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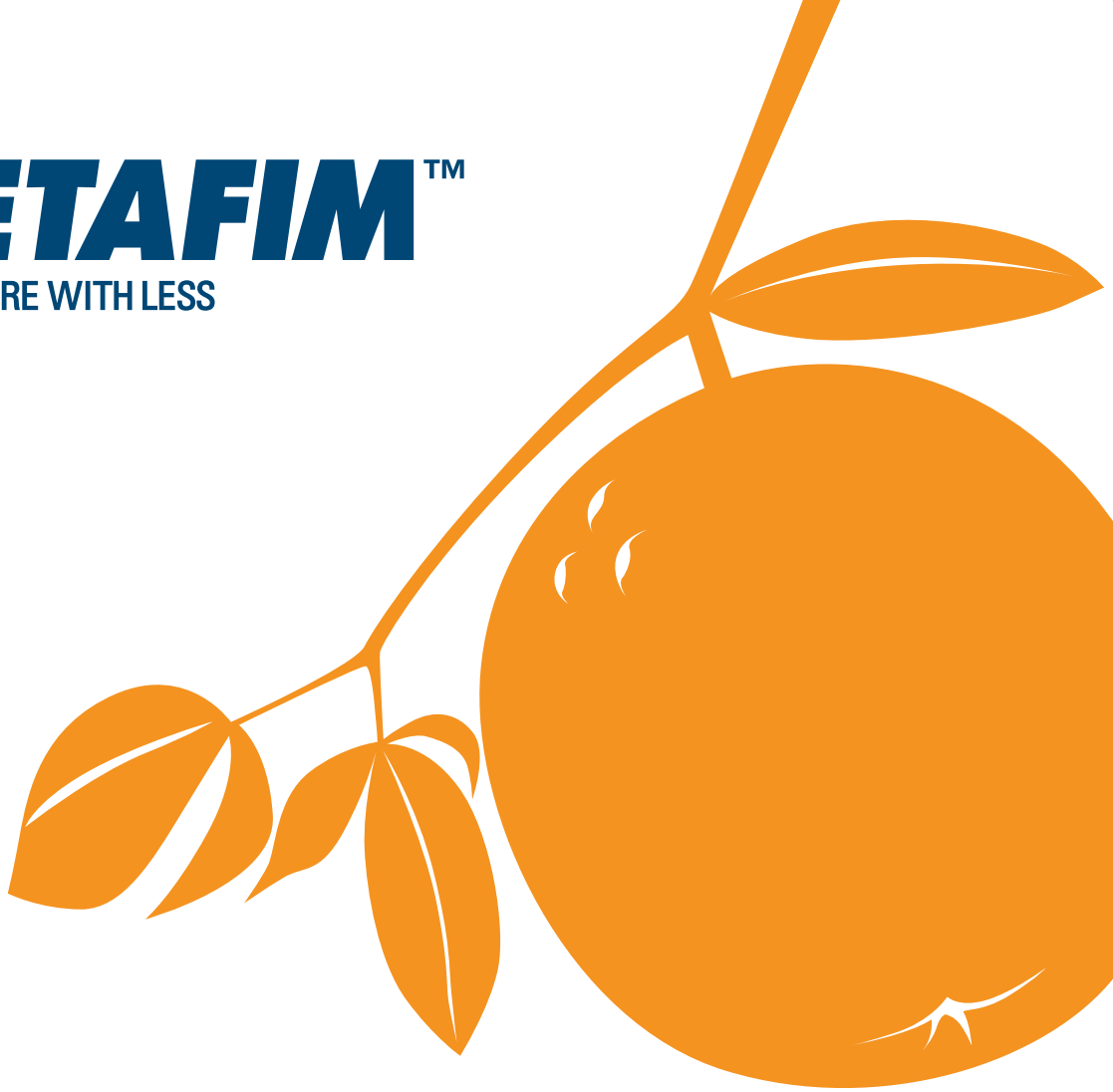

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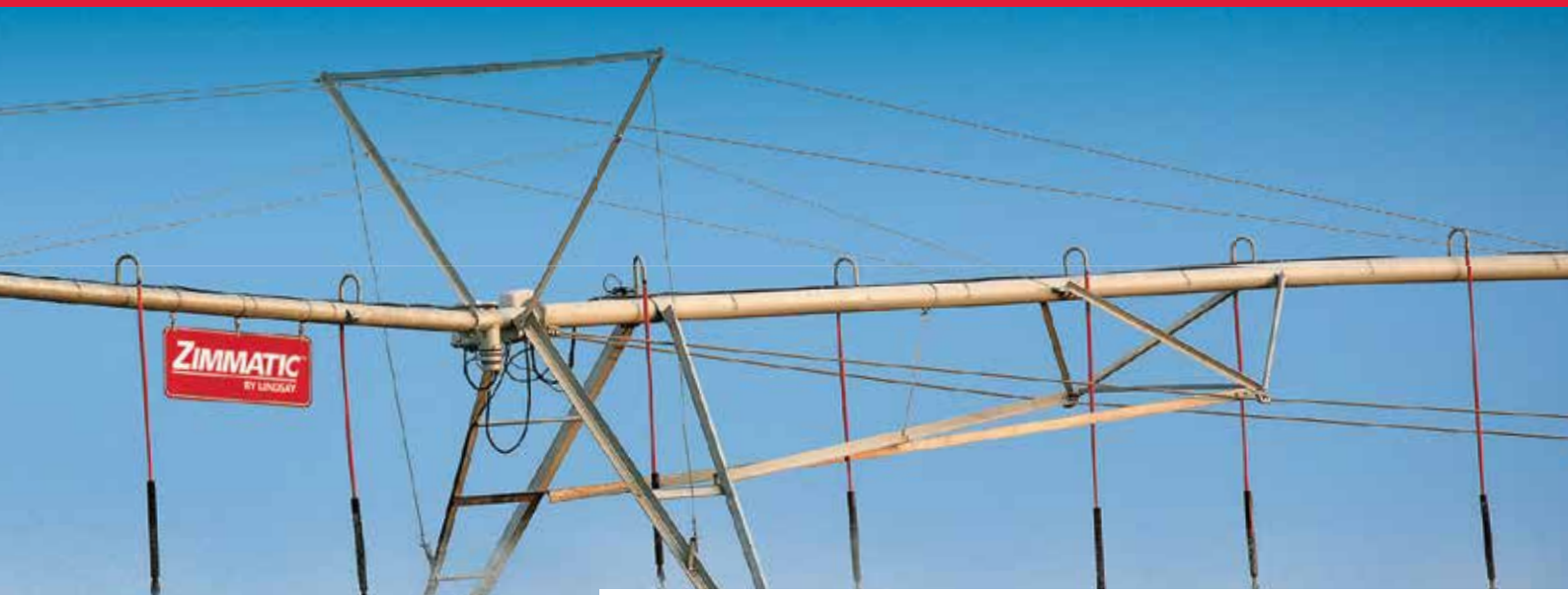

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Creating measurement solutions that matter

Ndwakhulu Mukhufhi, CEO,
National Metrology Institute of South Africa CEO

Africa as a continent is currently experiencing a globally unparalleled growth trajectory. This growth is both economic and population based, with UN Growth Projections estimating that the African population will double by 2050, to an estimated 2.4 billion people.To sustain a larger population Africa will have to increase its agricultural output in the face of extreme climate change, making the burden of food safety and food security even greater.

Recently there has been a greater demand for agricultural goods within the African market. This is not only due to growing population and economies, but through the growth of alternative markets and active marketing campaigns within Africa. Further growth is anticipated through the Continental Free Trade agreement, and with this an extra dimension to the complexity of unified analytical testing protocols and a well-established quality infrastructure.

The value of agricultural products is linked to the quality and safety of the product, which is established through measurements conducted by food testing laboratories. Similarly, for food producers to consider trade to be fair and benefit from it, measurements taken in different parts of the world need to be equivalent and mutually accepted. Important decisions, both economical and safety related, are based on these measurement results.

The National Metrology Institute of South Africa (NMISA) is an entity forming part of the South African technical (quality) infrastructure under the department of trade and industry (the dti), together with the National regulator for Compulsory Specifications (NRCS), the South African National Accreditation System (SANAS) and the South African Bureau of Standards (SABS). We exist to support South African testing and calibration laboratories in their quest to deliver internationally accepted and competitive measurement results.

NMISA is committed to support measurements in agricultural food production, through the provision of fit-for-purpose Africa relevant measurement solutions. In the field of pesticide residue testing, NMISA has developed customised proficiency tests that reflect local pesticide use on seasonal crops. These testing schemes enable laboratories to continuously assess the accuracy of their measurement results, which consequently provides the food producer with the required product quality assurance. (Read more about this service on page 32.)

Through NMISA's recently established reference materials production facility, food safety reference materials for mycotoxin and pesticide residue testing can now be produced locally, empowering analytical testing laboratories with the measurement tools required to not only ensure reliability of measurement results produced, but also to sustain the measurement capability established on the continent.

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EDS NOTE

GREG PENFOLD
greg@capemedia.co.za

Farmers are doing it for themselves

Spring ushered in the hope of unity among South African farmers, with the signing by the presidents of four organised agriculture bodies of a statement of intent on 2 September. The African Farmers' Association of South Africa (AFASA), TAU-SA, the National African Farmers' Union of South Africa (NAFU SA) and Agri SA have agreed to work together and develop a national agricultural development strategy.

They will operate under the umbrella name of the Agri Sector Unity Forum (ASUF) and are going to hold an indaba in November to work out the details of the plan. Calling for a complete redesign of the system, they said that current policies and programmes are bedevilled with problems so intricate and comprehensive as to be irreparable.

