into energy efficiency and renewable energy due to increasing electricity prices and uncertainty of supply, as well as decreasing technology costs. This can be seen by the current uptake (light grey), and predicted uptake (dark grey), of solar energy in the agriculture sector in the figure below.

This article will explore the energy services options available to businesses through Energy Services Companies (ESCos). ESCos provide energy services to businesses, from diagnostics to design, data management and financing. To form a better understanding of what ESCos can offer a business, we look at a basic energy service’s value chain in figure 2 on the next page.

As illustrated in figure 2, ESCos are completely integrated in the Energy Services Value Chain, thus offering end-to-end solutions. We unpack ESCos further in figure 3 on the next page.

Figure 1: Solar PV installed capacity within the Western Cape agricultural sector (current and predicted)
Figure 2: Energy services basic value chain

- **Supplier**
  - Technology Suppliers / Original Equipment Manufacturers (OEMs)
  - Manufacture, supply, and sometimes install technology forming part of typical energy efficiency or supply interventions

- **Consultant**
  - Typically able to do simple walkthroughs and full Energy Audits to help understand consumption and opportunities
  - High proportion of stand-alone ‘consultants’ or auditors in South Africa

- **EPC**
  - Engineering, Procurement and Construction Contractor
  - They will design interventions, procure and install a turnkey energy efficiency that is tailored to your business

- **ESCo**
  - Energy Services Company
  - Differentiated by:
    - Provision of end-to-end solutions
    - Undertake performance contracts and other alternative contract models

Figure 3: End-to-end solutions offered by ESCos

- **ESCo Contract Models**
  - Power Purchase Agreement (PPA)
  - Energy Performance Contracting (EPC)

- **Energy Performance Contracting (EPC)**
  - Guaranteed Savings
  - Sharing Savings

- **Diagnostics / Consulting**
  - Technical Design
  - Product / equipment manufacturing
  - Installation
  - Operations & Maintenance
  - Energy Supply
  - Data Management & Steering
  - Financing
End-to-end service offerings can be seen in the left column of figure 3 with financing options unpacked to the right and discussed further below.

Key factors driving businesses’ decision towards energy investment:

- Reduced electricity costs and efforts to mitigate impacts of the pending carbon tax.
- Improved energy security.
- Positive marketing through improved sustainability compliance and a reduced carbon footprint.
- Ease of implementation, with many businesses having the internal capacity to implement and a favourable turn-around time.

This article focuses on ESCos providing (1) energy efficiency and/or (2) solar energy investment solutions.

1. Energy efficiency contracting options

After steps taken in figure 2 (left), an ESCo calculates how much a business could save from its baseline consumption through behavioural changes and implementing new technologies. If the business decides to implement the recommendations it will choose between two models:

a) Shared savings, where the ESCo has made the upfront investment/provided financing for the equipment, and recovers this through the contracting fee. Once paid off, the business owns the equipment. For example, if savings are calculated to be 30%, guaranteed by the Engineering, Procurement and Construction Contractor (EPC), the ESCo would recover the equipment cost through these savings. The contracting fee ranges, however it is usually close to a 50:50 shared basis. This model is illustrated in figure 4 (below).

Figure 4: Shared savings of an ESCo model
b) Guaranteed savings, where the client makes the upfront investment and the ESCo provides guaranteed savings. Note that if guaranteed savings are not achieved, the ESCo is penalised accordingly so there is no risk to the client; and if savings exceed the target, the savings are shared with the ESCo, i.e. their incentives are aligned with that of the client.

2. Solar PV procurement options through the ESCo model
One of the ways in which a business can obtain solar PV is to enter into a service procurement option with an ESCo. This is where the upfront capital and installation is provided by the ESCo, and is recovered through a power purchase agreement (PPA). PPAs are long-term contracts to buy electricity at a predetermined rate.

Key aspects of a PPA:
• There are no upfront costs for the businesses – the developer absorbs the cost of the proposal, design, construction, operation and maintenance of the system;

<table>
<thead>
<tr>
<th>Table 1: Comparative solar PV procurement options</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Advantages</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Disadvantages</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 2: Price benchmarking for solar PV</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>System size</strong></td>
</tr>
<tr>
<td>&lt; 100 kWp</td>
</tr>
<tr>
<td>&lt; 500 kWp</td>
</tr>
<tr>
<td>&gt; 500 kWp</td>
</tr>
</tbody>
</table>
Table 3

<table>
<thead>
<tr>
<th>Solar PV feed-in tariffs</th>
<th>Solar PV is VAT deductible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customers are “paid” for any electricity they feed onto the grid, through reductions in their energy bills.</td>
<td>VAT registered entities can deduct the VAT portion of the solar PV system.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tax benefit (12b) applies</th>
<th>Pay less carbon tax</th>
</tr>
</thead>
<tbody>
<tr>
<td>100% accelerated depreciation in the first financial year. In effect, it equates to a 28% discount on the price of the solar system.</td>
<td>As a low-carbon energy source, solar PV will reduce the impact of the impending national carbon tax on businesses.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tax benefit (12i) applies</th>
<th>Green Tourism Incentive Programme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tax allowance incentive designed to support greenfield and brownfield investments through support for both capital investment and training.</td>
<td>Small and micro tourism businesses can qualify for up to R1m in grants when they switch to renewable energy sources.</td>
</tr>
</tbody>
</table>

- it hedges against future electricity costs; and
- the performance risk stays with the developer.

