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HarvestSA

Securing South Africa's Food Resources

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Urban farming

A romantic ideal or possibility?

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On the cover

South Africa hasn't cottoned on to this idea quite yet, like the United States has, but an interesting idea for city dwellers to consider is using rooftops of buildings for urban gardening. It would have the purpose of providing nutrition, and looking aesthetically pleasing in an otherwise dull space. In light of sustainability and greener cities, urban gardens will provide cleaner air to the city.

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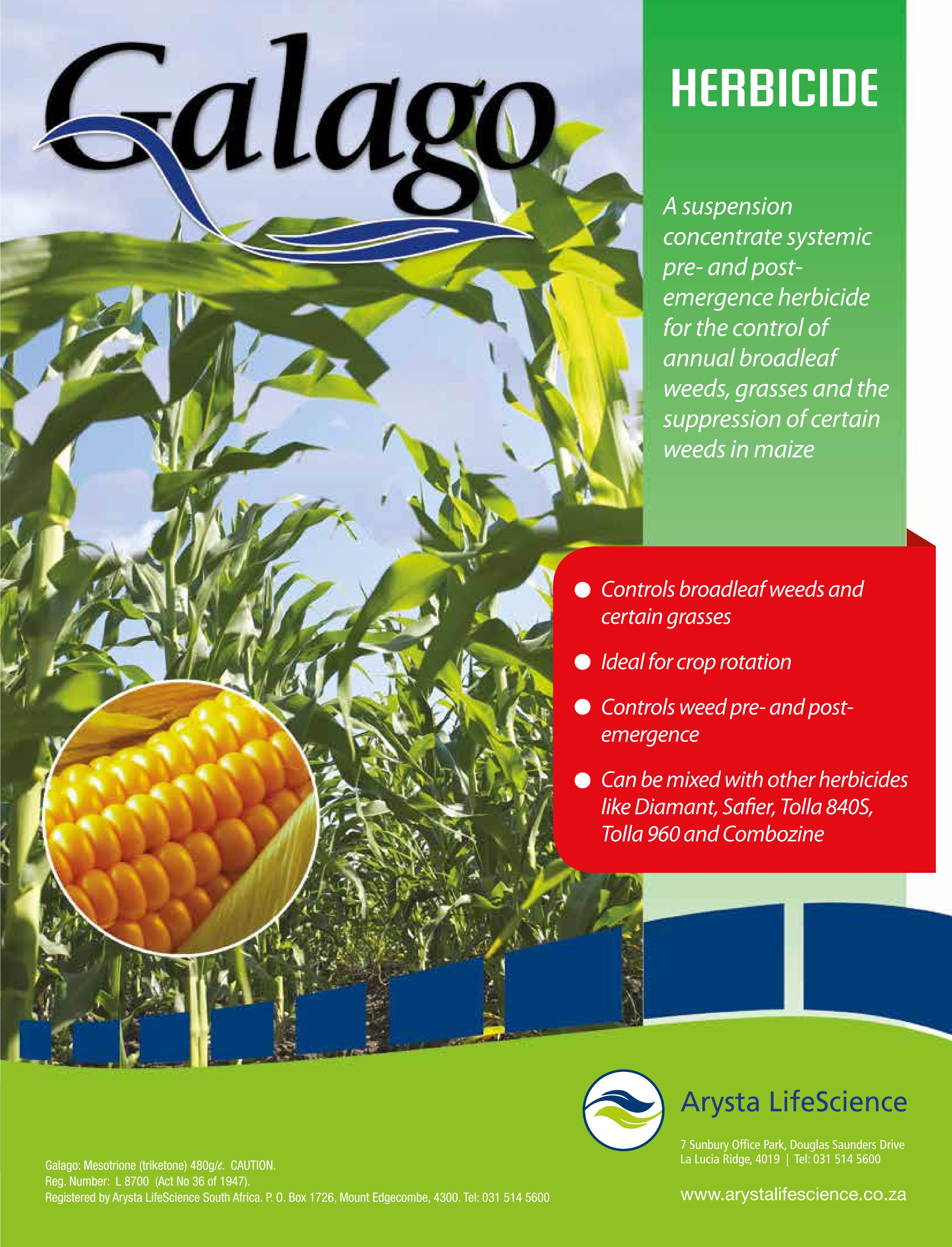
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FORE WORD

JANNIE DE VILLIERS
CEO: GRAIN SA

Food vs fuel vs energy vs water

The agricultural sector around the world is struggling with the debate about food vs fuel, as well as food vs energy. What is the sustainable balance when it comes to the allocation of land to produce food/grains vs biofuels or food (maize) vs minerals (coal)?

From the models provided in history, we have learnt that the free market will always allocate goods and services according to the ability to pay with a profit-driven motive.

Above that is a control system where the government makes decisions on behalf of all and in the public interest.

This is not always the optimum solution and because of the huge amounts of money and personal interests involved, it could be open to corruption.

In South Africa's case I suppose the answer lies somewhere between these two extremes.

If we allow the market to make decisions about how much of our high potential agricultural soils should be made available for mining minerals, the mining sector would win hands down. But when food becomes so expensive and poverty stares us in the face, it will be too late to intervene.

You cannot produce cash crops on rehabilitated land! Therefore, we need proactive intervention from the government in the allocation of land. Soon it will be too late to halt the issuing of mining licences.

The same arguments hold true in the debate about whether or not grain should be used to manufacture biofuel.

A very conservative approach is needed. The government has done exactly that.

The obligatory blending rates are not very ambitious and the stock feed has been chosen very selectively so as not to threaten food security. To mine an area, export the coal, make money and then go, leaving the land useless to the current and future generations is a very short sighted approach.

We need to balance energy security and long-term food security. I recently learnt from a World Wildlife Fund presentation that 50% of our fresh water supplies come from an 18.5% catchment area. Surely we cannot afford to issue any development activity licences in that area.

This catchment area feeds not only the Vaal, but also the Olifants and Pongola River systems.

Millions of people's lives depend on it. All these elements of food, water energy and fuel are critical – not only for our current existence, but also for that of our children and grandchildren. We now have time to act and to respect the needs of those who will come after us.

The true definition of sustainability is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

EDS NOTE

TRACEE HARVARD
EDITOR

Waste not, want not

The core function of this magazine is to create a platform on which both the government and Grain SA members can speak to one another about food security. We have often spoken about the challenge of securing food for households.

As a nation, we are not yet food insecure, but at household level we are.

That said, it is shocking that South Africa produces just over nine million tonnes of food waste a year.

There are organisations which feed the hungry, Foodbank SA being one of them. They are said to save about 6 000 tonnes of food every year which adds up to between 18 and 20 million meals a year.

According to the website BDlive: "FoodBank SA distributes food to needy South Africans, delivering between 12 million and 15 million meals a year to about 40 000 people.

The organisation's rural food banking and government relations executive, Patrick Andries, says one of the major challenges was moving into rural areas to reach the more than 11 million people who are "food insecure", defined by the World Health Organization as those who do not have "sufficient, safe, nutritious food to maintain a healthy and active life".

And according to some sources, anywhere between a third to half of the food produced in the world, never makes it to a plate.

How does this make any sense? With food waste comes energy and water waste. The main reasons food waste is a problem besides the obvious, is that it contributes to landfill issues and carbon gas emissions.

Some reasons for this relate to sell by dates that are unreasonable to meet, storage and the transportation of foods is not adequate, too much food is bought and goes to waste, or too much food is cooked and rots.

Another big problem is that we tend to want a perfect looking product, so a lot of bruised and badly packaged foods are wasted. Not to mention that from an agricultural perspective, farming practices are perhaps not always up to scratch and poor produce is delivered to wholesalers and retailers.

FoodBank SA is doing great work but transporting and feeding the hungry is a costly exercise. However, access to nutritious food is a human right and one that needs to be acknowledged as a foundation on which to mitigate hunger in poverty stricken places.

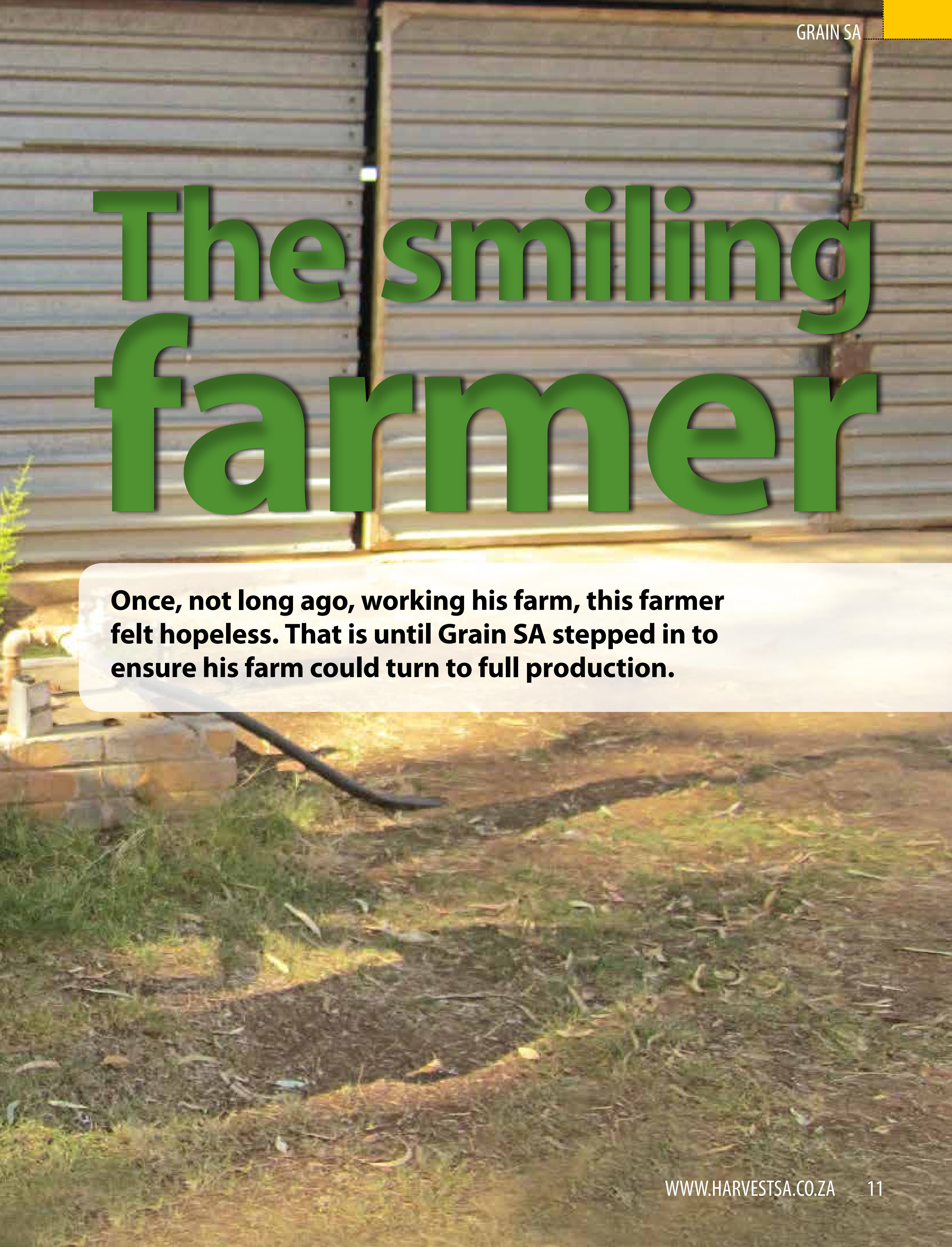
While FoodBank SA is doing sterling work my suggestion is for fast food outlets, restaurants and hotels which throw a lot of food away to do the same.

I am sure there are organisations some of them are affiliated to, but if we all made an effort to share rather than throw away profits it would make a significant difference.

If profits are being tossed, at least providing nourishment to others is a good cause - even if there is loss of profit.

The smiling farmer

Once, not long ago, working his farm, this farmer felt hopeless. That is until Grain SA stepped in to ensure his farm could turn to full production.



Joseph Mbaba comes from a farming family which was based in Springbokpan in North West province. His father was a farmer and he farmed mainly on communal lands. Mbaba always loved the farming life so he started farming with his father and learnt from him, even while he still had to work in the Prison Services where he was employed for 15 years.

The desire to farm was so strong he eventually took the plunge and decided to rent communal lands for himself between Kaalpan, Gelukspan and Springbokpan in North West province which he farmed until 2007. In September 2008 Mbaba's dreams came true when he became the beneficiary of a cropping farm, Schoongezicht, in the province through the Proactive Land Acquisition Strategy or Plas.

At last he would be doing what he loved and at the same time build a future for his family on his own farm.

Unfortunately what happened over the next few years was a nightmare.

It is one thing to get your own land but quite another to find the money necessary to farm sustainably.

Joseph was then nominated by the Department of Rural Development and Land Reform (DRDLR) to become a beneficiary of the 2012 – 2013 'recapitalisation programme' which has been managed by their strategic partner, Grain SA.

This development has put the smile back on Mbaba's face and he is excited by the changes which have occurred on his farm this past season.

The Grain SA team paid a visit to the farm and assessed what was needed to ensure the farm could be put into full production.

A budget was presented to DRDLR for their approval. The budget has been managed so carefully that every cent can be accounted for and every cent spent from Mbaba's budget was the result of a decision made by himself on advice from his mentor, John Mathews. Mbaba chose which new tractors he wanted to use on the farm to plant his maize and sunflower crops.

I visited the farm earlier this year with Mbaba's mentor and he told me that for the past four years he has found the planting season so stressful that he became sick and had to go to the doctor.