Critical factors to be addressed include post-settlement support for new farmers, export-led growth for black farmers and the creation of opportunities for women and youth. The establishment of trust among stakeholders is also vital.

Deputy President David Mabuza witnessed the signing and stated that government would support the initiative.

We applaud the ASUF initiative as being in the interests of everyone in the agricultural sector and will follow developments closely.

Greg Penfold

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Banking on land

Supporting agricultural sector growth and transformation

With the agricultural sector now sharply in focus following the ongoing national discussions around land reform, questions around structural and institutional readiness to support accelerated transformation in the sector have become increasingly relevant.

The responsibility to support accelerated transformation in the sector will undoubtedly have to be shared amongst many players, including, but not limited to government, the private sector as well as established commercial players. Successful agricultural development requires the establishment of value chains consisting of land, infrastructure, funding, skills and expertise, as well as access to a supply and distribution channel. Multiple role players will have to participate.

As a state-owned entity right in the middle of this responsibility matrix, the Land Bank is perfectly positioned to deliver the support the sector needs to transform and grow. The expectation of Land Bank is that it should add value to the transformation of the South African agricultural sector whilst remaining financially viable. Additionally, the Bank has a dual mandate — to serve the existing commercial agricultural sector as well as the emerging developmental sector. Its share of the agricultural debt market in South Africa is just less than a third and it remains one of the only options for small-scale black farmers.

There is a continuous tension between the Bank's mandate to transform the sector, which requires affordable financing to clients, who expose the Bank to relatively higher credit risk, on the one hand, and the expectations for sound and sustainable financial performance, on the other hand. Land Bank's current funding model requires it to raise funding in the commercial, capital and debt markets, with no direct funding

support from government apart from limited guarantees from time-to-time in support of its various funding initiatives. The cost of such funds is market-related and commercial investors have specific expectations in terms of returns, non-performing loan ratios, cost-to-income ratios and balance sheet ratios which limit the Bank's ability to respond to certain developmental and transformational aspects of its mandate. With the country one step closer to land transfers at scale, and hopefully thousands of black first-time beneficiaries wanting to productively work this land, due consideration on the Bank's current capital and funding structure must be given to ensure that it is fit-for-purpose to sustainably support accelerated transformation.

Opportunities amidst the Challenges…

Despite the challenges, Land Bank has made significant progress over the short-term in implementing a strategy that gives effect to national imperatives for inclusive growth in the agricultural sector. It has also worked to shore up funding in support of these transformative initiatives while establishing and maintaining the highest standards of corporate governance, and ensuring that it has a competent and committed organisational structure to deliver on this transformation mandate.

Over the past three years, the Bank has diligently diversified its sources of funding in order to continue supporting agricultural sector growth and transformation. In the last year alone, it has managed to raise around R3-billion in funding from international development finance institutions such as The World Bank, The European Investment Bank and the German KFW Development Bank. This is in addition to growing support from local investors. All of this has been secured on the back of the Bank's clean governance record and commitment to sound banking principles. These lines of funding are mainly tapped into to finance the emerging farmer sector.

Continued positive feedback from investors is as a result of practical initiatives including the implementation of a revised Code of Conduct and Code of Ethics policies; the adoption of a Politically Exposed Persons' Policy; as well as enhancements to its Domestic Medium Term Note Programme to improve transparency, provide additional investor protection mechanisms and raise investor confidence in general.

Furthermore, the Bank has exponentially increased the transformation component of its gross loan book since 2012 from a very low base in to about 12% currently (a 440% increase since 2012). Its intention over the next 3-5 years is to increase the share of transformational transactions to 30% of its total loan book or approximately R15-billion on a sustainable basis.

But how does this progress translate practically for marginalised groups wanting to access and excel in the agricultural sector? Land Bank currently supports around 1,500 black farmers through its direct network. Of these, around 250 are female and just over 130 are under the age of 35. The Bank has provided around R76-million in interest rate subsidies across the board in the last year to help ease the cost of funding challenge that many new entrants to the sector face. To mitigate against the impact of a lingering drought,

the Bank has disbursed almost R400-million in loans to farmers over the last three years.

Even with this progress, the pace of transformation is admittedly still slow. In order to accelerate transformation and inclusivity of the sector, there could, with government's willingness and financial ability, be opportunities to provide further funding for farmers through more blended lines of funding – a mix of state-sponsored grant funding and loans from development finance institutions such as Land Bank. The Bank has also taken the initiative to facilitate greater collaboration with different stakeholders in direct response to an often valid criticism of a lack of cooperation and coordination between players to drive development impact. For every R100-million in grant funding that the Bank receives, it can extend up to R800-million in funding at a subsidised interest cost of the prime lending rate less 2% over a five year loan term.

The reality of the current land debate is such that the capacity of institutions set up to support transformation and inclusive growth in the economy, and specifically the agricultural sector, needs to be aligned to the expectations that will ultimately come from the resolutions to be taken.

In preparing for accelerated land reform and a more inclusive sector, Land Bank will be focussing on developing comprehensive client value propositions across segments that more closely align its development mandate and provide real solutions to the challenges new entrants to the sector face. This, together with an unwavering commitment to corporate governance and greater collaboration will hopefully instil greater confidence that the Bank remains best placed to support agricultural sector growth and transformation.

Bennie van Rooy, Chief Financial Officer, Land and Agricultural Development Bank of South Africa (Land Bank).

Conversations that count

Agriculture House is committed to practical, inclusive solutions for emerging farmers

Agriculture House directors Vusi Madonsela, Rhonnie Manana and Sifiso Myeni

The land reform and redistribution conversations happening in South Africa are critical to establishing a workable solution to an emotive issue. The current noise resonates around those defending their right to land; those equally arguing for its expropriation without compensation and redistribution, and those wanting the cohesion that evolves from working together.

"Destructive statements that South Africa is the next Zimbabwe emanate from people not listening to president Cyril Ramaphosa's comments on the issue. He has consistently stated land expropriation will be done mindfully of the economy, jobs, food security and within legal ambit," Agriculture House CEO Sifiso Myeni says.

The solution to land reform lies in stakeholders thrashing out the issues until they discover the way forward, because South Africa cannot have pockets of highly prosperous land ownerships amid dire poverty.

There are case studies that we can all learn from, where commercial farmers are working with local communities and everybody benefits from the proceeds of the business.

Currently, primary agriculture contributes an estimated 3% to South Africa's gross domestic product (GDP), with the figure slightly higher when agro-processing industries are included in the data. However, despite attempts to encourage new entrants, the gap between commercial and emerging farmers is widening as the latter struggle to gain a significant toehold.

Myeni says emerging farmers face challenges relating to agrologistics and production infrastructure e.g. the lack of silos means no grain storage and a limited time to handle produce after harvest, access to capital with weak balance sheets, and access to markets where small farmers cultivating a few hectares must adhere to costly global compliances.

"This is where the government should assist emerging farmers in breaking the cycle of poverty," he says.

Equally critical within the land debate is ownership, specifically the right to title deeds, as when black farmers do not own the land they are farming, they cannot offer financial institutions the security required to develop and enhance their commercial prosperity.

In KwaZulu-Natal this issue speaks directly to the Ingonyama Trust Act—legislation adopted ahead of the 1994 general election that has placed all the land holdings previously administered by the KwaZulu government into a trust "for the benefit, material welfare and social well-being of the members of the tribes and communities living on the land".

"The main issue with land should be about how it benefits the people living on it. This means if the situation is not currently favouring development for those people, then the conversations about how Ingonyama land is used need to take place," says Agriculture House senior project implementation specialist, Vusi Madonsela.

Agriculture House senior risk and credit analyst Rhonnie Manana says resolving the land issue means unlocking the opportunities for economic activities and development. Lack of ownership and clarity becomes a barrier to economic growth, as has happened with a silo project in Umzimkhulu. Despite grant funding having been secured from the Department of Trade and Industry to construct the silos and thus boost agribusiness in the region, debate around the land ownership has caused delays.

"Land has the ability to address some of government's problems and provide meaningful economic participation.

Looking ahead, Madonsela says South Africa's agricultural landscape should reflect the optimal use of available productive land to the benefit of the country and all its citizens. The KZN provincial government is currently driving programmes such as Raset which is aimed at contributing towards economic transformation – and if those initiatives are effectively implemented, they can become the solid foundation for a different agribusiness scenario in the country.

A diverse portfolio

Established in 2007 as a specialist agribusiness development company, the wholly black-owned Agriculture House has nine experienced managing specialists in various agricultural specialisations. Essentially, it is among a handful of specialist agribusiness organisations working on closing the gap between commercial farming and the emerging agriculture sector.

Aiming to become the trusted centre for knowledge in the agribusiness value chain development, the company has seven business units—the holding company, farms, agro-logistics, food distribution, trading services, information and communications technology (ICT) and consulting services – and provides clients with quality products and reliable, practical solutions.

The holding company invests and provides support to the group, while the farm division produces on company-owned and leased farms. The agro-logistics unit collects and distributes raw and processed agricultural products on behalf of the group and customers. Food distribution processes and packages agricultural commodities, and trading services sources various agricultural commodities from producers and supplies into various markets.

Technological support for the group as a whole is provided by the ICT unit, which also develops tailored software solutions for clients, such as Agri Smart Pro. Consulting services provides technical expertise in various agribusiness development fields and in the value chains such as grain and oil seeds handling, fresh produce, livestock, poultry and sugarcane.

Among the company's clients are the Old Mutual Masisizane Fund, the National Health Education and Allied Workers Union (Nehawu) Investment Holdings, Sheepcor South Africa and Sheepcor KwaZulu-Natal, Twelve Apostle Church in Christ, Durban International Convention Centre, King Fresh Wholesalers, Pick n Pay, Spar Group, Enterprise Ilembe Economic Development Agency and eThekwini Municipality.

