Harvest SA

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Securing South Africa's Food Resources

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FOOD SECURITY

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On the cover

According to www.themaize.com: There are more than 3 500 different uses for corn products. Corn does much more than feed people and livestock! It is processed and used in such things as baby food, chewing gum, dessert icing, fireworks, ethanol fuel, peanut butter, antibiotics, potato chips, soap, paint, and rust preventatives. It is also used in vitamins, the manufacturing of photographic film, and in the production of plastics.

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FORE WORD

Food security for SA is a necessity

JANNIE DE VILLIERS
CEO: GRAIN SA

We are proud to announce our new and fruitful partnership with Cape Media Corporation and congratulate this powerful media house on this first great edition of *Harvest SA* – the first of many – which is used as a mouthpiece for our organisation to deal with an issue that concerns all of us and future generations that will come. The importance of food security has never been more relevant and important than where we are right now with the economy the way it is, population growth, climate change and the immense pressure our precious water resources are facing. We are confident that with the assistance of Cape Media, we will convey the message to government, the private sector, like-minded organisations and prospective partners that we are ready to work together to ensure that South Africa remains food secure.

Internationally the FAO uses the following definition for food security, "Food security exists when everyone has access to sufficient, nutritious and safe food at all times".

Since the deregulation was implemented, South Africa has never been without food, although we had to import from time to time. We do experience big challenges as far as affordability is concerned. When there is enough food in a country, but unavailable to many of its people, it is normally due to a structural problem in the economy. In South Africa's case it is unemployment and lack of education / training / solutions to these problems are mostly government's responsibility. It is here where the gap between food security and food insecurity is the most visible in our society.

South Africa sits with the discrepancy that we have 100% food security on national level, but are experiencing food insecurity at household level. According to the Bureau for Food and Agricultural Policy at the University of Pretoria, the South African population is getting wealthier every year. The percentage of the population in the poorest categories has decreased drastically from 2004 to 2010. Against this, the middle income group showed meaningful increases. This movement placed additional pressure on grain to produce protein (poultry, dairy and red meat). The social and welfare grants contributed to make food more affordable to people in this category. Should the government's plans to create job opportunities be realised, an even bigger migration and a bigger demand for processed food can be expected.

According to South Africa's report to the United Nations, we have already reached the millennium goal to have the number of people surviving on less than US$1(R8.21) per day by 2015. Our latest goal is to push this threshold to US$2.50 (R20.52) per day. This is very ambitious , but it is possible especially if job creation is realised. The largest challenge lies in how we can build a bridge with the positive things of national food security to the food insecurity experienced at household level. My suggestion for the pillars of this bridge would be, amongst others, the following: partnerships between the government and the private sector; to remove mistrust; a positive agricultural policy (tariffs); good infrastructure; more hectares under irrigation, particularly communal land; culture of training with mentors; technology; and finding new markets to stimulate surplus production.

According to Minister Trevor Manuel's 2030 plan, South Africa has a population of approximately 50 million and in 2030, it will be approximately 59 million. We are currently consuming about 14 million tonnes of grain and by 2030, the minimum might be 25 million tonnes. This excludes grain for biofuel. The grain industry will have to tackle this challenge with innovative thinking. To produce a minimum of 25 million tonnes, is not only a linear expansion, but exponential. We will have to get communal land into production, improve yields and work more intelligently. All these factors indicate that the power base is moving from the buyer to the seller. The dynamics of the market is in the process of changing and in the midst of it all we have to find solutions to improve food security on household level without losing food security on national level.

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.

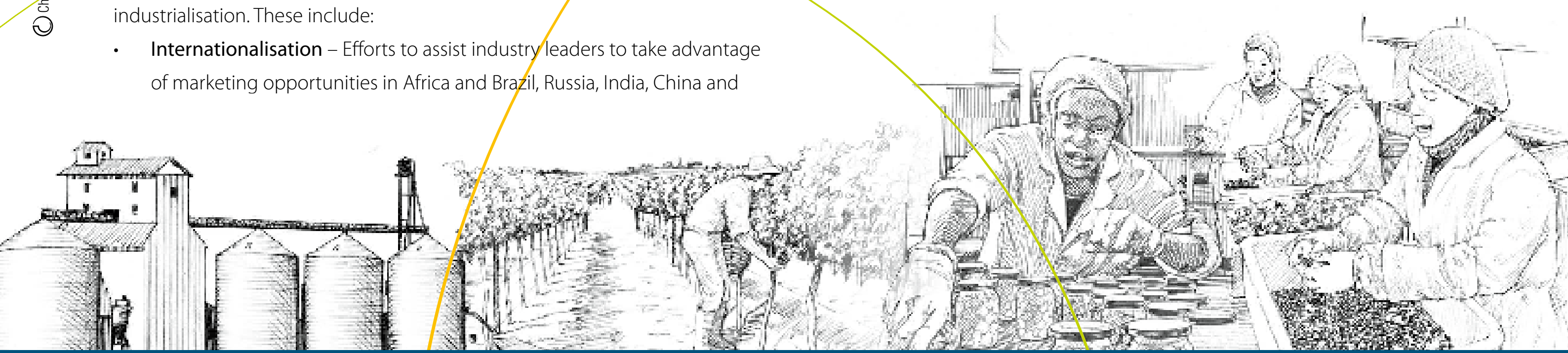
Five main strategies are implemented, which facilitate pro-poor and pro-rural industrialisation. These include:

- **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.



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EDS NOTE

Ethiopia should be a warning

TRACEE HARVARD
EDITOR

Cape Media Corporation is very excited to introduce to you *Harvest SA* – a magazine, which endorsed by Grain SA – aims to create a platform for the government, the private sector and the greater farming communities of South Africa to discuss the way forward for our people with regards to securing food in a more sustainable and long term basis that takes into consideration women, climate change, the importance of job creation, skills transfer, the economy and good practice in terms of agriculture and rural farm development.

Living in the 21st century is a fast paced affair.

On a daily basis new industries, technologies and innovations are created and on top of this, the world's population is ever growing – therefore increasing the pressure on energy and water resources. Carbon emissions and urban sprawl to accommodate growth, has contributed to the climate change issues we face today, which has a direct and negative affect on our food reserves. The economy is weak, the cost of grain exorbitant and is imported from elsewhere in the world because we have a lack of it in our own country. And if the price of grain increases, everything else increases too.

For the more affluent parts of society, the effects have been felt but never more so than for those who live on the breadline, or in poverty. Turning to the land has always been the solution to feeding one's family in rural areas. And while survival is a necessity, skills transfer, public and private sector support is crucial in the face of the myriad challenges we face in South Africa when it comes to feeding our people.

In the 1980s when Ethiopia suffered drought, famine, malnutrition and disease that resulted in over one million deaths, the world, reeling from shock – did all it could to assist the people of Ethiopia.

The world was haunted by images splashed all over the media, which showed nutrition-deprived skeletal and emaciated dull-eyed people, covered with flies, too exhausted to move. This, all came from drought. The effects of that drought destroyed the economy and the people. Climate change is that much worse than just drought.

The point is that climate change is a key player in depriving people of food. Poverty is another. The combination of the two doesn't just affect the poor. It affects everybody.

This magazine's sole purpose is to ensure that what happened in Ethiopia never happens in South Africa.

Harvest SA will strive to explore and find solutions to a variety of issues that will contribute positively towards food security; solutions to mitigating the impact of climate change on our land; finding solutions to job creation, education, including women in every sphere of agriculture, community development, healthcare, empowerment, alternative farming practices, good practice, land distribution, corporate involvement, government involvement, governance, service delivery, partnerships, social responsibility and so much more. By speaking to those who can make a difference to food security measures; stakeholders, members of Grain SA, the three tiers of government, business organisations such as the South African Chamber of Commerce and Industry and agricultural agencies.

We welcome you to this, the first edition of *Harvest SA*, and hope that along this journey together we can find the solutions that will ensure that food security or rather food insecurity is not a threat in the many years to come despite the extreme challenges we have to face.

Feeding the nation

Grain SA works closely with the government and the private sector to achieve sustainable grain production for South Africa

Grain SA is a non-profit organisation of grain farmers in South Africa. We have 2 900 commercial farmers and 3 800 developing farmers who are paid up members. Our strategic aim is to promote the sustainable production of grains and oilseeds for the sake of food security in South Africa.

Food security implies producing enough grains to feed the nation at affordable prices and of a safe and nutritious nature.

Grain SA is also committed to contributing towards the government goals of job creation through sustainable economic growth.

South Africa can pride itself in that famine or food shortages has not occurred in the past five decades. Although we do struggle with high food prices from time to time, the country has never run out of food, even during times of drought.

White maize and wheat produced are primarily used for human consumption (maize meal and bread) and the yellow maize and soya beans produced for animal feed.

Animal feed is manufactured specifically for poultry, dairy and red meat production. Adding to this, other oilseeds like sunflower and canola are processed for the food market.

Grain farmers are therefore part of every South African citizen's life, almost every day.

It is estimated that each grain farmer feeds almost 6 000 people every day. Food security provides a platform for political stability. The food riots of 2007 and 2008 in many countries, as well as the Arab Spring of 2011, proved the importance of having enough affordable food to feed a nation.

Agriculture therefore plays an important role; to feed the nation, but according to the National Planning Commission of South Africa's 2030 strategy, the sector is a strategic partner for rural development and job creation. To assist the government to achieve these and other strategic goals, Grain SA has aligned its own goals and focus areas to support the government in realising these.

One of the major achievements has been our training and mentorship programme for new black farmers.

There are about 4 000 farmers of all ages and genders organised in our 109 study groups.

They undergo training, attend farmer's days and learn at the numerous trial plots how to farm the land in a sustainable way. The technology transferred at these training sessions assists them to produce grain of commercial yields. Access to land and financing, remains the biggest stumbling block for these farmers.

One of the solutions to overcoming this problem was the partnership formed between the government and Grain SA in 2011. The government is funding the recapitalisation of these farmers and Grain SA provides a mentoring service to ensure that commercial production occurs. The programme was expanded in 2012, following the huge success, from R36-million (16 farmers) to R185-million (88 farmers).

The partnership assists the farmers for a period of five years to allow them to become independent sustainable farmers contributing towards food security in South Africa.

Another area where Grain SA plays an important role is to act as a mouthpiece for all grain farmers.

This comes in very handy in matters such as agricultural policy, trade negotiations with other countries, misuse of market power by input suppliers and buyers.

Grain SA is also involved in the research that is done to ensure that the farmers are as productive and competitive as they can be. Productivity and competitiveness are the keys to affordable food.

Despite our best efforts, farmers are always exposed to the ever changing weather patterns in South Africa.

Currently we are experiencing high food prices because of a severe drought in the United States.

The US produces the biggest quantities of grains and oilseeds in the world.

It is basically the breadbasket of the world and the drought has caused a crop failure in maize and soya beans.

Because of this failure, world prices have increased substantially and as a consequence the prices of grains have increased in South Africa as well.

All our prices are attached to the international prices like those of crude oil and petrol.

This impacts negatively on consumers, but it creates an opportunity for grain farmers to expand their production which will lead to a reduction in food prices over time.

A major strategic goal of Grain SA is to unite agriculture. The history of our country has separated not just our people, but has caused division in institutional capacity as well. Although the development of these farmers might differ, it is only the border fences which separate them from each other.

Our dream is for farmers to co-operate (black and white), but also for farmers and the government to ensure that the people of this country will never stand in lines for food, because of shortages.

Jannie de Villiers
CEO: Grain SA

A lifeline for farmers

The government's recapitalisation programme has the potential to place farmers on a sustainable path

"If at first, you don't succeed, try and try again." This is the approach of the Farmer Development Programme at Grain SA and a motto which proved to let years of dedication to proper farmer development come to fruition at just the right time.

Manager of the farm development programme of Grain SA, Jane McPherson said: "A focus on human development is essential to achieve agricultural development, and eventually a united and prosperous agricultural sector.

"Over many years, we have invested in human capital and we are involved with the development of farmers." This well-established development programme is operated through study groups on farm level. Demonstration trials, farmer's days, a Farmer of the Year competition, on farm-support to individual farmers, a multitude of training courses, radio broadcasts and the monthly *Pula-Imvula* newsletter all support the human development approach of Jane and her dedicated team.

"All this is aimed at capacity building. We have seven development co-ordinators who toil tirelessly to invest in the lives of our farmers," she added.

However, when you are a farmer, at some stage you have to get into the business of farming which means that you have to have access to arable land, tractors, implements and production inputs. This is where the real challenge begins. Over the past few years, crop production has not been very profitable and it has therefore been difficult for farmers to get production loans and they have had no surplus profits to invest in the farm or mechanisation.

"Having been let down badly by one of the larger commercial banks who promised loan finance but did not deliver, we were in a desperate position as our farmers needed financing. Efforts to access production finance from the Department of Agriculture have borne little fruit over years. Just as we were losing hope, officials from the Department of Rural Development and Land

Reform (DRDLR) came to Bothaville to tell us about their recapitalisation programme," McPherson said.

After much negotiation and discussion, an agreement was signed between DRDLR and Grain SA. In accordance with the agreement, business plans were prepared for 16 farmers who were the beneficiaries of the land reform programmes and who were part of the Grain SA farmer development programme. The total amount of R36-million was deposited into the new bank account and they were able to start with the implementation.

"This was very exciting but also quite daunting as all eyes were on the team!" McPherson recalled. It has always been the belief of Grains SA that they were never going to take decisions for farmers or farm for them.

All the organisation's development programmes are designed to empower and develop the farmers – and they intended to do the same with the recapitalisation programme. To have sufficient support on the ground, five retired farmers were identified who indicated that they would be willing to act as mentors to these farmers (four of them were trainers in the programme).

Flip du Preez from Senekal is now mentoring five farmers there, Attie Louw is mentoring one farmer near Bloemfontein, Eduard Foord is supporting three farmers (Bothaville, Wesselsbron and Hennenman), Bertie Human is helping three farmers near Welkom and Johan van der Merwe is helping four farmers in Theunissen.

Concerning bookkeeping, they had to establish additional financial staff capacity in the Bothaville office as well as a new set of books. The farmers have heir own codes, which has made it possible to keep a detailed record of each and every transaction and monitor the spending against the budget.

"Although the business plans had been developed and signed off by each farmer, we felt it very important to have the farmers involved in every step of the way. We devised a system whereby the farmer and the mentor have to make out an order for every purchase – quotations for expenditure have to accompany the order. The reason for the quotations is so that we are sure to be using the money very wisely and at the same time, teaching our farmers the value of comparative shopping," McPherson explained.

The physical payments are made electronically from Bothaville, in accordance with the Grain SA processes and procedures.

After a payment is made, the farmer, the mentor and the supplier receive an sms informing them of the payment. The supplier also receives a remittance advice so that the items can be delivered. As Grain SA's farmer development started implementing the programme in October last year, they had to prioritise the expenditure – first the necessary tractors and equipment (both new and used), then production inputs. Once the crops had been established, they were able to focus on other areas – livestock and infrastructure.

To date, the farmers have used R33-million of the R36-million originally approved – controlled spending will continue until the entire budget is used.

On 17 May, during Grain SA's National Maize Producers' Organisation – NAMPO – Harvest Day, a special event referred to as the 'recap reunion', was held to celebrate the successes of the first year of the recapitalisation programme. Five of the farmers in the programme shared with guests how the programme has improved their farming operations.

With a first recap year under the knee, McPherson and her team are delightfully positive about the future of the programme. McPherson concluded: "One realises that there is still a lot of work ahead, as development is a process and not an event. We remain focused on achieving our goal, which is to develop black commercial farmers which have capacity and to contribute to household and national food security through the optimal use of the natural resources available to each farmer."

The developing farmers need training and support in order to become commercial farmers. Various training courses were developed to address the specific needs of subsistence farmers, small holder farmers and commercial farmers

Reaping the rewards

Grain SA is actively involved in farmer development which is aimed at strengthening human capital and thus far has shown great results

Ms Jane Mc Pherson, manager of the Farmer Development Programme of Grain SA.

Farmer development is not only about land, machines, markets, money, skills development and training. It encompasses all of the above, because development is a process and not an event, according to Ms Jane McPherson, Manager of the Farmer Development Programme of Grain SA.

As a flagship project of Grain SA, the programme provides training to developing farmers. The success of the programme, which was introduced in 2000, establishes a platform for healthy and sustainable transformation on a broad base. Through funding by the Maize Trust, Oil and Protein Seeds Development Trust, Winter Cereal Trust, Sorghum Trust and the AgriSeta, R88-million has since been spent on training and developing black farmers.

The programme is proud to have ± 4 000 black farmers in its 109 study groups and a total of 66 black farmers in the 250 Ton club. As part of Grain SA's advanced farmer programme, 120 farmers are currently being serviced with mentoring and on-farm support by development co-ordinators.

"The focus of any development programme must be on strengthening human capital. Therefore we should enhance human capabilities and use them productively. Also, one must never forget that development is achieved by self-reliance through effective participation. The bottom line of development is that it should be something that you do for yourself or it does not happen at all," McPherson added.

At a function held on 23 August 2012 in Bloemfontein, Grain SA celebrated its harvest of emerging farmers who form part of the Farmer Development Programme. The day of celebration was organised to give recognition to emerging farmers for their contribution to the country's food security.

CEO of Grain SA, Jannie de Villiers, said in his message to the developing farmers who attended the day of celebration, "You are the pride of our harvest. You are the trailblazers in whom we can see how to develop farmers in this country."

The CEO of AgriSeta, Jerry Madiba, addressed the role of training in farmer development and said that when organisations co-operate, successful training takes place. He accentuated the fact that training changes attitudes and inspires people to reach higher goals. He thanked Grain SA for providing "on-the-job" training and developing the skills of emerging farmers.

The role of the farmer in transformation was highlighted by Karabo Peele, chairman of the Maize Trust. He said he is excited to see that Grain SA has shown other organisations what transformation is all about.

He encouraged farmers to adapt to the daily changes in agriculture and to not only listen to advice, but to apply what they

William Matasane, commercial farmer of Senekal and member of Grain SA's executive (far left) and Koos Mthimkulu, Developing Grain Farmer of the Year for 2011, discuss wheat matters with Jannie de Villiers, CEO of Grain SA

Israel Motlhabane became the first member of the 250 Ton Club's platinum level. With him is Grain SA development co-ordinator Johan Kriel

Three of the newest members of the 250 Ton Club (bronze), from the left: Jack Kokoma, Thulane Mbhele and Pieter Chabalala

have learned. "I support this organisation, as Grain SA has taught us to become farmers," Peele added. Chairman of Grain SA, Louw Steytler discussed unity in agriculture and emphasised that co-operation is the key to success in the agricultural industry. "Unity can ensure food security in our country," he stated and added that Grain SA is willing to play a leading role in the advancement of agriculture in South Africa.