It is very frustrating to be given an opportunity on a farm – but farming as a business is so much more, and so much finance is needed to farm properly.

Farming is about:

- Having access to land;
- Having the equipment to plant crops;
- Having the fertilisers, chemicals and diesel;
- The seed to plant crops which grow and flourish throughout an entire season;
- The on-going management through the growing season all costs money to get the crop to the point where it can be harvested successfully and profitably so that the farmer can prepare for a new season. For example, to make sure the soil is weed free so the weeds do not compete with the crop for moisture and nutrients requires tractors and sprays and farm workers and diesel; and
- Knowledge.

Farming is not a career if you are not prepared to work hard or if you are not prepared to learn something new every season.

Mbaba has proven to be a true farmer at heart who is dedicated and committed to work hard to reach for his dreams.

With hope renewed he has been eager to learn more about all aspects of farming as a business and has attended the training courses run by Grain SA throughout the season.

The team has trained him and other farmers in the recapitalisation programme on many aspects of farming like tractor maintenance, calibration of planters and sprays, introduction to maize and sunflower cultivation as well as providing assistance with the business management aspects of the business such as opening bank accounts and linking them with bookkeepers.

To assist in the process Grain SA has linked each farmer up with a mentor in his area who knows about farming in the same conditions.

Mathews has been farming for 33 years and is Mbaba's mentor. He cannot praise his protégé's work ethic enough. During this last summer, farmers witnessed one of the worst droughts in 30 years.

The Grain SA team paid a visit to Mbaba's farm and assessed what was needed to ensure the farm could be put into full production

Every stage of the season was difficult as we looked to the skies hoping to spot gathering clouds which would promise to bring us the relief of rain.

The rains started late and were very erratic so there were only a few planting days in the season as the moisture dried out so rapidly under the hot sun. The pressure was on and having the right equipment and knowing how to work it properly for top performance was essential.

Thanks to Mbaba's work ethic, the recapitalisation budget and the dedicated team of Grain SA, this could happen on Schoongezicht this year.

Mbaba has a keen awareness of the pressures involved in getting the job done on time and he always responds positively when it is pointed out that time is of the essence and operations need to be done urgently.

The crops were stressed throughout the season but at least there is still something to harvest and there is still hope for a future farming with wonderful efficient tractors and implements.

Not only has Mbaba listened eagerly to advice from his mentor but he has also read as much as he possibly could to become an informed participant in the mentorship process. His mentor has thoroughly enjoyed his mentorship. In fact, I would go as far as to suggest that the relationship goes so much deeper as I have witnessed a warm connection growing between two farmers who were strangers but who have developed a mutual respect and a friendship.

When programmes are as effective as this, one has to feel hopeful that our land reform can be successful and the future for our emerging farmers like Mbaba can be bright.

Agriculture is the future and the potential to build food security for our nation is in the capable hands of farmers like Mbaba.

Jenny Mathews

Mbaba with his mentor John Mathews

Responsible use is the motto

AVCASA is dedicated to crop protection and animal health

Agricultural remedies and stock remedies are essential commodities for the sustainable and profitable production of food and fibre for the growing world population. Without these products it is doubtful whether farmers will be able to supply the demand for food that is produced by livestock and agricultural crops.

Food and fibre demands drive the need to be inventive in pest, disease and weed management resulting in research, capital and developmental investment by companies that operate in the agricultural remedies and stock remedies arena.

CropLife SA (CLSA) and the South African Animal Health Association (SAAHA), the umbrella of the Association of Veterinary and Crop Associations of South Africa (AVCASA), respectively serve the interests of the crop protection and animal health industries in South Africa.

Crop protection products and animal health products are now entering an arena where biological and natural compounds are becoming as important as the classic synthetic chemical compounds.

Nevertheless, the commodities remain controversial due their ability to kill biological organisms. It is therefore important that all crop protection products and animal health products are used with utmost caution and according to the instructions offered on the labels of these products.

SAAHA is constantly checking on the needs of livestock and poultry. Game farmers as well as companion animal owners must ensure that animal health products that are offered in the market are registered under Act No. 36 of 1947 or Act No. 101 of 1965.

Where Act 101 of 1965 allow veterinarians to produce unregistered veterinary medicines when none are available to treat a particular condition in animals, these must also conform to the sections and regulations of the Act.

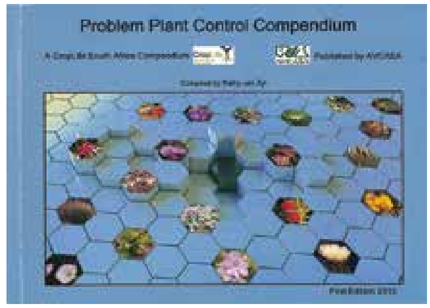
SAAHA urges all farmers to be aware that unregistered veterinary medicines may only be used by a veterinarian on one farm to treat an animal, herd or flock and that such medicines may not be offered commercially to any other production unit.

Ecto-parasites are a menace to livestock and wildlife farmers. SAAHA members supply a range of effective products to manage ecto-parasites, yet some individuals resort to preparing their own homemade animal dips by mixing crop protection products with various oils and diesel. This is a highly irresponsible practise as it results in resistant tick populations due to ineffective control, damage to animals and contamination of meat and milk with active ingredients that are not allowed in these food stuffs.

SAAHA urges all livestock farmers to stick to proven remedies as supplied by its members and to ensure that oxpecker compatible dips are applied in areas where these valuable birds occur.

CLSA has invested in databases and compendiums that collectively harbour all the data on crop protection products. The CLSA Agricultural Remedies Database on *www.croplife.co.za* offers basic information on crop protection products that are available in South Africa.

To get all the detailed information on these products in the respective crops, CLSA publishes a set of compendiums on plant pest management, weed management in agriculture, control of problem plants and management of plant diseases that are caused by fungi, viruses and bacteria.



CLSA publishes a series of crop protection compendiums

The most recent information resource from CLSA is the AgriIntel Database on *www.agri-intel.co.za* that is a comprehensive crop management tool that will offer information on all the crop protection products that are registered on all crops via a web-based search engine and will provide the producer with a list of these products, their application windows, withholding periods, maximum residue limits for local and export markets as well as the labels of all products.

Both SAAHA and CLSA members' sales representatives undergo training under the auspices of the AVCASA Academy. The two courses (SAAHA Animal Health Course and the CLSA Basic Crop Protection Course) are designed to set minimum industry standards in the responsible use of animal health products and crop protection products.

Contact Nadia Richards at nadia@avcasa.co.za or 011-805-2000 for ordering details of the compendiums; and Hettie Dickenson at Hettie@avcasa.co.za or 011-805-2000 for details on SAAHA and CLSA courses.

A strategic move

We welcome newly elected vice chairperson, Victor Mongoato, to the top ranks of Grain SA


Victor Mongoato, vice chairperson of Grain SA

Victor Mongoato, recently appointed as vice chairperson of South Africa's largest grain organisation, Grain SA which was previously viewed as a predominantly white organisation is proving to the government and to other organisations that he means business. Mongoato's appointment means a strategic plan is in place to spearhead the 'rural development farmer' programme, led by Grain SA. These are a few quotes that have been recorded by the media.

In an interview with *Farmer's Weekly,* Mongoato had specific views on the issues of land and agriculture.

On challenges facing developing farmers:
"Training and skills development are crucial for farmer development, but training alone is not enough. Many of our farmers do not have tractors and other implements required, or they lack production finance.

"Different areas have different challenges. In the eastern parts of the country (Mpumalanga, KwaZulu-Natal and the Eastern Cape), for example, where the rainfall is higher, the pH of the soil is low and more lime supplementation is needed."

On land use:
"Land is only valuable if it is used properly."

On the term 'emerging farmer':
"We use the term 'developing' farmer as we feel that this could apply to any farmer of any size who wants to develop. We do not use the term 'emerging' farmer.

"This seems to show that we are under something we have to emerge from. However, the fact remains that there are farmers who are not producing grain optimally.

"Grain SA's 'farmer development programme' provides those farmers with support and training."

Readers are invited to read the one-on-one interview with Victor Mongoato in the next edition.
We look forward to finding out about his unique position, what it entails, his vision for the future of South African rural farmers and his views on food security.

incotec

involved in seeds

Tertia Erasmus

Tertia is the General Manager for INCOTEC South and Sub Saharan Africa with her background in genetics and extensive knowledge on seed technology, she is able to contribute largely to INCOTEC's new and current technologies.

Derick Jones

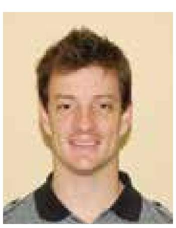
Derick has recently joined the INCOTEC team end of 2012 as the Sales and Marketing manager for South and Sub Saharan Africa. Derick has been involved with the agriculture industry for 25 years in various markets ranging from forestry to cereals and vegetables.

Fernando Pienaar

Fernando is the laboratory manager in charge of all routine testing and scientific data analysis, on both protein and DNA tests. He is also responsible for the maintenance and implementation of the quality standards for the company.

Gabriel Stoltz

Stompie as he's known to most people, is the Production Officer and is responsible for blending all the filmcoating products as well as the pelleting and encrusting products. Stompie has been trained in the U.S.A on the same equipment currently in South Africa.



Jovan Steffens

Jovan is the IPR manager, who is responsible for new products, technologies and is also very experienced in INCOTEC's polymer and seed coating products. He is continually testing and performing quality controls on all products constantly maintaining INCOTEC's high standard.

INCOTEC South Africa have finally done it!! February 2013, INCOTEC went commercial on their pelleting and encrustment programme, and the message now being conveyed is that what has been achieved in Europe can now be achieved here on the African continent. With the Analytical Services sector of the company just about to receive their ISO 17025 certification, INCOTEC SA is now starting to have the ability of offering the client the technologies that have been unavailable in the past. So where does INCOTEC stand, well they now offer – 1. Upgrading, 2. Pelleting, 3. Encrustment, 4. Analytical Services, 5. Production of film coating liquid(Disco) What's still to come – priming!! And last, but not least, a product that is being considered for the seed maize grower in South Africa where INCOTEC is able to increase the window of opportunity for pollination of seed maize plants! INCOTEC has always stood as a company whose vision is to assist world food security, so the current products are just a taste of what this company can achieve.

City harvest

A solution to food and nutrition insecurity or simply a romantic idea without substance?

Urban farming is not only about food – even though with some decent planning it could be. With many of the projects the spin-offs are not just addressing food and nutrition but also environmental conservation as well as improving social concerns such as crime and unemployment.

According to the Institute of Race Relations (IRR), South Africa's long-term urbanisation trend is partly the result of the freer movement of people since the demise of apartheid moved people from rural to urban areas.

Higher economic growth in urban areas has also drawn people to cities in search of employment, including foreigners.

Smaller cities have experienced the most rapid growth, owing, in part, to small initial populations, as well as growing economic activity. Thuthukani Ndebele, a researcher at IRR, said Polokwane, Rustenburg, Vanderbijlpark, Nelspruit, and Ekurhuleni are the country's five fastest-growing areas, with average annual population growth rates of between 1.6% and 2.9% over the last decade, compared to Cape Town, with a rate of 1.4%.

Urban agriculture has been advocated as a means of supplementing food in the home.

The reasons to consider urban farming are as varied as the ways in which urban farming is conducted. It falls into a number of categories with each category fulfilling a particular need or aspiration.

Due to this rapid pace of urbanisation, particularly in developing countries, studies have been done to measure the effectiveness of urban farming. The viability of the projects largely depends on the objectives and social

circumstances that supplied the motivation for these initiatives in the first place.

In many of the urban areas of South Africa, a lack of food is most often found in informal settlements, where poor nutrition and difficulties of food security are at their worst.

There are a number of shining examples in the urban agricultural sphere where community based organisations are hosting projects that address some of the concerns relating to food security.

For instance, in the Western Cape there is an organisation called Abalimi Bezekhaya, which supports individuals and community groups to develop their own organic vegetable gardens in order to complement their supply of food, improve and increase nutritional values and provide long-term additional income.

In addition to this they believe that, in their experience, "organic group gardening facilitates community building, personal growth and development of self-esteem".

The core function of Abalimi is to combat poverty by growing food sustainably, using organic methods, at home and in community gardens and, secondly, to plant water wise indigenous trees and flora in schools and communities, in order to transform the dune-sands of the Cape Flats into a sustainable water-wise urban environment.

Abalimi Bezekhaya targets people living in vast informal settlements, and townships in Cape Town, where they say, "up to one million people now live, mostly in shacks and matchbox houses. Approximately 40% of the people in this area are unemployed".

Environmental conservation

Targeting residents of the Cape Flats – including Khayelitsha, Nyanga, Philippi-Brown's Farm, Crossroads and Gugulethu – the Abalimi Bezekhaya project also addresses sensitive dune sand areas containing some of the most threatened floral species within the unique Cape Floral Kingdom, a World Heritage Biome.

In all their activities they strive to conserve what is left and to renew what has been destroyed. 'Soil for life', is a non-governmental organisation (NGO) project with similar objectives and is also run in the Western Cape. 'Soil for Life' teaches people to grow healthy plants with a special emphasis on building the soil, so that families can eat safe, fresh nutritious food throughout the year.

They emphasise low-cost methods to help growers reap greater yields from smaller areas of land utilising the least amount of water without harmful chemicals and toxins.

According to the organisation, "the challenge that we face in the years to come is not to produce more food. The world produces enough food. We need to deal with the real issue; which is for the food to be produced by the people who need it most, for the people who need it most".