Table 1 (left) compares investment in solar PV through the ESCo model to a business investing in solar PV using their own capital.

The price benchmarking for solar PV is shown in table 2 (left). This assists the business in what to expect when entering a PPA.

When the business procures the equipment, rather than the ESCo, additional incentives exist. This is illustrated in table 3 (above).

The South African National Energy Development Institute (SANEDI) had 12 full and 20 developing ESCos registered on their website in 2016. This list of ESCos can be found at www.sanediesco.org.za. 

For more information on energy services and incentives for solar PV investments, please contact GreenCape - a not-for-profit sector development agency that can provide support and independent information:
Tel: +27 (0)21 811 0250
Email: michaelleighton@greencape.co.za
References


Beef cow efficiency

HJF Grobler

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manieg@elsenburg.com

Introduction
Most of the beef weaners produced for market in the RSA are being finished in feedlots. Figures given, range from 70 to 90%. Although beef producers in the Western Cape are far removed from the larger feedlots, they follow the same marketing system. Much attention has therefore been given to the breeding and marketing of heavy weaner calves. The danger here is to increase weaning weight and at the same time increasing mature cow weight, with increased feed requirements, and the possibility of increased Inter Calving Period (ICP). A study by Scholtz, et al (2016), showed that the ICPs of 10 breeds participating in the National Beef Recording and Improvement Scheme (1999 to 2008) increased by 10 days or more! It is important that efficiency be measured by the unit of land/available resources used to produce weaner calves. Therefore this paper will focus on measurement of cow efficiency.

Cow efficiency
A measure for cow efficiency often used is:

Weaned calf weight/cow weight at weaning x 100

It has however been argued that this formula benefits smaller cows. Numerous factors affect cow efficiency, and all need to be taken into consideration. According to Scholtz, et al (2016), the traits of importance are:

1. Calf-weaning weight
2. Feed requirements to produce the calf (measured in Cow LSU)
3. Frequency of calving (measured by ICP).
4. Crossbreeding

Calf-weaning weight
The weaned calf is the marketable product from the cow/calf unit and needs to comply with feedlot requirements on weight, growth potential and carcass quality. This factor can however not be evaluated in isolation. Weaning weight needs to be evaluated in combination with the production of its dam.

Feed requirements to produce the calf
The cow utilises approximately 94% of required total digestible nutrients of the cow/calf unit until weaning (Van der Westhuizen & Matjuda, 1999). The rapid increase of feed costs, either through natural range, pasture or bagged feed, necessitates breeding with cows that will use feed resources efficiently. Herd efficiency (output per hectare of land) becomes an important factor to optimise. The ideal cow should therefore be the one that uses less resource to produce the same output in a sustainable environment. The type of cow to farm with will differ according to the quantity and quality of natural resources in a specific climatic area. To estimate feed utilisation of a cow the standardisation for livestock, developed by Meissner in 1983 (Large Stock Unit;
LSU) may be used. As pointed out by Mokolobate et al in 2015, it is important to note that cows with the same body weight, but different frame size, do not have the same LSU. A medium frame cow of 500kg with calf at foot equates to 1.5 LSUs with a voluntary feed intake of 13.6kg/day. While a large frame cow of 500kg with calf at foot equals 1.78 LSUs, with a voluntary feed intake of 15kg of dry matter per day. An example of the number of cows, of different frame sizes, that can be carried on a 500ha property with a carrying capacity of 6ha/LSU is presented in Table 1.

Measuring cow efficiency taking feed requirements into account is:

Kilogram calf weaned/cow LSU

A recent evaluation on cow efficiency for three beef breeds in RSA, by Theunissen (2017), is presented in Table 2. Jordaan, et al (2014), conducted a study on improvement of production efficiency through genetic change over 25 years, of three indigenous beef breeds in South Africa (Table 3). Although weaning weight increased in two breeds, increase in mature cow weight influenced cow efficiency considerably.

It is therefore important in your breeding strategy to keep a check on mature cow weight while increasing calf-weaning weight.