Previously the 250 Ton Club had three levels – bronze, silver and gold – but this year a fourth level, platinum, had to be added when Israel Motlhabane managed to produce 1 500 tons during the past season.

A new member was added to the gold level for farmers producing over 1000 tons, while the silver level (production exceeding 500 tons) welcomed three new members. The 250 Ton Club's bronze division awarded certificates and badges to six new members. This club celebrates the progress and hard work of these farmers and accentuates the importance of the Farmer Development Programme.

"It is important to also give recognition to those farmers who do not have large pieces of land to cultivate. One can produce food on small pieces of land if you do it correctly," McPherson said to farmers at the day of celebration. As smaller farmers cannot compete with the bigger commercial farmers in the Farmer of the Year competition, a category for Small Holder Farmer of the Year and one for Subsistence Farmer of the Year were created so that these farmers could also receive recognition for their hard work.

CUSTOMER-FOCUSED

The FPT Group is providing supply chain solutions

FPT Group was formed in 2001 and boasts multi-purpose terminals, which are located in the major southern African ports of Cape Town, Durban, Port Elizabeth and Maputo, the capital of Mozambique.

FPT's comprehensive range of services includes cold storage, terminal services, warehousing, transport, stevedoring and logistics coordination. FPT handles a wide range of cargo types including general cargo in the form of agricultural bulk, container handling services for shipping lines and their shippers, and break-bulk services for general and perishable cargo, including import and export fruit.

FPT's diversification of services will increase within the coming years and future investment plans are in place to provide additional capacity for container and agricultural dry bulk handling and storage. Cementing FPT's position as a dominant and dependable logistics player in the agricultural sector will remain a key focus area going forward. The group will also invest in providing integrated customer-focussed supply chain solutions.

FPT provides secure, dedicated berths to shipping lines and the coordination of cargo at its premises, as well as storage facilities which include cooling and ambient slots for a wide range of cargo types in covered and uncovered areas. In addition, a container stack offers 144 full reefer plug-in points, with an additional 72 mobile plug-in point units for containers at the Cape Town terminal.

Last year FPT handled 520 000 tons of dry bulk cargo which included wheat, maize, soy bean meal (SBM), sunflower pellets and fertiliser, 600 000 pallets of fruit, 250 000 tons of break bulk cargo and 25,000 TEUs.

The terminals in Cape Town, Durban and Port Elizabeth specialise in the management of export programmes involving specialised cold treatment of fruit destined for countries such as the United States, Japan and Korea, where very strict import restrictions are imposed.

Transport is provided by FPT's dedicated transport team based in Centurion, moving fruit and general cargo within South Africa and cross-border.

A comprehensive range of tracking services, including barcoding, tracking and tracing of cargo and online weighbridge reporting, as well as a daily tally and inventory status report, both on receipt and dispatch of cargo, provide customers with peace of mind.

FPT views empowerment, education and the environment as important aspects of its social corporate responsibility.

The company has been BBBEE certified, placing the company at an overall Broad-Based BEE Level Three Contributor status, with a BEE Procurement Recognition Level of 110%.

FPT is committed to the highest standards of quality in its quest for zero defect in the execution of its operations. To this end, FPT's terminals are ISO 9001:2000, NOSA and HACCP certified. Moreover, FPT is a member of the international 360 Quality Association and three of the twelve certified global terminals are FPT port terminals.

FPT Group Managing Director, Danie Schoeman

As its contribution towards conserving the environment, FPT has embarked on a carbon footprint analysis of its activities. A number of energy audits have been performed to benchmark its electricity consumption, electricity being the largest contributor, and to enable the company to track improvements.

"Ultimately our businesses cannot succeed without our people," says Schoeman. "I know it's a cliché and everybody says so, but our mission is to dedicate ourselves to finding ways of exceeding the expectations of our customers and our shareholders. That is why we need to have in our FPT family passionate, entrepreneurial and pioneering individuals who think outside the box."

Contact: info@fpt.co.za

Let's work together

According to Jaco Minnaar, a farmer from the Free State, South Africa is on the knife edge between food security and food insecurity. We need to act now to ensure our food stocks are secured.

Agriculture in South Africa is a sector that requires more investment and participation from both the private and public sectors if we are to ensure South Africa remains food secure.

The problem is that the price of grain is high. According to Jaco Minnaar, a Free State farmer who farms maize, soya beans, sunflowers, potatoes and cattle – and who is an executive member of the Grain SA board as a representative of the Mashebang municipality – the price of grain is a result of what is going on in the economy.

"The markets are reflecting the state of the whole world: grains are scarce at the moment and that's why the prices are as they are. It was a whole different story about two years ago when there was enough in the world, and the prices were entirely different – it's just reflecting what is happening in the world.

"It's purely economical: there are the forces of supply and demand at play, and when there's more demand than supply, the price goes up, which equalises the whole thing again in the future, so you need these high prices in order to produce more, so that the prices come down again, it's a whole cycle at the moment, we're on the high end, two years back we were on the lower end," he explains.

At times like these when the economy has taken a knock, and therefore the price of grain increases, farmers are often looked at as being greedy. The fact is that farmers don't dictate prices; price increases are based on supply and demand.

With South Africa's population on the increase, supplying food to all is becoming increasingly challenging. Add to this climate change and water shortages and the strain on the market increases.

The price of grain is much like the petrol price fluctuating, although with petrol, the market is a little more controlled than that of grain farmers. There are more small producers of grain which means the market is a lot more volatile.

South Africa produces two to two and a half percent of the world's supply, and is one of six countries that exports its maize. "In terms of the export market, we're a role player, but we're actually very small," he explains.

One of Grain SA's solutions for securing food is South Africa, is helping people to become rural farmers through farmer development programmes.

Globally, Jaco believes that established farmers should become more competitive, but that new farmers – under the aegis of Grain SA – can learn to produce quality produce faster than working on their own.

Overseas farms are growing; which means being able to use better and more effective equipment, and which translates into being able to produce a lot cheaper. The smaller the farm, the more expensive it is to run. This begs the question: how does the rural farmer get past this?

"The biggest thing is that we must support them with support services, mentorship programmes and guidance.

You can't grow into a big farmer without money, so we need to start with finance so they can produce effectively for themselves and their families. And of course, distribution of money and how it is used is a South African problem, you have to look at how you give that money to the farmer, and how you distribute it."

According to him, first-hand experience is key. "The best place you can learn, is from people who have proven themselves in the past, I don't think you can go to a University or some institution and ask them, show us how to farm.

The people who know the job are the people on the farm at the moment.

"It's in everybody's best interest that we get as many farmers as possible. This year shows us that we're on a knife edge – enough food or not enough food, and that's a worldwide [problem]. We need to get more farmers to produce more and produce effectively.

"In South Africa we've got a lot of farmers and we can supply South Africa with enough food, but we can't supply SADC for instance or the rest of the world.

There is still a lot of scope for farmers and places to be developed in order to produce, which may be a little misleading seeing as we import some wheat and barley.

"We used to produce enough wheat for South Africa, 15, 20 years back, and there was much less technology. At the moment we can't do it because it's just not economical, we can't compete with the imported wheat that comes from Belarus and even nowadays from Argentina."

What makes farming harder in South Africa, is that overseas many governments subsidise farmers for their produce and to export their goods. Depending on other countries for our grain adds cents on to the price of bread.

"At the end of the day it's about having enough for your people and I think that's the biggest issue, you have to have enough in South Africa.

Don't be dependent on other countries. Rather protect the producers in South Africa because to protect the country, means finding sustainable solutions to food security in South Africa."

According to him, wheat production has halved over the last few years, and with that, loss of opportunity for employment.

"We're producing half the wheat that we produced five years ago.

We're declining in wheat production rapidly, which is not the way forward. If you look at all the poultry imports into South Africa, and the

amount of jobs that could have been created in South Africa, the amount of maize that could have been used in So it's scary to see these things happening and nothing is being done about it."

The future of farming is in the hands of the oppressed and those living in rural areas, whether it be as a means of righting the wrongs of the past or not "there are not enough white farmers in South Africa to produce sustainably for South Africa, we need to get more black farmers operating at a profit and supplying other people, not just sustaining themselves, but helping to sustain the whole country, we need to get more of them and the scope is there, if you look at parts of the Eastern Cape there is a lot of good potential land there available that one can farm on, we just need to get that much more productive."

Grain SA welcomes the support of the South African government, and would like to form a solid partnership going forward. However, the past and mistrust are obstacles that need to be addressed. A tough one to get around, but it is possible, Jaco believes.

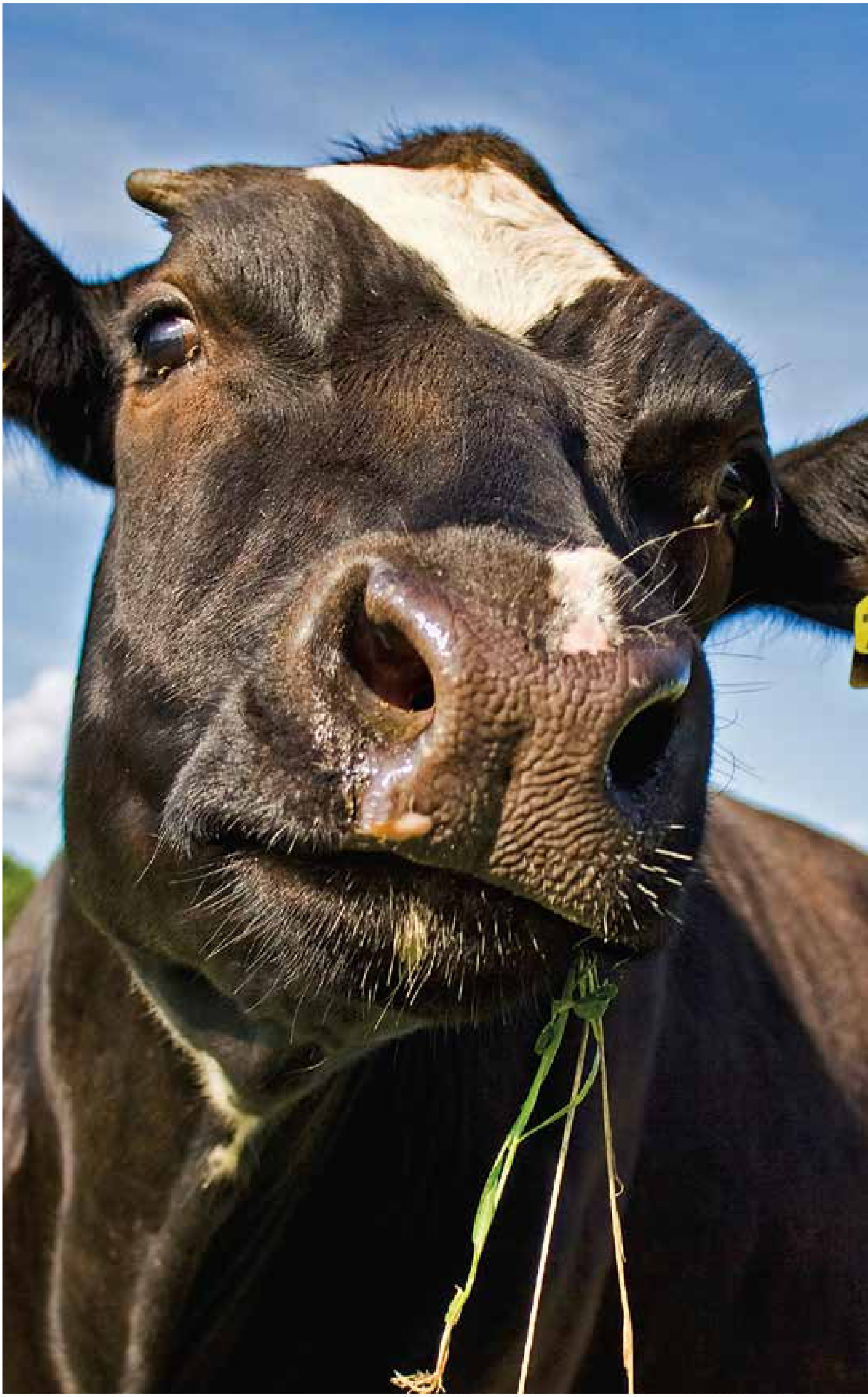
Currently in the North West province, Grain SA is trying to give financial support to farmers but the mistrust, and suspicion of where that money came from and what it is really for, holds back progression for farmers.

"There are some people that get and there's some people that don't, and everyone wants to be part of it, and if you're not part of it you're against it, so that's a big problem we face in the North West, and that's why the North West, or certain parts of North West hasn't been producing in the past five/ten years, because there's so much infighting, nobody wants to see the sun shine on someone else."

There is hope, however.

"I think if you've got the right people to work for you, if you've got the right contracts we can supply, we can do the job, we can really put some farmers on the farms producing on a large scale.

There really is place to do that. But to do that, I think we must work closer together, we must trust one another, I think that's the biggest issue in this country and for us as farmers is trust between departments and



producer organisations like Grain SA, I think that's the first problem we should get out of the way, and from there on we can really go forward."

Jaco believes the past is the past and is ready to work with the government even though there has been mistrust on both sides for many years. "I believe we have proven ourselves in the past. The department that we have a really good relationship with is based on a relationship of trust.

I think we can do that with all departments in the future, because that's really what we want to do, we want to produce food for this country and it doesn't matter how we do it or who does it, we want to do that, that's what we are, we are farmers."

Action is needed, there is no time to argue and to fight about the past. "I think most of the people in South Africa, farmers especially, realise that we have to do something, we can't go on like we did in the past, but like in every organisation you've got people thinking differently, but I think in agriculture we know we have to do something and 90% of the farmers know we have to do something."

For Jaco it is about understanding the facts. That Grain SA cannot work without the government and vice versa.

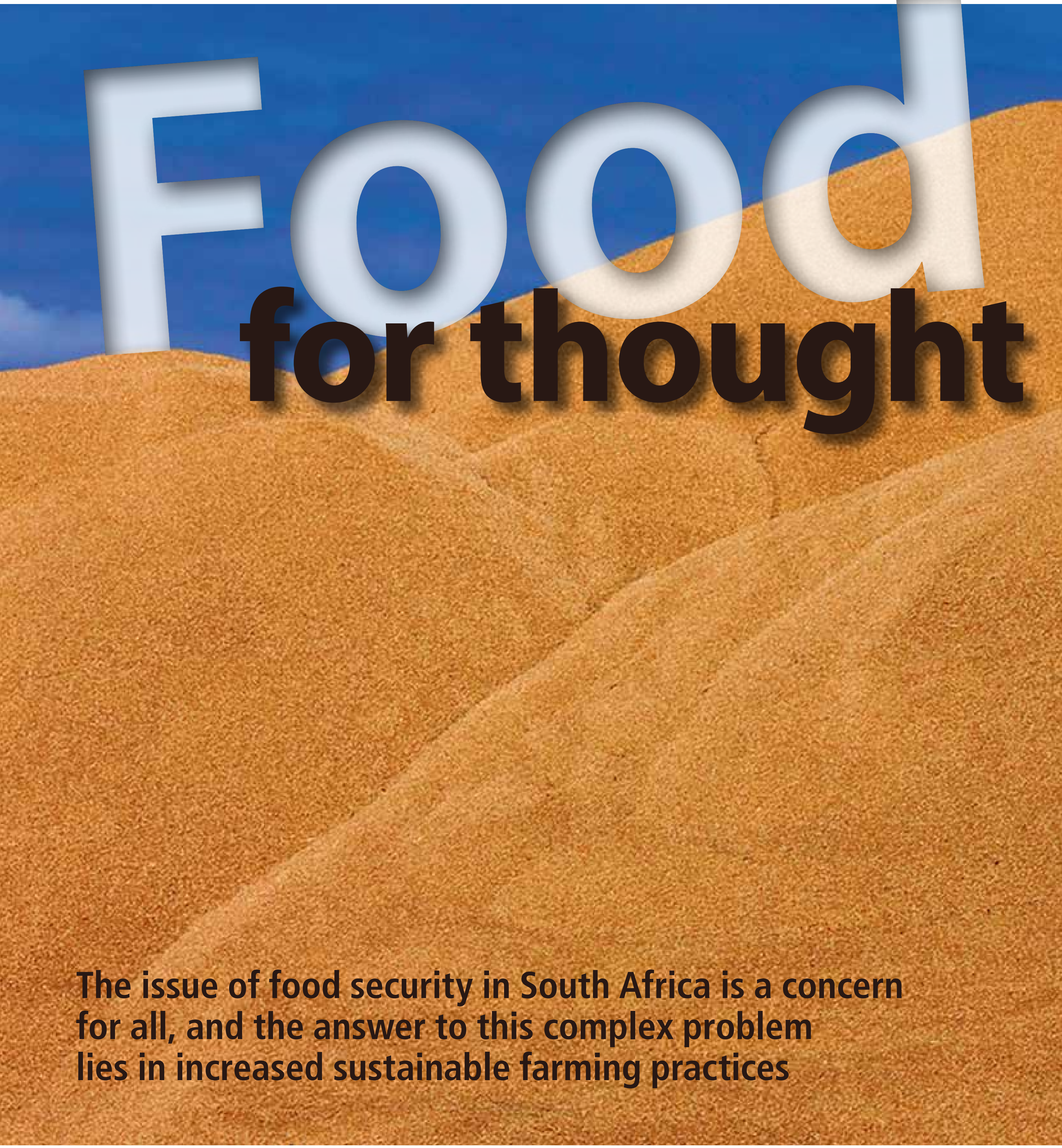
This cannot be done alone. This is a country wide problem and everybody is involved in how this plays out. "We will take the people with us, we will educate the people on the farm as well.

They need to know the role they play in the bigger picture, they need to know how important they are. That's why we give them training, that's why we help our people on the farm, or better educate them so they can help to be more productive and so they can yield more.

Currently, the only provinces where black farmers are adding to the member listing of Grain SA come from the Eastern Cape or Southern KwaZulu-Natal.

The numbers are growing we've got a lot of members who need information, who really need to be educated on how to farm and when to farm. Most of the farmers know something, and you just have to trigger that and add to that to get them better and bigger farms.