Soil for Life's mission has been to:

- positively impact on the lives of the urban and rural poor and hungry; and
- make it possible for everybody at all times to have physical and economic access to sufficient, nutritious food to enable them to lead healthy and active lives, it is not their only focus.

Their workshops also extend to more affluent areas, where they have workshops to teach city dwellers how to create food gardens using whatever they have and to re-use and recycle.

Social benefits

The social benefits of these programmes go beyond gardening, it is also about 'growing' whole people who are able to help themselves on many fronts: survival, earning their own money, creating healthy families, improving values, dealing with inflation, problem-solving, developing creativity and resourcefulness, and building bridges of goodwill and understanding.

With a focus on educating and training in organic production for communities, people can take part in the variety of workshops such as composting and composting with worms, natural diseases and pest control.

To the more affluent, urban food cultivators are a great way to provide relaxation, a connection to the earth, a way to connect and experience interaction with other city dwellers. With the increased awareness of conserving resources in strained economic times home grown produce can help toward saving money by supplementing with home grown produce, decrease the carbon footprint and helping from an individual perspective to become more eco-friendly.

While these growers are not focused solely on producing food there are still excellent and rewarding reasons for urban farming which contribute to meeting social needs and can lead to improved health, self-esteem, education for children and help encourage culture exchange.

Other good reasons to plant food in the city centre is that it fosters a greater sense of commitment to areas in which people live, strengthens relations, reduces crime by creating healthy recreational activities, safer places for children to play while their mothers produce food, better uses of areas where land is not being utilised and where areas are run down it provides a healthy way to claim back the land.

Some of the employment opportunities which are off-shoots of urban agriculture are: start-ups who produce bulk compost (recycling all food waste), seedling production, sales at local markets, delivery to local restaurants. With the example of local urbanised farming and land reclamation in a more affluent area of Cape Town, where both the community and business benefit there is the Oranjezicht City Farm (OZCF) project.

Good reasons to plant food in the city centre is that it fosters a greater sense of commitment to areas in which people live, strengthens relations, reduces crime

This neighbourhood non-profit project claims its main aim is celebrating local food, culture and community.

Once a bowling green, built in the 1950s, the land had not been in use for a number of years, according to the OZCF, "it is situated on part of the original farm, 'Oranje Zigt', established in 1709, and which became the largest farm in the Upper Table Valley in the 1800s.

"Fed by a cluster of springs that provided perennial fresh water to Khoi Khoi pastoralists as well as to sailors and the Company's Gardens from the 1800s, this farm grew vegetables and fruit that fed the growing settlement and colony and supplied passing ships with essential produce to the turn of the 1900s.

"Swallowed by urban expansion, the productive farmlands were converted into a housing syndicate in 1901 and the original homestead standing on the site was demolished in 1957 to construct a

bowling green, which fell into disuse and neglect in recent decades."

Linking the OZCF to the Oranjezicht neighbourhood and the rest of Cape Town using gardening is a prime objective of the project. With the idea of building social inter-relations across communities and: "to develop skills among the unemployed, to educate residents and their children and others about food, environmental and related issues, to beautify public space and to champion unused or under-utilised green spaces in the city bowl".

As one of the primary donors, the Madame Zingara group of restaurants is contracted to purchase everything that is grown, paying wholesale market rates for organic produce.

This makes it possible for the farm to be financially stable (though not self-sufficient on this basis alone), and for the OZCF to make investment plans for the future knowing they have a 'customer' that will buy what is produced. In some instances urbanised farming forms part of community projects that are linked to institutions which are allied to churches, education centres, prisons and

Did you know?

"The first supermarket supposedly appeared on the American landscape in 1946. That is not very long ago. Until then, where was all the food? Dear folks, the food was in homes, gardens, local fields, and forests. It was near kitchens, near tables, near bedsides. It was in the pantry, the cellar, the backyard."

– Joel Salatin, Folks, This Ain't Normal: A Farmer's Advice for Happier Hens, Healthier People, and a Better World

hospitals. The benefits of these projects also do not meet the requirements for alleviating urban food insecurity on a broad scale, but can be seen as helpful toward alleviating some of the social issues in poverty stricken areas.

Some of the barriers preventing greater participation in urban food growth are:

- Land pollution, where the produce presents a health risk from agricultural contamination, either with metals or lead.
- Land ownership is also a problem where very often residents do not own the land.
- Some do not want to grow vegetables due to lack of knowledge, flooding, and wanting to get away from their rural beginnings.
- Water contamination where water that stems from waste or has not been treated correctly and could spread water-borne diseases.
- Water scarcity – using water which is metered and costs a lot of money – not having access to water in some of the townships is still a big problem.
- Some studies reflect a breakdown in the quality of the crops grown in urban areas due to high levels of pollution and the vegetation becoming more vulnerable to pests because of pollution and a lack of control in cities of certain pests.
- Theft and vandalism are also issues for the urban farmer, especially in informal settlements where community farming is done on a larger scale, such as near churches or schools.

Overview

Although urban farming has not as yet become mainstream there are indications that there are useful projects and proponents both locally and internationally which show that city farming is one of the options for increasing food security.

With the help of NGOs, the government and some good city planning there are ways that urban agriculture can make a valuable contribution to society, the way we eat and how we relate to each other.

Simone Tredoux

IDC cultivates growth *in Agro-Industries*

The IDC has a R4.5 billion portfolio in Agro-Industries, providing support for the sustainable growth and equitable development of the agro-industrial value chain. Rian Coetzee, Head of the Agro-Industries Strategic Business Unit (SBU), outlines its strategy.

The Agro-Industrial sector is an important part of the South African Industrial landscape. It represents around 18% of manufacturing gross domestic product (GDP) and around 20% of jobs in the manufacturing sector. What makes this sector unique is its relationship with the rural economies and the primary agricultural sector of South Africa. It provides market access to many commercial as well as smallholder farmers. It is through this link that the sector plays a critical and strategic role in addressing the growth and development challenges of our rural economies. About 8.5 million people are directly or indirectly dependent on agriculture for their employment or income. The industry is also important from a food security point of view.

The South African Agro-Industries sector is highly dualistic. On the one hand there are a few large modern, dynamic, vertically integrated and diversified agro-processing companies contributing to more than 70% of turnover in the sector; and on the other hand around 7 000 food processors; smaller-scale unintegrated processors, often outside the formal retail chain. Whilst it is of critical importance to facilitate the growth and development of the large companies – to ensure that South African food brands benefit from opening markets in the rest of the continent and other trade partners – it remains important to address the barriers-to-entry and barriers-to-growth that these smaller companies face.

Focus areas for the Agro-Industries SBU include agro-processing, beverages and aquaculture, with a spotlight on localised value addition. Our objective is to facilitate pro-poor and pro-rural agro-industrialisation by creating new industrial capacity that will have as its main outcome the creation of job opportunities. Whilst the Landbank focuses on primary agriculture, the IDC focuses on food and non-food agro-processing. Our definition of agro-processing includes on-farm, first-tier processing as well as backward integrated projects.

Five main strategies are implemented, which facilitate pro-poor and pro-rural industrialisation. These include:

- **Internationalisation** – Efforts to assist industry leaders to take advantage of marketing opportunities in Africa and Brazil, Russia, India, China and South Africa (BRICS). We also facilitate foreign direct investment, where foreign food companies use South Africa as a production hub. The creation of value chains across our borders forms part of this strategy.
- **Value addition** – It is important that maximum beneficiation is localised in South Africa. At this stage we focus on the labour-intensive horticultural sector and the grain industry.
- **Import replacement** – Food imports remain an area of concern and we need to ensure that we competitively replace these imports with local production. At this stage the IDC is targeting seed-oil processing and malt production.
- **New emerging industries** – IDC is known for innovatively facilitating the creation of new industries. Our focus at this stage is to develop the marine aquaculture sector, which will address specific development challenges of our smaller coastal towns.
- **Rural/poor linkages** – Agro-industrialisation should be linked to resource-poor small-scale farmers, to maximise its potential impact on rural South Africa. We have specific initiatives through which we facilitate the linkage between agro-processors and these farmers.

Special IDC development funds further drive the IDC's efforts to promote development of poor rural areas. The R100-million **Agro-Processing Linkage Scheme (APL)** incentivises agro-processors to source raw material directly from resource-poor farmers. This creates direct linkages between agro-processors and resource-poor farmers through mechanisms such as contract farming.

The Agro-Processing Competitiveness Fund (APCF) enhances competition, growth and development in the agro-processing sector by providing finance to non-dominant players, stimulating job creation and increasing rural activity, while also contributing towards food security and affordable basic foodstuffs.

Despite challenging economic conditions, the activities and funds of the IDC Agro-Industries SBU successfully develop increased capacity in the agro-industrial sector, both creating and saving jobs. Our intention is to invest around R1 billion per annum in this highly important sector.

Telephone: **086 069 3888**
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Tasty morsels

Here are little factoids to interest you

Wheat farming is said to be one of the most essential activities in South Africa. Maize is considered to be the most important crop along with sugarcane and wheat cultivation which is being followed on a massive scale. The Free State is known to be the largest producer of wheat. *www. inica.org*.

According to the Southern African Grain Laboratory, wheat is by far the biggest winter cereal crop planted in South Africa. Other winter crops are barley, for malting purposes, and canola.
However, maize has the largest crop size of the different crops, followed by wheat, then soya beans, sunflower seed, malting barley, sorghum, groundnuts, canola and dry beans. *www.bdlive.co.za*

White maize is biologically and genetically very similar to yellow maize, although there is a difference in appearance due to the absence of carotin oil pigments in the kernel which otherwise cause the yellow colour of the grain. Production conditions and cultivation methods are largely identical. *www.foa.org*

In the case of cash crops, or grains such as oats or maize, South Africa pays roughly the same in labour costs as a number of its competitor countries, particularly those in the developing world, said Christo Joubert of the National Agricultural Marketing Council. *www.mg.co.za*

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The good fight practice

Battling against climate change in Africa one seed at a time

Unpredictable rainfall, unexpected droughts and other symptoms of climate change already have disastrous consequences for Africa's fragile food security. While farmers are the first victims of erratic weather patterns, experts say they can play a leading role in averting tragedies including hunger and famine by implementing 'climate-smart' policies.

Study after study has been published about the link between climate change and agriculture in Africa, and the impact of this scenario is typically grim.

The book: *West African Agriculture and Climate Change* by the International Food Policy Research Institute (IFPRI), which was launched in April this year, is no exception.

The book, as a first, provides in-depth country-by-country climate analysis for Benin, Burkina Faso, Cote d'Ivoire, Ghana, Guinea, Liberia, Niger, Nigeria, Senegal, Sierra Leone and Togo.

"Climate change will have far-reaching consequences for the poor and marginalised groups among which the majority depend on agriculture for their livelihoods and have a lower capacity to adapt," the authors wrote.

"Weather-related crop failures, fishery collapses, and livestock deaths in addition to losses of property are already causing economic losses and undermining food security in West Africa," they continue, adding that the time has come for those involved in farming, on a large and small scale, to redesign their agricultural practices.

This could include "crop diversification as well as crop®-Clivestock integration to minimise the risk of crop failure or livestock deaths", they say, as well as planting crop varieties that are more resilient to erratic droughts and rainfall.

These and other climate smart practices are not just important to Western Africa. Other regions, like the south, could benefit as well, experts say.

"Agriculture is the most important sector in the world today, and it plays a big role in southern Africa.

"We have seen how more and more farmers from this part are recognising climate-smart agriculture as a means to achieve the critical objectives of maintaining food security as well as adaptation and mitigation to climate change," said Douglas Taylor-Freeme, former president of the Southern African Confederation of Agricultural Unions (Sacau) during the COP17 climate change convention which took place in Durban in 2011.

"At its basis, 'climate-smart' agriculture is guided by science. It presents an opportunity to transform African agriculture to a more productive and resilient production system while contributing to emissions reduction," he noted, adding that more research is needed to safeguard the region's farmers and food security.

Taylor-Freeme is not alone with his stance. The World Bank for the past years has stressed the need for a wider implementation of 'climate-smart' agriculture in Africa, where some 80% of the population in some way or another relies on farming.

"Many impact studies point to severe crop yield reductions in the next decades without strong adaptation measures, particularly in sub-Saharan Africa and South Asia," the organisation writes on its website.

"These are areas where rural households are highly dependent on agriculture and farming systems are highly sensitive to volatile climate.

"One assessment estimates that by the 2080s world agricultural productivity will decline by between 3% and 16%. The loss in Africa could be between 17 and 28%."

Manyewu Mutamba, economic and policy analyst at the Sacau, agrees.

"Conservation agriculture is one of the simple various 'climate-smart' practices farmers, large and small, can use to protect their crops, livelihoods and the region's food security against erratic weather," he explains.

The Food and Agricultural Organisation of the United Nations describes conservation agriculture as a practice based on three principles: keeping mechanical soil disturbance to a minimum to prevent erosion and loss of nutrients, protecting the soil with an organic cover to prevent moisture from escaping, and last but not least the rotation of more than two crop varieties.

"The benefits of 'climate-smart' agriculture are significant. These practices reduce the cost of working the land and increase yields," says Mutamba.

He adds that the implementation of climate change agriculture in Africa should be done now, simply because erratic weather patterns are already a reality in many parts of southern Africa.

"In Mozambique, flooding has become a persistent issue. Other parts of the African region, such as Malawi and Zambia, are more and more frequently struck by droughts."