Leadership on the path forward

Madonsela says in a diverse society like South Africa, a leadership vacuum opens opportunities for problems to fester, but solid leadership in government dispels political rhetoric to detail the path forward.

This prevents self-enrichment opportunities. Agriculture House facilitates emerging farmers, believing investment into an initiative cannot be a once-off approach. Myeni explains that this scenario carries the opportunity for meaningful public-private partnerships driven by deliberate attempts to shift the agricultural landscape.

The company considers three methodologies when assisting clients, taking into account the existing business and managerial skills. The first is an operator model where Agriculture House runs the farm and transfers skills before exiting the venture; the second is a senior understudy model where the company does not deploy the full structure but places an experienced manager on-site to transfer skills to an understudy before exiting the venture; and the third recognises a high competency on the farm, but the requirement for on-the-job training for additional skills development. Some projects demand a combination of the three models.

The Stanger-based Essienna Farm project is an Agriculture House initiative where the 18.5

hectare farm is currently being converted from sugarcane into a fully irrigated vegetable farm. Plans include growing and packaging spinach, tomatoes, cabbage and various peppers and will create 43 jobs.

Madonsela says that emerging farmers are struggling as a result of a lack of product diversification and the need to access technical information and skills development.

Furthermore, their participation is restricted to primary agriculture where margins are narrow.

The higher the farmer's position in the value chain, the higher the profits—supplying milk in bulk is less profitable than bottling the milk, which in turn is less profitable than making cheese.

"Agriculture is a numbers game, but emerging farmers do not have access to the land and capital required to produce in scale. Coupled with those restrictions is a lack of business acumen," Myeni says.

Manana says there are sound government programmes aimed at assisting small-scale farmers to boost their projects, but implementation is problematic and changes in political administration merely reshuffle and repackage existing programmes in different configurations without following through on the outcomes.

"The government must devote time to establishing where the difficulties lie in implementing programmes—essentially speaking to the people on the ground rather than those sitting remotely in offices—and then contribute meaningfully to assisting those programmes to take hold. Partnerships, including mentorships from industrial bodies that can train new entrants to the market, are critical to success," he says, reflecting that merely throwing money at the capital-intensive elements without transferring skills does not solve the problem.

Added to that scenario is the dedication to follow through with the monitoring and evaluation of various programmes. "The government cannot have a five-year programme and only send through evaluators in year six and still expect faultless accountability," he concludes.

Nicola Jenvey

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Between a rock and a hard place

Where do we go from here?

Agriculture in South Africa is of crucial importance because it provides food and fibre for the country's population. It is also of strategic importance because it ensures that the country will not be overly dependent on imported food. This latter option is unreliable as it is dependent on so many variables, including the world's weather, political upheavals, the integrity of overseas producers and exporters, and of course the price. These factors are beyond the control of the food importer.

This is one industry whose product is a daily necessity for SA's population. In addition agricultural products earn vital foreign exchange. In 2015, SA's agricultural value added was R84 billion, which was 2% of the country's GDP. But this R84 billion translated into R1.65 trillion once it was put through the entire supply chain, including retail, wholesale, restaurants, transport, logistics and financing.

Despite the social and strategic importance of agriculture, politicians bandy about statements regarding expropriation of land without compensation (they seem to prefer agricultural land, and productive land at that!), while "Kill the Boer" is loudly proclaimed at public meetings. In December last year President Ramaphosa declared clearly and unambiguously that "we will take the land". These politicians seem impervious to the harm they are doing to South Africa. But maybe they are not impervious – perhaps they think holding on to power at the next election is more important.

Ideologically-driven politics has no place in a modern economy. If economic principles are not taken into consideration, we are on a path to famine.

The principles of 2005

In 2005, TAU SA presented a discussion document to government where the future of agriculture was mapped out using sound economic principles. The intention was that this document could trigger a process where prudent principles would be utilised across the whole agricultural chain so that both local and overseas investors would have confidence in SA's future, and where the ANC's concerns about land for their beneficiaries could be addressed over a period of eight years. Needless to say nothing came of our proposals.

Irrespective of the government in power, agriculture should be conducted based on an immutable principle – the sustainability of food production for the whole population. Certain role players in authority have ignored this tried and tested principle, throwing it overboard to be replaced by policies based on political correctness.

Economic forces operate relentlessly and if the game is not played correctly, the adverse effects will affect everyone in South Africa. Examples of this abound, especially in Africa, and more especially in Zimbabwe, our neighbour.

No debate

There should be no debate about food security, no tinkering with something that works. If South Africa's 35 000 odd commercial farmers successfully provide food for the country's population of 57 million, and if there is no other group that can do this, then there should be no debate about "reforming" this formula. President Ramaphosa talks about land for "our people" yet the latest SA Institute of Race Relations survey indicates that only one percent of the population believes that land reform should be a priority of the government. People want jobs and housing and service delivery and good education for their children. They want what most people in the world want. This one percent figure is exactly the same percentage obtained by an Afro barometer survey conducted among 50 000 respondents in 36 African countries. Sixty-eight percent of South Africa's population is already urbanised, and most of these people don't want a farm or even a piece of ground.

We are sitting on a time bomb, not as a result of the "land question" but as a result of this "question" being converted into a vote getter for the next election. Unemployment and the failure of the government te create the much needed climate for job creation is the issue, so pandering to poor uneducated voters who are conned into believing that a "piece of land" will be the panacea for their problems is actually fraudulent.

Jobs are created by the private sector, yet the government does all in its power to frighten off investors. It is a strange anomaly. Some have said that it is the government's aim to keep the masses poor and struggling because if they become, as former President Jacob Zuma declared, "clever blacks", then they won't be fooled by the "piece of land" ruse.

Eyes of the world

The world is watching this expropriation threat with interest. On August 4, the New York Times ran a scathing piece on South Africa's deputy president David Mabuza. It was not flattering. The article outlined his rise to power. "He didn't become what he is because of his political

capability," said a senior ANC figure in Mpumalanga province. "It was because of money and manipulation, nothing else." The article outlines an alleged history of misspending, mismanagement, and his education department's cheating on exam results. The article goes on to characterise the general behaviour of the ANC as being fraught with nepotism, ineptness, corruption and a seeming disregard and even contempt for ordinary citizens.

The Wall Street Journal of August 6 asks whether President Ramaphosa is following the example of Venezuela and Zimbabwe. They pick apart the ANC's old chestnut of whites owning 87% of the land (who believes that story now?), and they say that "the ANC was founded as a revolutionary party, and the tragedy is that it won't let the revolution end". South African columnist Peter Bruce says Ramaphosa's investment envoys seeking R100 billion overseas "might as well stay home".

He repeats what TAU SA has been saying for years: "there is simply no rational or workable alternative in an open economy to the sanctity of title". He goes on to say that "the ANC will not transform itself overnight into a delivery machine. It cannot. It is just too hopeless".

Criticism of the government is across the board, both overseas and locally. If the SA president doesn't listen to advice, then no one will listen to him when he goes cap in hand to the world's financial institutions. They might help but there will be a price to pay, and that price may be too harsh for South Africans already struggling to find even one meal a day. Mr Ramaphosa is between a rock and a hard place. He will have to choose. He can't please everybody.

TAU SA's objective remains to establish a harmonious, prosperous agricultural environment. For this we need confidence which will only be possible in a sound policy environment. Will agriculture prosper under these circumstances? We believe it will. But sanity must prevail.

Bennie van Zyl, CEO, TAU SA

Feed, tease and succeed

How to ensure a high ovulation rate in your ewes during mating

It is that time of the year again when sheep farmers start thinking about flushing ewes that will be put in with the rams during November. The success and profitability of sheep farming for wool as well as slaughter lamb production are largely determined by the percentage of marketable lambs. A high body mass at mating (static body mass) and an increase in body mass (dynamic body mass) of ewes during the mating period, ensure a high lambing and thus weaning percentage (weaned lambs per 100 ewes mated).

Prior to mating

From February to May maximum ovulation takes place. The highest conception rate and lambing percentage will be achieved during these months when the natural sexual activity of the flock is the highest.

For maximum conception of young ewes, they must reach a critical body mass of at least 70% of mature body mass on mating; whether they are 10 or 14 months old is of lesser importance.

Ewe lambs that experience nutritional stress during the first few months of their lives will have a lower ovulation rate and produce fewer lambs during their lifetime than ewe lambs that have received optimum nutrition.

To ensure maximum conception and a high lambing percentage, ewes must be in an excellent condition at mating, namely with a condition score of 3.5 on a scale of 1 (very thin) to 5 (over fat). For every extra kilogram increase with mating, a 1.5 to 2% increase in lambing percentage can be expected.

The function of flush feed to enhance ovulation rate

Three weeks before mating, ewes can be given flush feed that will cause a higher ovulation rate and thus lambing percentage as a result of the increase in feed intake (200 – 300 g/ewe/day) and mass.

To prevent resorption of the embryo, ewes should be given the same level of nutrition for at least three weeks after mating.

Flush feed has very little or no effect if it occurs longer than four weeks or shorter than two weeks before mating.

Flush feed increases the lambing percentage with 10 to 20%, provided the lambing percentage of the flock is not 20% higher than the average of the specific breed in a specific area.

The specific feed used as flush feed must contain protein, energy, minerals and trace minerals.

The most economical application of flush feed is to divide ewes according to condition, into two groups (good and thin condition) approximately six to eight weeks before mating and to adapt the nutritional level in such a way that both groups are in a good condition on mating.

Examples of flush feed supplements

- Molatek Master 20 at 250 to 350 g/ewe/day;
- Molatek Wool Sheep Lick 28 grain mix (50 kg Wool Sheep Lick mixed with 50 kg maize meal) at 300 to 400 g/ewe/day; or
- Mix Molatek Wool Master Concentrate 500 kg + 400 kg grain + 100 kg salt for a production lick and provide at 300 to 400 g/ewe/day.
- Epol Super Lamb and Ewe pellets at 300 to 500g/ewe/day.