Loren Scholtz



Food for thought

The issue of food security in South Africa is a concern for all, and the answer to this complex problem lies in increased sustainable farming practices

The issue of food security is on high rotation as rising food prices and climate change take their toll on crop production and are jeopardising food security across many regions around the world.

South Africa teeters on a very fine line between food secure and insecure – a plight that has earned the attention of government, the private sector and industry bodis to address what could potentially be a devastating and far reaching crisis should it escalate. Even the simplest definition of food security encompasses a number of variable facts that can affect a nation's food security.

According to *Wikipedia*, 'food security refers to a household's physical and economic access to sufficient, safe, nutritious food that fulfils the dietary needs and food preferences of that household for living an active and healthy life.'

On dissection, it is clear that true food security is defined and determined by a number of equally important factors. In addition to physical and economic access to food, the food itself needs to be produced in an environmentally sustainable and socially just manner.

The issue of food security is also rooted in a healthy national and international food system, encompassing production, processing, distribution, marketing, acquisition and consumption of food.

South Africa is in a unique position in comparison to other African countries and is even compared to first world countries.

On a national level, South Africa produces enough food to feed its own people and export across the world and is considered food secure from a global perspective. At a household level however, South Africa is considered food insecure.

While there is enough food to feed its people, rapidly escalating food prices have left the country's poorest hungry and unable to access adequate amounts of quality food.

In South Africa, the complexity of food security is further compounded by the lack of integration with the country's land reform programme.

While the redistribution of land is necessary parts of rectifying discrimination and marginalisation of the Apartheid regimen, the lack of co-ordination between the

Despite how South Africa measures up by international measures of food security, underutilisation of land and mining poses a threat that could mean food insecurity in future on a national level

two programmes have, in many instances, resulted in productive farms becoming unproductive once the transfer of ownership is complete.

The ramifications of fertile land that is either underutilised or not farmed correctly poses an enormous threat to food security and have resulted in a number of bodies calling for the alignment of food security and land reform policies in order for both to be effective.

The global financial crisis in 2008 brought on massive increases in the price of a number of staple foods such as maize, wheat and rice.

Developing countries felt the biggest impact with some grains doubling in cost. This years' drought in the US will again see spikes in the cost of maize and have highlighted the effects of climate change on food security. Failed harvests due to natural disasters, floods, droughts and heat waves have been cause for alarm from nations around the world.

While affected by an increase in food prices, South Africa also saw a significant increase in demand for agricultural products. Between 2008 and 2010, agricultural exports grew by 10% while imports dropped by nearly 1%.

According to the South African institute of Race Relations (SAIRR), the total agricultural exports during the same period amounted to \$6.8-billion (R56.7-billion) and South Africa sold an estimated 30% more agricultural goods in 2010 than it imported.

Subsequent reports continue to indicate that South Africa's exports continue to grow. The Netherlands was South Africa's largest agricultural export destination but a growing demand from Asia and the rest of Africa have helped to maintain South Africa's status as a net agricultural exporter.

The Global Food Security Index, conducted by the Economist intelligence Unit, ranked South Africa 40th out of 105 countries, with the United States in first place and the Democratic Republic of Congo ranked the least. The index also noted however, that countries in sub-Saharan Africa and South Asia were the most vulnerable to high food prices, although the report classified South Africa as an 'upper middle income' country.

A separate study by the SAIRR revealed that commercial farming was a staple to South Africa's food security and accounted for 95% of the country's locally produced food.

The remaining 5% was made up from South Africa's 220 000 emerging farmers and 1.3-million subsistence farmers.

For many, the numbers are a clear indication that food security relies heavily on commercial farming but that the sector wasn't without pitfalls.

The study also estimated that there are 94.5-million hectares of agricultural land in South Africa but only 14% of this land was used to grow crops. The rest of the land is used for other activities such as grazing or mining. Currently, the country's 47 500 commercial farmers use only 36% of cultivated agricultural land and 5% of the total agricultural land available, indicating enormous room for expansion of commercial farming activities.

According to AgriSA, South Africa's largest farming body, farmers must adopt sustainable farming practices that make an impact not only of production costs and profits but also on the environment and maximising land use in an environmentally friendly way.

Research conducted by the Bureau for Food and Agricultural Policy (BFAF) for the Maize Trust warned that a clash of interests between miners and farmers could cost the country millions of tonnes in maize production every year up to 2020. The research was presented at the launch of BFAP's Baseline Agricultural Outlook 2012 to 2021 and aims to offer an outlook on southern African agricultural production, consumption, prices and trade for the period.

Mpumalanga province was cited as an example of a productive mining area, rich in coal, gold, iron ore, chrome, alusite, magnetite and vanadium amongst others. Added to that, 46% of the country's arable land, as well as wetlands and ecologically sensitive areas are located in the province and it is the heart of South Africa's maize producing area.

In a pilot study of one small area in Mpumalanga, researchers estimated that mining activities could result in the loss of 400 000 tonnes of maize within the next 10 to 20 years in the same region. And while mining is more profitable in the short term, agriculture is more sustainable in the long term, leaving a huge concern over which will win out and what effect the result will have on food security.

Currently, economists fear that the maize crisis will be felt globally, however not immediately and not as severely in South Africa as other neighbouring countries, but that the true impact will be felt in the households of the country's poor.

Despite the recent predictions, food security has been a priority for the government since 1994 and was an important component of the Reconstruction and Development Programme (RDP) in 1994 where both commercial and small scale subsistence farming were emphasised as part of a strong food supply. The gaps in production and supply led the government to launch an integrated and more efficient food security programme, titled the Integrated Food security Strategy (IFSS). The goal of the IFSS is to eradicate malnutrition, food insecurity and hunger in South Africa by 2015.

The strategic objectives of the IFSS include the increase of domestic food production and trading, to improve the generation of income and job creation in agriculture, to improve food safety and nutrition, to implement food emergency management systems, to improve information management and analysis of agriculture and food production and finally, to have stakeholder dialogues.

One of the major steps in creating equal food security on a national and household level is the improvement of household food production and distribution to address rural food insecurity. By increasing the number of households involved in productive agriculture, together with increasing access to small scale irrigation systems and training for farmers on green and sustainable technologies, the IFSS aims to eradicate food insecurity and empower marginalised groups to drive commercial food production in rural areas.

Overall, the country is actively engaging in creating a food secure state, from empowering individuals and communities to harness commercial farming and export opportunities to build a healthy economy and a thriving nation.

While working together is proving successful in overcoming food insecurity, it is still true that the country needs to strive towards an even more vigorous approach to planting the seeds that will lead to food security well into the future, affording us the opportunity to harvest a new era where no one goes hungry.

Taryn Springhall

We will steer you

Navigating difficult markets with ease

Currently America faces the worst drought in 50 years, and commodity prices are at an all-time high, economists, politicians, as well as the man on the street are all uncertain as to when the European debt crises will abate. These international conditions affect South Africa and the rest of the continent.

The South African commodity prices are therefore influenced by international influence like the Chicago Board of Trade (CBOT) in America, and our local stock market feels the pressure if: changes are afoot from the European Central Bank (ECB), the American Federal Reserve or data from China is not as positive as the market expected. So, given these influences, how does the commercial farmer or corporate navigate and protect against losses?

Deon Schoeman, the Managing Director of GroCapital Financial Services, believes that both can benefit from engaging a financial expert in order to limit risk and losses with entities such as GroCapital which has years of market experience, coupled with sophisticated products and technology to navigate the specialised financial services area, where the customers profitability remains GroCapital's priority.

Services with regard to foreign exchange include: foreign exchange services, trade finance, currency and interest rate hedging (Yield-X), price risk management (SAFEX); specialised/corporate finance and debt origination and restructuring.

Foreign exchange instruments include - dealings at spot (two business days); forward exchange contracts (fixed exchange rate at a future date); collars (cap and floor structure) and vanilla options. Freeing up much needed working capital is a constant in the mind of the commercial farmer or corporate. GroCapital can provide a gateway to international trade and foreign exchange products and services, where letters of credit can be packaged to provide creative funding solutions.

Similarly, interest rate derivatives and liquid fuel hedging instruments for diesel, petrol and jet fuel, can limit exposure to price and interest rate movements, which is hugely beneficial and the involvement of a partner with an experienced trading desk, helps a great deal.

The smooth operational requirement of corporate's and commercial farmers means that they often need to deal with a restrictive and challenging environment within the markets in which they operate. Dealing with GroCapital's Specialised Finance Division can ease much of this stress by means of innovative, tailor-made, structured financial solutions to small, medium and large corporate customers. "Let our experts structure a package most suited to your current business model", advises Schoeman.

Commercial farmers and corporates should get their current cash and stock cycle assessed in order to offer attractively priced solutions to allow the business to optimise the best procurement strategy and also allow the business to focus on important revenue generating activities.

Corporate's looking for an established broking firm to help with Commodity Price Risk Management should consider a firm able to offer clients a facility to hedge price risk of agricultural commodities on SAFEX as well as a platform where clients can trade on Yield-X.

Thus offering clients the opportunity to enter into futures and options transactions such as currency, bond and other interest rate derivative futures and options. Corporate and commercial farmers in need of structured trade assistance should consider a relationship in which the end-to-end solutions provides an opportunity to free up financial and human resources to spend more time optimising operational efficiencies, while minimising downtime.

SAFEX

GroCapital Broking offers clients the peace of mind to know that they can hedge their commodities against price risk movements in a highly volatile market on SAFEX, which is part of the Johannesburg Stock Exchange (JSE).

Our futures and options product range related to commodities include white and yellow maize, sunflower, wheat, soybeans, sorghum, USA maize (CORN), Chicago Board of Trade (CBOT) soybean, CBOT soybean oil, CBOT soybean meal. Also included are NYMEX Crude-oil, COMEX Copper, COMEX Silver, NYMEX Platinum and COMEX Gold.

Yield-X

Yield-X, which also forms part of the JSE, offers individuals or companies the opportunity to enter into futures and options contracts such as currencies, bonds and other interest rate derivatives. Currencies include the US dollar, euro, British pound, Australian dollar, Japanese yen, Canadian dollar, and Swiss franc against the rand.

Added services: Stay informed about market prices • Receive 'live' market prices per SMS on your cell phone every day
• Receive a daily market report (local and international)
• Stay informed with our Greek Program, the web based front-end viewing and live portfolio management system.

To find out more, contact Bethwell Mazibuko Head: GroCapital Financial Services (Pty) Ltd
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AFGRI at your service

AFGRI
Growth the natural outcome

The 'Perfect Farm' takes dedication, passion, positive change and AFGRI. The end result is a comprehensive value chain transforming the business of agriculture with growth a natural outcome.

As a JSE-listed agricultural services and foods business, AFGRI has the passion, resources and potential to effectively assist and advise farmers, producers and consumers of agricultural product. South Africa's market leader, AFGRI simply and effectively offers business solutions across three sectors in the chain.

AFGRI Services is one of South Africa's largest agricultural commodity trading companies, comprising Retail, Equipment and Grain Management.

The Retail division offers a comprehensive range of products and services enabling farmers the tools for a successful crop outcome. From seed, to fertiliser to tractors, these inputs can be easily sourced, with advisory services sustaining the farmer throughout the season. Both 'Farm City' and 'Town and Country' offer a full range of agricultural inputs, home, garden, outdoor and DIY products for consumer use. A regional supplier of mechanised equipment tailored to the needs of the commercial farmer, AFGRI Equipment is the largest John Deere franchise in Africa. Grain Management offers secure storage of agricultural products throughout South Africa and Zambia up to 4.4 million tons, with AFGRI being a world leader in the handling and storage of the maize, wheat, sunflower, soya beans and sorghum grains. World-class technology in silo inventory management also furthers AFGRI's status as an industry frontrunner.

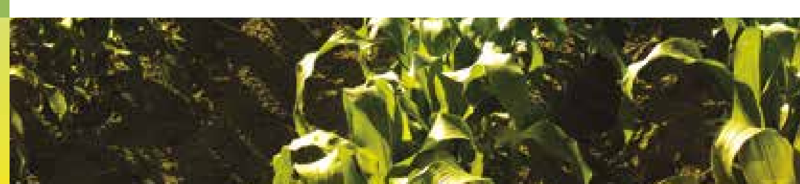
AFGRI Foods, the second in the value chain, encompassing Animal Feeds, Milling and Poultry, Equipment and Oils. AFGRI Animal Feeds is one of South Africa's leading manufacturers and is committed to the provision of superior manufacturing technologies. Over 1 million tons of feed is produced per annum with a clear dedication in manufacture to excellence, innovation and quality.

AFGRI Milling is a leading producer of yellow maize products for manufacturing and industrial use. In keeping international standards the mills are certified for compliance, with international food safety and quality management standards. Excellence is key with Non GMO Hybrids, and the integrity of corn preserved.

AFGRI poultry, and the associated 'Superior' chicken brand, is an integrated process producing parent stock through to state of the art facilities. Passion and innovation allows quality product direct from the farm to the customer. Known for its supply of first class instrumentation and equipment, AFGRI Labworld is a leading supplier of laboratory and scientific analytical equipment used in the agricultural, food and beverage, mining and petrochemical industries. Customers receive total all-encompassing solutions to all analytical requirements enabling effective product development.

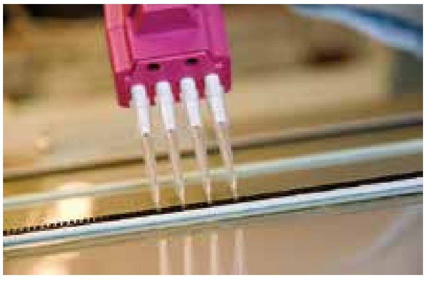
Nedan is AFGRI's oilseed crushing, extraction and refining plant. A leader in the field, the plant processes oils and other raw materials into edible product for the food processing and fast food industries. Nedan aims to be the most technologically advanced oil and protein company in South Africa, a goal being achieved through plant innovation processing efficiencies and ongoing product development. AFGRI Financial Servcies, the final link in the value chain, offers tailor made solutions through Capital, Broking and Insurance.

The GroCaptical division provides financial solutions for a variety of clients ultimately facilitating profitability and growth. GroCaptial offers specialised finance and innovative solutions with strong emphasis on the emerging markets and allowing international trade and foreign exchange. Specialised knowledge, structured trade and debt origination set GroCaptial as a leading provider. AFGRI Broking facilitates the right protection against currency movements with currency futures and options from the JSE, an essential consideration for trading farmers and a volatile currency exchange. AFGRI insurance is a composite insurance broker specialising in all aspects of short-term and long-term insurance, specialising in the risks that face today's farmer. A newcomer to the AFGRI Financial Services chain is Farmer Lending. Previously part of the GroCapital offerings, Famer Lending offers attractive rates for seasonal needs, capital expenditure and future extensions. It's about relationships, funding and advantages for all farmers.



Incotec

A market leader in the seed enhancement sector



With the global population escalating to staggering numbers by 2050, food production will have to increase by 70% and the need for healthy food will become increasingly critical.

Incotec acknowledges that the seed industry has a responsibility to make a contribution to the welfare of the global population. By delivering sustainable added value to seeds and vegetative materials we can help to improve the quantity and quality of the crop.

Incotec was founded in 1968 as part of the research department of Royal Sluis in the Netherlands. Since 2002 Incotec has been an independent company with 11 facilities across the globe and employing more than 400 people. Innovation is one of the cornerstones of the company and a large number of these employees are therefore involved in research. Incotec invests more than 8% of its annual turnover in researching and developing new products and technologies which can improve and enhance seed.

Incotec is the market leader in the seed enhancement sector. Its facilities worldwide are involved in developing, producing and marketing Incotec's innovative products and technologies. Incotec understands the importance of being close to the market and close to its customers. These customers are seed breeders, traders and growers all over the world. For this reason Incotec South Africa was established in 2008 to serve South Africa and all of sub-Saharan Africa.

Besides South Africa, the Incotec Group has facilities in the Netherlands, France, Sweden, USA (Indiana and California), Brazil, Japan, India, China and Australia.

The organisation provides products and services for seed coating, pelleting, seed enhancement and analytical services for genetic analysis and quality inspection. These products and services form key solutions in four business areas: Field Crops, Vegetables, Ornamentals and Analytical Services.

Incotec offers seven main technologies

- Upgrading is a process to separate the seeds with best germination quality from those with a lower germination quality.
- Priming is used to trigger the germination mechanisms under strictly controlled conditions. The germination is then brought to a standstill at precisely the right moment. When planted, primed seeds germinate faster and more uniformly even under varying climatic conditions.
- Disinfection helps to remove seed-borne diseases from the seed. Many techniques are used including the patented ThermoSeed disinfection technology which effectively disinfects seed using only warm humid air.
- Film Coating is the application of a thin film coat to colour the seed or as a carrier of active ingredients.
- Encrusting/pelleting makes the seed easier to sow through adapting the shape of the seed by affixing a layer of coating material.
- Application of actives and additives is Incotec's newest technology. Registered plant protection products and stimulants are applied using Incotec's advanced seed coating technology. These actives and additives protect the seed and plant against disease and stimulate growth.
- Analytical quality testing offers control and breeding assistance through a broad range of biochemical, molecular and analytical tests and technologies.

Incotec South Africa was first established in 2008 in the quiet suburb of Ashburton with one employee running the Analytical Service Laboratory and organising the blending of the film coating which then was outsourced. By 2011, Incotec South Africa boasted a team of eight. In November 2011 a production facility in Mkondeni, an industrial area bordering Pietermaritzburg in the KwaZulu-Natal Midlands, was purchased.

The facility has been renovated and upgraded to host a state of the art Analytical Services

laboratory with increased capacity and international accreditation. The production hall is fitted with a high capacity blending plant and preparations are being made to fit this location for upgrading, pelleting and encrusting to service a wider market segment.

Until now, Incotec South Africa had been focusing mainly on film coating and analytical services but is extending the services available. Before the end of 2012 the facility will be providing three new technologies: upgrading, pelleting and encrusting with priming to follow shortly after that. There are also several trials running presently involving Incotec's newest technology – the application of actives and additives.

High-quality plant protection products, stimulants and biologicals are applied directly to the seed using Incotec's seed coating technology. Through agreements with reliable producers of actives and additives Incotec, as an independent company, gives producers and growers access to combinations of yield increasing-products from numerous suppliers.

Incotec South Africa provides film coating technology for a broad range of crops with the largest customers presently in maize production. The three new technologies ready to be launched onto the African market, upgrading, pelleting and encrusting will be available for many seeds including tomato, lettuce, onion, carrot and eucalyptus.