He notes that many countries across the continent have acknowledged the impact of erratic weather on crops and food security and the need for climate smart agriculture: "South Africa, for instance, has made great strides in that regard. Quite a few farmers, large and small, are taking determined steps to make their agricultural practices more 'climate-smart' and resilient.

"Conservation agriculture is becoming a big thing here. That said, a lot of work needs to be done for the situation in the entire region to be satisfactory."

Bruce Dick, managing director of the development department of the Dutch Rabo Bank, agrees.

This bank was established in the 1970s as a co-operative to provide financial services to poverty-stricken farmers. As part of this history, it has developed into a global leader in food and agri-financing and sustainability-oriented banking.

"Some 80% of the African population depend on agriculture, whether on a large or small scale. The problem is that rural communities have been largely ignored by financial institutions and even governments.

"Most attention is going to improving lives in the cities," he says.

"This is where we come in. We are involved in various African countries, including Tanzania, Zambia and Rwanda, where we assist in enhancing agricultural practices through finance.

"We basically help to implement locally-driven agricultural initiatives including 'climate-smart' strategies," he says.

"While strides have been made in this regard, the pace to make African farming more resilient to climate change and increase yields at the same time needs to quicken.

"Red tape needs to be cut. If we do not address the issues of optimising agriculture, fighting climate change and feeding people, we risk social disruption and instability.

"This will pave the way for conflict. Africa does not need that," Dick says.

Miriam Mannak

Climate change, agriculture and Africa

- Côte d'Ivoire, Ghana, Guinea, Nigeria, and Togo have experienced an annual reduction of 50 to100 mm rainfall, whereas Burkina Faso, Niger, and Senegal – usually arid, rain-scarce countries – have seen increases in rainfall by 50 to100mm. (IFPRI)
- Temperatures have increased by 2°C over the past years in most parts of west Africa. (IFPRI)
- Even a minimal temperature rise could cause permanent GDP losses of 4% to 5% for Africa. (World Bank)
- By 2020, up to 250 million Africans (slightly under 25% of Africa's current total population of 1.02 billion), could face water shortages. Rain fed agriculture is expected to contract by 50% if no changes are implemented (Intergovernmental Panel on Climate Change)
- One metre sea level-rise, which is predicted for the next century, will displace 16 million Egyptians. (World Bank)
- Various countries across Africa have taken steps which deal with the link between climate change, agriculture and food security. Multiple western African countries have, for instance, submitted National Adaptation Programmes of Action (Napas) to the United Nations Framework Convention on Climate Change, identifying present and future climate change adaptation activities.
- Nigeria is increasingly growing cassava, which is more drought resistant less water intensive than, for instance, maize.

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A grape success

The proof that a combination of co-operating and using dialogue to meet challenges paves the way to greater yields

Albie Adams laughs heartily when I suggest that he must possess finely honed conflict resolution skills. My observation is made in light of the fact that he has just informed me that the Eksteenskuil Agricultural Co-operative has 80 raisin-producing members and 33 members who are not yet active producers.

"Yes, we do have different views about how to deal with challenges. However, dialogue is a positive thing and we have structures in place to make sure everyone is heard," Adams says. As chairperson of the co-operative, he heads up a five-member board that meets on a monthly basis.

Quarterly meetings are also held with all the co-operative members, and in this manner there is ample opportunity for challenges to be addressed.

Eksteenskuil is a rural settlement on the lower Orange River Valley outside Keimoes (approximately 45km from Upington) in the Northern Cape province.

The Eksteenskuil Farmers' Association (EFA) was established in 1994 to contribute to the social and economic upliftment of the historically disadvantaged small-scale irrigation farmers in the region.

In 1995, the EFA facilitated the export of raisins produced by its members to fair trade markets in Europe.

In 2003, it obtained fair trade accreditation, or FLO-CERT, which created the opportunity for the organisation to generate much-needed income in the form of a premium paid by the buyers to the community.

In 2006, the members of the EFA recognised that the EFA's legal status as an association was making it difficult to participate in the market and value chain. After investigating various legal entities, and following a comprehensive consultative process, the Eksteenskuil Agricultural Co-operative was registered. A decision was taken to dissolve the EFA on in September 2007, and thereafter the assets of the association were handed over to the co-operative. It has been a long journey for everyone involved, and the focus at present is to increase the production capacity of the farmers in the co-operative. Adams explains that many of the farmers have small-scale operations of three to four hectares. The size of their facilities limits their ability to expand drying areas, which is a critical element in raisin production. "Space is one challenge, but we can possibly overcome this by setting up shared facilities in the town that farmers can rent when they need it," Adams suggests.

"The real problem is the cost of these facilities, whether it is cement slabs or drying racks.

"The cost of producing them has increased significantly in recent times, and it will be a careful financial balancing act that we will need to undertake in order to make this a reality." This pool of equipment has played a big role in helping the farmers lift their production efficiency. However, the reality is that wringing maximum efficiency out of the vineyards can only take farmers so far.

"About 50% of the vineyards for raisin production in the lower Orange River are 20 years old. This constitutes a real problem because when these vineyards were planted, contemporary soil preparation techniques and planting procedures were not in use. This means that older vineyards can sometimes produce as much as 20% to 30% less than new vineyards," Adams says.

Once the vineyards that produce grapes for the wine industry reach full capacity, the potential exists for the co-operative to start dealing directly with wine producers

In this respect, the funding the co-operative received from the National Development Agency (NDA) has played a big role in opening up new opportunities for the farmers.

In 2010, the NDA provided funding to allow the farmers to start planting new vineyards that will allow them to provide grapes for the wine and fruit juice markets.

Despite floods in the region soon after the planting of the new vineyards, which necessitated some re-establishment of the vineyards, they are expected to start producing significant capacity this year.

"These vineyards are going to make quite a difference. They will allow farmers to switch between drying grapes for raisins and harvesting grapes for wine production, thereby affording them the opportunity to better balance their production," Adams says.

At present things are looking promising for the co-operative, and in the current year it has produced 240 tons of raisins and some 51 tons of sultanas. The increase in demand from Muslim countries during periods such as Ramadan has seen prices increase for sultanas, and it is now a potentially lucrative option for the farmers.

The co-operative has also concluded agreements with Safari and RedSun Raisins, which offer farmers reasonable prices for their raisins depending on the grade the farmers deliver.

"We negotiated these agreements in order to give farmers an opportunity to deliver to more than one buyer. To a certain degree, this gives freedom of choice to the farmer," Adams says.

Looking ahead, there are good opportunities for the co-operative.

Once the vineyards that produce grapes for the wine industry reach full capacity, the potential exists for the co-operative to start dealing directly with wine producers.

The increased interest in healthy lifestyles across the world also bodes well for the industry in general.

"We are not without our challenges, but I think we are certainly on the right path. The market is gradually opening up for us, and if we ensure that we are ready to take advantage of the opportunities that lie ahead, we will be able to continue building on our success," Adams concludes.

Mukondeleli Makhwathane
National Development Agency

The business of farming

The benefits of sustainable agriculture investment

Conservative estimates put the world's population at around nine billion by 2050. That's two billion more mouths to feed than is currently the case. While the responsibility for providing these escalating global nutrition requirements rests on the shoulders of the world's agriculture sector, it is not a burden this sector can be expected to bear alone – particularly when one considers that the additional challenges of climate change and water scarcity will make farming an increasingly difficult undertaking in the coming decades.

Given the importance of agriculture, it is incumbent on other sectors to actively contribute to its sustainability. So, while some may contend that the only part banks have to play in agriculture is through responsibly lending money to farmers, Nedbank takes a different approach. One that, they believe, has the potential to make a lasting and significant contribution to the establishment of sustainable agriculture within the South African agricultural sector.

Their work in this area sees them co-operating closely with agriculture sector stakeholders in order to gain a better understanding of the challenges faced and contributing to the development of actionable and effective sustainable agriculture initiatives.

Through their involvement with the WWF Nedbank Green Trust, which Nedbank helped establish over twenty years ago, they support and participate in a variety of initiatives aimed at supporting South Africa's agriculture sector while, at the same time, working with both farmers and consumers in promoting the importance of sustainable farming practices and consumption habits.

"Nedbank's three-year partnership agreement that was recently signed with WWF-SA's Sustainable Agriculture Programme is just one example of this integrated approach to encourage and enable sustainable agriculture at all levels of industry and society," says John Hudson, Nedbank business banking's divisional manager: Agriculture for KZN coastal and inland.

"Through our support of this programme, Nedbank will be making a significant and sustainable contribution towards the establishment and growth of healthy farmlands and surrounding ecosystems as well as the development of a resilient and viable agribusiness sector that will continue to play an important role in job creation, food security, social and economic upliftment and the development of the entire country."

The WWF Sustainable Agriculture Programme currently focuses on agricultural sectors within areas of global conservation importance, such as the Western Cape's Fynbos region, the Succulent Karoo and the Grasslands of South Africa.

This programme seeks to encourage environmentally sensitive agriculture production practices that ensure improved water and energy efficiency; reduce stress on limited, scarce natural resources; increase production capacity through the promotion of healthy, living soils and optimal water usage whilst delivering sustained, ethical long-term employment; and community upliftment opportunities. The programme focuses on both commercial, as well as emerging farmers. WWF-SA's Senior Manager for Sustainable Agriculture, Inge Kotze says that there is an urgent need to redefine and refocus our vision in terms of the future of food and the role of agriculture in reaching that future.

'This is why the Sustainable Agriculture Programme is aimed at enabling better production, rather than merely focusing on increased production alone. By promoting and supporting a vibrant and profitable agricultural sector in this way, we can all help to address potential food security challenges, while protecting the planet's natural resources and unique biodiversity."

Targeting not only the primary agriculture sector, but also the role players throughout the supply chain such as retail industry, key markets and many other key stakeholders in government, corporate and civil society sectors, the Nedbank-supported WWF Sustainable Agriculture Programme offers a unique opportunity for all members of society, including each of us as daily consumers, to be a part of a viable solution to South Africa's sustainable agriculture challenges. And when one considers that conservative estimates point to the need for global food production to increase by 70% in the next 35 years in order to meet the nutrition needs of the nine billion future inhabitants, it's easy to see why this level of involvement by all is non-negotiable. And why Nedbank is committed to investing in the future of South Africa's farming.

Natural sustainability

Agriculture to enhance a greener economy

A green economy is reducing the consumption of, and damage to, natural resources and the environment, while meeting and improving economic and social needs, and promoting equity in society.

A green economy ensures real sustainable economic growth, prevents environmental pollution, minimises global warming, resource depletion and environmental degradation, and controls a greater efficiency in the use of energy, water, and materials.

The United Nations Environment Programme's (UNEP) Global Green New Deal green economy initiative encourages all governments to support economic transformation to a greener economy that promotes sustainable and inclusive growth.

In response to the call, the Department of Environmental Affairs convened a Green Economy Strategy Summit in May 2010 to gather insights on key focus areas. The summit produced strategies which refer to two interlinked developmental outcomes.

These are growing economic activity in the green industry sector which would lead to investments, more jobs and competitiveness; and a shift in the economy as a whole towards cleaner production with a low environmental impact.

To ensure that opportunities in the development of green industries are recognised, the Green Economy Accord was signed at

South Africa's National Parliament on 17 November 2011 in Cape Town by representatives of the government, business representatives, organised labour and the community constituency.

The Accord functions towards achieving a higher share of participation by all sectors with increased investments and decent jobs, reduced energy and material intensities in production processes, less waste and pollution, and significantly reduced greenhouse gas (GHG) emissions.

For the transition to a greener pathway, South Africa needs dramatic upgrades in technology, skills, policies, business models, public buy-in and improved governance.

In the agriculture sector, a shift is needed from industrial, high-input and resource-intensive agriculture to sophisticated, biodiversity-based agro-ecological practices. Previous research suggests that the application of green farming practices has increased yields, especially on small farms, between 54% and 179%.

Investments and policy reforms aimed at greening agriculture, offer opportunities in diversifying the economy, reducing poverty through increased yields and creation of new green jobs especially in rural areas, ensuring food security on a sustainable basis, and significantly reducing the environmental and economic costs of agriculture.

Besides the productivity gains, green agriculture has the potential to contribute significantly to environmental benefits such as: restoring and maintaining soil fertility; reducing soil erosion and inorganic agro-chemical pollution; increasing water use efficiency; decreasing deforestation,

Investment in agriculture, including agro-industry, rural infrastructure, agricultural science, technology and support services such as financial institutions and extension programmes, have been critically important to past growth performance

biodiversity loss and other land use impacts; and reduced emissions.

Investment in agriculture, including agro-industry, rural infrastructure, agricultural science, technology and support services such as financial institutions and extension programmes, have been critically important to past growth performance.

Greening agriculture requires investment and research in the following key areas: soil fertility management; more efficient and sustainable water use; crop and livestock diversification; biological plant and animal health management; an appropriate level of mechanisation; and capacity building efforts in upstream and downstream supply chains for smallholder farmers and co-operatives to expand market access.

Reducing waste and inefficiency such as crop losses to pests and hazards, losses in storage, distribution, and marketing are important parts of the green agriculture paradigm. This offers opportunities requiring small investments in simple farm and storage technology on small farms where it makes the most difference to poor farmers. Less than 5% of worldwide agricultural research and extension funding currently targets this problem.

Investors are expecting to benefit from investments in the agricultural sector, in the short term, medium and long term, since demand for food and other agricultural products is projected to continue to rise.

At the same time, constraints on the supply side of agricultural products exist, such as resource scarcity and growing urbanisation.

In addition, the impact of environmental degradation on agricultural production leading to more supply constraints is expected to further contribute to increased investor interest.