The use of teaser rams to increase ovulation rate

For effective stimulation by teaser rams, ewes should have no contact with rams (this includes seeing, hearing and smelling the male animals), for at least 34 days, but preferably three months, before the mating period.

When mating takes place during the early summer months, it happens that only a small percentage of ewes are already in estrous cycle and only approximately 2% per day are in heat. The presence of rams stimulates the ewes that are not in cycle yet, which causes an increase in the secretion of follicle stimulating hormone, so that a large number of ewes will come into heat 16 days later.

Above-mentioned problem can be prevented by making use of 2 to 3% teaser rams. Teaser rams are placed with the ewes for nine days before the breeding rams are introduced. As there are 6 to 8% ewes in heat for 2 to 3% rams from the beginning, it prevents unnecessary fighting amongst rams. Also always use teaser rams with a high sexual drive.

Very important

Rams should be in a good condition two to three months before mating already, to ensure good testis development and sperm production. This will result in maximum conception and lambing percentage.

Dr Vlok Ferreira,
National Technical Manager Ruminants, Molatek, RCL Foods

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Country hospitality

How can farmers get tourism right? Agritourism SA's Jacqui Taylor has the answers.

I am asked many times why certain agritourism farmers are more successful than others. There are a number of reasons, but when farmers view agritourism as part of their overall farming business, then success is inevitable.

Agritourism on a working farm cannot be separated from the farmer in person. He or she is part of the marketing brand. Two farmers that immediately come to mind are Skeiding Guest Farm, owned by Neels and Anne-Lize Uys, and Louvain, owned by Morne and Jonita Jonker.

Skeiding Farm is near Heidelberg in the Western Cape. Guests are involved as far as possible in the working of the 1200 hectare farm, which includes the following variety of farming activities: ostriches, Merino sheep, Nguni cattle, canola, wheat, barley and peas. Guests get up early to join Neels in his daily farming activities, then come back to have a farm breakfast cooked by Anne-Lize. Neels grew up in that area, so he is a walking encyclopaedia of local information. Most of his visitors are from Europe, who want to learn about ostriches.

Morne and Jonita Jonker own several farms in the Upper Langkloof area (near Herold over the Outeniqua Mountains from George). They have seven different guest houses on three different farms that neighbour one another, namely Louvain, Jakobsdal and Ezeljacht. All are working farms, with ostriches, sheep, and so on.

Not only is Morne a marketerfarmer, but he is also a highly successful marketer andn entrepreneur. He worked for many years in the Saag Jonker (his father) family ostrich business in Oudtshoorn. Morne and Jonita are superb hosts. They understand very well that people relate to people, as well as the value of storytelling and the history of the farm itself.

On Louvain there are hiking trails (including a trail for women only), mountain biking trials, 4 x 4 trails and off-road motorbike trails. There is also the most magnificent Bishop Grey church built in 1853, which doubles as a wedding venue. In total the Jonkets have over 80 beds. Morne and Jonita focus on the adventure tourist, but also those city-weary people who seek peace and solitude. Morne also offers microlight flights over the area, which is a wonderful way to gain a perspective of the area and of the farms. Most of their market is domestic.

Both Neels and Morne's farms are well signposted and have location pins. This is very important as guests frequently cannot find the farms.

Ensuring that those responsible for taking bookings are always available via cell phone is just as important. Visitors frequently make plans at the last minute and cannot wait for days for a response from the farmer. A website is not a necessity, as they are expensive and need to be updated regularly. Social media, YouTube and blogs are a very successful way to attract tourists/visitors, as they are inexpensive and an easy way to keep visitors updated. Ensure that the visitor gives feedback, for example, about what they enjoyed and what could be improved on.

The successful agritourism farmer is a person who focuses on networking, innovation, marketing, diversification and adding value to his existing farm produce. Farmers must tell their visitors about the security measures they have put in place, so that people feel safe. Communication is key to any successful agritourism farming operation.

To begin with, farmers should assess his their assets on the farm. Start with what the farm currently has: climate, land usage, improvements, attractions, activities, owner/manager strengths, goals and resources. Farmers must decide who they want as their target market and focus on developing that market.

Another question I frequently am asked by farmers starting their agritourism business relates to funding. I recommend that farmers look at the Land Bank website and see what type of funding options they offer. Visitors to farms are not expecting a fancy hotel. Visitors are seeking new experiences that are real, not man-made theme parks.

In closing, agritourism is a serious business, not a side-line operation. Time, effort and an understanding of the market will ensure success.

www.agritourismsouthafrica.com

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The National Institute for Occupational Health (NIOH) is a division of the National Health Laboratory Service (NHLS). It provides Occupational and Environmental Health and Safety (OEHS) services across the public and private sectors of the economy including the informal economy. This is primarily to improve and promote workers' health and safety but very importantly to be a consistent catalyst for a mind-set change towards greater prevention in OEHS. The institute achieves this through:

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The NIOH provides OEHS services to its target population. These include advisory services on OEHS policy development, medical surveillance, HIV and TB workplace programmes, biological monitoring, prevention and hazard control, research protocol development and other areas. The advisory services are particularly useful for small and medium enterprises, but are available to large enterprises and government agencies as well. The NIOH conducts autopsies for deceased current and former mineworkers in terms of the Occupational Disease in Mines and Works Act (ODMWA), which provides compensation for occupational lung diseases. The NIOH houses the national occupational health library and provides information on request.

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Rapid recovery expected

Securing competitive advantage and advancing investment opportunities in agriculture

South African agriculture still offers many investment opportunities despite headwinds caused by drought in parts of the country and policy uncertainty.

A shock 2.2% GDP decline in the year's first quarter was largely the result of agriculture dipping by almost 25%. But the sector is expected to recover rapidly as financing, innovation and expansion kick in during the remainder of the year.

Nico Groenewald, Head of Agribusiness at Standard Bank, says agriculture's decline is no reason for alarm, as it was largely due to the sector coming off a stellar 2017 fourth quarter. In Q4, it was the leading light of the economy after reaching 37.5%.

The longer-term trend also paints a promising picture. After contracting for every quarter in 2015 and 2016 due to southern Africa's drought conditions, the agriculture, forestry and fishing industry actually expanded for four consecutive quarters prior to the Q1 data.

While land policy remains contentious, consumer and business confidence is rising. Combined with population growth and urban expansion, this is driving the need for a vibrant agriculture sector. In turn, says Mr Groenewald, sectors higher up the value chain, such as agri-processing, fruit packing and aquaculture, are drawing investor attention – both from within the continent and abroad.

Agriculture's contribution to South Africa's economy has declined by almost 8% from the 1960s onwards. Nevertheless, it's becoming more crucial to the national economy's health, and it's also an important source of employment in rural communities for unskilled and seasonal workers. Data from AgriSA shows that the number of people working in agriculture has increased by 29% from 624 000 in 2011 to 881 000 in 2016.

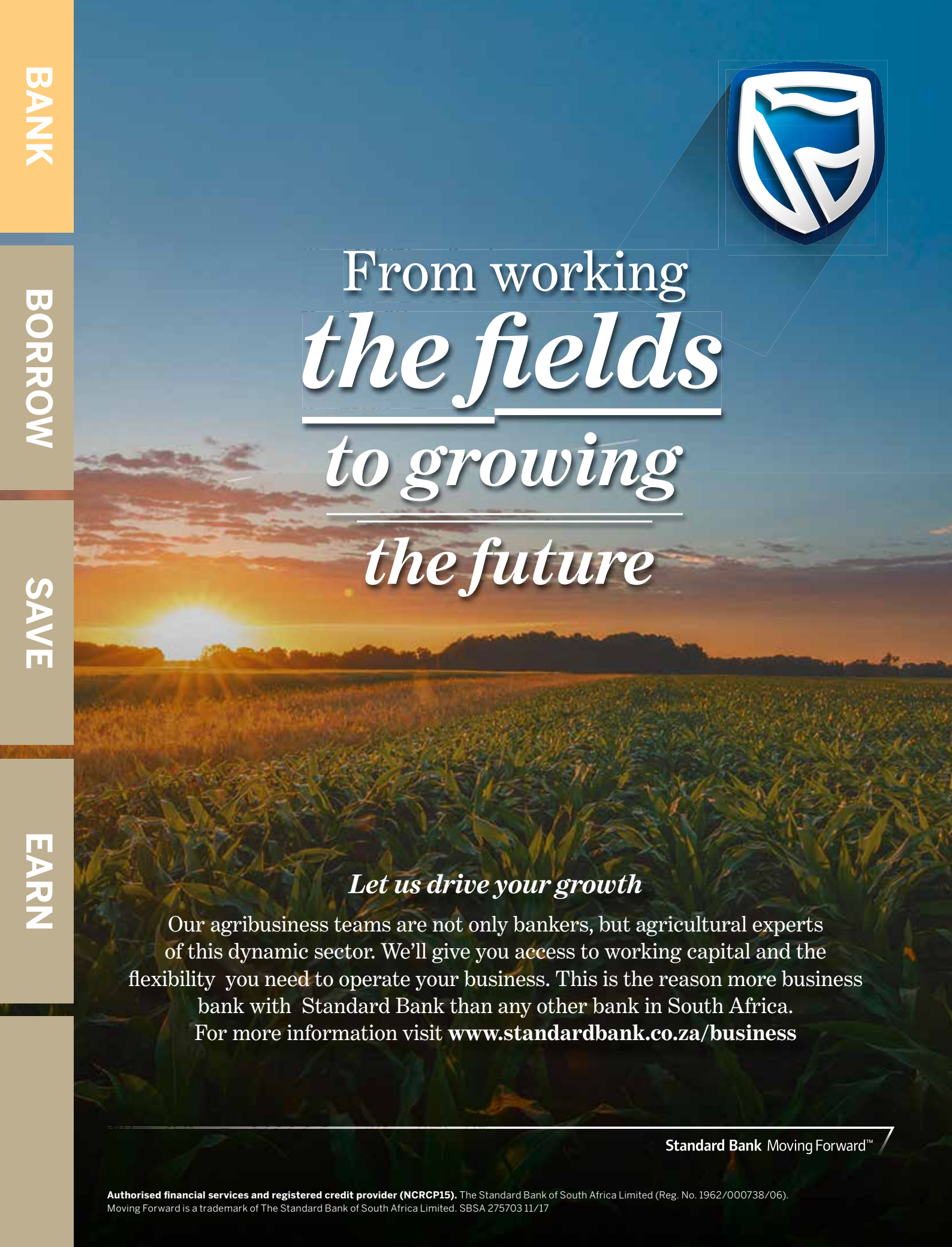
"More needs to happen at commercial and government level for this to be realised," says Mr Groenewald. "For instance, market-based approaches through a coordinated effort by all stakeholders, including farmers, government, civil society and the private sector need to be leveraged more."