Incotec South Africa's state-of-the-art laboratory provides analytical services globally. These services include quality control testing, a genotyping service, breeding support through marker assisted selection (MAS) and marker assisted backcrossing (MAB), Heubach Tests and is in the process of implementing an HPLC service. The laboratory has a number of disease resistant markers on a large variety of crops.

One of the major focus points is GMO testing. In our laboratory we can identify, qualify and quantify the presence of GMO traits in seed, food or feed using the latest technology. The amount of GMO crops worldwide is on the increase as are the legislative demands for controlling the flow of these products. Our testing facilities can help you comply with these demands. Our laboratory is in the process of obtaining the ISO 17025 status which is an extremely valuable endorsement. This guarantees our customers that the laboratory is highly experienced and able to produce highly reliable results.

Within a few short years Incotec South Africa has become an established facility providing a range of innovative technologies and products to sub-Saharan Africa.

Incotec specialises in providing key solutions for the seed industry and each local facility has access to the resources of the entire global organisation. Remaining close to the customer and in touch with the specific problems facing traders and growers in Africa, Incotec South Africa sees plenty of opportunity to maintain this steady growth and become a major player on the African continent.

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A new d

Agroecology in South Africa: the way forward for agricultural production


irection

Agroecology is essentially the adaptation of agricultural production practices to the ecological conditions rather than the dominant approach of adapting the environment to suit agricultural practices.

It is not a single production system but a collection of techniques adapted to specific local conditions. While there are many possible principles underpinning agroecology, this article focuses on five: diversity, adaptation, multi-functionality, closing energy and nutrient cycles, and context specificity.

1 Diversity refers to widening the base of what is being produced, how and by whom. The logic is that if one part of the system fails, other parts can still succeed. Diversity therefore produces flexibility and robustness in the system. The first type of diversity is biodiversity. If we look at any local ecosystem, we can see a wide variety of plants and animals interacting with one another. This is true in desert conditions as much as in forests, even though their complexity may differ. Genetic uniformity is not found in natural ecosystems. The aim of agroecology is to replicate this biodiversity on farms to match that of the natural ecosystem.

Diversity also refers to a multiplicity of production methods and scales. In South Africa we currently have a highly concentrated system of agricultural production that excludes many people from productive activity, and that constantly orients towards greater scale of production. Diversifying the types of production and widening the base of people engaged in different types of production spreads risk and makes the system more robust.

2 The second principle, adaptation, refers to the ability to adapt to short-term (drought) and long-term (climate change) adjustments in the ecosystem. It requires a willingness to change assumptions and interventions based on what is learned in practice, rather than ploughing ahead with the same strategy year after year in the face of declining returns (productivity, ecosystem resilience, adaptability).

The conventional response to ecosystem change is to attempt to create an artificial environment for agricultural production.

For example, the soil is converted into an inert carrier of manufactured chemicals to allow plants to grow from one year to the next. These strategies are heavily dependent on energy- and resource-inefficient and ecologically-damaging external inputs.

The drive for ever-higher yields means a shorter horizon for decision-making.

The expectation is that the longer-term negative impacts of productive activity will be solved through technological innovations yet to be discovered. This is leading into a dead end marked by ecological limits. In contrast, agroecology seeks to adapt to these recognised limits by adjusting practices to align more closely with the natural functioning of the ecosystem.

3 The third principle of agroecology is the multi-functionality of agriculture, referring both to the wide range of direct outputs (food, animal feed, fibre, medicine and fuel) and to other 'intangible' outcomes, such as the role farmers play in the stewardship of natural resources, or the role of agriculture in social cohesion.

Commercial agriculture contributes to these multifunctional roles, but sometimes in distorted ways. Specialisation of production (for example in livestock or crops or biofuels), means reducing biodiversity and opening the system to vulnerability to stresses and shocks. Competitive pressures tend to override the sustainable stewardship of natural resources, with environmental costs externalised and deferred to future generations as more energy- and resource-intensive methods of production are adopted to keep up with the market. In South Africa, agricultural production and land ownership are increasingly concentrated, creating social instability rather than cohesion.

Agroecological production seeks to take into account these multiple dimensions of agriculture, adjusting practices to ensure all of them produce positive outcomes, rather than imbalances where some (for example, high levels of production) come at the cost of others (for example, declining ecological or social sustainability). This means integrating different production systems on individual farms, placing ecological integrity at the top of the priorities because ecological destruction will bring humanity down with it, and generating equitable systems giving a wider base of people opportunities for productive involvement.

4 Closing nutrient and energy cycles is the fourth principle, focusing on reducing waste in the system, and identifying and using resources generated on the farm as inputs for further production. Integrated livestock and cropping systems are central here, as the beneficial interactions between these components generate a cycle (animals feed on crop residues, and manure used for soil fertility) that can go a long way to closing on-farm nutrient cycles and reducing reliance on external inputs. There are debates about the extent to which supplementary external inputs will be necessary, but in principle the aim is to shift towards closing nutrient and energy cycles. It may not be possible to realise an entirely closed system, but it certainly is possible to get a long way closer than we currently are.

> "Agroecology is based on observable, measurable and replicable evidence, which defines a scientific approach"

5 The final principle of agroecology is context specificity. This says that the specific context will determine practices, selection of technologies and their adaptation. The dominant scientific-industrial agricultural model tends to introduce uniform technologies that can only be used in one way. This requires intervention to alter local ecosystems to accommodate the most efficient use of the technologies rather than altering technologies to accommodate the ecosystem.

We should not view agroecology as unscientific. Agroecology is based on observable, measurable and replicable evidence, which defines a scientific approach. In an agroecological approach, context is geographical but is also cultural and socio-political.

These elements must be brought into account in decisions to adopt and adapt technological options.

To some extent commercial agriculture follows local specificity, for example, sheep are predominant in the arid Karoo, while intensive horticulture is dominant in the fertile soils of the Western Cape.

Agriculture would not survive if it took no account of the ecological context. However, there are other challenges facing commercial agriculture in relation to operating within ecological limits. Monocropping, separation of livestock and cropping systems and high input, high waste systems have been mentioned above.

Agroecology as a concept also looks beyond agricultural production on the farm, to encompass the ecology of food systems more broadly. This makes explicit the connections between agricultural production and input supply, processing, storage and distribution of food. Localisation of food chains, co-operation between actors in food chains, the extent of integration into global markets, and farmer-community interactions come into play. Thus, Agroecology is not simply a change in production techniques contained within the boundaries of the farm, but has wider societal implications for how we produce and consume.

Recognition of agroecology

There is broad recognition of sustainable agriculture in government policy, but this is not translated into practice apart from marginal programmes like the Land Care programme, or projects isolated from one another, without lessons being drawn or shared more widely. The South African government is developing an agroecology strategy. However in its current form it is marginal, almost an offshoot of the organic agriculture strategy which in turn is seen as no more than a potential niche requiring further development. In a climate that is not overtly hostile to the idea, practical work on the ground is the most important intervention. This should ideally include efforts to connect commercial practitioners and small-scale, resource-poor farmers to share methods.

There is a shift amongst some South African commercial farmers towards more ecologically sound practices connected to agroecological principles. Examples include decisions to adopt conservation agriculture, no-till farming, inter-cropping, use of cover crops and mulching, integrated livestock and cropping systems and holistic natural resource management. Although these are not systematic they offer a valuable technical basis to build on. There is an underlying sense of stewardship of natural resources amongst South African farmers, and an implicit recognition that it is their responsibility to maintain ecosystem health.

Resistance to agroecology is not overt, but rather takes the form of dismissal. There remains a deeply held belief – both amongst commercial farmers and government – that large-scale commercial farming as it is practiced today is the only way to ensure national food security.

They do not want to tamper with a system that is perceived to be working well. The question is how well the agricultural system really is working if cast our horizons beyond yields and profits.

There are gathering ecological problems with water pollution, soil degradation, concentrated seed ownership systems, over-reliance on synthetic pesticides and fertilisers, growing pesticide resistance and a very unequal distribution of economic resources.

There is also a mismatch between the amount of food being produced and the effective access to that food for the poor. Some adjustments are not only desirable but essential. There is a debate globally about whether agroecological production methods can produce enough to meet growing needs. These practices are fragmented and often on a relatively small scale, and it is thus necessary to extrapolate from local contexts.

Influential global initiatives such as the International Assessment on Agricultural Knowledge, Science and Technology for Development (IAASTD) have concluded that agroecological methods are an essential part of shifting towards more sustainable production while maintaining yields.

Production scale and Agroecology

Agroecology is strongly linked to small-scale, resource-poor producers for a number of reasons. The most obvious is that resource-poor producers cannot afford a lot of external inputs and therefore, by necessity, produce in ways that conform closer to agroecological methods. Agroecology is more labour intensive, and thus smaller scales are required. The transition to agroecological production is likely to be smoother starting from a base of low external input production than from a commercial base.

However, this should not be taken to mean that agroecology seeks to replicate resource-poor farming practices across the board. There are things to be learned from what these producers are doing, but there is also need for other knowledge to be brought to bear. Studies indicate that the most successful transitions to 'strong multifunctionality' based on agroecological practices are actually more likely on 'large, economically buoyant farms' with the resources and skills, and hence flexibility, to adopt different tactics and strategies in conversion.

In contrast, small, resource-poor, marginal farms face many constraints in fully adopting agroecological practices. It is of value to support small-scale farmers to adopt these practices and extend them where they are already doing them. But this involves dealing with larger structural issues to ease their ability to move in that direction as a conscious choice. Support should include secure access to more land and water, building systems to identify agroecological practices amongst producers (commercial or otherwise) and sharing these using farmer-to-farmer networks which recognise and value farmers' knowledge.

A principle of agroecology is not to make all changes at once, but to experiment and adapt according to lessons from practice. For example, if a farmer wants to try a new seed variety, they don't go ahead and plant their entire field with it. They rather allocate a small portion of their land for experimentation. If the experiment fails, there is no great cost. If it works, it can be expanded. The scientific method requires experimentation, which involves failure and the ability to learn from it.

The same principle can be applied to agroecological practices. There is an array

of different practices that can be tried on their own or in combination: these include mulching; intercropping; saving and sharing of locally adapted and indigenous seed varieties and other genetic resources; integration of ecological reserves, livestock and crops; integrated nutrient management; agroforestry; cover crops for nitrogen fixing; composting; rainwater harvesting; small-scale biogas and biofuel production.

These do not have to be adopted all at once or across the whole farm at once, but rather can be experimented with, tested and scaled up as they prove to be of value.

Agroecology is an appropriate response to the ecological challenges facing our systems of production and distribution. It is not something that should be left in the margins.

It is the advanced guard for adapting systems of production to accommodate the biophysical limits we are bumping up against globally.

Stephen Greenberg
Researcher: food systems, land, agriculture and rural development

Omnia Group

Omnia's stellar performances led to industry triumphs

Starting out as a family business in 1953 and listed in the chemicals sector of the Johannesburg Stock Exchange, Omnia Holdings provide specialised chemical products and services to the agriculture, mining and industrial sectors.

Omnia Holdings operate the above three divisions with 3 017 employees and 9 000 customers in 23 countries across Africa.

"One of Omnia's most vital business operations remains marketing," says Omnia's Group Managing Director Rod Humphris.

"Omnia's marketing model is based on creating value for customers by understanding their needs, providing quality products and impeccable service, implementing technological innovation, improving profitability and reducing production risk."

However, our business is chemistry, the science engineering of matter. Chemical substances are often defined as any material with a definite chemical composition. Our bodies, food, and the clothes we wear are all made from chemicals.

As Humphris says, "By the time people reach the office they have already used several products containing (or were grown with) elements of Omnia's chemicals."

Throughout its 59 year operations, Omnia has achieved several milestones.

The most recent was when Omnia's new advanced nitric acid complex in Sasolburg commenced production in March 2012.

Sited next to the Group's existing nitric acid plant which was built in 1983, the new R1.4-billion facility comprises a nitric acid plant, an ammonium nitrate plant, a porous ammonium nitrate plant, and a fleet of 145 specialised ammonia rail tankers.

The new complex has the capacity to produce 73 000 tonnes of nitric acid per annum, 40% higher than the first nitric acid plant's capacity.

Nitric acid is a key material in fertiliser and explosives production and a much-needed investment in mining and agriculture sectors. Between 2000 and 2009, Omnia's mining explosives and fertiliser businesses grew considerably, and the volume of nitrates Omnia had to purchase reached the point where an in-house nitric acid complex was economically justified. The new plant is the first investment of its kind in the industry in almost 30 years.

In 2003 Omnia acquired Protea Chemicals, a well-established manufacturer and distributor of speciality chemicals and polymers with a major presence in many segments of the industrial, manufacturing, mining and agriculture sectors.

Omnia had already started servicing the mining industry in 1985 through its BME division and the acquisition of Protea Chemicals made it possible to market a wider range of mining related chemicals. Since then, "BME and Protea Mining Chemicals grew to be frontrunners in supplying opencast explosives and chemicals for ore processing and metallurgical plants," says Humphris.

Rod Humphris, MD of Omnia Group

With its roots in lime, then moving into developing Omnia Fertilizer and Omnia Specialities services, Omnia's agriculture division grew to be a market leader in southern and east Africa, Australasia and Brazil.

Omnia Fertiliser produces granular, liquid and speciality fertilisers for a broad customer base of farmers, co-operatives and wholesalers. Omnia Fertilizer manages exports into the rest of Africa with established facilities in Zimbabwe, Zambia, Malawi, and Angola. Over the past 20 years, Omnia's commitment and investments within these markets ensured a significant competitive advantage.

Omnia Specialities has established itself as a spearhead in diagnostic technology with the OmniSap® and Nutriology® offerings. Omnia Specialities is breaking into key agricultural markets such as New Zealand, Australia and Latin America.

Chemtech Agri is an analytics laboratory facility situated in Sasolburg, and specialises in the analysis of soil, plant sap and irrigation water. Chemtech Agri is an important component of the Omnia Nutriology® approach which is focused on improving customers' profitability with lower risks.

The laboratory opened in 1968 and has expanded into a newer facility which started operating in 2006 with the capacity to handle more than 2000 samples a day. To the best of their knowledge, Omnia is the only fertiliser company in the world to boast such a facility.

Social responsibility and carefully considered environmental projects are fundamental to Omnia's approach. Omnia supports the Responsible Care initiative of the chemical industry and the Kyoto Protocol of the United Nations with various educational projects for community farmers in the agriculture sector.

In 2008, Omnia won the Mail & Guardian/ Department of Environmental Affairs and Tourism, 'Greening the Future' award for its EnviNOx® plant. Currently, Omnia sells around 50% of the southern African certified emission reductions, which sets them as a leading company in mitigation of greenhouse gases.

For a company to accomplish these remarkable feats, it needs consistent teamwork from all departments and divisions. From an employee's perspective, working for Omnia is far more than just going to the office. It is going to be with family, it is going to a workplace that will help you to grow and develop, while giving dreams free reign and achieving set goals. It is where employees are presented with new challenges and opportunities, receive recognition for committed efforts and treated with respect.

It is a place where they are inspired by great leaders like Group Managing Director Rod Humphris and others that have already paved their way to success. Humphris leads with a strong hand delivered with a consultative push. "Employees need to understand the full detail in order to execute their job functions efficiently," says Humphris.

Humphris joined Omnia in 1982 as Project Manager, considering his new position as a huge challenge. "And it still is," he smiles. "But I've learnt a lot along the way. Working for a diverse organisation such as Omnia, is very stimulating every day."

Humphris was coached and inspired by his predecessor, current Chairman of Omnia Holdings, Neville Crosse. "He taught me how to look after my people, to encourage them in being more innovative, to grasp opportunities, to grow with it and to implement it."

Before joining Omnia, Humphris gained experience on gold, uranium, flotation and sulphuric acid at Anglo American's President Brandt and Ergo Mines. He held executive positions in Omnia such as Fertilizer Managing Director and has also served two two-year terms as President of the Fertilizer Society of South Africa.

Initially, Omnia started operations competing against strong giants that don't even exist anymore, "With perseverance, good leadership and creating value for our customers, Omnia Group has grown into a solid market leader," concludes Humphris.

As the founding members of Omnia had said, "In our minds we have a vision for our future, in our past we find experience to guide us. In our hearts we hold the values that light the way, in our present we celebrate the culture that defines us, and in our spirit is the inspiration that drives our progress."

Upon entering Omnia's offices in Bryanston, Johannesburg, one actually breathes the pride and commitment. Even more evident is the dong of the grandpa clock in the corridors of the executive offices, and the countless framed newsletters and photographs of founders and management displayed on the boardroom walls.

In peace and quiet all employees and divisions grow forth fruitfully. Their strongly held values and corporate culture have proven its worth and returned excellent value. A culture deeply developed inside of each employee that shines strongly outwards, certainly a powerful driver of business success.

Science and knowledge enable Omnia, pride drives them. Just as their past has depicted many milestones and their logo represents a stellar explosion, so will the company detonate into several more markets and industries in future.

www.omnia.co.za

Start with the basics

The agricultural landscape is in trouble if the problem of the skills shortage is not addressed from grassroots level

Skills shortage debates often tend to revolve around sectors like manufacturing, mining and construction. Not many people however realise that South Africa's agriculture is as equally and badly affected.

Determining the extent of the skills shortage in farming is a complicated affair.

Currently, there are no recent comprehensive and readily available figures on the industry's overall situation – what types of skills and how many are needed and where these particular skills are required.

Various representative bodies of agricultural sub-sectors have however conducted their own research, including the National Emergent Red Meat Producers Organisation (NERPO). According to this not-for-profit meat farmers network, the South African livestock industry is in dire need of thousands of skilled workers.

"We need 2 146 skilled people in livestock farm production as well as animal attendants or farm workers (3 581), machinery operators and drivers (15 000), clerical staff (703), and elementary workers," said Elizabeth Moller, NERPO's head of skills development and training earlier this year during the City of Tshwane's fourth International Trade and Infrastructure Investment conference.

While it does not look at individual sub-sectors, the 2010 Sector Analysis Report by the Agricultural Sector Education Training Authority (AgriSETA) confirms the lack of skills in the industry.

AgriSETA is tasked with the creation of skills development programmes within agriculture and related sectors. These initiatives are funded by skills development levies paid to SARS by South African companies with a payroll exceeding R500 000. Companies with workplace training programmes can claim part of these levies back.

The document for instance shows how agriculture, of all major sectors, has the highest percentage of unskilled workers. Quoting the Department of Trade and Industry (dti) figures, the researchers claim that 94.1% of all people working in primary agriculture are have no practical working skills whatsoever.

