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Harvest SA

Securing South Africa's Food Resources

Beat drought with science

Dr Julian May on food security, sustainability and opportunity

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Harvest SA wins gold at the international Tabbie Awards 2013 in the Best Single Edition Category

TABBIES 2013 Award Winner

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Tough times to come

WATER IS A NECESSITY FOR ALL LIFE ON EARTH. A LACK OF WATER CAN DEVASTATE CROPS AND LIVESTOCK. WHAT CAN YOU DO TO PREVENT YOUR FARM AND LIVELIHOOD FROM SUFFERING AS A RESULT?

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- Check your piping system, each simple leak dripping one drop per second can waste up to 11000L per year.
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EDS NOTE

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Not only is farming one of the oldest professions known to humanity, but it is also one that occasionally makes tremendous demands on the ingenuity, resourcefulness, endurance and faith of the farmer. As one of the drier countries on the planet, South Africa has never been reticent in testing the mettle of its agricultural folk. Now the global climate has joined in, with El Nino making 2015 the hottest year on record, with the worst drought in decades threatening to create a food deficit and push food prices sky high--unless the sky itself falls, which the sheer volumes of doom and gloom in the air seem to make less unlikely than usual.

However, as always, there is a range of silver linings to these dark clouds. First, common sense and FNB alike suggest that "in the long run the situation will normalise and farmers who are able to hold out now will benefit from higher prices at a later stage when the market experiences shortages in supply" (for more on this, read the article on page 12).

Second, adversity always contains the seeds of opportunity. In this case, we are talking about seeds that, unlike, say, wheat, have been in South Africa for time out of mind. Heritage crops such as morogo are attracting increasing attention not only because they are intrinsically healthy, but also because they are better adapted to the South African climate. Drought resistant and capable of flourishing in poorer soil than wheat demands, such crops offer small farmers an opportunity to enter the value chain from which hitherto they have been excluded because of the economies of scale prevailing in the established value chain.

For a current example of this exciting trend, read in this issue about how Nestlé South Africa, the Council for Scientific and Industrial Research (CSIR) and the Agricultural Research Council have developed a version of Maggi two-minute noodles using morogo. For further insight, read our cover story featuring the DST - NRF Centre of Excellence in Food Security, which has identified traditional African crops such asre' cow peas and sorghum as excellent means to bolster food security in terms of nutrition as well as offering economic opportunities to small farmers.

Here's wishing all our readers good fortune in these trying times.

Good for health, good for growth

The Department of Science and Technology-National Research Fund Centre of Excellence in Food Security is promoting crops that are nutritious and beneficial to emerging farmers

"Hunger is not a natural phenomenon. It is a man made tragedy. People do not go hungry because there is not enough food to eat. They go hungry because the system which delivers food from the fields to our plates is broken." — Archbishop Emeritus Desmond Tutu, 2011

An age-old adage claims that you are what you eat. Most people would see that as common sense—eat healthy, live healthy. What may be less obvious is that this piece of folk wisdom is also applicable at national level. Let "you" refer to the general population and the familiar homily moves from the domain of personal dietary choice to one of the most import, complex issues that can determine the health of a nation: food security. Harvest SA chatted to Dr Julian May, director of the DST - NRF Centre of Excellence in Food Security, to find out more.

The World Food Summit defined food security as "when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life". This means that it is not enough to provide everybody with food to eat—there are several other aspects that have to be taken care of before food security can be achieved, including, first and foremost, nutrition.

As Dr May explains, "When people talk about food security in South Africa right now, because of the drought, we are very concerned about having enough food." Given the severity of the drought and its unquestionable impact on local food production, this concern is understandable. However, most years, South Africa does in fact produce enough food to feed its population. Where things fall down is the quality of diet: on average, says Dr May, South Africans eat rather poorly. This has a number of negative outcomes. "What we are having in South Africa now is an increase in overweight and obesity, and that results in an increase in diseases like hypertension and diabetes. And so many people argue that instead of focusing on producing more food, we actually need to have better diets."

South Africans were not always obese–indeed, traditional diets contain many healthy ingredients such as sorghum. However, eating patterns have changed to such an extent that the consumption of fast foods, snack foods and sugary drinks has caused obesity to become endemic: "South Africa has a diet very similar to the diet that people have in countries known for high levels of obesity such as the USA or Mexico, where there is high consumption of food that provides consumers with calories but doesn't provide much in terms of the nutrients that you need to be healthy". Things have reached such a stage that "the Minister of Health is now talking about a sugar tax and has also introduced legislation limiting the amount of salt in processed food".