In spite of their invaluable contribution to economic growth, small farmers often lack the tools, money and skills to respond to agricultural development challenges. Pests and diseases destroy crops and animals, extreme weather events slow work and limit production, and growing populations increase demand for nutritious food.

In agricultural research and development, the challenge is to maintain past productivity gains, while investing in technological innovation in more diverse agricultural systems that will add value to small farmers.

A challenge in deciding future investments in technological modernisation is to understand and project future needs such as changing consumer needs and urbanisation, and what that means in terms of food processing and logistics.

Farmers have a great opportunity to help make South Africa more independent in energy efficiency practises.

Advancements in technologies for making biofuels like ethanol and biodiesel mean that new markets are opening up, especially opportunities for sorghum production.

Fuel ethanol is currently produced from the easily fermented sugars and starches in grain and food processing wastes. Biodiesel is made from oil-seed crops such as soybean and canola.

Soon, new and better technologies will be economically viable for converting plant fibre to ethanol and small-scale farmers could benefit vastly from contracts that would guarantee a steady income.

Agriculture contributes 30% of GHG emissions worldwide and is responsible for 50% of South Africa's water use.

Greening agriculture could transform the sector from being a major emitter of GHG to one that is net neutral and possibly even be a GHG sink (removing GHG from the atmosphere), while reducing deforestation and freshwater use by 55% and 3%, respectively.

In South Africa's agriculture sector, it is critical to develop a water-efficient economy with a social ethic of water conservation for sustainable water resource re-use.

The Green Economy Strategy aspires to develop a water-efficient economy that is sustainable, prosperous, self-reliant and meets the fundamental human needs of all South Africans. By managing its limited ecological resources responsibly for current and future generations, and by advancing efficient and effective integrated planning and governance through national, regional and global collaboration, South Africa's green economy can advance and contribute positively towards green sustainability.

Rizel Delano

Do

o it the BVG way...

As time, technology and growth within companies has become a day to day reality, so has the change from Bosveld Graan Est 2005 to BVG – your partner in risk management. This name change came about in 2012, when Bosveld Graan chose to abbreviate the company name to BVG. BVG has travelled a great journey in the trading industry as a member of the JSE. Over the last eight years BVG has had the opportunity to make a direct connection between the client and the trader in terms of needs, wants, service and satisfaction.

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Extracting the facts

Mpumalanga province is in a bind about which industry supports its ongoing operations: mining or agriculture, both of which contribute and are vital to the country's economy

South Africa is the fifth largest coal producer in the world. In Mpumalanga both mining and agriculture are in a power struggle and have a significant impact on the each other's core business functions.

The problem is that both are vital to the country's growth so neither can be eliminated as a threat to the other.

The question is whether or not they can co-exist, an answer that does not have a definitive answer, though it would seem that the mining industry is winning.

Coal mined in Mpumalanga is used to provide about three-quarters of the country's energy. However, it is also known for its grain, maize, soya beans and dry beans farming.

With household food security a problem, agriculture has become more important.

The global population is expected to reached approximately nine billion people by 2050. Mining uses a lot of the resources like water and electricity because it is an extractive industry, and provides jobs to thousands but agriculture provides food for the country, and employment to farm workers. According to *Miningmx*, there are 60 mines in the province which operate on 13% of the river catchment areas and productive farms.

If pending mining permits and prospecting licences were granted, that would mean 80% of the region's area would be taken up by mining companies.

These same areas are suitable and produce soya beans, maize and dry bean farming (soya beans 51%; maize 24%; and dry beans 23%)

are produced in the area. The pressing issue is that if mining companies win this land war, food prices will further increase and food insecurity will become a reality.

And, post mining, any agricultural yields would not have the same potential as before, not to mention road infrastructure, water infrastructure and electricity infrastructure – farms in the province could be destroyed. In an article published by *Farmers Weekly* in October 2011, Koot Claassen, president of Mpumalanga Agriculture said: "About 13,7% of the land in Mpumalanga is currently being mined, 40% has prospecting applications and 54% of the land has already been mined.

"The impact of this on agriculture and the economy will only get bigger," he warned.

Adding to this he said many mines at the time did not have water licences never mind that many of the mines that could be rehabilitated, are not and that there are more than likely illegal mining operations taking place. In an earlier report in 2011 from *Engineering News*, Eskom said 15 more coal mines are needed in Mpumalanga to meet the demand for energy in 2015.

That is a whopping two billion tonnes. And it has been reported that the quality of coal being mined in the province was not nearly as top quality as previous coal that was mined, which begs the question, why are coal mining companies not looking elsewhere?

On the *State of the environment in South-Africa* website, which featured mining in Mpumalanga, it states quite aptly the crux of the issue that agriculture has with mining in the province.

"Apart from the demand for such non-renewable natural resources, other typical environmental impacts associated with the mining sector include the loss of biodiversity due to the transformation of natural habitats and ecosystems. Mining processes usually require massive amounts of water and this creates a huge demand on available water resources. Furthermore, surface and groundwater pollution often results from acid mine drainage when soil and rock overburden or waste rock and tailings are exposed to air and water and through chemical processes, release large quantities of iron and sulphate into a solution which produces an acidic solution known as acid mine drainage.

"Other impacts include air pollution, noise pollution and the visual impact of large open cast mining operations."

The challenge remains that while both industries are important to our survival, one is going to have to relinquish control over the land.

Food security is a major problem, as is coal production for energy.

However, we live in a world where clean energy is a more appealing alternative, perhaps the agriculture industry will win this one. We can only hope.

Staff reporter

Did you know?

Around 224 million tons of marketable coal are extracted each year. Currently, about 77% of South Africa's primary energy needs are provided by coal. Due to the relative lack of suitable alternatives, this situation is unlikely to change over the next 10 years.

Market maker

Prominently situated on a busy thoroughfare in the centre of Pietermaritzburg, the New Port fresh produce market benefits from the bustling commuter trade in and around its location

In many respects, New Port represents a new era in the funding approach adopted by the National Development Agency (NDA). It is a unique project in that, for the first time, the agency has funded a project aimed at building a retail base and establishing its brand in the highly competitive commercial marketplace.

"I must confess that I was quite sceptical when I approached the NDA," acknowledges Muhle Sibisi, founding member and chairperson of the New Port Co-operative.

"I had my doubts about its willingness to put funds behind an idea that would push the boundaries of what has become known as an 'acceptable' projects to fund," he says.

Despite his reservations, and with the encouragement of a local NDA representative, he approached the agency.

His idea, which he admits had been germinating in his mind since childhood, was to open up direct and easy access for emerging farmers to urban markets.

"I grew up in a rural area, and as is common practice in such an environment I spent a lot of time working the soil and raising crops in conjunction with my family.

"I always knew that our produce carried commercial value, but there never seemed to be an effective way of unlocking this potential," Sibisi says.

While attending a function at which KwaZulu-Natal Premier, Dr Zweli Mkhize, placed emphasis on the formation of farming co-operatives and urged everyone to assist these emerging farmers, Sibisi decided that the time had come to start putting action behind his dream.

Since 2000, he had been active in the informal trading of produce and had gained a good understanding of the challenges which were prevalent in this sector.

By the time he approached the NDA with his plan to create a fresh produce market that would focus on being an outlet for all the emerging farmers in the region, he was quite confident that his venture would be a commercial success.

His experience, business plan and the thorough manner in which he dealt with all the details, along with his experience in the market, were all factors that convinced the NDA that this 'new' approach was worthy of funding. The agency assisted him in fitting the market with all the necessary equipment, and in October 2010 New Port opened its doors for the first time.

"Full-blown commercial enterprises are expensive to get off the ground, and the grant was a sizable R3.5 million," reveals Sibisi.

To his credit, the market has been a great success – even an outstanding funding tranche has not broken its growth stride.

"There is still about R300 000 that is outstanding, but this does not pose a problem for us as we are on a sound footing and generate enough to keep us going," he says. It has also been a huge positive for emerging farmers in the region, who now find a ready market for their produce.

According to Sibisi, for many of the emerging farmers the market provides an introduction to the rigours of the free-market system.

"I know that the NDA makes a substantial effort towards ensuring that farmers have a good understanding of financial controls and input costs. However, it is only when they deal with the realities of having a crop in the field, tallying all the input costs at harvest time and negotiating with buyers that a new learning curve opens up for them," he shares.

He admits that a number of emerging farmers harbour unrealistic price expectations, and that he often spends some time with them during price negotiations to explain the impact of energy costs and how the prevailing market price influences what he can offer them for their produce.

"We always find a happy medium in terms of price, and I also use the opportunity to advise them on packaging techniques for their produce, since how you display your products makes a big difference to consumers.

"One of the challenges I am experiencing revolves around the regularity of supply. I always encourage the farmers to have a crop in the field, since this gives them the opportunity to take advantage of good market prices while riding out the dips."

Sibisi has big plans for the future. He is already negotiating with the owners of the building situated at the back of the market to secure a lease for these premises.

He intends opening up a wholesale market in this space, catering for vendors and other bulk buyers. He notes that in the northern regions of KwaZulu-Natal, many vendors and traders think nothing of driving to the municipal market in Durban to acquire produce.

"This makes no sense, but they do it because they do not have municipal markets in their towns. I believe we can successfully take the New Port brand into these regions and kick-start the wholesale side of our business in a big way," Sibisi says.

This expansion will create additional employment opportunities, and Sibisi could add to the 19 people already employed at the market.

"One of the key challenges I am going to have to overcome first is raising the finance to expand my fleet.

"Ideally, I need a fleet of one ton commercial vehicles and three more trucks. If I can get these, we can collect and get produce to the market faster. It will also facilitate our expansion drive," he says. Considering the track record he has for innovation and overcoming obstacles, there are few people who would bet against him making this a reality.

Access to markets

Under the stewardship of a mentor, BBS Farm has grown from strength to strength, producing tomatoes, beans and macadamias.

BBS Farm had a wealth of produce but lacked a sufficient market to sell to.

"The Newport fresh produce market has really helped us to grow exponentially. Representatives from the market buy all the produce we are able to generate, collect it themselves and pay us when they say they will," the mentor says.

With regard to non-monetary aid, the mentor says: "Before, we struggled with marketing our products, having enough manpower to really capitalise on our harvest, and having the correct documentation on hand – all facets with which the NDA has helped us through training in these core activities."

Food for thought

The owner and chief operator of Rainbow Mission Farm, is delighted with the opportunity that New Port has brought.

"Apart from purchasing all the beetroot and carrots we are able to produce, the market has opened our eyes to new and exciting avenues we had not considered before.

"Through our meetings with the market's representatives, we have been told that by producing other produce that falls in different cycles than our main produce – such as spinach and paprika – we will be able to substantially supplement our revenue streams, as these are highly sought-after products," the owner said.

The positive outcomes of this project are not only found on the farm but in the surrounding communities too.

"Apart from the fact that the Newport fresh produce market employs local people and therefore creates job opportunities, the market is also – and this is very important – giving hope of a brighter tomorrow to all members of the surrounding communities," the owner says.

Motivation for a brighter future

Through their ability to bring their products to market, coupled with effective cost savings, the operations manager at Coastal Cashews, sees sustainable growth for the future.

"In these harsh economic times, one cannot afford to carry excessive expenses while not reaching expected sales. The Newport fresh produce market has been instrumental in enabling Coastal Cashews to remain competitive through purchasing everything we are able to produce, and taking collection upon themselves, thus minimising our expenses in terms of distribution," the manager says.

Looking to the future, the manager says: "We are looking forward to expanding our pineapple production, not only to increase sales but also to get more members of our community involved and employed."

Supporting growth

From the outset, the NDA has been there to help and assist new farming ventures, as a member of the Agri Co-operative says.

"Without prior knowledge of the supporting activities required to run a successful business, we were cautious and a bit hesitant.

"But through training programmes provided to us by the NDA on financial management, business management and dispute resolution, we have become much more confident in our ability to make a lasting change," the member said.

Mukondeleli Makhwathane
National Development Agency

Newport brings new hope

The Newport fresh produce market is an NDA initiative aimed at assisting small farmers from the KwaZulu-Natal Midlands in bringing their produce to a relevant market. The market was initiated by an NDA grant of R3.5 million and has had an incredibly positive impact on the local community, as these small farm owners attest.

The gentle gender

The participation of women farmers is growing in the right direction

It is a common belief that as things grow they also change. And that we must embrace change or cease to grow. That ideal literally applies to the act of farming as much as to an agricultural sector that is faced with a number of challenges that require change to support growth.

Traditionally a male dominated sector, agriculture has been under the microscope in recent years due to the issue of food security in the country and the continent as a whole. According to the United Nations Foods and Agriculture Organization (FAO) more than two-thirds of all women in Africa are employed in the agricultural sector and collectively produce almost 90% of all the food on the continent.

Coupled with the fact that women in sub-Saharan Africa also make up almost 80% of the labour required to produce food for household consumption and sale, it seems obvious that harnessing and maximising

According to the United Nations Foods and Agriculture Organization (FAO) more than two-thirds of all women in Africa are employed in the agricultural sector and collectively produce almost 90% of all the food on the continent

women's roles in agriculture would be a natural progression of the industry resulting in reduced poverty, hunger and marginalisation.

While women are regarded as the answer to a successful agricultural industry, many questions go unanswered about how to realise this change.

Gender issues remain largely unchanged and prevent women from taking a more active role in farming.

Women receive a fraction of the land, credit, improved seeds, fertilisers, agricultural training and information compared to men. Added to that, women are generally remunerated less than men. In a report by Lindiwe Majele Sibanda, CEO and head of the Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN), said that: "Developing policies that focus on the needs of women is not just a political priority, it is an economic imperative. As the FAO states, there is a significant global gender gap in agriculture, which translates into a costly lost opportunity to improve the quality and quantity of the world's food supply.