Scaling the transformation through finance, infrastructure, institutions and monitoring is the recipe for success. For instance, policies that promote digital and financial inclusion will drive the growth of rural entrepreneurs and rural economies.

"While good farm management will help keep pace with digital challenges and opportunities, policy support remains crucial for agriculture to thrive, including those that encompass infrastructure development, energy provision, and improved educational facilities."

However, under-investment in agricultural research by many countries in sub-Saharan Africa is a concern. South Africa, for instance, allocates less than 1% of its national budget to agriculture, negatively impacting research and development.

"South African agriculture certainly faces challenges, but it also has many opportunities given our well-established trade links with Europe and new markets that are opening in the Far East," says Mr Groenewald. "Being one of the major food producers in Africa also puts us in an excellent position to capitalise on the growing population and rapidly expanding economies on the rest of the continent."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Calculated risk

The risk of frost, hail and excessive rain for wheat production in South Africa

The greatest risk for grain crops in South Africa is the lack of rainfall and the prevalence of drought. This is also true for dryland wheat production. A large part of wheat production in South Africa is, however, irrigated.

There are other climate risks that increase the production risk of wheat substantially and that contribute to the precariousness of production and profitability. Climate risks for wheat production differ from one geographical area to the next. For example, in the Western Cape excessive or untimely rain is the largest risk factor after drought. On the other hand, frost damage and hail are the largest risks in other production areas in South Africa that are unrelated to drought.

What are the ideal temperatures for wheat production?

Wheat is very sensitive to temperature differences during its various growth stages. Moderate to cool and even cold conditions are needed in the vegetative growth state, but temperatures should not drop below zero (this includes the ambient temperature or wind-chill factor) in the reproductive stages. Moderate to warm temperatures are essential in the reproductive stages, but too hot and dry weather could cause damage.

The risk of frost, hail and excessive rainfall

Temperatures in the winter rainfall areas in South Africa are in general favourable as they meet the temperature needs of wheat. However, it is a different story in the central and northern parts of South Africa where a winter crop is "forced" to grow and produce in a summer rainfall area. Water supply is manipulated through irrigation or stored ground water because normal rainfall (volume and timing) is not sufficient for sustainable production under dryland conditions. It is, however, very difficult to manage or manipulate temperatures. Cultivars and planting dates can be used to a certain degree, but it remains a huge risk to not suffer temperature-related damage during one developmental stage or another.

Frost

The risks of frost and low temperatures are high when winter crops and specifically wheat are in the reproductive stage. Warmer temperatures in winter and spring can also cause the developmental process to accelerate and cause damage earlier during so-called cold snaps. Most frost damage happens in the warmer regions like the irrigation areas of the Northern Cape (Lower Orange River, as well as Vaalharts), Northwest, Limpopo and Gauteng. The cooler parts of the Eastern Free State experiences less frost damage because growth and development are slowed by lower temperatures in winter and spring.

An analysis was done to determine the last occurrence of temperatures below 0°C for Douglas in the Lower Orange River (where frost damage occurs regularly). The last frost dates from the year 2000 ranged between 27 August 2003 to 10 October 2008. The average last day of frost or temperatures below 0°C was more or less on day 260, or 17 September.

Hail

The occurence of hail in the winter rainfall area of the Western Cape is very low and hail damage rarely happens. In the wheat-producing areas of the summer rainfall region the risk is much higher. Hail is most likely to occur in the summer rainfall area during the first part of summer when the wheat is in its reproductive to ripening stage. In parts of the country like the Eastern Free State, the average number of hail days is three to five days and these occur mainly from October to December. In the Lower Orange River region, hail occurs roughly one to three days a year, also mainly during the first part of summer. The average hail occurence in other important wheat irrigation regions around Brits/Thabazimbi, as well as Groblersdal is also some three days a year. Thus, the risk of hail damage to wheat is significant as the critical development stages when large-scale damage is caused coincides with the start of the rainy season and is accompanied by hail in these areas.

Excessive rain

As the quality of wheat quickly deteriorates with rain during harvest time, it is an important risk to keep in mind. Even though the Western Cape is mainly a winter rainfall region when the wheat cannot sustain damage yet, the risk of rain during harvesting time is still huge. For a town like Moorreesburg in the Swartland, more than 20mm of rain occurredfell 35 times since 1950 and during November 21 times

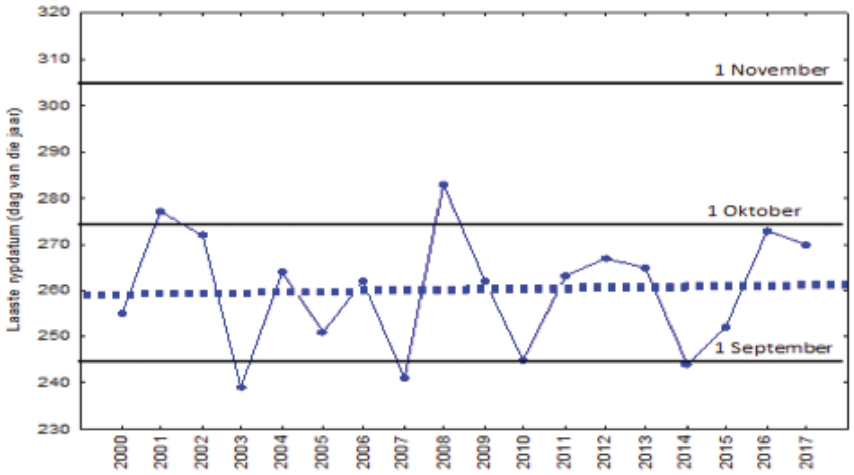

Figure: Last dates when temperatures dropped below zero (0°C) since 2000 for Douglas in the Northern Cape.

where more than 20mm were recorded. In more than 13% of years during this period more than 50mm occurred in October and could have caused damage.

The risk in the Southern Cape is even bigger. Since 1950, during 57 of the 67 years (85%) more than 20mm rain fell in October in Swellendam and in the 49 years (73%) in November where more than 20mm occurred. Rain of 50mm or more occurred in 46% of years during October and 45% of years during November.

The risk of excessive rain is also great in the Eastern Free State and the irrigation regions of Mpumalanga where harvesting time coincides with the peak rainfall season. In this instance, the Lower Orange River regions have an advantage in that less rain falls traditionally during harvesting time and these regions are well-known for their good quality wheat.

In summary

The risk to wheat production is high in most areas, whether it be from drought, hail, frost or excessive rain. Unfortunately, there are few alternatives for wheat and it remains one of the few crops that are produced in winter and for which a market exists. It is therefore debatable whether the commodity price and yield is sustainable over the long term when compared to the risk. Dryland wheat production in the Free State has disappeared almost completely as it is not sustainable.

When planting wheat, it is essential that excellent management regulations are in place to plant the right cultivar at the right time. At present, insurers are only willing to offer hail and in some instances frost insurance and the producer must carry the rest of the risks himself or make provision for it.

Johan van den Berg, Santam Agriculture

Protecting potatoes

The Agricultural Research Council Transforms The Potato Industry

The Agricultural Research Council is faced with a mammoth task to not only safeguard national food production of South Africa through research and human capacity development but also play a vital role in the transformation of the potato industry. One of the ARC's key areas of responsibility is to safeguard the national food basket and to provide South Africa with high quality and nutritious food to combat hunger and poverty.

Over the years the ARC has invested in research and technologies to improve one of the most consumed crops, potatoes, a staple in most South African homes. Since 1960 under the Department of Agriculture the ARC developed its first breeding programme which formed the cornerstone of the potato industry then and led to the mass production of potatoes and contributed significantly to the development of the more than a seven billion Rand farm gate value potato industry we know today.

The ARC boasts the initiation and support of the establishment of a number of well-functioned private laboratories over the years that today provide the potato industry with clean planting material, in addition to its own laboratory and gene bank. The establishment of these laboratories is another feather in the cap of the organisation that is in the DNA of the agricultural sector for over 100 years, and its commitment to providing the potato industry with quality and heathy material that combat malnutrition and hunger.

As part of its development and nurturing of the growth programme of the potato industry in South Africa the ARC has, since the 1980s to date, been providing requisite training in mass propagation. As a neutral entity and an organ of state, the organisation is the custodian of the gene bank which is a national asset that is also mandated with alleviating the risk of food insecurity for the nation and the well-being of the industry.