How has this situation come about? "According to one view, we have a food system which is largely dominated by what is referred to as Big Foods, in the same way people talk about Big Pharma. Consequently our food system is dominated by a small number of very large farms which sell their product to a small number of very large processing companies, who in turn sell that food to a small number of very large supermarket chains, so we have an unusually concentrated food system—certainly by any standard in Africa and actually pretty much by any standards in the world. Obviously, those companies' major concern is going to be profitability.

"Now the kinds of snack food particularly that poor people buy essentially consist of corn that is flavoured and fried in palm oil, providing lots of calories. For example, in the Western Cape, there is a very popular brand called "Spookies". If you analyse Spookies, you'll find it makes quite a substantial contribution towards the minimum calories that people need in a day, but in terms of anything else, it's mostly sodium and fat."

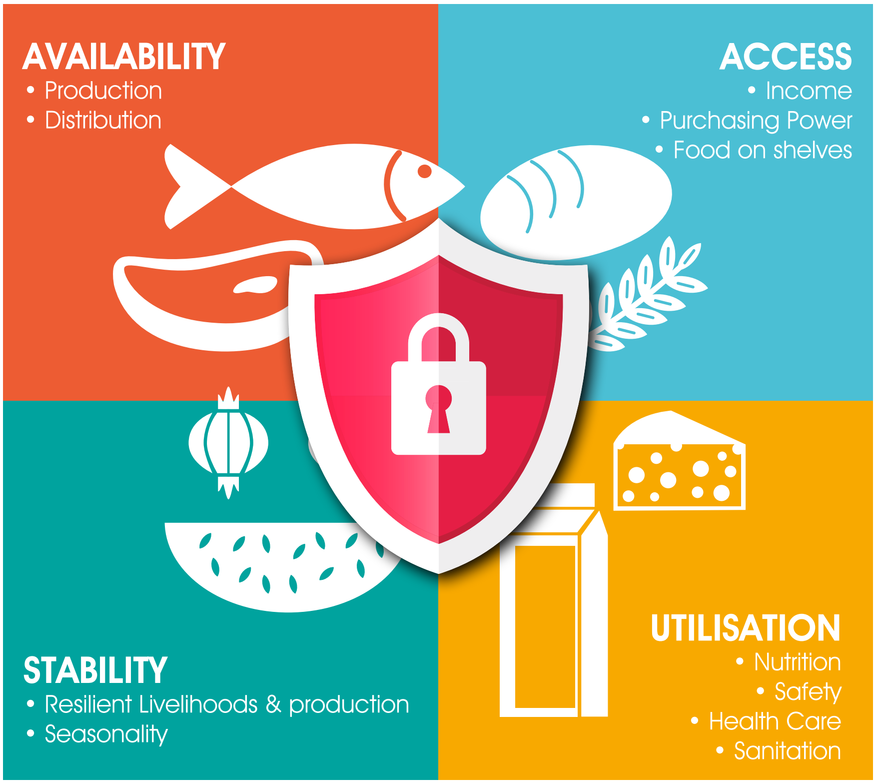
Seen as profitable by the big food companies, such products are promoted through chains and enjoy massive popularity. Consequently, people are putting on fat instead muscle.

When it comes to small-scale or emerging agriculture, it is interesting to note that prevailing food system "makes it very difficult for small-scale farmers to be producing crops and

Food Security exists when…

all people at all times have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.

Source: UN Committee on World Food Security, 2012



DST-NRF
Centre of Excellence
in Food Security

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products that will compete with the established highly concentrated sector."

Naturally, the food companies will source ingredients wherever they are cheapest. For example, the palm oil in a certain product will be sourced from Ghana, while "the corn may be sourced from South Africa but just as easily it could be sourced from the USA, which has a massive corn surplus." In other words there is no guarantee that food "made in South Africa" benefits South African farmers at all.

Consequently, "The big food companies are extremely efficient at delivering cheap food, but they are not efficient in terms of delivering food that is healthy. What is more, probably the biggest problem when it comes to food security in South Africa is employment. The present food system isn't a significant generator of jobs."

According to Dr May, one country where small-scale producers grow snack food is Ethiopia. "Snack food might be roasted, salted lentils or chickpeas literally grown by a farmer and taken to town and sold by his wife. In South Africa it's quite hard to imagine such a thing of any small scale production that feeds into fast food. For example, we have done research on so-called walky-talkies, or chicken feet, a popular snack food in townships. Even though it's an indigenous snack, the chicken feet, are not sourced from small farmers but come directly from large scale broiler production. The benefits may come to the hawker but they don't go down the value chain to the small farmer."