**Frequency of calving**

The third factor to take into account by breeding/selecting for cow efficiency is the frequency of calving, measured either as calving %, ICP or “days to calving”. This is the most important contributing factor to cow efficiency.

The formula used may be:

Kilogram calf weaned/Cow-LSU x calving %

---

**Table 1:** Number of lactating cows that can be carried on 500ha (6ha/LSU) (Mokolobate et al, 2015)

<table>
<thead>
<tr>
<th>Frame</th>
<th>Breed example</th>
<th>Cow weight (kg)</th>
<th>Cows (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td>Afrikaner</td>
<td>450</td>
<td>63</td>
</tr>
<tr>
<td>Medium</td>
<td>Bonsmara</td>
<td>500</td>
<td>55</td>
</tr>
<tr>
<td>Large</td>
<td>Simmental</td>
<td>550</td>
<td>44</td>
</tr>
</tbody>
</table>

**Table 2:** Cow efficiency evaluation (kg calf/cow LSU) of three breed types on National Performance data

<table>
<thead>
<tr>
<th>Breed type</th>
<th>Frame size</th>
<th>Cow efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indigenous</td>
<td>Small</td>
<td>116</td>
</tr>
<tr>
<td>Indigenous/British composite</td>
<td>Medium</td>
<td>145</td>
</tr>
<tr>
<td>European</td>
<td>Large</td>
<td>116</td>
</tr>
</tbody>
</table>
Scholtz, *et al* (2016), using a different data set but with comparable change in traits for phenotypic change on all three contributing factors to cow efficiency, published progress made in cow efficiency as presented in Table 4.

The results indicate the important contribution of reproduction to cow efficiency. The contribution for each factor to cow efficiency is presented in Table 5 (Scholtz, *et al*, 2016).

**Crossbreeding**

The use of properly planned crossbreeding can have a major impact on cow efficiency without incurring additional herd costs. Crossbreeding can especially improve lowly heritable, but economically important traits.

---

### Table 3: Phenotypic change (25 years) (Jordaan, *et al*, 2014)

<table>
<thead>
<tr>
<th>Breed</th>
<th>WW205¹ (kg)</th>
<th>MCW² (kg)</th>
<th>KgC/LSU³ (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indigenous Sanga (red)</td>
<td>21</td>
<td>14</td>
<td>12.0</td>
</tr>
<tr>
<td>Indigenous composite (red)</td>
<td>15</td>
<td>16</td>
<td>2.7</td>
</tr>
<tr>
<td>Indigenous Sanga (small framed)</td>
<td>-14</td>
<td>-26</td>
<td>-7.0</td>
</tr>
</tbody>
</table>

¹WW- 205-day corrected weaning weight  
²MCW - Mature cow weight  
³KgC/LSU - Kg calf/LSU

### Table 4: Phenotypic changes for the three basic traits with resultant cow efficiency

<table>
<thead>
<tr>
<th>Breed</th>
<th>WW205 (kg)</th>
<th>MCW (kg)</th>
<th>ICP</th>
<th>Cow efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indigenous Sanga (red)</td>
<td>20.4</td>
<td>-8.3</td>
<td>-19.7</td>
<td>18.3%</td>
</tr>
<tr>
<td>Indigenous composite (red)</td>
<td>9.1</td>
<td>17.5</td>
<td>-16.9</td>
<td>10.0%</td>
</tr>
<tr>
<td>Indigenous Sanga (small framed)</td>
<td>-0.7</td>
<td>-17.3</td>
<td>-19.4</td>
<td>10.4%</td>
</tr>
</tbody>
</table>

### Table 5: Trait contribution to cow efficiency

1. Calf-weaning weight          (32 – 33%)
2. Feed requirements to produce the calf (measured in cow LSU) (17 – 24%)
3. Frequency of calving (measured by ICP) (44 – 51%)

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traits like adaptability, fertility and milk production, through heterosis (hybrid vigour). Crossbreeding is also practiced to combine desirable traits from different breeds (Complementarity). The effect of hybrid vigour presents itself in a certain trait in that the average of the trait, like weaning weight, in the offspring is better than the average of the parent breeds for that specific trait. The following for weaning weight serves as an example:

\[
\text{Hybrid vigour} \% = \frac{\text{Avg WW for offspring (230)} - \text{Avg WW for parents (180+240)/2}}{\text{Avg WW for parents (210)}} \times 100
\]

\[
= 9.5\%
\]

Table 6: Reproduction and WW comparison in pure bred and cross-bred females

<table>
<thead>
<tr>
<th>Breed of cow</th>
<th>Calving %</th>
<th>WW(205)</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>82</td>
<td>224</td>
</tr>
<tr>
<td>A</td>
<td>84</td>
<td>226</td>
</tr>
<tr>
<td>B</td>
<td>79</td>
<td>233</td>
</tr>
<tr>
<td>AxH</td>
<td>86</td>
<td>230</td>
</tr>
<tr>
<td>BxH</td>
<td>97</td>
<td>281</td>
</tr>
<tr>
<td>AxB</td>
<td>97</td>
<td>278</td>
</tr>
</tbody>
</table>