All the successes enjoyed by the ARC and the potato industry has, at times, witnessed some setbacks which threatened their vibrancy. Despite all the challenges that the industry sometimes face the ARC steadfastly continues to be the Number One and go-to solution provider to their daily programme through its highly skilled and trained workforce and world-class technologies. The ARC consistently continues to use technology to assist both emerging and commercial farmers to mass propagate the production of planting material and grow their profits. Some 10 000 smallholder farmers are also enjoying growth under the tutelage of the ARC in various ways.

Changing climatic conditions continue to plague the potato industry leading to ongoing challenges such as reduction in productivity potential and increased pests and disease occurrence. The ARC through its expertise, is best placed to provide climate-smart solutions to the industry and safeguard the national food basket and

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the potato industry by developing high yielding drought - and pest resistant crops. In this regard the ARC recently released two new potato cultivars into the industry with another two to be released in 2018.

ARC President and CEO Dr Shadrack Moephuli is confident of the future of the potato industry and the role of the ARC. The ARC together with its clients will continue to ensure that the potato varieties maintained by the ARC remain true to type. As a result of recent potato variety mixing in the industry the ARC is currently doing an ongoing investigation to its own laboratory and gene bank.

The Agricultural Research Council Tackles the Late Blight

Pretoria: The Agricultural Research Council (ARC) contributes to the South African potato industry with innovative, environmental friendly research, technology development, technology transfer and scientific solutions to improve potato production in the country in support of a sustainable industry. The ARC also conducts research on a number of serious potato pests and diseases, which have significant impact on the industry. If not timeously prevented and controlled these pests and diseases could have devastating effects on the industry.

The ARC hosts the only active potato breeding programme in Africa (with the exception of a few University-based initiatives) with the focus on high yielding varieties with good skin finish and resistance to heat, drought, late blight and common scab. Late blight has been a challenge for breeders since the Irish Famine in 1845 to 1849. Even with all the new fungicides outbreaks often cause huge losses in the potato industry. This is also the most severe disease that restricts good yields for small scale farmers that cannot afford the modern fungicides. The ARC is at the forefront of research on late blight with international collaborations with the Swedish University of Agricultural Sciences and Rostoch University in Germany. This joint research focuses on marker-based selection breeding for drought and late blight resistance. Other aspects the ARC potato research is focused on is the use of resistance inducing chemicals or extracts to increase natural resistance of potatoes to late blight. This is intended to reduce production costs to small-scale potato producers in South Africa.

What is late blight and how does it affect the potato industry? Late blight of potatoes is caused by the fungus-like oomycete pathogen Phytophthora infestans. It can infect and destroy the leaves, stems, fruits, and tubers of potato plants and has devastating effects on the yields.

The ARC is key in the development of new cultivars that are adapted to the South African climate (since 1960) and the breeding material and cultivars are maintained in the National Cultivar Collection since the 1980's. In addition to the release of varieties the ARC developed technology that will allow mass production of its new varieties into the industry and the ARC was key in the development of tissue culture procedures to assist the rapid multiplication of potato seed. For the potato industry, the ARC is rightly regarded as the only neutral body that can service the industry in the supply of mother plants for the production of clean seed. The ARC remains committed to provide excellent services to the industry and strives to improve systems through continued research in the improvement of production technologies and efficiencies.

ARC President and CEO added, "Potato is an important crop in South Africa and considered to be one of the most highly enjoyed and multi-purpose staple foods for many households from all background, and plays a major role in food security."

Over the years the ARC has also established itself as the benchmark with regards to common scab, several fungal and bacterial diseases of potato, potato tuber moth, potato leaf miner and Tuta absuluta and remains committed to providing excellent services to the industry and strives to improve agricultural systems through continued research in the improvement of production technologies and efficiencies.

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Crop protection is a vital part of growing quality and ensuring good yields in any crop. It is necessary to provide farmers with products, experience and insights into solving the challenges faced in crop protection and plant health management. These insights would typically include the "right product or program" applied with the "right equipment" at the "right timing" considering the cost to benefit ratio at all times.

The optimal performance of agricultural inputs relies as much on precision decision making as on quality products. The average grain farmer makes around 40 key decisions during any crop-growing season. These would typically include decisions around crop rotation, seed variety selections, crop nutrient requirements, equipment use or maintenance, financial modelling and budgets, cost benefit analysis, labour relations, application of crop protection products, which crop chemicals to use and many more. Wrong and uninformed decisions can be disastrous. A successful farmer typically surrounds themselves with partners that assist in making these decisions.

At Villa, we are proud to work on a programme called "Answer Plot®", a collection of trial sites across the country where we aim to demonstrate our solutions to local weed, pests or disease problems. In collaboration with our USA partner, Winfield United, we aim to bring up-to-date innovation and technology, training and education to our customers using these Answer Plots®.

Answer Plot® sessions are unique in the industry. Think of these as living laboratories, where we plant and test different crop varieties and then evaluate crop protection and plant nutrition technologies by collecting a multitude of data each year. The Answer Plot® team gathers data and insights to help enhance agronomic expertise and provide credible facts for farmers using similar conditions.

An Answer Plot® event is designed around technology and innovation themes.

Providing even more value, Answer Plot® events are held at different points throughout the growing season to serve as a "show and tell" experience for retailers and farmers. Whether it's digging and analysing roots, looking for insects or diseases, or standing back and noticing an overall different appearance between two treatments, these demonstrations provide an outdoor classroom opportunity to gain your trust with Villa and Winfield United products and insights.

More than 800 farmers, agronomists, consultants and partners attended Answer Plot® events during the previous summer season in both the Southern and the Northern region. In the Southern region, we hosted a session at Oakdale Landbouskool in Riversdal, followed by a session at Boland Landbouskool in the Swartland on wheat, barley and canola. In the Northern regions of the country we hosted Answer Plot® events in the Winterton area in the Kwa-Zulu Natal, followed by an Answer Plot® event in the Eastern Highveld in Morgenzon and finally a session in Lichtenburg in the North West focussing on maize and soybeans.

These events create opportunities for farmers and agents to discuss relevant issues facing farming. The Villa Answer plot™ program provided the platform to gain, share and GROW KNOWLEDGE.

Villa's next Answer Plot® models will be present at this year's Swartland Show in Moorreesburg and the Cape area's first Nampo Show in Bredasdorp in September.

This year we have a few station topics to choose from at the Cape Answer Plot® events.

- Station 1: Fungicides
- Station 2: Herbicides – Mode of Action
- Station 3: Application technology
- Station 4: Plant nutrition concepts
- Station 5: Post emergence weed management and the effect of water quality

If you are interested in attending, please contact events@villacrop.co.za to find out more or to register.
Marius Boshoff, National Marketing Manager, Villa Crop Protection

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PROUDLY SOUTH AFRICAN

NMISA support for agricultural exports:
South African tailored proficiency testing scheme for pesticides in fruit.

Agricultural products sold for human or animal consumption are governed by local and international legislation to protect the consumer. Maximum residue levels (MRLs) are determined to ensure that when testing for pesticides and other harmful residues, levels are met and not exceeded. These MRLs are continuously adjusted as new scientific knowledge relating to the toxicological implications of chemicals are obtained. Laboratories need to remain up-to-date with these changes to ensure that routine measurements remain relevant.

Residue levels are especially critical when importing and exporting agricultural products. Failure to comply to MRLs when exporting can cause the withdrawal or recall of an entire produce consignment, which can in turn lead to substantial financial implications, forfeiture of contracts, job loss etc. Likewise, importing of non-compliant products from international markets, can threaten the food safety of our Country. According to the EU Rapid Alert System for Food and Feed (RASFF) for South Africa, pesticide residues are the second most frequent cause for alerts, and most of these alerts originate in fruits and vegetables. Therefore, accurate residue quantification is key to ensure food safety for South Africans, and support the export of our agricultural products to the international market.

One of the measures used to assist in maintaining a high level of analytical quality is participation in proficiency testing schemes (PTSs). Participation in PTSs allow laboratories to assess measurement accuracy, comparability and continued staff competency. The National Metrology Institute of South Africa (NMISA) developed a PTS tailored to the needs of South African laboratories. This PTS supports laboratories to analyse the full suite of pesticides, as well as varying crops treated with different pesticides. It also takes into account factors relating to export limits and MRLs relevant to local and international markets.

An important consideration was aligning the material being analysed with the local growing season, since the South African harvest period differs to that of the Northern hemisphere. This alignment ensures that the quality of testing performed on crops is being assessed at the time of harvest. Pesticides selected for the PT, represent multiple chemical classes routinely used on a specific crop, which assists laboratories to assess the full range of their capabilities and accommodates routine analysis performed at the time of the PT.

The current PT schemes are focussed on main fruit exports such as citrus; pome fruit; stone fruit, berries and other small fruits. Future schemes will include tropical and sub-tropical fruit, as well as high fat commodities such as avocado. NMISA also offers tailored PTSs to suit agricultural sectors facing specific export challenges or struggling to implement new regulations. In these cases, PTSs can be fast tracked to ensure that the farmers harvest reaches the market unhindered.

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A farm in the neighbourhood

Pioneering green schools and healthcare

Cape Town's Deep South, often jokingly referred to by people up the line as "behind the lentil curtain", is living up to its name, with Neighbourhood Farms flourishing at the first of 11 schools, and the provincial hospital set to be the greenest healthcare facility in the city of Cape Town.

Neighbourhood Farms, an adventure into health and well-being, social connectivity and community identity, all buried deep in rich organic neighbourhood gardens, aims to benefit the 100 000 people living in the Valley and is pioneered by organic food activist and TV cook Justin Bonello and co-founder Erik Haraldsen.

"Market gardens are nothing new, they have been around for hundreds of years, where people grew their own produce and sold what was extra. It's a celebration of local," said Bonello, who himself nurtures a 200sqm permaculture garden in his front yard.