Prof May presenting at the UWC-MU Plant Science Symposium

The picture is clear: not only does the present food system expose the population at large to nutritional risks, but also it shuts out the small farmer from the value chain.

Opportunities for small farmers

There is a silver lining to this, however. In fact, says Dr May, the DST—NRF Centre of Excellence in Food Security is actively researching and promoting avenues of food production that promise not only to get South Africans eating healthier but also to create the markets that emerging farmers need. For example, the University of Limpopo is doing research into how South African farmers can adapt better to current farming conditions. "Researchers have observed that in many other countries in Africa, cow peas are a popular crop and a popular food item, and they've also observed that South Africans used to eat cow peas but no longer do. The question here is what are the reasons for that and how can we actually introduce cow peas as a crop for small-scale agriculture, given that it's fit for human consumption, can be used for animal feed, and can be intercropped with other more traditionale crops in South Africa like maize or pumpkins. Specifically, our researchers

are looking at varieties of cow peas that have been grown in countries in Africa to the North, examining how they will fit into our more arid conditions and how they can be adapted to production, while looking at what the opportunities are to introduce that crop into the local food system. It's pointless growing something if nobody wants it."

This is where the Centre of Excellence really comes into its own. "We have funded research that has been undertaken by food scientists at the University of Pretoria, and for a food scientist a crop like cow peas is simply an ingredient that can be used in a variety of ways. The consumer would not necessarily be aware that they are in fact eating cow peas. Another example is sorghum, which is a very good crop for small scale agriculture. It's drought resistant, a small crop can have a big yield, and it's a crop that we used to eat. What the food scientists can do is take the grain from the sorghum and find things to do with it, such as introduce sorghum flour into bread. Consumers wouldn't even notice the difference in the taste or texture of the bread because for a food scientist what the seed looks like and the composition of the seed is simply a scientific problem that can be solved. If you want sorghum to taste and feel the same as wheat, no problem. Six months in the lab and they will figure it out.

"Further benefits of sorghum are that it is more drought resistant and can be grown in more parts of the country than wheat. "Wheat is mostly concentrated in the Western Cape, which means you spread your risks so if one particular region in South Africa is hit by a drought there is still another region can produce. Generally sorghum flour is actually healthier than wheat, which is not viable as a smallholder crop. A sorghum success story would be Nigeria, which is not a great area for growing wheat: sorghum has been introduced into the Nigerian bread industry with very positive benefits both for farmers and for the consumer."

As Dr May points out, sorghum used to be a staple for many South Africans and still occupies reasonable market share, because it was used in traditional beer and a significant amount of Maltabella porridge is still consumed. In addition, he adds, "There's also quite a strong sense of saying we need to reclaim our indigenous heritage. Some people are arguing that we mustn't lose the values of our traditional African diet and research has shown that that diet was actually a healthy diet for families and consumers."

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The DST - NRF Centre of Excellence in Food Security is a virtual centre hosted by the Universities of the Western Cape and co-hosted by the University of Pretoria. Researchers in the Centre are drawn from Universities of Cape Town, Fort Hare, Johannesburg, Nelson Mandela, North West, Stellenbosch and Venda, Tshwane University of Technology, the Agricultural Research Council and the Water Research Council. Its international partners are the Australian National University, City University of New York, Institute of Development Studies, International Food Policy Research Institute, Michigan State University and Missouri University.

The CoE Director Prof. Julian May works on poverty reduction including land reform, social grants, information technology and urban agriculture in Southern and East Africa. He formerly held the South African Research Chair in Applied Poverty Impact Assessment.

Prof. Sheryl Hendriks, the University of Pretoria node head, works on household food security measurement, agricultural growth and food policy analysis. She is a member of the Committee on World Food Security's High Level Panel of Experts.

Dreams come true

A Matatiele maize farmer encounters his destiny

In David Mongoato's office is a picture of himself as a small child, standing in a field of tall, ripe maize plants. He knew than that he wanted to be a farmer.

But the path to your destiny is seldom a straight one. David and his wife Selloane worked as teachers for many years before he was able to return to the rich Eastern Cape soil that he loves.

The Mongoatos now run a thriving 947-hectare maize farm near Matatiele, with the Drakensberg and the Lesotho border nearby. The farm was acquired by the State as part of its land reform process. But simply having access to land doesn't make you a successful commercial farmer.

A loan from the Masisizane Fund allowed the purchase of crucial equipment such as farm implements, as well as providing start-up capital for them and 14 other emerging farmers in the area.

The fund is a non-profit company established from unclaimed shares by the Old Mutual Group in 2007, in consultation with National Treasury. It lends development finance, with a key focus on improving the sustainability of small businesses.