This is significantly higher than mining (87.9%), manufacturing (82.1%), utilities (68.8%), construction (88.3%), trade (84.2%), transport and communication (76.8%), finance (59.5%) and community and personal service (49.8%).

While agriculture, in particularly primary farming, requires less skilled people than most other sectors, AgriSETA stresses that this does not mean the industry doesn't need skilled workers at all.

"It needs highly skilled and qualified farm managers and technical staff, as well as large numbers of semi-skilled workers," the researchers write. "Many managers of emerging farms are mainly untrained, unskilled, and unqualified."

Professor Nick Vink, Chair of the Department of Agricultural Economics at the University of Stellenbosch, agrees and says that South Africa needs more skills – at both primary agricultural level and up and downstream.

"You can't run a business when the majority of your employees can't read and write and are not adaptable to changing situations," he says, noting that the consequences of South Africa's shortage of skilled farmworkers are serious.

"You can't grow the farming sector's productivity and economic value if you only have unskilled workers.

People need to get skills and upgrade their existing skills sets so that the sector can develop," adds Vink.

AgriSETA, in its 2010 report, adds another reason to the equation why farm workers should be provided with skills.

"South Africa's enormous pool of unskilled agricultural workers drives wages down and creates opportunities for casualisation and the expansion of labour contract agencies and brokers," the organisation claims.

"At the lower skilled end of the market tensions are likely to increase, and further protests either in the form of xenophobic outbreaks or actions against farmers may well increase."

What is the main cause of South Africa's agricultural skills shortage? According to Vink it is the collapse of the once thriving farm support and education system and the lack of political will to revive it.

> "You can't run a business when the majority of your employees can't read and write"

"Farmers could once apply for support when setting up a business. We used to have solid agricultural training programmes in the form of colleges, too. That system has been dismantled since the 1980s," he explains.

"Boskop College in Potchefstroom for instance closed down in 1998. So have others. The entire support structure is gone and the Department of Agriculture is not taking its responsibility to train those working in farming."

Founded by the South African Agricultural Union, Boskop College trained over 15 000 workers between 1977 – its year of inception – and 1989 alone. Apart from its permanent structures, this college had 30 mobile units that visited farms on request.

In Going for Broke: The Fate of Farm Workers in Arid South Africa, which was published in 2007 by the Human Science Research Council, Doreen Atkinson confirms the link between skills shortage and the decline of agricultural colleges.

"Training opportunities have declined drastically during the last 10 years, and training institutions for farm workers are few and far between" she writes.

"Some provinces like the Western Cape do have a better track record. Training centres in this province can accommodate up to 2 500 farm workers every year. However, given that there are about 200 000 farm workers in the Western Cape, this is still inadequate."

Acknowledging the important role of AgriSETA in skills development strategies in the farming sector, Vink says more is required: "It is a good system and I have a lot of respect for them, but AgriSETA is not set up to cater for primary agriculture. The payroll of most primary farmers is too small. It is there where skills are needed."

NERPO, Vink and AgriSETA are not alone with their concerns regarding the lack of agricultural skills and the future of farming.

"The number of farmers has dropped from 120 000 in 1994 to 37 000 today, and the average age of a farmer is 62-years-old," said AgriSA Deputy President Theo de Jager in September during the SA Agricultural Outlook conference, partially blaming the collapse of agricultural colleges.

"But we are to blame too. We have not made this profession sexy enough. It is not cool to be a farmer. We need to rectify this in a short space of time," he added.

As Vink, REPRO, AGRISA and AgriSETA pointed out, more skills are needed to keep the South African agricultural sector a thriving pillar of our economy. In 2010, the overall agro-industry, including primary farming as well as up and down stream sectors, accounted for some 12% of the Gross National Product.

That is almost double the contribution of the mining sector in that year - often regarded as the ultimate engine of South Africa's economy. Employing 650 000 people, or 5% of all jobs available in South Africa; agriculture is an important employer too.

"These are just the jobs in primary agriculture. "On top of that come the jobs in related industries. It is however mainly the primary agriculture that is in need of skills," Vink concludes.

Miriam Mannak

Growing Africa

Technology incorporated into crop production

Syngenta is one of the world's leading companies, with an enormous breadth of agricultural technologies in crop protection, seeds and seed care. It is uniquely placed in the industry to offer the grower integrated solutions as well as truly innovative and transformative technologies in the future.

Syngenta believes that Africa has the resources, not only to feed its growing population, but also to become a major world food exporter, thereby driving its economic development and creating significant opportunities for investment.

Investing in growth

Africa has become one of Syngenta's strategic growth regions and the company's aspiration is to contribute to the transformation of agriculture on the continent. Syngenta will deploy its leading portfolio as part of a system-wide approach linking people, land and technology, with the aim of increasing productivity sustainably and reducing poverty.

In support of this undertaking, Syngenta will make cumulative investments of more than $500 million (R4.2-billion), which will include the recruitment of new local employees, many of whom will be field advisors trained in agronomy. In addition, the development of distribution channel networks, local production facilities and logistics, in collaboration with local partners, will increase access to technology for both smallholders and large-scale farmers.

This engagement has been catalysed by the encouraging steps taken by some African governments to stimulate investment. Syngenta intends to play a leading role in public-private collaborations that will be essential to making a planned transformation actually happen on the ground.

Building on a strong presence

Syngenta already has a strong presence in South Africa – with commercial, production and R&D facilities – which enables it to make a substantive contribution to developing sustainable agriculture in this country. It also gives the company an excellent platform to build on as it implements its strategy and focuses new investments on countries such as Côte d'Ivoire, Ghana, Ethiopia, Mozambique, Kenya, Nigeria and Tanzania.

Over the next 10 years, Syngenta will bring knowledge, tools, technology and services that farmers need, regardless of the size of their field or type of cropping system. By 2022, Syngenta wants to have reached more than five million farmers and to have enabled productivity gains of 50% or more, while preserving the long-term potential of the land. This will help the continent attain food security within a generation. That it represents a major investment opportunity is to the benefit of business and humanity alike.

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Cultivating a new plan

With South Africa's population on the rise, and water resources becoming that more precious, farmers need to find strategies to create sustainable farming methods

Faced with a fast-growing South African population that literally consumes agricultural production, farmers are under increased pressure to augment their output to meet the steadily-increasing demand for agricultural produce.

One logical response is to increase the area under cultivation, a solution that many farmers have begun to explore.

However, increased cultivation means increased use of water, potentially harmful pesticides and herbicides, as well as the cultivation of previously uncultivated land.

Concerns exist that, if left unchecked, these activities may lead to increased soil erosion, water pollution and scarcity, declining soil health and the destruction of biodiversity.

In an attempt to address these concerns, the Conservation of Agricultural Resources Act (CARA) aims to regulate the use of the natural agricultural resources and its objectives are clearly formulated to counter the negative effects of unsustainable farming practices.

Listed amongst CARA's objectives are the conservation of the soil, water sources and vegetation. Notably, when expanding upon the importance of these objectives, the Green Choice Living Farms Reference, a reference for good agricultural practice and biodiversity conservation in farming, summarises the concept of sustainable agriculture as the minimisation of any adverse impacts of farming on the environment, the demonstration of good trusteeship of natural resources and the enhancement of social well-being, while providing a sustained level of production and profit.

In line with these objectives, the cultivation of virgin soil, defined in terms of CARA as "land which, in the opinion of the executive officer, has at no time during the preceding 10 years been cultivated" is rightfully an activity requiring investigation and authorisation in terms of our laws.

South Africa has various statutes and regulatory provisions that deal with environmental protection and sustainable development, both subjects to which the topic of virgin land relates. It is forseeable that there is an overlap between these different pieces of legislation and, as such, the administration thereof is notoriously fragmented, making their interpretation

somewhat complicated. For the purposes of this article, a comprehensive review of the legislative framework would perhaps be a far too lengthy task. Suffice it to say that the cultivation of virgin land is regulated, essentially in terms of two statutes, namely, CARA, mentioned above, and the National Environmental Management Act (NEMA).

Note that a third statute, the Environmental Conservation Act (ECA) also played a significant role but the relevant provisions thereof are no longer in force.

Nevertheless, what follows is a basic outline of how the three statutes relate to one other and the authorisations required in terms thereof.

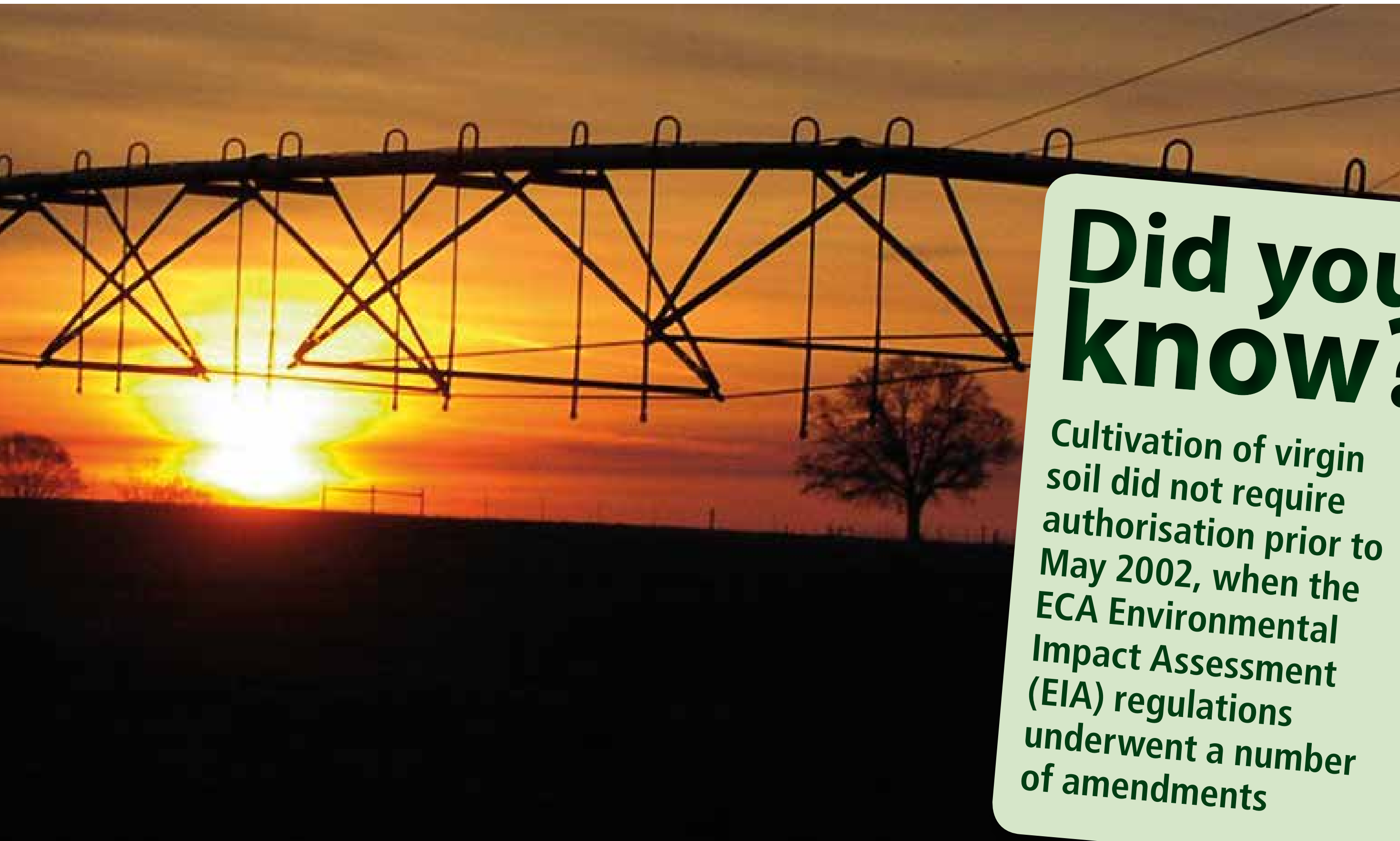
One such amendment was the addition of the cultivation of virgin land to the list of prescribed activities requiring authorisation under the Act. In July 2006, the ECA EIA regulations were repealed and replaced by the NEMA EIA regulations, in terms of which certain listed activities would trigger a mandatory basic assessment and others a scoping and Environmental Impact Assessment (EIA).

In terms of the regulations, the cultivation of virgin soil will, depending on the extent thereof, trigger either a basic assessment or an EIA. For example, any development activity where the total area is or is intended to be, 20 hectares or more, will trigger an EIA.

Similar provisions exist for smaller areas of land and different sets of circumstances, all of which potentially pertain in some respect to the cultivation of virgin land.

In addition, section 28 of NEMA provides for a basic duty of care towards the environment by requiring that "every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing, or recurring, or, in so far as such harm to the environment is authorised by law, or cannot reasonably be avoided or stopped, to minimise and rectify such pollution or degradation of the environment."

It is clear that even if a land user is authorised to undertake an activity that is recognised will damage the environment to



Did you know?

Cultivation of virgin soil did not require authorisation prior to May 2002, when the ECA Environmental Impact Assessment (EIA) regulations underwent a number of amendments

some extent (for example the cultivation of virgin land), he or she must nevertheless take steps to minimise or rectify any degradation (or pollution) that may be so caused.

Having come into effect in June 1984, the regulations promulgated under CARA have been applicable to both ECA and NEMA.

Prior to the NEMA regulations coming into force in 2006, the cultivation of virgin land was almost exclusively controlled in terms of the CARA regulations. Notably, CARA prescribes certain control measures which must be complied with by the land users.

Such control measures apply to, amongst others, the cultivation of virgin soil and provide that "except on authority of a written permission by the executive officer, no land user shall cultivate any virgin soil."

Significantly, any land user who refuses or fails to comply with a control measure is guilty of an offence and a directive may also be issued compelling a landowner to comply with a control measure.

Permits for the cultivation of virgin soil are issued in terms of the regulations to the Act. An applicant may be directed to dig soil pits and undertake other, unspecified, "steps (for) the purpose of an investigation deemed necessary to consider an application (for a cultivation permit)". Permit conditions typically could provide for interventions such as soil conservation works to divert run-off, the establishment of fields perpendicular to the dominant wind direction, and the planting of cover crops.

What is clear from the foregoing is that there is an overlap between the NEMA EIA regulations and CARA. Having been granted a permit under CARA to cultivate virgin soil, a land user would still have to comply with the authorisation procedures as well as general duty of care provided for in terms of NEMA.

In order to deal with this overlap and to prevent the duplication of efforts, certain principles of co-operative governance have been incorporated into the legislation. Section 2(4)(l) of NEMA states that "there must be intergovernmental co-ordination and harmonisation of policies, legislation and actions relating to the environment", while section s2(4)(m) goes on to say that "actual or potential conflicts of interest between organs of state should be resolved through conflict resolution procedures."

Of note further is that regulation 6 of the NEMA EIA regulations provides that where an application must also be made in terms of other legislation that requires that information must be submitted or processes must be carried out that are substantially similar to those required in terms of the NEMA regulations, the MEC must take steps to enter into a written memorandum of agreement with the other authority to harmonise requirements and avoid duplication.

Although these provisions go some way to ensuring avoidance and resolution of conflict as well as integrated decision-making, a regulatory overlap remains and, from a practical perspective, this may continue to complicate the task of cultivating virgin land.

Moira Johnson
Attorney: Luke Havemann Inc.
Specialist Energy Attorneys

Farming towards prosperity for all

Poverty alleviation and job creation is possible through agriculture

In the second quarter of 2012, South Africa's unemployment rate was still high at 24.9%, trailing behind other developed countries which have a rate of (mostly) below 10% (e.g. Australia 5.2%, Japan 3.9%, United Kingdom 8%).

The UNICEF *State of the World's Children* (2010) report found that 75% of the world's poorest people live in rural areas and are dependent on agriculture and related activities for their livelihood. The report also indicated that 50% of hungry people are farming families.

According to a press statement issued by Statistics SA in July 2012, employment within the local agriculture sector increased by 6.7% during the April 2011–2012 time period. This is the biggest year-on-year increase of all the employment sectors in South Africa, including formal and informal.

In an economic environment plagued by poverty and unemployment, agriculture has a role to play in offering solutions through the support of both commercial and rural agricultural communities.

A company with a vision

Through Farmsecure's vision of being a meaningful contributor to securing the world's food supply by creating sustainable and profitable agricultural enterprises, where the process is optimised from 'farm to shelf', the company has created a positive ripple-effect in the agricultural community.

In the seven years since its inception, Farmsecure has created more than 4 700 jobs by investing in agricultural activities and infrastructure. Two thousand of these opportunities were generated through its fruit-farming activities within the space of a year.

Mr Jerome Yazbek, Farmsecure founder and CEO, has previously worked in South Africa's informal jobs sector for more than 15 years. "My vision since this time has been to establish opportunities for the development of small to medium enterprises within African-based environments that would contribute to the alleviation of poverty and unemployment, of which agriculture can play a large role."