"If women had the same access to, and control over productive resources as men, they could increase yields on their farms by 20% to 30%. This could raise total agricultural output in developing countries by 2.5% to 4%, which could in turn reduce the number of hungry people in the world by 12% to 17% or 100 to 150 million. It is clear that addressing the issues that affect women's ability to become major stakeholders in agriculture is key to closing the gender gap that exists.

A 28-member farming group in Machakos, Kenya farms a four acre plot where they grow oranges, avocados, vegetables and maize

Low literacy levels (as low as 40%) often prevent women in Africa from fully engaging in the business of farming.

Literacy gives women access to essential resources such as loans and credit to purchase assets, equipment, tools, fertilisers and seeds.

A lack of finance is also related to a lack of collateral or surety for loans, complicated administrative procedures and inadequate loan sizes or heightened interest rates are major obstacles that limit the investment and productive capacity of women, as well as their ability to finance other basic and strategic needs.

Beyond the issue of literacy, women also have difficulty accessing funds to invest in irrigation or land improvements because of their fundamental inability to own land.

Many societies, laws and traditions in Africa prevent women from owning and inheriting land. Furthermore, formal laws and regulations that prohibit a married woman's access to credit without her husband's signature keep women from breaking cultural barriers to owning land and operational farms themselves.

And according to Melinda Sundell, a senior research fellow at Stockholm Environment Institute, women's lack of assets directly impacts on human development outcomes.

Also at a root level, women access very limited to no benefits from training in new crop varieties and technologies. A lack of government services to help increase output and productivity in agriculture further exasperates the problem.

SHE SAID IT!

"The real cause of hunger is the powerlessness of the poor to gain access to the resources they need to feed themselves."

Frances Moore Lappé

woman working the fields in Kismayo.

They receive only 7% of agricultural services, less than 10% of the credit offered to small-scale farmers, and own only 1% of the land, excluding African women from lucrative agricultural opportunities such as cash crop production which has in many instances, reduced women's bargaining power and status as their role of food producers is replaced by seasonal employment and unpaid family work on men's crops.

Unfortunately, a skewed perception of women's empowerment prevents growth and change in many of these problem areas. Typically, empowerment is often regarded as a win-lose situation with men being replaced by women in the agricultural sector or 'losing out' to their female counterparts.

Transforming gender relations may bridge the gap between fact and reality in this case.

According to a study conducted by the International Food Policy Research Institute, if men and women had equal influence in decision-making in agriculture, an additional 1.7 million children would be adequately nourished in sub-Saharan Africa.

It has been stated many times over that Africa's food security problem can only be overcome by working in partnership with its small-scale farmers, most of which are women. It is therefore imperative that these farmers be linked to seed suppliers in the private sector; have improved access to production resources such as input credit and secure land and water rights.

It is with that in mind that a number of initiatives are underway to elevate and equalise the role of women in agriculture. Women Accessing Realigned Markets (WARM) is an initiative by FANRPAN and supported by the Bill and Melinda Gates Foundation that serves to strengthen a women farmer's ability to advocate for improved agricultural policies and programmes through the Theatre for Policy Advocacy (TPA).

FANRPAN has developed a script called 'Winds of Change' that explores the challenges that rural women face in farming.

Low literacy levels (as low as 40%) often prevent women in Africa from fully engaging in the business of farming

The Women in Agriculture and Rural Development (WARD) is an initiative started by former Land and Agricultural Minister, Lulama Xingwana.

The purpose of WARD is to bring gender issues in agriculture and land policies to the forefront, and bridge the gap between rural women and government programmes and projects on a local and national level to increase their involvement in farming.

AfriSam is another pioneer in promoting women in agriculture and has invested in a multi-million Rand enterprise development initiative to assist women from Rethabiseng, outside Bronkhorstspruit, to realise their dream of making a good living from sustainable farming. AfriSam worked together with social enterprise Food & Trees for Africa (FTFA) to develop a commercially viable, organic farming community project.

FTFA's programme, Farmer Eco-Enterprise Development (FEED) provides farmers with training, mentorship, operational support and marketing assistance to help them build their businesses from the farm to the local market, supermarket and in time, the international market as well. The produce from this initiative is already being sold, resulting in earnings of around R1-million for the co-op members in their first year of operation.

It is clear that growth must come from change and change in gender equality will require the participation and co-operation of both men and women for the good of the continent and generations to come. This approach could mean that the farms on our continent have enough food for all and an abundance of opportunities to realise prosperity.

Taryn Springhall

Empowered women are key

A quote found on the Royal African Society website states: "Against the odds, Africa's women produce the large majority of the continent's food, a critical issue when the continent suffers malnutrition – a terrible thing in itself – which has knock-on effects for health and education. Despite their critical role in Africa's farming, women still have less access than men to land, finance, expertise, and other critical inputs.

Empower women. When women grow more and earn more, they tend to spend on healthcare and education for their children.

Greater yields from women farmers can increase food security and reduce dependence on aid. It's time this moved up the political agenda. Africa has tremendous potential to be the world's bread basket and contribute to world security. Fully empowered, women will be the key."

Caroline Kende-Robb: Executive Director The Africa Progress Panel

The importance of riots and strikes cover

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The strikes started with the Marikana saga followed by all the other mining protests, truck drivers strike and the national Farm workers' strike. "

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Food inflation problems

10 solutions for a sustainable future

Accoring to Professor Marcos Fava Neves, from the São Paulo University in Brazil there are two ways to solve the food inflation problem. One is to go backwards towards an increase in protectionism, stimulating non-competitive areas to produce and returning to the 'self sufficiency' of war times. The other is to ban biofuel (a biofuel moratorium) as a possible solution for society to live in a more sustainable planet.

I offer governments and international organisations, my contribution to the food inflation debate, a 10 point agenda that in my opinion is the right avenue to follow in providing long term results:

1 Expand production horizontally into new areas, with environmental sustainability.

This expansion can be done in several countries – South America uses only 25% of its capacity, but in all the continents, with millions of hectares which today are poorly used. In Brazil, several studies by credible institutions confirm the existence of more than 100 million hectares of land which can be utilised for food and biofuel production, without touching fragile systems and mostly growing over degraded pastures.

These production and land expansions, if stimulated with sustainable contracts, will bring inclusion in farming, new entrepreneurs, job creation in less developed nations, income distribution and economic development, having even a positive impact on democracy.

2 Vertical expansions, or, more production in areas that are already being utilised.

Several hectares of land in South America, Africa, Asia, and even in developed nations could produce more with more technology and investment. If one compares the amount of corn a farmer in the United States can generate in tons per acre is two or even three times higher than the average production of Brazil and other countries.

With irrigation, some farms on the tropics can generate three crops a year.

3 Reduce food import taxes and other import barriers and protections.

Food prices in some countries are artificially inflated due to import taxes and other kinds of protections.

For example, in the European Union beef costs four to five times more than in Argentina or Brazil.

The argument mostly used is that lowering the protections will damage the local agriculture of less developed countries.

It must be assumed now that the new level of commodity prices may allow local agriculture to be competitive.

Several other internal taxes on food can also be reduced by the local governments, reducing consumer prices. Additionally, the more than R3 trillion spent annually by the Organisation for Economic Co-operation and Development, or OCDE members in agricultural subsidies put even more pressure on prices while undermining more cost efficient food production in naturally competitive countries.

4 Investment in international logistics in order to reduce food costs.

Some grain producing countries have extremely poor logistics. The governments should invest and society should work harder to change institutions in order to facilitate public-private partnerships to privatise ports, roads, and other food distribution logistic equipments.

5 Reduce transaction costs.

Since major international food chains are badly co-ordinated, have several redundancies, poor use of

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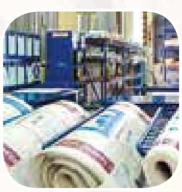

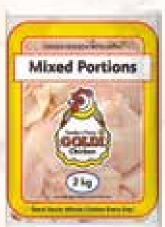

Poultry Operations | Feed Operations | Investment Holding

QUICK FACTS

- Astral as a listed company was 11 years old on 9 April 2012
- Top 100 JSE listed company for 6 years
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- Represented in 4 Southern African countries
- In excess of 11 000 employees
- 7 000 hectares of agricultural and industrial land
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assets, corruption, opportunism and other inefficiencies that are largely responsible for losses, increases in costs and the maintenance of not adding value to companies, agents or others in the food chains, impacts food prices. Institutional reforms as proposed by Douglass North are the solution here.

Also more efficient co-operatives, producer pools, and other collective actions should gain force to reduce redundancies and increase bargaining power.

6 Use the best sources for biofuel, in a totally sustainable way.

The example of Brazil could be better analysed, since ethanol is produced in 3.5 million hectares of cane, using only 1% of the country's arable land and supplying 50% of fuel transport consumption, with no impact in food production.

The growth of food production and biofuel in Sao Paulo State in the last 10 years shows that it is possible to grow food and biofuel together.

Crops for biofuel that have better yields and do not compete with food chains should be prioritised in the global development of biofuel. Ultimately, the growth of biofuel in the world's energy matrix has a positive effect on inflation and food production for it reduces economic dependency in limited resources and eases climate changes that jeopardise agriculture (lately, unusual climate patterns have impacted wheat and meat production, for instance).

The energy balance of Brazilian ethanol is 4.5 times better than that of ethanol produced from sugar, beet or wheat, and almost seven times better than ethanol produced from corn.

7 Invest in a new generation of fertilisers.

It is important to produce fertilisers from alternative sources – plants that can absorb the energy of the sun, more recycling of by-products as sources of fertilisers to mitigate the huge risk and cost of fertilisers in the future.

Fertilisers are among the most important and expensive inputs for agriculture, and in times in which yield must be improved, its importance grows even more. For example, in Brazil fertilisers respond to around one third of total variable costs of a standard soy plantation.

In the last three years farmers have been facing an astonishing increase in the prices of fertilisers. Compared to 2006, the DAP international price averages for the first four months of 2008 rose more then 360%.

Also during this period, according to the World Bank, the prices of phosphate rock is 730% more expensive, TSP rose 414% and urea and potassium chloride rose 181% and 197% respectively.

8 Work more towards sustainable supply contracts for farmers, with integrated sustainable investments and projects.

It is of fundamental importance that margins and income will be better distributed on food chains, reaching farmers all over the world.

Price stimulus is the best economic incentive for growth in production with technology.

It is well known and studied how concentration in several food industries and retailing retains margins that could be better distributed to farmers increasing economic development.

9 Stimulate research and investments in innovation.

From all possible sources, but mostly in genetics, in order to find new solutions for food and biofuel production and consumption. In trying to solve the sustainability equation, seeds are a problem today, due to shortages.

Public investments in agricultural research and development have decreased considerably in the past couple of decades, resulting in a yield-growth slowdown, disabling production and the ability to keep up with rising consumption.

10 Slowly work to change consumption habits in both food and fuel.

Food is over consumed in several parts of the world, bringing with it obesity which is a major health concern.

Another area of inefficient consumption is fuel. Investments need to be made in resourceful public transportation. This is a major challenge in many countries.

Barcelona has implemented a very nice public biking system which is an excellent example of a working solution.

My contribution is to organise and propose these 10 suggestions for use in this debate. They are not new, and some are already being implemented with beautiful results. But, we have reached a turning point.

We can either go back to trying to increase protectionism, less efficient ventures of self-sufficiency, ban biofuel, create food export taxes, or even threaten to turn private companies into public companies. Or society can move forward, and I certainly hope global interest will allow us to move forward with this positive agenda, the right avenue for global sustainability.

Professor Marcos Fava Neves
University of São Paulo

Strategic planning

The futures market in the current economic context for the interested investor

This volatile sector has seen rises and falls among a host of variables within the agricultural sector. Nonetheless controllable macro-economic policy variables and an investor comprehension of overall trends help navigate the futures market.

The year has begun with trends discernible from both sector activities in the world's largest economy as well as recent challenges reported this year for South African farmers on the issue of water security.

Despite shifts in the grain market coupled with the standard warnings of investment analysts, noting hedging on grain futures are only for the very experienced investor; this has not stalled the interest and profit making in the sector.

According to the government's data the grain industry is one of the largest in South Africa, producing between 25% and 33% of the country's total gross agricultural production.

At present the largest area of farmland is planted with maize, followed by wheat and, to a lesser extent, sugar cane and sunflowers according to *southafrica.info*. What many are coming around to acknowledging, in the mainstream, confirms what contrarian investors like Doug Casey predicted for some time: the potential for wealth lies in agricultural commodities.

Casey Chumrau, a market analyst at a United States based entity called Wheat Associates, says this downward trend in wheat came unexpectedly to several buyers and sellers.

"While the wheat market fundamentals appear mostly bullish, wheat futures have

fallen 20% on average since 8 November 2012," she noted in a recent investor newsletter.

"Declining world production estimates and crop damaging weather have not supported the markets and the slide stands as a reminder that complicated dynamics are driving today's wheat market," she said.

Some have blamed the US government's budget debates, indicating they "overwhelmed any bullish wheat news at the time".

Michael Krueger, founder and president of The Money Farm was one such individual: "Investors and investment funds looking for new opportunities pulled money out of commodities into the stock market, for example, which has performed extremely well the last few months.

"That erased the incentive to stay in or return to declining commodity markets.

"The biggest reason for the drop in wheat futures has been an exodus of speculative money from the markets in late November and early December due to concerns about the approaching fiscal cliff in the United States," he said, in comments captured by US Wheat Associates.