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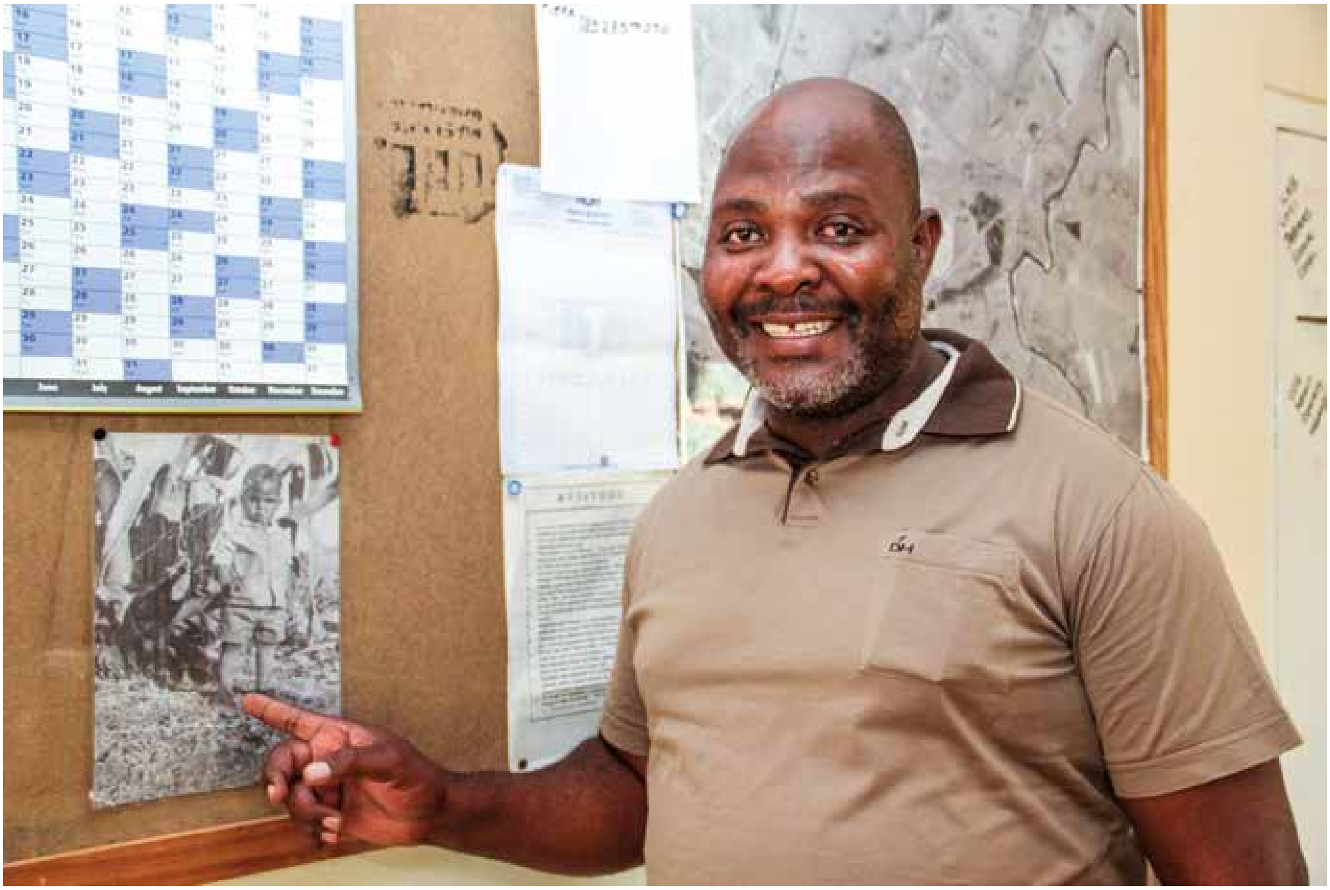

The Mongoatos' farm is at the core of a partnership of 15 farms, which share some resources, such as silos where maize can be stored until prices improve. It's a cluster of small operators whose enterprises are independently owned but they work together to get contracts. They can build a support structure of services to keep income in their community rather than having to contract and so lose revenue, explains David.

So far it's working well: "I'm running out of arable land so I may need to lease land to plant more maize," he says. He adds that the farm now has a piggery and plans are afoot to reopen the dairy, which Mogoato says could initially provide much-needed nutrition to local schools. It could then become a commercial undertaking and the Mogoatos would have a fully-fledged mixed-farming operation.