FARMSECURE®
SUSTAINABILITY AND PROFITABILITY IN AGRICULTURE

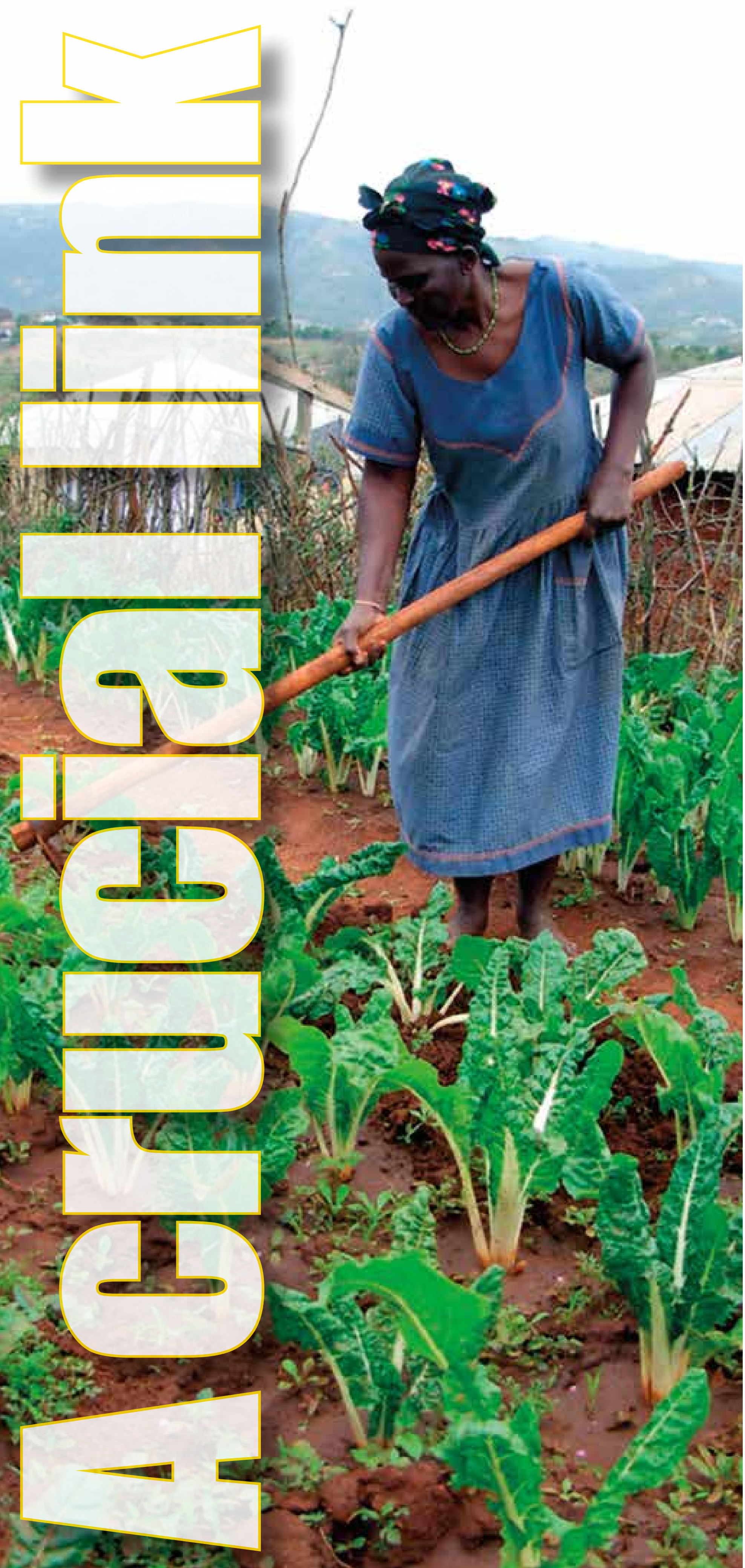
The company believes that to contribute to world food security and the creation of sustainable and profitable agricultural enterprises, investment into, and support of two critical agricultural environments are needed, including:

- Commercial agricultural enterprises that facilitate critical mass; and
- Rural agricultural communities

Mr Yazbek says, "At Farmsecure, we strongly believe that empowering rural agricultural communities and activities are dependent on the principle of critical mass. As of the end of 2011, we were confident that we reached our goal of establishing sustainable and profitable commercial agricultural enterprises within South Africa."

"This allowed the Group to secure the necessary critical mass and required structure throughout the agricultural value chain for the future development and support of rural agricultural communities."

Through its fruit, livestock and grain operations, the company is set to make an even bigger impact on job creation and rural empowerment in the next five years through collaboration with, and support from key role players. This is the time for agriculture to play a crucial role in not only the country's food security, but also in the development of its economy and the contribution it has to make in Africa, the new global agricultural hub.



Women envisioned as critical to agricultural development are gradually taking the reins in agriculture to combat food shortage, especially in low income communities

With the country still reeling from the effects of the recession, poor communities, especially in rural areas and informal settlements are bearing the brunt of this. The question is: What is society at large doing about this?

Efforts are afoot to address this problem, with agriculture as a sector identified as crucial in job creation and ensuring food security for families and communities in South Africa. Stories of women being encouraged to get involved in farming are becoming commonplace in the media.

Because of its practicality, farming is seen as a feasible vehicle to helping combat food shortage and creating jobs. It is doable on a small as well as large scale, in one's own backyard, in school yards, church yards as well as in vacant plots in rural as well as peri-urban communities. Throughout the country various farming activities are taking place to encourage women participation in this sector. In Orange Farm, a semi informal settlement in the South of Gauteng, Getrude Ramashitsa wakes up early every morning to water her carrots, spinach, tomatoes and potatoes growing in her medium-sized backyard. "I'm proud of my garden and the work I've done because I'm using the resources I have to empower myself while feeding the community and my family."

Together with other women farmers in her area, she supplies neighbouring supermarkets and restaurants with produce.

Gauteng MEC of Agriculture and Rural Development, Nandi Mayathula-Khoza, says this about women in farming: "The link between women and agriculture is crucial as agriculture remains that backbone of our economy, women are the bedrock upon which families are built. We are resolute in our commitment towards the total emancipation of women."

She made this statement recently, at the annual Agri-Business Woman of the Year Awards, which is sponsored by the petroleum company, TOTAL, through its corporate social investment (CSI) department. The overall winner, Flora Shilaluke (46) took home R140 000. She owns a 21-hectare farm in Leeufontein near Bronkhorstspruit, and has four farming enterprises with poultry layers as the main enterprise.

"With agriculture, there is no hunger and I have been working very hard since I started farming in 2008," she said about her participation in farming. The mother of four has employed two women and six local men, in permanent employ.

Sizakele Mshumayeli of Kwagomani in KwaZulu-Natal who has no formal education and owns 10 goats, three cows and 21 chickens in a kraal at her home. She lives with her son, two daughters and four grandchildren, who all rely on her to provide for them. "I've worked at a farm and know a lot about farming and I have land here, so I'm using my knowledge and skills to make a living and help myself now," she says about her circumstances. Mshumayeli credits her church with empowering her in this regard, through a unique model of helping its community become economically active in a sustainable way.

"The church donates a pregnant goat to you, that goat gives birth to kids, which grow up to do the same. So it goes until you have a lot of them – it's the same with the chickens and the cows." The practice is encouraged throughout the parish and has become part of the culture to empower its members. Mobile phones are also transforming the lives of women farmers by helping them do business efficiently while they also gain skills. Just over a year ago, cell phones were distributed to three cooperative women's farming groups in different agro-ecological zones in Maseru district, western Lesotho. The Regional Hunger and Vulnerability Programme (RHVP) ran the project as part of a pilot programme to see how vulnerable people benefit from cellphones, to disprove arguments against the use of mobile phones for cash transfers, and to prove that illiterate people are able to embrace technology. "The phone has transformed the women farmers' lives completely – they are able to market their produce, access information on prices, and it has made them so confident," said Gladys Faku, the national chairperson of the Participatory Ecological Land Use Management, a network of NGO and civil society groups working with small-scale farmers in East, Central and Southern Africa.

Evodia Matobo, then 62 when the project was launched, is a small-scale poultry farmer in Lesotho's rural lowlands, who was stacking plastic containers to feed her chickens.

Now she talks about feeders, agricultural shows, workshops and experts. In Maseru district, where Matobo lives, the distance between co-operative groups can be up to 200 kilometres – a 16-hour round trip by taxi costing about $13 (R122), with an overnight stay. The evaluation team found that one of the co-operatives, a dairy farm, was planning to visit a Jersey cow farmer in Ladybrand, with a view to buying breeding stock. "This is an opportunity that they would have been unlikely to hear about or organise beforehand," the report noted, and definitely a benefit of improved connectivity.

In the United States, the government department of agriculture makes special efforts to promote women-owned agricultural businesses. A media report states that trained specialists assist the department in identifying opportunities and referrals to women who own agricultural businesses. "The Department also awards contracts to businesses run by women. In 2007, it awarded $304-million (R2.5-billion) in procurement contracts. For women-owned agricultural businesses to be considered for procurement contracts, they must have an established business with a registered name and agriculture entity type. The establishment of a business status is also needed to apply for any loan or grant applications."

Climate change cannot be excluded in any discussion on farming, especially considering that global warming has become a topical issue affecting especially the agriculture sector. International NGO, Oxfam is working with women farmers in the devastated area of Breede River Valley, in Rawsonville, Western Cape, to help them cope with the changes. Anita Jacoba Armoed (56) is concerned about not having enough food due to the negative effects of 'mother nature'.

To try and help Armoed's co-operative cope with the situation, Oxfam's partner organisation, Women on Farms Project taught the women simple techniques to adapt, by planting crops that survive in cold weather and using mushroom locks for compost for the unseasonably cold weather.

The organisation aims to help seasonal and unemployed workers increase their income. Their co-operative grows gourmet mushrooms, which they sell to a commercial farmer in Stellenbosch. The women receive a stipend of R500 (US $60).

The Department of Agriculture and Rural Development has partnered with a number of stakeholders in an ongoing effort to boost women in the agribusiness. People simply need to take the initiative and start by, at least, making contact with the government body to earn more about opportunities for women in agriculture.

Siza Mtimkulu

Did you know?

With women being the majority of the population and heads of most single parent households, as informed by research, this makes them the most vulnerable group in all areas of life

Working together for all

Agricultural extension strengthens SA economy

According to Sygenta, an organisation that aims to improve the lives of smallholder farmers, and to create value for rural farmers in developing countries through sustainable farming practices, "agricultural extension is the function of providing need – and demand-based knowledge in agronomic techniques and skills to rural communities in a systematic, participatory manner with the objective of improving their production, income and (by implication) quality of life. Extension is essentially education and it aims to bring about positive behavioural changes among farmers".

In Africa, agricultural extension work started in the early years of the 20th century by European colonial powers. The principal objectives of the extension services were to generate revenue and meet the colonial demands for a steady supply of exportable agricultural products. Accordingly, the extension system was commodity oriented but which often neglected the needs of food crop demands of the farmer and the farm's surrounding communities. Moreover, it paid little attention to the production constraints faced by subsistence farmers.

Today, the main focus of agricultural extension work is to increase agricultural production and to enforce improved farming techniques and methodologies through advisory services to start-up and small-scale farmers.

The president announced the re-establishment of the agricultural credit scheme in his State of the Nation Address of May 2004. This meant that many farmers could get credit and grants through the Land Redistribution for Agricultural Development (LRAD) programme.

But the majority of the beneficiaries of LRAD lacked farming skills or experience, and agricultural extension and advisory services needed to be reviewed and reformed accordingly. From this, a five pillar extension recovery plan was born which focused on recruitment, re-orientation and re-skilling, the provision of information and communications technology (ICT), visibility and accountability, professionalism and image.

continues to page 58

Southern African Grain Laboratory

A passion for quality

After the Control Boards dissolved in 1997, the Southern African Grain Laboratory (SAGL) was established as a Section 21 Company. Today, this non-profit organisation continues its work as a reference laboratory for grain analyses in Southern Africa.

SAGL's mandate is to render affordable grain analysis services to its customers. The customer base includes the entire grain value chain from production, storage, processing, baking, milling, trading, seed breeding and research.

The vision of the SAGL is to be recognised as the market leader in grain analysis and related services in Southern Africa and the services they offer are therefore driven by the needs of the grain and related industries. SAGL strives to provide an effective internationally competitive range of laboratory services to its customers. The laboratory is a self-sustained, independent testing facility generating quality test results which is globally accepted. As the reference laboratory, SAGL aims to add value to the activities of the industry by developing solutions to issues related to production, processing, breeding and trading of agricultural commodities. In this role, SAGL has to maintain its accreditation status under the International Standardisation Organisation (ISO 17025).

Services

- The services provided by the laboratory can be categorised as follow:
- Analysis for vitamins, minerals and amino acids;
- Physical milling and grading tests;
- Chemical analyses;
- Contaminant analyses including mycotoxins using LC-MS/MS;
- Conducting dough rheology and baking tests.

All analyses are performed using internationally approved methods, in-house developed methods and industry accepted methods. SAGL operates under a well documented quality control system to ensure good laboratory practices according to internationally recognised standards.

Awards

The American Association of Cereal Chemists International (AACCI) is a non-profit organisation with the main focus to promote development in the field of cereal science. As an on-going prove of competency, SAGL takes part in the proficiency schemes offered by AACCI. Annually, AACCI presents accuracy awards to the laboratory submitting the most accurate results amongst all the global participants. SAGL has recieved this award for the last four years running for tests performed in the chemistry and rheology laboratories.

Collaboration with research and tertiary institutions

SAGL is involved in research projects in collaboration with Tshwane University of Technology, the University of Pretoria, University of the Free State and Stellenbosch University. Through these collaborations, SAGL is able to provide reliable analytical testing results as the basis of the research, but also to get a better understanding of new capacity to be established at the SAGL to stay abreast of new technological developments.

SAGL is also involved in new initiatives such as the evaluation of cultivars of agricultural commodities for their suitability for bio-fuel production. This work is done in collaboration with commercial seed breeding companies and bio-fuel production plants to ensure optimum agronomical as well as bio-fuel yields.

Did you know?

In the early 1960s, when many countries in Africa gained their independence, the financing and management of agricultural extension work became largely a national, often government-led responsibility

The agricultural sector is crucial to rural development and contributes significantly to alleviating poverty.

There is therefore a great need for a strong extension that is led by government operations in partnership with relevant role-players and the private sector. The private sector's involvement is essential to overcome limited resources to meet the growing demand for food and to sustain the natural resource base.

To assist, the private sector could use empowerment strategies such as human resources and skills development, offer agricultural inputs and services, provide holistic and effective specialised support, have a voice in policy formulation, be a part of development planning, and implement advisory service projects. The most challenging area for emerging farmers has been market access.

As part of their social responsibility efforts, Pick n Pay stores align with emerging farmers and wherever possible, make a measurable contribution towards communities who are encouraged to run their enterprises according to sound business principles.

Pick n Pay purchases the short- and long-term crops, while perennials are bought by associated manufacturers for processing, thus providing the farmer with consistent cash flow. In this way Pick n Pay combines social upliftment with commercially sound business principles, giving guidance and mentorship, knowledge and skills transfer, and access to markets to farmers.

With access to larger retail markets, Pick n Pay constantly grows the number of small-scale farmers and industry-related entrepreneurs.

Pick n Pay improves their competitiveness with sustained capacity building, broader networks and gives support to ensure limited punitive mistakes.

Farmers take advantage of this collective action. This is either as co-operatives, producer organisations or through one or another form of association.

As part of Pick n Pay's sustainable long-term strategy, a franchise model was designed which provides a perfect convergence point between the community, local suppliers and retailers.

Communities purchase produce from the local retail store that is linked to surrounding subsistence farmers who drive direct supply of fresh produce. In this way everyone benefits.

As agricultural markets operate in an ever-changing environment, agricultural advisory services must respond effectively and adapt to factors impacting agricultural markets. The efficiency of projects is dependent upon how well information flows between relevant role-players, their level of business linkages, and the ability to overcome problems as they arise.

In order to establish effective service provision and to keep their services updated and of a high quality in line with clients' needs, agricultural advisory service providers need access to back-up services, and train and mentor farmers in a broad range of skills.

Collaborative diagnosis of farmers' conditions and needs should be the basis for planning and setting priorities, using informal and formal surveys, conduct frequent meetings, organise field days, enforce rapid rural appraisal, conduct on-farm trials, disseminate innovations, and evaluate and reconsider projects and assessments.

In turn, farmers' participation must be substantive and have a significant impact on the outcomes. This would promote ownership, increase demand for services and empower

farmers. Since advisory service providers cannot solve all problems, they should build partnerships with local municipalities, farmer organisations, input and output markets, and involve credit institutions.

For example, since 1994 a growing number of developing farmers in the North West Province have emerged, all with the same basic support needs.

Of these, financing of production inputs proved to be the major constraint in their development, and many were not able to make any progress in farming because of lack of funds. Other constraints identified included a lack of knowledge, insufficient training and a seriously insufficient and broken down mechanisation ability.

NWK Ltd, a company providing financing, production inputs, and agricultural related services such as grain handling and marketing to farmers in the province, could not handle these challenges alone. NWK Ltd reached out to other role players in financing and agriculture hoping to get specialists on board to curb the effect of the constraints.

A number of valable partnerships were formed and the project is now regarded as a successful agricultural extension development programme.

This shows that funding extension is an important factor and cost recovery is critical for the sustainability of extension services. Consequently, new funding mechanisms in which farmers share costs are increasingly being pilot-tested. To produce more food and reap greater benefits from their harvest, small-holder producers should establish sustainable partnerships with advisors and private corporations.

These partnerships would generate more assistance and knowledge, and upscale skills procurement so farmers can understand processes and their roles in the economy better. It is hoped that through this, with correct support and leadership, poverty will be alleviated, unemployment reduced, the production of food and fibre be secured, the export of agricultural products be enhanced, and the economy of South Africa strengthened

Rizel Delano

Life's nectar under threat

While food security is a concern in South Africa due to population expansion and industrial usage, so too is securing water for growing crops

Water security is a large and complex problem – not least in the important role that it plays in the health of the nation in terms of fresh drinking water and sanitation. However, there is a secondary and equally important role that it has to play in the health and growth of a nation and that is as one of the primary factors that water plays in growing crops.

In addition to the worries that climatic change brings, "the long-term climatic risk to agricultural assets and agricultural production that can be linked to water cannot be known with any certainty," the Food and Agriculture Organization (FOA) of the United Nations states in its water report Climate Change, Water and Food Security.

The report emphasises that "the assessment of viable and effective adaptations to the impacts of climate change on water and agriculture will require a sound understanding and integration of agronomic science with water management and hydrology." This is even more important as the report sites that agriculture is constantly developing and, as population grows, becomes more and more intensive in land and water resource use.

Along with this is the impact that agriculture has on natural eco-systems that eventually have an impact on climate change and hence on the availability of water. "Climate change will significantly impact agriculture by increasing water demand, limiting crop productivity and by reducing water availability in areas where irrigation is most

Did you know?

A litre of water is needed to produce each calorie consumed by a human

WEALTH IN WOOL

Cape Wool invites your family to participate in the success of the wool industry. At Cape Wools we believe grain and woolled sheep farming is synergistic and together creates wealth for your family. Give them the opportunity to share in the prestige of the international fibre trade venturing with wool from the farm to the fashion houses of London, Paris and Milan. The wool industry welcomes new entrants and we support wool producers intent on initiating wool farming operations.

The wool industry of South Africa and farming with Merino sheep trace their origin back to the days when royalty stored their wealth in their flocks and enjoyed the benefits from wool. Now you can also expose your children to the joys of wool sheep farming where they will master valuable life skills whilst caring for their ewes and lambs and shearing the wool. As a producer of wool, they will proudly wear and display their product.

Gaining market access is simple with industry support structures aligned to assist new entrants. Knowledge and information is easily accessible and freely available with existing participants eager to involve themselves in mentorship and coaching programmes.