"Our vision is to recreate the village of our collective memory, it's impossible for us to operate 15 000 market gardens around the country, but if we create an open source system that can be shared from the North West to the Eastern Cape, we'll all be eating more healthily, taking better care of the planet and knowing each other better," he added passionately.

"The Oranjezicht Community Farm is a fantastic example of community market gardening. We have an obligation as an organisation to expand their thinking and making this the status quo in the suburbs," says co-founder Erik Haraldsen.

The project at False Bay Hospital is a partnership between the Permaculture Research Centre and Neighbourhood Farms to utilize under-used space for the broader community in the middle of Fish Hoek.

"Research shows, a connection with nature brings about healing benefits, said Dr Wendy Waddington, representing the False Bay Hospital Facility Board.

"A natural environment can be used to divert patients away from focusing on their pain or distress, while increasing pleasant feelings of freedom and serenity. This calms patients down, providing them with the right mindset to recover effectively. Many studies show evidence that even brief encounters with nature settings can bring about some recovery from stress within three to five minutes."

"This Neighbourhood Farm will be developed hand in hand with the hospital and phased in over time. "It's our vision to create the greenest hospital in Cape Town which can be copied and replicated countrywide," added Justin.

The False Bay Hospital site will include the market garden, a training garden, packing shed and washing facilities.

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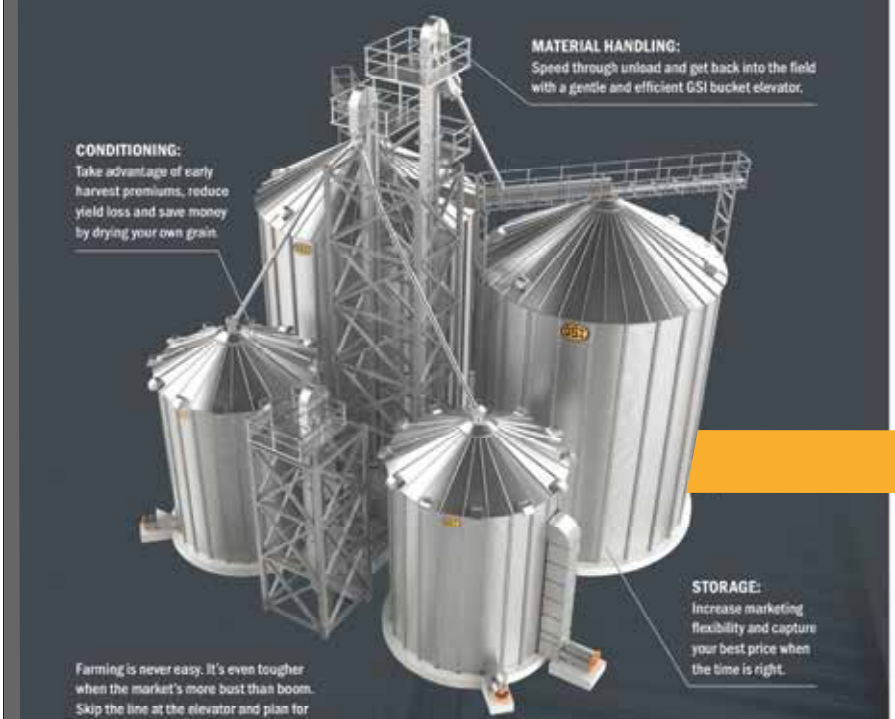
THE PROFIT CENTER



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Beetroot and Butternut Salad

Ingredients (serves 4):

50g rocket
100g green leaves of your choice
1 x butternut
4 or 5 medium-sized beetroots
a handful of pumpkin seeds
a handful of pine nuts (optional)
a handful of feta, cut into smallish chunks
a drizzle of olive oil
a drizzle of balsamic glaze

Method:

1. Peel the butternut, cut it in half, scoop out the seeds and cut into slices
2. Peel the beetroot and cut into quarters
3. Place them on to a baking tray, drizzle with olive oil and salt, bake until soft and the butternut starts to caramelize and brown at the edges.
4. Take the beetroot and butternut out of the oven and let them cool down.
5. In a pan, dry toast the pine nuts and all the seeds.
6. Lay your leaves and rocket on a plate and drizzle with the olive oil, top with the butternut, beetroot, feta and roasted seeds in that order
7. Drizzle with balsamic glaze and enjoy!

On the day Justin Bonello shared a delicious recipe using all fresh home-grown ingredients.

"The hospital is on a journey towards ensuring it's water secure, and the garden will ensure food security, as well as an opportunity to raise funds for the FBH Facility Board to provide comforts for patients by selling fresh produce to the local community," added Dr Waddington.

Surplus and nutrient dense produce will go into the hospital as well as Meals on Wheels whose kitchen is based at the hospital. The first planting begins at False Bay Hospital in June.

The False Bay Hospital will host the NF training centre for the South Peninsular, offering permaculture courses to local residents and upskilling people from under-resourced areas to becoming urban farmers.

"Each garden location provides work for two or three full-time gardeners. Our vision for the Deep South is that eventually, all the 17 local schools will grow their own Neighbourhood farm which provides nutrient goodness for the 15 000 strong school communities, create employment and garner closer connection," said Bonello.

Kommetjie Primary was the first school to embrace the concept of a neighbourhood farm.

"Kommetjie Primary is our pilot project. The ground was prepared in March and planted a month later. We're streamlining our systems such as picking, packing and processing and expect ot have produce for sale in the third term," said Bonello.

The small family of Kommetjie Primary School believes that urban agriculture is beneficial to the environment, and to the health and wellbeing of community members.

"Improved nutrition, lifestyle changes for healthy living, and improved food security combined to create environments where families and communities connect, makes Kommetjie Primary School a proud participant in this remarkable project," said George Gueorguiev, Principal of Kommetjie Primary School.

"We are confident that community gardens can help reduce negative environmental impacts by promoting sustainable agriculture; reducing food transportation costs and reducing water runoff. Humans, plants and animals can all benefit from urban agriculture since it creates habitats and improves the ecology of the area."

"The new gardens are an inspiration for our precious students and provide a learning opportunity and experience," Gueorguiev concluded.

Each local school Neighbourhood Farm will give local entrepreneurs an outlet for their produce such as honey, bread, bottled fruit and vegetables.

Kim Barty

VALLEY

The Leader in Precision Irrigation.

Ideally suited for:

carrots

potatoes

onions

alfalfa

X-Tec® A perfect combination of speed and power.

The new Valley® X-Tec® drive delivers the ultimate combination: top-performing speed for quick irrigation cycles and dynamic power to take on even the toughest terrains. The patented alignment technology and robust DC motor keep the pivot moving at a smooth and consistent pace, even over varied terrain.

Valley® X-Tec® operates at up to twice the speed of a standard, high-speed AC center drive motor. The advanced DC motor design provides constant torque throughout a wide speed range, providing growers with unmatched control and additional options to maximize crop yields.

Powerful Features:

- Full torque at all speeds
- Patented, consistent precision alignment
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- Robust design provides lasting durability
- Soft starts allow for smooth acceleration of the motor

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Pass to success

New irrigation technology in the field

A constant speed, even on hills, rocks and slopes. Equally distributed amount of fertilizers and no problems with the characteristics of the landscape or the amount of water needed: these are, for short, the advantages of the new Valley system, X-Tec™.

How can we improve yield with the resources we have? Well, that's an age-old question in agriculture. Farmers have already learned that water is their main limiting factor when it comes to yields, but Valley pivots can take care of that efficiently.

But the land is not always flat. And, sometimes, the outside temperature is way above the ideal one for the crops. And you really want to put the same amount of chemicals on every inch of the field, without any damage to the young plants.

Therefore, what could you do?

The solutions: tested and tried

You could test everything. And modern farmers are paying for all kinds of research, including determining soil types throughout fields, examining water usage and uniformity through AgSense reports on pivots, performing strip testing and tissue sampling of crops in different fields, and using thermal sensors to measure the temperature difference in the canopy of the crop and more.

Or you can constantly supervise and move the machines. Farmers spend high amounts each year because they have to move all the pipes from one field to another as they rotate crops. This operation involves also maintenance cost and the time to actually operate the system.

Or you could find a better solution to fit all the requirements of the modern agriculture. Valley Irrigation continues to guide growers with new technologies and innovative techniques to gain greater yields and produce healthier crops. The new Valley X-Tec™ advanced DC centre-drive motor does just that. The power allows pivots to move at a smooth, consistent pace, even over varied terrain at any speed, while the FastPass™ technology allows it to operate up to twice the speed of a standard, high-speed AC centre-drive motor.

What are the advantages?

1. The patented alignment technology and robust DC motor keep the pivot moving at a smooth and consistent

pace, even over varied terrain. It can move easily over rocks, hills and slopes, moving pivots with ease.
2. Valley X-Tec operates at up to twice the speed of a standard, high-speed AC centre-drive motor.

At top speed, chemigation through the pivot is improved as chemicals are not as diluted. On those dangerously hot days of the growing season, plant health can be improved by applying a cooling pass of water. For partial circle pivots, you can now water in one direction and quickly move back to the dry part of your field to begin irrigating again. Damage to young plants from blowing soil can be reduced by applying a light application of water to hold the soil down. Your pivot can be moved out of the way much quicker for harvesting or other operations.

3. The advanced DC motor design provides constant torque throughout a wide speed range, providing growers with unmatched control and additional options to maximize crop yields.
4. In order to get high-quality yields, farmers need a lot of water, and Valley X-Tec helps them to keep up with that high demand. In hot weather areas they run their pivots all day during the hot season, and pivots with Valley X-Tec technology lets irrigation packages to match the water intake rates of the soil and evapotranspiration.
5. The patented alignment technology and robust DC motor of the Valley X-Tec allows it to move at speeds as low as 1 RPM – just 1% of maximum motor speed – or ramp up to a fast 136 RPM, giving growers the ability to gain consistent application at any speed.
6. The robust design behind the Valley X-Tec center drive provides less downtime and lasting durability.