By contrast corn futures fell in early January after prices of the grain declined in the US, the world's largest grower.

However local South African wheat futures rose to the highest in more than five weeks after US prices climbed following concern that snow and cold weather late in the winter may harm the crop – leading to a five week high just before April as tracked by Bloomberg News.

"South Africa is a net importer of wheat and sub-Saharan Africa's largest producer of the grain after Ethiopia.

"The nation is the region's biggest importer after Nigeria and Sudan, according to US Department of Agriculture data," Bloomberg's Jaco Visser elaborated. Domestically the contribution of agriculture stands at around 10% of formal employment, meaning policy in the area of agriculture is a natural priority for the country and a critical variable for investors.

Policy aside however, sustainability of current farming practices has been highlighted, with journalist, Sue Blaine, revealing that there is insufficient fresh water in South Africa to go around.

She underscores that experts say water availability is the most important factor limiting agricultural production. This variable of water is critical in determining the economic contribution of agriculture to the economy.

Declining world production estimates and crop damaging weather have not supported the markets and the slide stands as a reminder that complicated dynamics are driving today's wheat market

Policy matters are also important determinants in the environment.

The latest Index of Economic Freedom, an annual guide published by the *Wall Street Journal* and the Heritage Foundation in Washington, report on South Africa explains that the economy continues to be "moderately free", but the level of economic freedom this year is the second lowest in the country's 19-years of being surveyed for the Index.

Lead economist on the report, Jim Roberts, alongside Ray Walser, note in a report by the Centre for Development and Enterprise: "Land Reform in South Africa, after South Africa's first democratic elections in 1994, small-scale farmers expected the opportunity to buy the land they had formerly leased from their homeland governments in order to acquire full commercial status."

They add that the CDE report notes, however, that most are still awaiting transfer of title to the land, leaving them unable to use that title as security for production and farm infrastructure loans.

"Anger has already mounted among farmers – both black and white – in the Eastern Cape, at the provincial government's failure to release state-owned farms for redistribution as well as at the failure to enforce property-rights protections against land invasions."

The regulatory ability to provide title on state-owned land is argued as a crucial measure to deliver on the macro-economic stability that can make for a lasting solution leading to improved market conditions and long-term output for investors. Overall the government reports in its own analysis that the grain industry is one of the largest and is "a very strategic one".

Garreth Bloor

Rain harvesting

Sustainability was the name of the game at the launch of South Africa's largest commercial rainwater harvesting project, located at Vodacom's Midrand head office

The R4.2-million (US$459 000) project is expected to reduce Vodacom's usage of municipal water for cooling by up to 40%. Fittingly, it's been completed in the UN-declared International Year of Water Co-operation.

Over the last 10 years, says UN Water, global water use has been growing at double the population growth rate, and is unsustainable.

"Corporates, even those that don't use a lot of water, can have a significant effect on society and the environment by introducing conservation measures," says Maya Makanjee, the company's CO of corporate affairs. She also sits on the board of the World Wide Fund for Nature, South Africa.

Decisions taken today will affect future generations more, says Makanjee, because water is available now whereas people in years to come may face greater challenges in accessing the resource. Rainwater harvesting is a technique that has been proven effective in conserving water.

Thembani Jwambi, Vodacom's executive head of facilities, says there were a number of compelling reasons for initiating the project.

Firstly, the company wanted to reduce its reliance on municipal water and reduce the volume of municipal water it uses in the HVAC cooling plant in its Commercial Park building.

Also, rainwater would require fewer chemicals for treatment, which in turn would help the environment, and lastly, it would contribute positively to the bottom line.

The company started on its water-saving drive by filling in the man-made water features and pools on its premises, replacing them with water-wise gardens. In addition, waste water from the cooling plant was used for irrigation.

The savings from these efforts amounted to about 15%, but Vodacom wanted to do more. Tackling the water usage of the cooling plant, the team felt, was a way to substantially reduce overall water consumption.

The plant uses about 30 megalitres of water every year, but now 12 of those megalitres – or 40% of the demand – are supplied entirely from rainwater. One megalitre is a million litres.

Based on 50-year data reflecting annual rainfall in the area, which was calculated at 537mm per year, the company was able to determine the optimal size for an underground dam to

> Every drop counts. All of us in South Africa need to realise that water conservation doesn't depend only on the government.

collect the monthly downpour. "The capacity of the dam is one megalitre, which is what we are able to harvest every month," says Jwambi, "and the catchment area is 0.4 square kilometres."

Those million litres a month, which would normally run away into the stormwater drain, are now diverted to Vodacom's Commercial Park.

The water is not exposed to any chemicals, and the only treatment is a filtration process. Monitoring of quality and quantity is automated, and because there is a non-return valve in place, there is no danger of the untreated rainwater and municipal water coming into contact.

Vodacom aims to become known as a leader in the field of corporate water conservation. "We want to tell other companies that we did it, and they can do it too," says Jwambi.

"Every drop counts. All of us in South Africa need to realise that water conservation doesn't depend only on the government," says Phakamisa Mgedezi, programme manager for rainwater harvesting at the Department of Water Affairs. "Rainwater harvesting is not a new idea because people in rural areas have practised it for years, but these days it's well suited to urban areas because there are better structures in place."

Future demand exceeding supply

By 2030, an extra 52% of water will be in demand from urban centres, agriculture and industry around the world. Unless steps are taken now to cut down on water usage, the demand will outstrip the supply by 17%, predicts the 2030 Water Resources Group.

South Africa's special challenge, says the group in a report titled *Charting our Water Future*, lies in the fact that demand is projected at 17.7-million megalitres by 2030, with 34% of this demand coming from households. However, the country currently supplies 15-million megalitres, and not all of that can be guaranteed for the future.

"At WWF we are faced by challenges such as preserving wetlands. This issue and others that centre on water availability and scarcity are crucial for the African continent.

"Today water is available, but we need to look to the future," says Makanjee. Wetlands are important because they help to purify and store water, thus ensuring a supply during times of drought.

Wetlands help to minimise flood damage because they regulate water flow, and they control soil erosion. They also provide a home for a wide range of plants and animals, and they are an important source of food, drinking and irrigation water for poor communities.

Yet, 50% of South Africa's precious wetlands have been lost, says Makanjee, and others are suffering under pollution from industrial effluent.

"Water availability affects not only society," she says, "but the economy too, because many companies rely on water for their operations.

"Vodacom has taken on the responsibility of reducing its water footprint."

Janine Erasmus
MediaClubSA

Is your drinking water safe?

According to the Department of Water Affairs there are a variety of places to find the results you are looking for:

- Your local water services authority (municipality): You can see the results from water quality testing at your water services authority. Customers services staff will explain the results of tests and also tell you what is being done to rectify failures.
- The Department of Water Affairs: Additional information on drinking water quality sampling, analysis, assessment, treatment and management can be found in the Department of Water Affairs and Forestry, Department of Health and Water Research Commission guides on the quality of domestic water supplies.

More detailed information is available in the Drinking Water Quality Framework for South Africa which is accessible from the Department of Water Affairs and Forestry (Water Services Regulation (012) 336 6583 / 6870 / 6871), or your Regional Department of Water Affairs and Forestry office:

- Northern Cape (053) 830 8800
- Western Cape (021) 950 7100
- Eastern Cape (043) 604 5400
- Gauteng (012) 392 1300
- North West (018) 384 3270
- Limpopo (015) 290 1200
- Mpumalanga (013) 759 7300
- KwaZulu-Natal (031) 336 2700
- Free State (051) 405 9000

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- Your pivotal partner in irrigation

Senter 360
Africa's pivot of success

COMPANY PROFILE

SENTER 360 is a South African company. We have a simple policy of doing business with the highest standards of integrity. We therefore pride ourselves on not merely selling a product, but building long term relationships.

Designed and built in South Africa in 1994, SENTER 360 centre pivots are known for their superior construction quality and strength – above industry standards, and we as a company are renowned for excellent sales and after-sales service.

We have been in the irrigation industry for more than 20 years, specialising in surveying, system design, installation and commissioning of irrigation systems. We have growing business interests in South Africa, Africa and internationally and offer a turn-key project development service from feasibility study phase to implementation and project management.

One of our recent achievements has been the allocation of an international tender for the supply of more than 50 centre pivots to the South African Government for the Taung irrigation scheme.

At SENTER 360 we are passionate about our centre pivots. Apart from building a functional and exceptionally strong and rigid structure, we pay great attention to the finer details, making a day-to-day difference in your life.

STRUCTURE STABILITY

The SENTER 360 centre pivot utilises trusses made from pipe being lighter than the traditional angle iron trusses, allowing us to incorporate two more sets of trusses, and so giving enormous strength and exceptional resistance to high wind. Longer 4,5 m base beams (5,8 m for the high profile machines), tower supports, stabilising rods and diagonals add to the exceptional stability.

INNOVATIVE CONTROL PANEL RANGE

The simple modular design is also applied to our control panel range. The basic panel with direct millimetre adjustment can be expanded at minimal cost through various stages of automation and communication.

"LAST SPRINKLER" SOLUTION

One of the problems in centre pivot irrigation is that the last sprinkler clogs regularly. We came up with a genius yet simple way to constantly keep the last sprinkler clean. SENTER 360 centre pivots are fitted as standard with the pressure regulated Senninger I-Wob sprinklers on drop pipes to ensure outstanding water distribution in most climatic conditions.

HEAVY-DUTY GEARBOX AND MOTOR

The drive train of the SENTER 360 centre pivot comprises a heavy-duty wheel gearbox as standard with a free optional five year warranty* driven by the UMC Power Saver centre drive motor and gearbox.

*Terms and conditions apply

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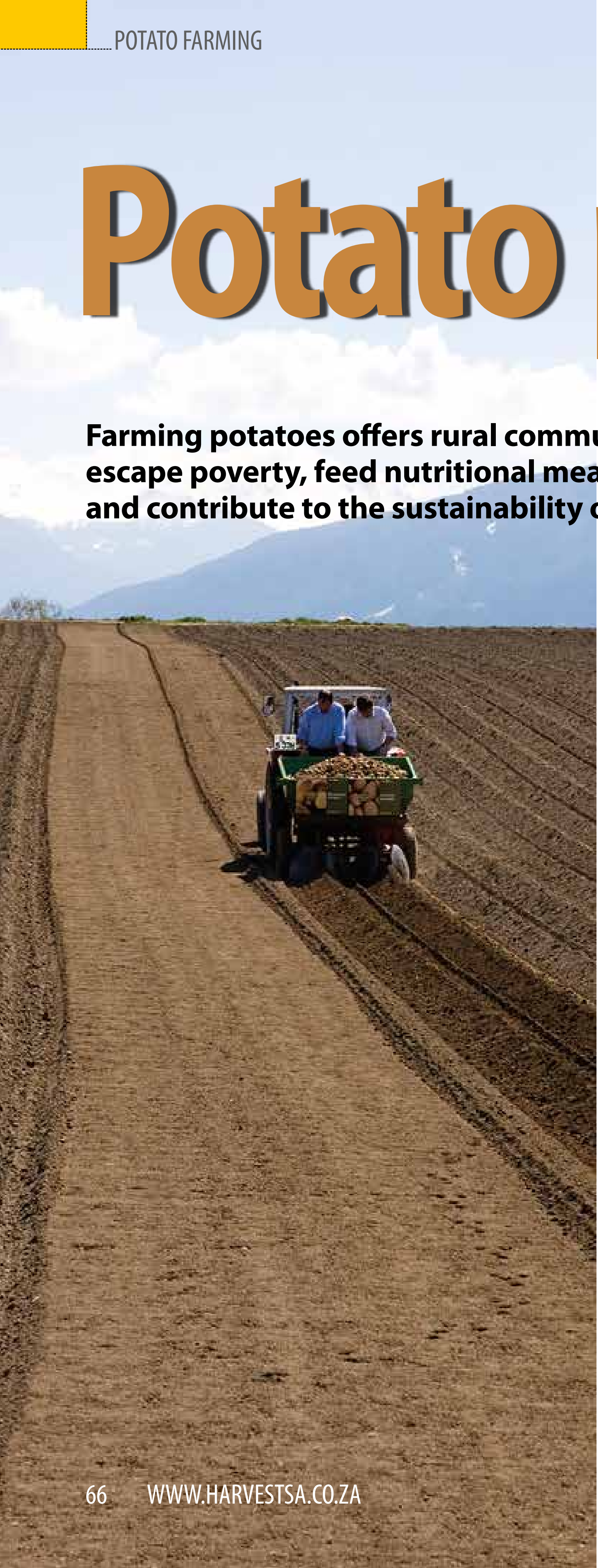
Potato power



Farming potatoes offers rural communities a chance to escape poverty, feed nutritional meals to their families and contribute to the sustainability of the potato market

One thing is for certain. Despite the fact that South Africa is household food insecure, the one item one will find in the fridge, pantry or vegetable rack, is a bag of potatoes because every household in South Africa eats them. Professor André Jooste, professor of economics and the chief executive officer of Potato SA, gave *Harvest SA* great insights into the potato market in relation to our food security concerns.

He believes that if we grow the potato market locally, we would be a lot closer to eating a balanced diet, and not being food insecure. In rural areas, often times the land is where they turn to feed themselves and their families.

The thing about potatoes is that they grow in all our provinces, so land is not really an issue, and they grow fairly quickly.

While it is costly to enter into farming of any nature, potato farming despite the cost has a dual purpose.

A small scale potato farmer can easily rise to the ranks of commercial farmer if he follows the guidelines on how to farm potatoes. The other purpose, is that potatoes will and do contribute to food security.