Grain farmers are perfectly positioned to benefit through wool. You understand grazing and pastures and are skilled and equipped to produce top quality feed for your flocks. Well-fed and well-tended flocks produce more wool and wool of a better quality. In this production method top quality feeds translate to top quality wool and more progeny. A larger offspring delivers more wool available for shearing in the following season and results in a consistent income stream from wool.

All grain farmers consistently evaluate alternatives for crop rotation and permanent pastures with Merino sheep is a definite consideration to reduce the high fixed cost component of a grain farmer's operation.

Wool is marketed internationally with existing markets in China and India. This also presents an opportunity for the grain farmers to expand their market involvement to these markets. The domestic market for wool is mature and will support your personal marketing initiatives. The marketing of your wool is promoted by wool brokering houses that support your value chain from the time of shearing to the auction.

The price of your wool on auction is an efficient translation of international supply and demand of wool as a commodity. Demand for South African apparel wool is high and South Africa is a preferred supplier of apparel wool. Market commentary and sales information are readily available, also online.

The free market system guarantees producer choice. Wool producers are at liberty to sell through either private treaty or on auction and control the timing of the sale of their product. The ability to influence certain sale factors greatly assist in the financial planning of their cash flow as auction sale proceeds are received within 5 working days of the event. Auctioned wool is distributed globally from Port Elizabeth and wool producers are encouraged to visit the city and enjoy all the facets of the wool trade here.

The environmental credentials of wool are impeccable as wool is bio-degradable and a renewable source of fibre. Wool sheep farming supports eco-friendly and responsible practices where producers adhere to a Code of Best Practice. The discerning consumer appreciates this and values wool as their natural fibre of choice.

The wool industry is championed by expert advisers who embrace opportunities to assist you with your growth in wool.

Make the choice now to share in the wealth of wool. Embark on the journey with wool and we will gladly assist you in your efforts.

CAPE WOOLS SA

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needed or has a comparative advantage," the FOA report states.

A symptom of rising prosperity

The FOA also sites that as populations grow and become affluent, that the demands on food change too. Grains are viewed as secondary to the demand for luxury food products such as fruit and vegetables, milk and meat increases. These are all foods which take more water to produce and the production of animal products are significantly more inefficient in using resources in their production.

Engineering News reported on Maggie Catley-Carlson, Global Water Partnership patron at the South African Water and Energy Forum in Sandton, Johannesburg earlier this year that "Food demand is expected to double over the next 50 years, owing to the changing diet and growing population."

There is an interconnection between South Africa's growing population and water and food security. She explained that a litre of water is needed to produce each calorie consumed by a human.

FOA states that while food demands are likely to rise by 70% by 2050, in developing countries, such as South Africa, this increase in demand is likely to double. In other words, there is likely to be a 100% increase in food demand by 2050. Considering the resource of water in South Africa that is known to be cyclical in terms of rainfall, the production of food to meet these demands, is to say the least concerning when South Africa is not in a rain-plenty cycle. In low rainfall cycles, water as a resource that will be irrigation-intensive in South Africa is bound to rise, especially in the production of food and the planting of crops so that increase with food demand in the country. In other words, a scarcity in water would undermine the security of food in South Africa.

As yet, the new South African government has not had to deal with a drought situation that affects farmers and the production of crops and food in South Africa. Understanding and making the provision of water security is crucial to the stability of the country and this is only from a food security point of view which doesn't include drinking water, sanitation, the water used in energy production and other industries that are essential to the country such as mining.

Sharing water with neighbours

A solution in terms of food security and its reliance on water, for the southern tip of the continent would be to grow the agricultural sectors of countries such as Zambia, where there is more than enough rainfall on a continuous basis, the *Mail and Guardian* reported.

"Johan van Rooyen, the National Director of Planning at the Department of Water Affairs, believes this would reduce the burden on South Africa to provide cheap water for irrigation – over 60% of our water is used for irrigation – and also stimulate neighbouring countries." the report stated.

Farming out production to other countries is on trend globally, Margaret Catley-Carlson pointed out at the South African water and Energy forum earlier this yearWhile this does to an extent solve part of the problem of securing food, it does not secure water for other purposes or for the established sector of agriculture in South Africa even though "South Africa would be able to import the food Zambia grows and also get growing markets for its own goods."

Drought resistant farming

Drought resistant farming is one way of conserving water where it is not readily available. In addition, practices that aid drought-resistant farming aid in crop yields under other extreme weather conditions and aid in the reduction of the use of chemicals. "Ecological farms that work with biodiversity and are knowledge-intensive rather than chemical input-intensive might be the most resilient options under a drier and more erratic climate," states *Ecological Farming: Drought-Resistant Agriculture*, a paper published by Greenpeace laboratory at Exeter University.

"Biodiversity and a healthy soil are central to ecological approaches to making farming more drought-resistant and more resilient to extreme events," the paper adds. The addition of excessive nitrate fertilisers to soil might address the problem of enriching nitrogen in the soil by adding these fertilisers, which usually only consist of urea as the nitrate-rich source, causes nutritional imbalances in the soil, increases acidification and reduces the soil's ability to hold water.

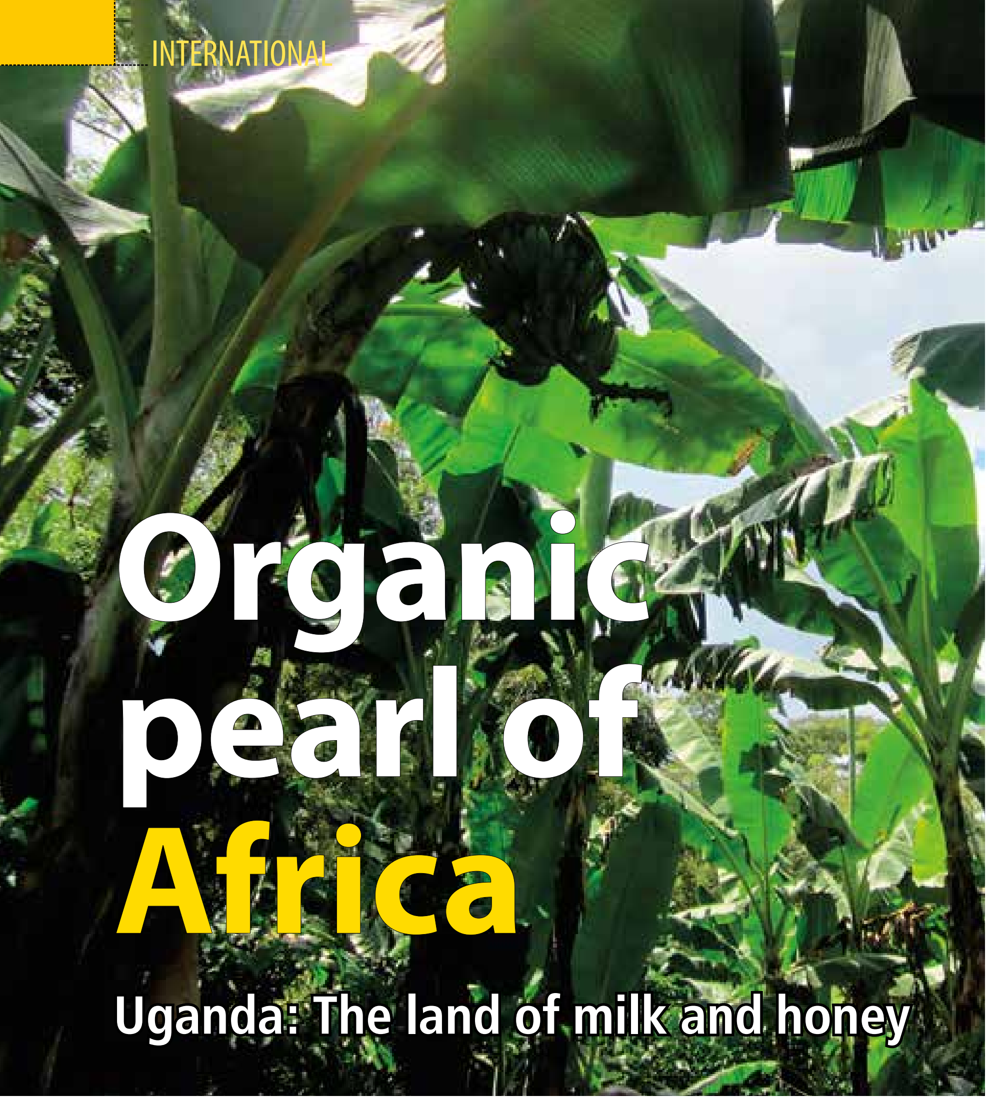
Ecological farming points out the case common on Punjabi farms due to the fact that the usage is "influenced by the government's subsidy system on nitrogen negatively affecting the physical and biological properties of the soils. For example, indicators of good soil fertility like microbial biomass, enzymatic activity and water-holding capacity are all drastically reduced under common nitrogen fertiliser practices (Masto et al., 2008).

There are many proven practices available to farmers right now to help build healthy soils. Cover crops and crop residues that protect soils from wind and water erosion, and legume intercrops, manure and composts that build soil rich in organic matter, enhancing soil structure, are all ways to help increase water infiltration, hold water once it gets there, and make nutrients more accessible to the plant.

Monique Broumels

Genetically engineered farming

Genetic engineering for drought-resistant farming is another possibility though this is not necessarily a sustainable solution for all types of farmers. For one, the seeds of genetically engineered plants are not true limiting sustainable small-holdings from creating their own seed banks. Secondly, while the specific genes will give expression to drought-resistant traits, it is really a combination of genes that will give the best crop production. Similarly singularly expressed genes limit biodiversity and the future adaptability of a single species. The security of water services the country on a number and is a quintessential resource on all levels of South Africa's functioning. There is no doubt that the security of water is an integral aspect of food security and in the agricultural sector which grows the crops that form the basis of the country's food supply.



Organic pearl of Africa

Uganda: The land of milk and honey

In 1909 Winston Churchill gazed across the lush green plains of Uganda and named it the 'Pearl of Africa'. Today, due to Uganda's incredible biodiversity, the country is promoted as a rapidly developing local organic farming producer.

Organic farming has been on the 'up and up', and is an ever-evolving international practice. To define 'organic agriculture' is not an easy task, but in a nutshell, it's about promoting the life and sustainability of all living ecological systems – producing organic products prohibits the use of synthetic inputs such as chemicals, drugs, fertilizers and pesticides. Before the introduction of inorganic methods, our ancestors farmed the land in natural ways, thousands of years ago. So organic farming is really nothing new. In South Africa we've just started to develop our local organic market and if we were to take reference, Uganda is a fine example of how organic farming is the truest form of a sustainable resource.

Uganda, since gaining independence in 1962, has a history marked by intermittent conflicts and civil war, however the result of this bloodshed has seen the survivors turning to their environment (with simple tools in hand) for food sources and the hope of a small livelihood.

Many Ugandan farmers have limited access to and can ill afford modern chemical solutions and therefore are using natural alternatives. These are innovative and have seen reason behind the enormous transfer of skills between the farmers and specifically new entrepreneurial, smallholder farmers.

The Ministry of Agriculture, Animal Industry and Fisheries of Uganda reported that in 2007 Uganda had as many as 206 803 certified organic farmers and 296 203 hectares of land was in use for organic farming production. With 85% of the population being engaged in agriculture production and agriculture contributing 42% of the country's GDP, the sector will simply continue to grow. Through the establishment of a farming society spread across the land, organic farming in Uganda has grown from strength to strength.

The non-governmental organisations together with the training institutions and the community builders in Uganda have placed much emphasis and effort on capacity building. These initiatives and developments must be backed by governmental policy support.

There are many policies within the Ugandan national government that relate to sustainable agriculture, however according to PELUM (Participatory Ecological Land Use Management Uganda) most promoters of sustainable agriculture in the country have different understandings of the subject and the concept.

Policy

Uganda is recognized as a key player in the trade of organic produce and considered a country with the potential to take a fundamental role in the market. The country has successfully been exporting their produce since 1993.

2004 saw the Uganda Organic Standard adopted, in 2007 the East African Organic Products Standards developed by the UNEP-UNCTAD initiative was implemented and by 2009 the Ugandan government released a Draft Uganda Organic Agriculture Policy. The outcome of these policies are as follows:

- Between 2002-2007, the number of certified organic farmers increased 359% and acreage under organic agricultural production increased 60%;
- Improved income and food security;
- Reduced greenhouse gas emissions (conventional farms, on average, emit 64% more emissions per hectare);
- Reduced agricultural chemical runoff into local water bodies;
- Certified organic exports increased from US$3.7 million in 2003/4 to US$22.8 million in 2007/ and
- In 2006, the farm-gate prices of organic pineapple, ginger, and vanilla were 300%, 185%, and 150% higher, respectively, than conventional products.

It is believed that this has hampered the smooth implementation and development of sustainable agriculture. The recommendation is that Ugandan policy makers and government parties need to develop minimum standards and guidelines. In turn these decision makers should facilitate the NGO's, institutions and other agencies to monitor implementation of sustainable agriculture.

Uganda has shown excellent growth in the number of projects and export companies. The export market is well supported by National Organic Agricultural Movement of Uganda (NOGAMU). The movement aims to promote development, networking and marketing of organic agricultural development. The demand for organic export produce from Uganda, is certainly growing.

All organic products are being exported in their raw form however the cotton exports are almost entirely used to produce organic textiles to the African Growth and Opportunity Act (AGOA) market. Uganda forms a part of the East African Community (EAC) and is a beneficiary country under AGOA.

Uganda's abilities and production within organic farming has ensured that the country gains economically and may be highly commended for it's contribution to mitigating climate change.

By 2003, Uganda had the world's 13th-largest land area under organic agriculture production and the most in Africa. GHG emissions per ha are estimated to be on average 64 per cent lower than emissions from conventional farms. Various studies have shown that organic fields sequester 3 to 8 tonnes more carbon per hectare than conventional agriculture.

Organic Aariculture reduces green house gas emissions and fossil fuel energy use, cuts nutrient and pesticide pollution and stops potentially harmful pesticide residues entering our food chain.Some studies support the idea of organic farming building resilient farming systems, reducing poverty and improving food security.

Celebrating 50 years democracy, the hardships experienced by the Ugandan people has united them and their need for harmony is unspoken but ever-present. Uganda has risen from her ashes – and has successfully developed its agriculture, and enhanced its community and environment.

Case study 1
Women's Initiative

In Bokedea, east Uganda, there is a gentleman named Rev. Samuel Ebukalin and he together with his wife built the Popular Kumi Women's Initiative (PKWI). The initiative began in 1993, due to the death of many men,45 their families left without husbands and fathers. The PKWI can be described as a grass roots solution and the guideline to becoming a member is to simply be an entrepreneur. There are three objectives to be met as a member:

- Create an avenue of daily income to pay for daily items;
- Generate a seasonal income to pay for seasonal bills; and
- Grow a long term crop so as to ensure a pension.

The framework within which PKWI operates is holistic. Each member is set to produce one acre of sunflowers to supply the PKWI mill that in turn produces oil to be sold on the open market. The cake from the sunflower mill feeds the chickens and livestock and the dung from the livestock feeds the earth. The members are encouraged to generate income however they can through their produce. Today the initiative boasts the involvement of 1600 families and the Rev Sam together with his wife Norah have been traveling the globe to present their ideas and philosophy.

(Source: www.farmersguardian.com)

Case study 2
International Learnerships

In central Uganda, the Mukono District, Timothy Njakasi set up the Kasenge Riverford Organic Centre. The centre attracts residents and learners from both the UK and Germany who specifically attend short courses taught by Timothy. The centre is located on four acres of land and it houses almost every kind of crop one could think of as well as livestock. Timothy has a simple philosophy that dictates that nothing is ever wasted. The Kasenge Riverford Organic Centre has gained worldwide attention. The centre supports land management together with agro-forestry which enlarges the farmers use of the land without actually expanding the size of the land. Environmental sustainability and sustainable income for the farmer are key areas of focus.

Emphasis is on using the available materials or by-products that are made available through various farming processes. Kasenga is transforming the rural communities into areas of improved living.

(Source: www.krorganic.org)

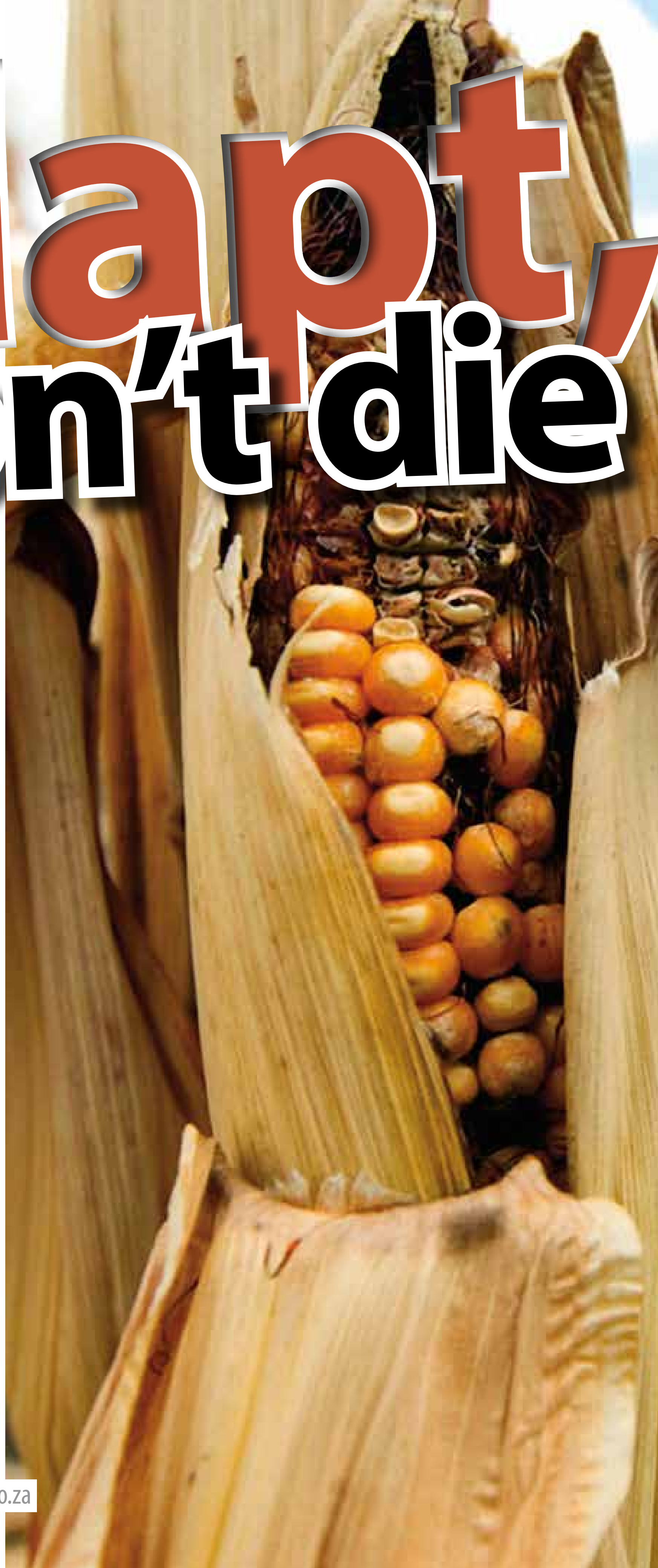
Megan Sell

Ties with South Africa

On the topic of benefit and reward, it has been interesting to note the capacity of the relationship between South Africa and Uganda. The relationship works within a framework of co-operation and South Africa is one of the fastest growing sources of foreign direct investment for Uganda. South Africa has invested in a number of different areas of infrastructure in Uganda. Namely; telecommunications, breweries, finance, wholesale and retail, poultry and energy. The trade relations between these two countries continue to grow, currently that growth is more within South Africa's favour however the ties that bind are strong. The two countries are to conclude an agreement establishing a joint Commission on Cooperation. It is set to enhance cooperation in areas such as defence, trade and investment, foreign relations, health, agriculture and education.