Table 7: Survival rate of breeds up to 12 years in a harsh heartwater environment

<table>
<thead>
<tr>
<th>Breed of cow</th>
<th>Survival rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>19.8</td>
</tr>
<tr>
<td>A</td>
<td>43.5</td>
</tr>
<tr>
<td>SH</td>
<td>13.0</td>
</tr>
<tr>
<td>HxA</td>
<td>46.3</td>
</tr>
<tr>
<td>HxSH</td>
<td>34.9</td>
</tr>
<tr>
<td>AxSH</td>
<td>45.7</td>
</tr>
</tbody>
</table>
The increased advantage in fertility, production and adaptability in F1 crossbred females are shown in tables 6 & 7 (Lubout, 2014).

Scholtz, et al (2016), reported results of up to 46% increase in cow efficiency with proper crossbreeding. The merits of this practice may be seen in a survey (fig. 1) done by the University of the Free State on the type of beef breeds commercial farmers farm with (Strydom, 2015).

The disadvantage of managing proper crossbreeding systems is the number of pasture camps necessary during the breeding season. Venter, et al (1986), reported that the development of composite breeds, like the Bonsmara, Brangus, Beefmaster, etc., with proper performance testing and selection may give nearly the same results as continued crossbreeding.

The breeder in a harsh environment that needs to keep small-frame indigenous cows has the disadvantage of price discrimination towards his weaners. This problem can be overcome by terminal crossbreeding (all crossbred offspring marketed); breeding his small-frame cows to large-frame sires. He has to ensure to use bulls with EBVs for light birthweights. Theunissen (2017) reported the following results on crossbreeding with Ngunis (Table 8 on next page).

**Figure 1:** Breeding cows of commercial farmers

![Breeding cows of commercial farmers](image-url)
Table 8: Comparison on cow efficiency between pure- and crossbred Nguni weaners

<table>
<thead>
<tr>
<th>Genotype</th>
<th>WW(205)</th>
<th>MCW</th>
<th>Kg calf/LSU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nguni</td>
<td>145</td>
<td>365</td>
<td>116</td>
</tr>
<tr>
<td>AngusxNguni</td>
<td>177</td>
<td>355</td>
<td>142</td>
</tr>
</tbody>
</table>

The normal practice is to purebreed the Nguni heifers for the 1st and 2nd mating and put the older cows to larger-framed beef sires. Several breeds have the ability to suppress the coat colour of the Nguni, rendering the weaners more acceptable to the feedlot market. Investigations at several Eden projects with crossbreeding to beef sires have illustrated the above in practice.

Conclusion

It is important for the beef producers to ensure they do not just produce weaners of optimum weight for the feedlot. Optimum production and economy per unit of available land is imperative. It therefore also becomes important for the weaner producer to record production and reproduction to be able to select for the best cow efficiency in his specific circumstances.

References


“GOOI SOMMER”!
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Gooi-Agri? Yes, this is the new buzzword in the agricultural community. This initiative was recently launched and can be found on www.elsenburg.com under the drought portal tab.

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We want to make sure you share your smart moves with other farmers to showcase local innovation and tenacity.

This exchange of knowledge and information could just be the spark to inspire other farmers to change to smart-agri methods.

You can “gooi” your short video via your cellphone with WhatsApp to 062 044 9061 or you can “gooi” via our website – just “gooi!” and share your clever ideas with your fellow agriculturists!

For more information, contact Dr Ilse Trautmann: ilset@elsenburg.com or visit www.elsenburg.com

Scan the QR code or visit https://youtu.be/p_OvCDiR_mg to watch the video: ‘Tell us what you are doing to make a difference?’. Produced by Waterkloof Wines.

Farm Manager Christiaan Loots from Waterkloof Wine Estate shares information on compost heaps. Waterkloof, recognised for its biodynamic winegrowing practices and environmentally responsible farming, aims to become entirely sustainable when it comes to natural fertilisers.

Photos courtesy Waterkloof Wine Estate.
Don’t forget to tune into RSG Landbou every Friday morning at 04:45 and on Saturdays at 11:45. Listen to the highly informative programmes on the Western Cape Department of Agriculture and the Agricultural Sector in general. If you miss it on the radio, you can also listen to the programmes of the week on www.elsenburg.com/resource-library/radio-elsenburg

Luister elke Vrydagmiddag om 12:45 na Die Kwik Styg op RSG waar kenners gesels oor klimaatsverandering.