As far as food security goes, its not only about maize, but about growing potatoes and having a more balanced diet than just eating maize meal. As a small scale farmer, you do not need the same amount of land to be commercially viable when you farm potatoes, though input costs remain high.

"You need knowledge about producing the product because it is very disease prone so a potato farmer would have to act quickly to eradicate the disease. It is quite an intensive cultivation practice," said Jooste. The amount of start-up cash can be quite daunting but the long-term rewards are priceless.

"The production capital to farm potatoes can range between R60 000 and R120 000 per hectare depending on where you are in the country and whether it is dry land, or if it is irrigated or not," explained Jooste.

Improve yield, increase efficiency

MONSANTO

Monsanto – a leading global provider of technology-based tools and agricultural products that improve farm productivity and food quality – is 100% focused on agriculture and helping the African farmer

Monsanto's mission is to deliver products and solutions to enable both smallholder and large-scale farmers to produce more from their land in order to meet the world's growing food needs, while still conserving natural resources and protecting the environment.

Monsanto's products consist of excellent seed cultivars for optimal production, innovative biotechnology products, and first-rate chemical products that offer optimum and safe crop protection.

Meeting farmers' needs

Agricultural technology can help smallholder farmers in Africa increase their incomes and improve their yields. Commercial approaches are the most sustainable in meeting farmers' needs; but many African farmers have needs that can't be met through commercial channels. A more developmental approach is adopted, where farmers are assisted to move from subsistence farming to commercial farming. Appropriate farming solutions of seed, fertilser, training, micro-credit and marketing support are provided. We believe that achieving true food security and sustained prosperity in Africa's diverse rural communities requires partnerships among private companies, public agencies, and non-governmental organisations.

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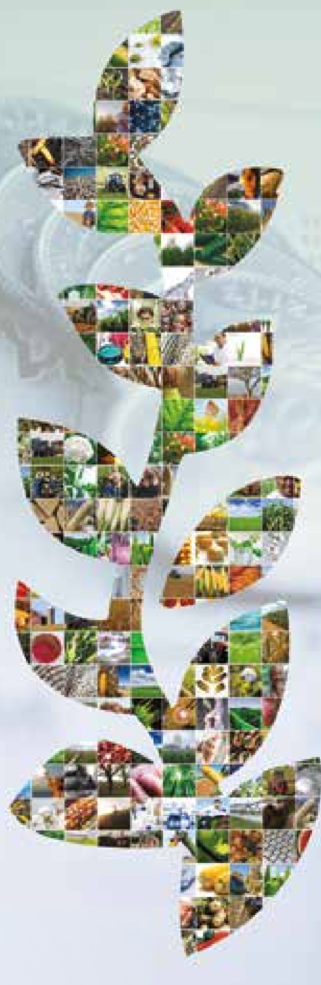

However, if you look after your crop and have all your ducks in a row, it can be equally remunerative in terms of the returns it will give you, so it can be very empowering to people who farm potatoes.

Giving back

One of the core functions of the organisation is based heavily on transformation.

"We have bursaries for students at the undergraduate and post graduate level, to study potatoes – whether it is economics, food science or plant pathology, those opportunities are there for them.

"We have other programmes in terms of farm-based training where we partner with Agriseta, and provide training to farmers and training to farm labourers.

"We also have our social development programme which is more security based where we go into rural areas and identity communities and through our field offices assist those communities to plant potatoes and through that try and inspire young farmers to go to a small scale level.

"Eventually they can go commercial," Jooste said. Much like Grain SA has its rural farmer development programme, so too does Potato SA.

"We have a programme where we identify small holder farmers who have an interest in potato farming as well as the potential and then provide support through various means to those particular potato farmers," explained Jooste.

Business today requires partnering up with like-minded organisations. Potato SA has a partnership with the KwaZulu-Natal Department of Agriculture to identify farmers and provide technical as well as machinery assistance to small holder farmers.

Job creation

According to Jooste, the vegetable industry within the agriculture sector, has the highest employment multiplier of all sectors, and agriculture in general has the highest employment multiplier in the economy.

He said studies done by the Organisation for Economic Co-operation and Development showed that in 2008 with our high food prices that it has five to six times higher chance of improving welfare for rural areas than any other sector of the economy. South Africa produces 38kg per capita annually, whereas in the United Kingdom, it is 105kg per capita.

One of South Africa's biggest challenges is to increase consumption, which will benefit the producer at the end of the day.

Potatoes have the potential to expand in all the provinces, and according to Jooste, we are nowhere close to producing enough of our own potatoes, so while it contributes to food security, on a much broader scale, potatoes could be the answer to the prayers of those living in poverty.

Consumer education, according to Jooste will contribute to the sustainability and expansion of the potato market in South Africa

"We export primarily seed potatoes (processed potatoes) that go to neighbouring markets which are untapped and will need attention from the seed side and the table side." Consumer education, according to Jooste will contribute to the sustainability and expansion of the potato market.

For example, various potatoes are suitable for certain cooking techniques: Boiling, baking, mashing, etc.

Buying potatoes these days provides choice to the consumer and it is the hope of those in the potato industry to further educate the consumer and help to grow the industry. To understand the consumer a lot better, Potato SA will conduct consumer orientated research to understand the food security needs of our country.

In the past, and even today, people have a misconception of what a potato provides nutritionally.

"A potato is not fattening, and while high in starch contributes to a balanced diet.

"Potatoes are low in cholesterol, and fat. Biofuels are far down the line for the potato industry based on the fact that we are not producing enough potatoes for processed potatoes," Prof Jooste says.

So the message is clear: Potatoes are versatile, they are easy to grow, they grow anywhere in South Africa, and if grown properly, a small scale farmer can contribute to his community, and to the greater South African economy by becoming a commercial farmer. Sounds simple enough.

Staff reporter

Pure potato passion

Promoting small grower development

Potatoes South Africa has structured its operations into five core businesses which are industry information, research and development, market development and product promotion, transformation and industry services.

As far as transformation is concerned Potatoes South Africa has, for years, been involved in transformation projects and results are slowly starting to be visible.

The number of hectares of potatoes planted by black farmers is on the rise and there are farmers who have already been identified as having the potential to farm commercially, who are currently receiving support from Potatoes South Africa. During the 2011/2012 financial year Potatoes South Africa focussed on the following:

Enterprise development

Potatoes South Africa continued with its enterprise development programme that is aimed at targeting black farmers in assisting them to set up viable potato producing enterprises. This was the second year that the enterprise development was started. The objectives of this programme are:

- Developing a programme that is aimed at sustainable potato production by small holder farmers in order to utilise available land and assist them to gain maximum benefit from of an integrated production system.
- Developing small holder farmers to grow and produce commercially in a sustainable way.

The second group of farmers were identified from KwaZulu-Natal, Eastern Cape and Limpopo after an intense selection process was followed.

The number of enterprise development farmers is currently 14 and this number is expected to increase every year. Approximately R1.02 million was spent towards the enterprise development during this financial year.

Small grower development programme

The programme involves farmers who plant potatoes mainly for food security with the remaining crop sold to the immediate community. The aim is to give farmers practical training on good potato production, harvesting and marketing. This is done through the planting of demonstration trials in the different identified areas.

An amount of R100 000 was spent on 11 small grower development projects in the KwaZulu-Natal and Eastern Cape rural areas.

The small grower development programme receives a lot of support from the Department of Agriculture in these areas and it is expected that this programme will grow as government is placing more emphasis on small holder farmers and the zero hunger programme.

Tertiary skills pipeline

The Potato Industry Development Trust annually awards bursaries to deserving students studying towards an agricultural related qualification with the emphasis on potato production.

The undergraduate bursary programme is primarily aimed at developing the skills of young talented farmers at existing potato enterprises. Their development is done through tertiary education at universities and agricultural colleges.

The postgraduate bursary programme, on the other hand, is aimed at making a contribution towards ensuring that sufficient postgraduates are produced to address the relevant research areas affecting the industry as well as increasing the industry's pool of appropriate qualified scientists. The Research and Development department together with the Transformation department are jointly responsible for funding and identification of the postgraduate students.

During 2011/2012, 16 bursaries to the amount R257 500 were awarded to students studying at various educational institutions throughout South Africa.

Internship and workplace experience

The internship programme is primarily aimed at providing experiential training opportunities to bursary recipients whose study disciplines require practical training and exposure as part of their qualification.

The workplace programme is aimed at affording the students with the opportunity to obtain workplace experience to enhance their employment opportunities.

An amount of R390 000 was set aside for the internship and workplace experience programme. During the year under review, six students were placed to gain internship/workplace experience.

Farm based training

During the 2011/2012 review, funds amounting to R332 685 (plus an extra R90 000 for enterprise development farmers to attend a Plant Pathology course) were set aside for training purposes to meet the skills shortages of all the potato farmers within the industry.

The main aim of the training provided is to uplift the skills of farm workers focussing on decision making and the understanding of their role, to assist in developing potato farmers with technical and business skills and also to improve the quality of potato production by improving the knowledge base of the potato producers.

Ernst Yzel is the chairperson of Potatoes South Africa. He attained an MSc Agric degree in Agricultural Management at the University of Free State. He has been farming full time in the Marquard District in Eastern Free State since 1982. Yzel has served on the boards of various agricultural companies and was also chairperson of the Free State Young Farmers. In an interview with *Harvest* Magazine he outlined more about the organisation.

How has the organisation been contributing to growing the industry inclusive of smallholder farmers?

The potato industry is a dynamic and fast growing industry – growing at 2% to 2.5% per annum. Two-point-five percent may not sound like much, but over a ten year period it represents a 25% growth which means that a quarter more potatoes are sold and consumed.

The Board of Directors of Potatoes South Africa took a decision four years ago to establish six new small scale farmers from previously disadvantaged communities every year.

Potato production, as is the case with most vegetable crops, is intensive by nature and also extremely costly to produce. Since the decision was taken 20 new "stand-alone" farmers were established in the potato industry by Potatoes South Africa.

Ernst Yzel, chairperson of Potatoes SA

These producers are farming in various potato production regions in South Africa.

How has the organisation been coping with growing its products in a labour regulated industry and with the ever rising input costs. What challenges has this situation brought forward?

Continuous increases in input costs to produce potatoes are a given. This resulted in commercial potato producers dropping from about 2 000 to a mere 690 in the past decade. Larger farming units can mechanise more easily because economies of scale is on their side.

It is anticipated that approximately 20% of job opportunities in the potato industry will be lost in the next few year as a result of the increase in minimum wages in combination with increases in electricity and fuel costs. The unfortunate part thereof is that the emerging producers will be worst affected because of the size and scale of their operations. Should producers decide to plant less potatoes because of increased production cost and risks it will lead to a lower supply of potatoes in the market place. This will inevitably lead to higher potato prices and that will be to the detriment of consumers who will have to pay more for their potatoes.

How has the Potatoes SA been contributing to transformation in the farming sector?

The potato industry is loaded with examples of successful transformation projects.

Numerous empowerment schemes, whereby commercial potato producers who empower their workers through shareholding, are going from strength to strength.

There are also success stories of small scale potato producers gaining access to the industry because of commercial potato producers providing mentorships to these farmers.

It is particularly in the rural areas where Potatoes South Africa plays an active role in establishing the small scale farmers who market the potatoes through the local informal markets.

The organisation is also involved in a number of small grower development programmes involving community farmers who plant potatoes mainly for food security with the remaining crop being sold in the immediate community. Potatoes South Africa is also involved in community garden projects that focus on self-sufficiency by teaching families to successfully produce potatoes. As far as enhancing skills are concerned Potatoes South Africa manages a farm worker training programme as well as a bursary scheme.

How have you been ensuring that the potato industry plays a leading role in food security and nutrition provision in South Africa?

Potato consumption increases as the income of level of South Africans grows. Potatoes are an excellent source of natural energy as well as various vitamins and are also low in cholesterol and fats.

The affordability and nutritiousness of potatoes will ensure that potatoes play a leading role in food security and dietary value. As a matter of fact potatoes are the most important vegetable crop cultivated in South Africa.

Any additional information you would like to add?

Following maize, potatoes are one of the most significant food security crops cultivated in South Africa based on production and nutritional value.

Although potatoes lends itself to production on relatively small patches of land, it is highly labour intensive.

This, therefore, makes potatoes an exceptionally suitable crop to address food security and nutritional value in South Africa, but at the same time is a champion as far as creating work and wealth are concerned in rural areas.

Of paramount importance in the above mentioned context is the role of partnerships, especially between government institutions and current role players in the industry to successfully launch transformation initiatives to established emerging farmers to produce potatoes sustainably.

Transnet Freight Rails' Agriculture & Bulk Liquids business unit is focused on transporting Grain, Fast Moving Consumer Goods (FMCG), Petroleum products, Chemicals and Fertilizers. The key agricultural commodities transported are maize and wheat amongst others.

The Agriculture and Bulk Liquids business unit is the most geographically dispersed with depots and yards spread across South Africa in Durban, Pietermaritzburg, Pretoria, Sentrarand in the north and Bethlehem, Kroonstad, Bloemfontein in the Free State as well as East London, Worcester and Bellville in the Western Cape. Trade is also conducted with African countries such as Maputo, Botswana extending up to the Democratic Republic of Congo.

Critical train flows for grain are from Kroonstad to Durban, Kimberley to Cape Town and Klerksdorp to Polokwane.

Transnet Freight Rail is currently embarking on branch line revitalisation and has successfully opened up the Orkney – Vierfontein branch line. Accessibility to export maize in the Klerksdorp area has become simpler as a direct result of the re-opening.

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