Powerful features

- Full torque at all speeds
- Patented, consistent precision alignment
- Low inertia rotor
- Electric braking technology
- Robust design provides lasting durability
- Soft starts allow for smooth acceleration of the motor

FastPass Application Features

- Frequent, light application maintains surface moisture during germination.
- Applying a light mist creates a cooling canopy for high-value crops during the heat of the day.
- Proper moisture prevents blowing sand from damaging early stage crop growth and minimizes erosion.
- Provides the opportunity for foliar application of crop protection products, reducing ground and aerial trips, and potential cross-contamination.
- Increased speeds in low spots prevents over-watering in areas that need little to no water.
- Allows for more effective split crop management.

Opening the field

Advances in drip technology result in new ideas for orchard irrigation

In recent years, the research and development team at Netafim has been able to develop drippers that deliver one litre per hour and less. This was made possible through the use of TurboNet™ flow path technology, which allows for very low delivery rates while maintaining clog resistant flow path dimensions. These drippers permit certain irrigation applications that were not possible before.

In the early 1980s, the introduction of integral pressure compensated drippers did a lot to improve the hydraulic accuracy of drip irrigation systems, especially on difficult topography. However, when using traditional 3.5, 2.3 and 1.6 liter per hour drippers in orchards, especially on sandy and rocky soils, irrigation involves a few short irrigation pulses of less than one hour's duration per day. Despite using high accuracy pressure compensated drippers, the filling and emptying of the irrigation system can lead to severe over and under irrigation in places. This is further accentuated when operating on undulating terrain. Under such circumstances we can improve the hydraulic application uniformity by using low delivery rate drippers.

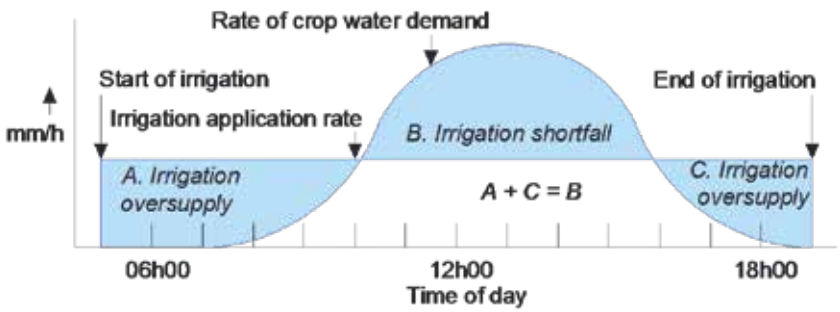
A further outcome when using low delivery rate drippers is "continuous irrigation". Under the auspices of Gerhard Mostert and Stephan Schoeman, Netafim has done research on citrus to investigate the viability of such an approach. The results indicated that many of the difficulties involved in managing drip irrigation in orchards are addressed by this method. "Continuous irrigation" involves decreasing the application rate of the irrigation system to balance with the maximum daily water use over the total consumptive period of the crop. This is achieved by using only one irrigation shift. The end result is a system flow rate of between 2.5 to 3.5 m^3/h/ha according to the climatic crop water

demand, with the aim of applying the water within a 14-hour period, using 1.0 and 0.7 litre per hour drippers to prevent irrigation beyond the active root zone.

In order to achieve optimal aeration conditions, drippers are spaced so that the outside perimeters of the wetted areas underneath adjacent drippers do not touch. Mostly these areas are 0.8 to 1.2 metres apart. The crop water demand will follow a typical bell curve over the consumptive period of the day while water application will stay constant. This entails an oversupply of water early and late in the day with under application during the peak water consumptive period of the day. The wetted soil volume should compensate for this.

through expansion and shrinkage of the wetted area whilst constantly applying water to a portion of the root zone. Irrigation scheduling involves a two-zone strategy whereby daytime irrigation is used to wet the active root zone, while night time irrigation is used to refill the buffer zone when required.

As delivery rate decreases, the flow path dimensions of the drippers also decrease. Extra precaution should be taken to ensure longevity of the irrigation system. Always start by analysing the water and the source. Other important hydraulic design parameters are dripper line length, flushing velocity and filtration grade. Special maintenance procedures are put in place to maintain the accuracy of the system. Although the system



The general guideline is to use one dripper per 2 m^2 of the canopy area of mature trees. Extraction levels were traditionally used to maintain balanced water and aeration conditions within the root zone of the crop. With continuous irrigation, this is achieved

will operate as one shift, it is still important to accommodate variations in soil type, cultivars, topography and drainage. Various mainline options exist, but in general, valves, automation and fertigation are centralised to the pump house.

Apart from the above mentioned motivations for this concept, there are the following other advantages:

- Reduced management inputs with regard to irrigation scheduling, with less leaching of water and fertiliser on low water holding capacity soils
- Centralised automation and fertigation with reduced dependency on sophisticated automation
- Simplified accommodation of soil and cultivar variation through the use of small block design in combination with pump variable speed drive (VSD) technology
- Reduced capital cost and mainline infrastructure
- Energy tariff restrictions: Using one shift, the idea is to have one or a maximum of two start times per day, depending on soil conditions and energy tariff restrictions with the complete area being irrigated at the same time.

Some of the leading fruit tree producers in South Africa are already reaping the benefits by using this new concept of "continuous drip irrigation". It opens up a totally new field for researchers to get involved in, and we are confident that it is an introduction to a total new outlook towards the irrigation of fruit trees.

Chris Malan, Manager: Agronomy, Netafim South Africa

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SUMMARISED AUDITED FINANCIAL RESULTS FOR THE YEAR ENDED 31 MARCH 2018

DEVELOPMENT IMPACT HIGHLIGHTS

R5.5 billion

Gross loan book classified as transformational

R1.55 billion

Disbursements to transformational projects

R74 million

Interest rate subsidies provided

R334 million

Drought relief approved (R240 million disbursed)

131

Farmers support under the age of 35 through direct network

248

Female farmers supported through direct network

Approximately 1500

Black farmers supported through direct network

CAPABILITY BUILDING

Banking and Credit Skills:
Learning Academy
Deepening Sector Specialist Knowledge:
Agricultural Economics and Advisory
Developing Future Leadership Talent

68% of employees are Black, Asian or Coloured

Black women in senior management

FY2018: 18%
FY2017: 16%

Employees

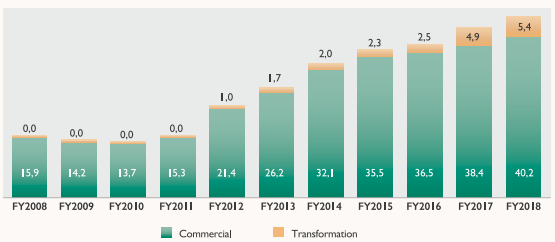
92% of employees
find meaning in their work
(response rate 70% to survey)

KEY PERFORMANCE HIGHLIGHTS

	FY2018	FY2017
Net profit	R278.7m	R268.8m
Net interest margin[1]	2.9%	3.0%
Cost to income ratio	60.5%	54.4%
Non - performing loan ratio	6.7%	7.1%
Total capital adequacy ratio position (target of 15%)	17.3%	17.7%
Liquidity coverage ratio position (target of ≥ 70%)[2]	214.3%	85.0%
Net stable funding ratio position (target of ≥ 90%)	108.6%	86.7%
Development book	R5.4bn	R4.9bn

[1] Net interest margin includes the reclassification of interest expense relating to the LDFU portfolio, from discontinued operations to continuing operations, the effect without reclassification would be FY2018: 3.0% (FY2017: 3.1%)
[2] Excl. Available committed facilities. LCR = 409,3% incl. available facilities (R2.15bn)

Profit for the Year	Published basis (R'm)	
	FY2018	FY2017
Net interest income	1 261.4	1 196.5
Interest income	4 827.0	4 234.8
Interest expense	(3 565.6)	(3 038.3)
Net impairment charges, claims and recoveries	(55.5)	(81.5)
Operating expense	(628.7)	(562.3)
Net profit from continuing operations	**278.7**	**268.8**
Net insurance (loss) / income	(51.1)	(4.5)



OUR SUSTAINABLE FINANCING STRATEGY

The Bank achieved the Medium Term target of reliance on short-term funding < 50% by 31 March 2018 as of FY2018/Q2. Since then the reliance on short-term funding has reduced to 43.2% as of 31 March 2018.

The Bank held two successful listed bond auctions during the year, which were supported by 17 and 18 investors respectively. During the auctions, cummulative bids of R8.4bn were received and R3bn was raised below pricing guidance. This resulted in significant yield contraction for the Bank.

The bank raised a 10-year unlisted fixed rate note of R625m after year-end. This was a first of its kind for the Bank.

Following extensive due diligence processes, the Bank finalised multi-lateral funding lines during FY2018 amounting to approximately R7bn with the World Bank, German Development Bank KfW, European Investment Bank and a MIGA backed commercial loan.

OUR SUSTAINABLE FINANCING STRATEGY

Statement of Financial Position	Published basis (R'm)	
	FY2018	FY2017
Cash and cash equivalents	2 362.1	1 211.3
Investments	1 406.7	983.2
Loans and advances	43 418.5	40 975.6
Other assets	545.3	648.9
Total assets	**47 732.6**	**43 819.0**
Equity and reserves	5 546.9	5 364.6
Funding liabilities	41 576.3	37 839.6
Provisions	79.5	107.1
Provisions	79.6	107.2
Total equity and liabilities	**47 732.6**	**43 819.0**