South Africa has a steadily growing organic farming sector. The South African government now has an Organic Agriculture Policy and is forming a National Organic Commission. The South African government is beginning to recognize the potential of organic agriculture and forms part of a developmental strategy to create a world class agricultural sector.

Adapt, don’t die



Climate change and the profit opportunities in futures trading

Certain economic conditions have led several to hedge in the agriculture commodities field – after all, food remains a fundamental human need not subject to change. With an increasing population and growing incomes across the emerging markets, trading agricultural futures are noteworthy to investors.

While climate change is seemingly tough to tackle with global action in light of recent summits in Durban and Rio, how does the uncertainty ensure contracting at today’s set prices yield tomorrow’s profits?

For a start, the climate change reality requires two important distinctions, one of which lessens the seeming uncertainty of a variable as uncontrollable as future weather conditions. Investors should consider the scientific variable of climate adaptation when mitigation (or prevention) efforts to avoid climate change have failed – witness the lack of global consensus. Fundamentally however, not all cases of a failure to prevent climate change mean anticipated threats to agriculture are realised in the future.

Adaptation measures are efforts that accommodate climate changes effects and do not assume prevention (or mitigation) as likely – thus affecting yields in agricultural commodities, in favour of today's sellers and tomorrow's buyers, assuming adaptation measures provide better than expected results.

Increasing attention is being focused on adaptation measures already, with increasing support from governments, NGOs and business. When the world's local governments at the coalface of food security and farming gathered for a pre-COP17 meeting, the theme was clearly purely adaptation.

Adaptation to climate change is the "adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities," as defined by the Intergovernmental Panel on Climate Change. Chinese media outlet, xinhaunet.com, quotes Judith Rodin, the president of Rockefeller Foundation, as having said that fighting the effects of climate change could provide an opportunity for increasing investments into the agricultural, financial and medical sectors in a way that generates economic growth.

Investors should assess adaptation measures along coastlines as well as performances of good governance on the environment.

Several measures protecting coastlines mean that even assuming climate change is not mitigated, there is no reason to believe agricultural potential is lost when adaptation-based approaches are being applied.

Techniques for developing genetically modified organisms (GMOs) broaden opportunities for crop improvement. While their research shows there is increasing adoption of GM crops globally, trade issues remain with European countries not accepting GMOs while many NGOs remain critical of the genetic modification as an adaptation measure in dealing with food security and climate change. Yields in agriculture are also tied to cattle – and livestock where demand may be set to rise.

Investment guru Doug Casey says there is such a thing as a cattle cycle, and "all over the world, cattle are in liquidation". Worldwide, cattle herds are being slaughtered, and that's depressing the prices."

In his regular investor newsletter, Casey points out that even as prices are being depressed by all the selling, counter-intuitively, cattle herds are collapsing. That means the number of cattle and the price of cattle are going down at the same time. He adds that sooner or later demand will pick up, coinciding with rising income levels in China and across the emerging markets, meaning a strong demand for more beef– in addition to the traditional consumers. Mike Norton-Griffiths, Senior Research Fellow of the World Agroforestry Centre in Nairobi, Kenya says there is a glaring oversight in the World Economic Forum report, *Realising a New Vision for Agriculture* when it comes to the importance of property rights. "I personally cannot think of any other intervention in the agricultural sector which can more than double economic productivity within a 10-year time span along with significant environmental gains.

"The fact is that secure tenure and property rights change land-user perspectives away from resource mining and towards investment in sustainable resource use, and it is only when land rights are secure that the cycle of poverty can be broken," the report says. Investors can track property rights index through the Index of Economic Freedom, which also rates regulatory environments – an important variable as regards the ease of setting up partnerships. The likelihood of longer term investments in adaptation by the private sector can be measured against the levels of property protection according to trends observed by the economists working on the Index of the past four decades.

The trends are looking good for investors. Izak Strauss, Executive Director and Chief Investment Officer of Agri-Vie, a private equity investment fund focused on food and agribusiness in sub-Sahara Africa, says governments have improved the operating environment for business. Investors observing the intersection of private and public behaviour, understanding the motivations of policy makers and their interests are particularly important.

Economist James McGill Buchanan Jr argued in his Nobel Prize winning work that the logic underlying government action remains distinct from private sector prerogatives given the short time horizon in politics and the absence of the direct pricing mechanisms that control business decisions. The government remains a critical variable in policies affecting agricultural futures, but with the markets being freer with protections for investors, technology remains an important competitive advantage for those who are navigating what is an easier regulatory environment and thus a more competitive marketplace.

The Rockefeller Foundation, working with the World Bank, is financing private companies to develop drought-resistant seeds to be sold to small scale farmers who live in areas affected by climate change

Garreth Bloor

Taxing problems

Carbon taxing and the effects on the agricultural industry and general public

The South African government has been urged to approach the issue of carbon taxing with an open mind and with the view that the public stands to suffer severely from overly draconian policies, reports the Agricultural Business Chamber (Agbiz).

As Africa's largest economy, South Africa is following the lead set by many nations around the world to reinvigorate its economy so that it is based around renewable energy resources rather than the current fossil fuel based model that the country is currently adopting.

As well as being the continents biggest economy, Reuters reported in February that South Africa is also the continents biggest polluter and is one of the 20 biggest emitters of greenhouse gasses worldwide.

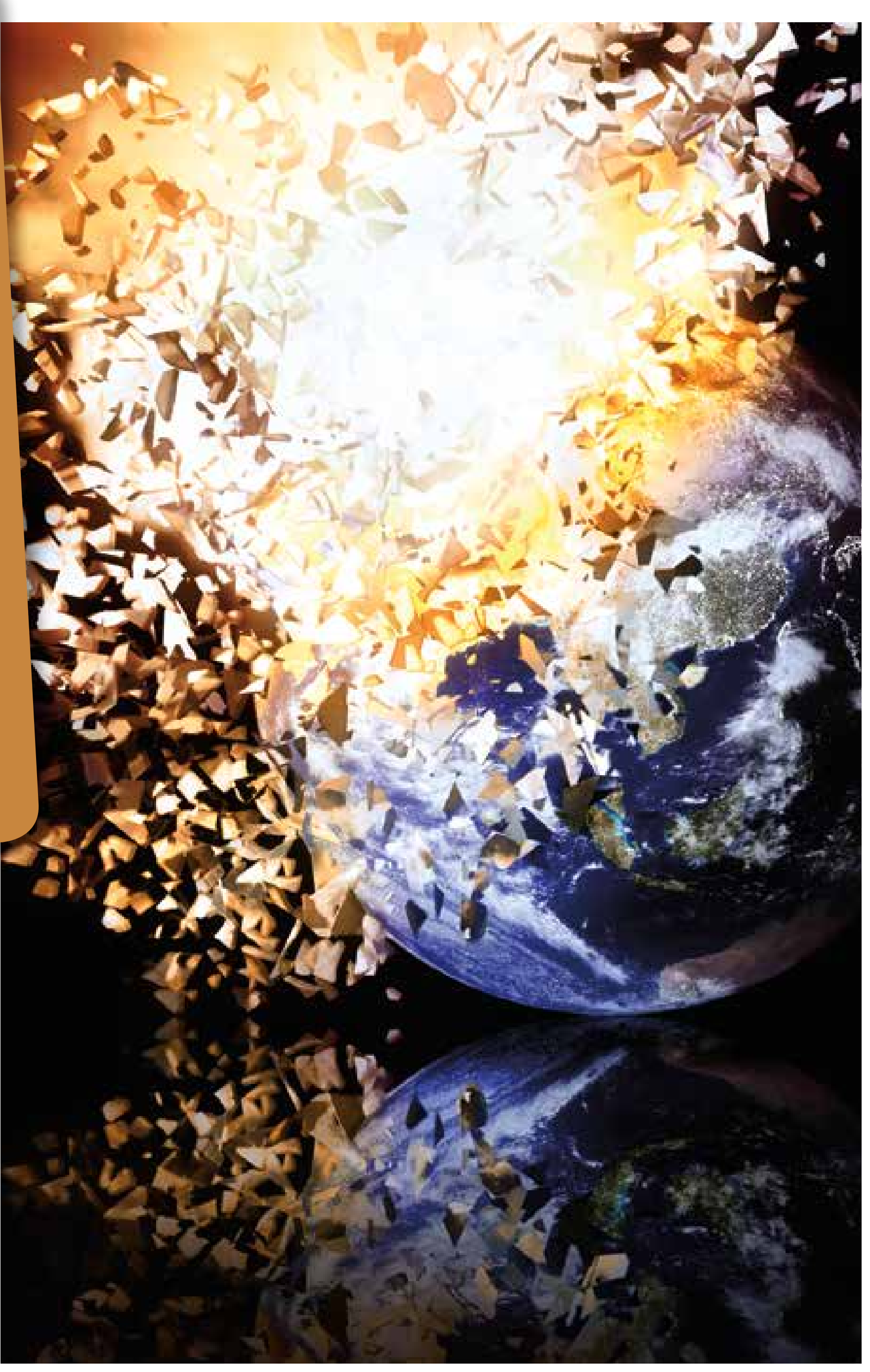
Although South Africa is investing heavily in new technology which will move it away from a carbon-based industry, it may take decades before a significant portion of this energy comes from clean sources.

But President Jacob Zuma is looking to fast track this transition and has been mulling carbon tax for a number of years. It was reported earlier this year that the government will be implementing a carbon tax in 2013 in order to achieve this.

Although this might raise some concerns within the industrial, energy, manufacturing and agricultural sectors, the government has made the right noises around the implementation of the tax pointing towards a slow transition rather than wholesale implementation. According to Reuters, nearly two-thirds of emissions will be exempt until 2020 in order

Did you know?

The agribusiness industry has requested National Treasury to exclude agriculture and agro-processing from such a carbon tax as it will undermine the competitiveness of the industry and increase food prices



to lessen the impact on industry. According to the report, the government is proposing a tax of R120/t of CO^2e (carbon dioxide equivalent) for emissions above the thresholds. Once in effect, the tax will increase by 10% every year until 2020.

Although still in the planning phase, the news is making waves in industry where it is being labelled harsh and counterproductive, saying that the likelihood of the South African economy experiencing negative growth as a result of the laws a distinct possibility.

There is no doubt that the tax will have a major effect on the energy and mining sectors but because Eskom dominates the energy sector it can apply for a further 10% rebate on the tax. It still remains to be seen what leeway will be given to the mining sector. But an industry sector that can ill-afford to experience negative growth is the agricultural sector, especially since there is a significant portion of the South African population that lives below the breadline. It will also affect the poorest of the poor.

"This will be to the detriment of the consumer and especially the poorer consumers, thus undermining household food security and even national food security," said Agbiz CEO Dr John Purchase.

The other side of the argument

But there is also a danger of not implementing the proposed tax. "Protecting energy and carbon-intensive industries to the extent that business-as-usual greenhouse gas emissions continue could weaken basic ministerial climate negotiations and exacerbate climate change impacts.

These include changes in water availability, increased floods and droughts, biodiversity loss and crop losses or lower agricultural production in South Africa," said Liesel Van Ast, Research Editor at Trucost. Maintaining emissions at their current level could result in lower productivity.

However, Purchase feels that there will still be significant resistance to the implementation of these laws in South Africa pointing to the recent introduction of carbon taxing to Australia and the resistance experienced in that country.

Trouble in the land Down Under

Purchase told Harvest SA that the adoption of carbon taxing in Australia was a controversial decision following years of bitter political wrangling.

"The law forces about 300 of the worst polluting companies to pay a levy of A$23/t of CO^2e emitted. While the Australian government has argued that the tax is needed to meet climate-change obligations, the opposition says it will cost jobs and raise the cost of living significantly," he said.

Like South Africa, of the industry's in Australia which stands to be the worst affected by the carbon tax is the energy sector. A report in the Australian, one of the country's leading newspapers, questioned the credibility of Government to effectively reform the industry.

The Australian Government planned to buy out some of the country's 'dirtiest' power stations but had to abandon the plan at the last hour for undisclosed reasons. The Coalition said the move reflected the chaos surrounding Labour's carbon tax, while the Greens said the collapse of negotiations with power generators showed they were being given too many free emissions permits.

The government had planned to pay generators to close 2000 megawatts of high emissions-intensive coal generating capacity by 2020 under its clean energy future package. But Resources Minister Martin Ferguson said the government had been unable to come to an agreement offering value for money to taxpayers with any of the five companies participating in the negotiations.

What it means for the consumer

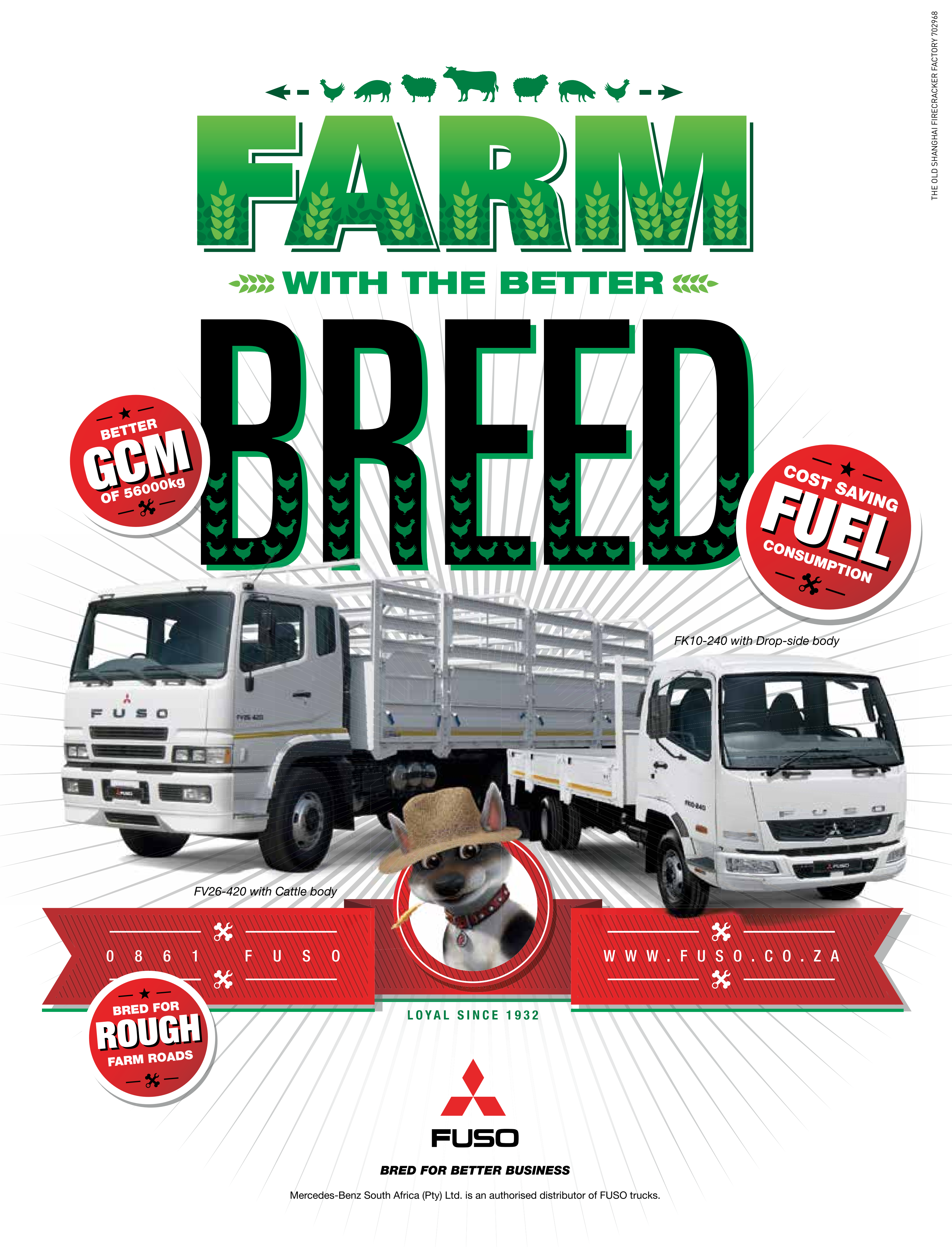
Although South African companies rank very low in terms of taxation by Government, according to *Wikipedia*, South Africa has one of the highest rates of unemployment in the world and the public have to deal with tax in a very personal capacity. On September 4 the price of petrol was increased by 93c a litre taking the price of petrol to R11.97/l inland and R11.62 at the coast. A further increase of 20c is planned for October.

This is already putting a significant strain on the consumer in that not only do they have to fork out more for fuel, but the increases have a significant impact on food costs.

Because South Africa is a net importer of oil and petroleum, the price of petrol fluctuates relative to the oil price. This means that the price of petrol is never stable and decreases are rarely relative to increases.

Any effect that companies would feel as a result of the implementation of the carbon tax would be transferred onto the consumer by way of increased food prices. With this in mind, one would shudder to think what the effect on the consumer would be if the agricultural industry was not exempt from carbon taxing.

Jonathan Faurie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BETTER GCM OF 56000kg
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