But the farmer with a lifelong love of the land has a longer view than that: another tractor would help meet the farms' year-round needs, from preparing soil, to planting, spraying, fire-prevention, maintenance of farm roads and so on. There's clear evidence of the need for the latter, with many farm roads in the area virtually impassable in the wet summer months. Better roads mean better access to markets, with benefits to the entire community and the rural and national economy.

David adds: "Most of my profit goes to hiring a combine harvester and they're in such demand that there's a waiting-list. Getting finance for one would make sense. We'd hire it out and it would pay for itself pretty quickly, plus the farmers in the area would get their crops in quicker."

He says growing the farm is a challenge, but one he loves: "This doesn't feel like hard work when you're doing what you love. It's demanding, but there's the thrill of planting and making what you planted grow, and seeing it turn into something you can sell. It provides for you and your family and creates jobs and dignity in your community."

Does he miss teaching? In a way, he hasn't left it: he mentors other emerging farmers in the area and he has a succession plan in place for the family, with the couple's four children working on the farm during holidays, donning gumboots and learning to farm.

David can treasure other pictures now: one of him surrounded by nearly 800ha of maize, all of it taller than him; others, of the harvested maize pouring into a silo like amber rain, of workers weighing and sealing bags of it, ready to be trucked away.

Daniel Chabana, field officer for the Masisizane Fund, says: "The 15 farms working together gives them some economic muscle and voice in local affairs. It's completely in line with the fund's mandates of employment creation, poverty eradication and reduction of inequality and contribution to economic growth."

The Masisizane Fund has a strong focus is on women, youth and the disabled, particularly in economically depressed parts of the country: rural and peri-urban areas and townships. It was established as a Section 21 company following the closure of the Old Mutual Unclaimed Shares Trust in August 2006 and aims to contribute towards the economic transformation of South Africa.

Drought relief for SA farmers

AgriSA, a non-profit organization made up of individual farmers, has recently announced the establishment of a drought relief fund for farmers impacted negatively by the drought.

The recent El Niño weather pattern experienced throughout South Africa has caused record-low rainfall and record-high temperatures. This has had a devastating impact on South Africa's agricultural industry, causing losses of billions of Rands so far. These losses have caused food prices to increase, affecting many South Africans that rely on staples such as maize and wheat.

South African farmers have received aid from all over the world, as their plight has reached international news.

Water Wise is encouraging all South Africans to reduce their water use as much as possible. Ensure that you have water meters installed on all pumps or outlets. Regularly reading all meters will help you understand how much water you are using. Reducing water use saves you on your electricity costs as well as your water bills. Be Water Wise!

It is not all doom and gloom for agriculture

Despite the severe drought currently facing the agricultural industry, FNB remains optimistic about the financial well-being of its farming clients.

The true severity of the current drought will only be realised in the coming year. The optimal planting period for some Mpumalanga maize producers has passed and indications are that only 75 - 80% of the planting has been completed. Following the fair rain last week, most of this region should be able to complete planting, in land that has already been prepared.

The North West region and western parts of the Free State still have time to plant. If these areas receive good rains within the next month, with follow-up rain later during the production cycle, farmers could still harvest a reasonable crop.

However, if dry conditions persist, the outlook for an average to good crop will undoubtedly deteriorate. FNB continuously consults with various industry experts to get an indication of possible changes in weather patterns and planting conditions in order to proactively assist clients.

Recent reports of a sharp decline in the price of meat must also be viewed in context. While there is downward pressure on the weaner calf price due to oversupply in the market, this has not yet filtered through the supply chain in order to benefit consumers. The oversupply in the weaner calf market resulted from farmers off-loading more livestock due to the dry conditions.

In the long run the situation will normalise and farmers who are able to hold out now will benefit from higher prices at a later stage when the market experiences shortages in supply. Once grazing conditions improve, farmers will rebuild their herds and curtail the supply of animals to the market.

Consumers should take advantage of possible lower prices now, as they are bound to increase in future. In addition, export producers have benefitted from the weakening of the Rand and those farmers who would have soft grain commodities available for sale from previous seasons, will benefit from expected higher local price levels. This might offset the impact of a possible lower crop for the current production season.

Although the previous droughts did not have that much impact on consumers, this time the situation may be quite different. Middle class consumers are also feeling the pinch as a result of water-restrictions and more so due to the heat-wave conditions experienced over the last couple of weeks.

Current drought conditions are affecting the whole economy. The South African Reserve Bank (SARB) increased the repo-rate by 25 basis points last week, partly on the back of increased food price inflation expectations, a direct result of the drought conditions experienced in most parts of the country.

The increase in interest rates will add more pressure on the disposable income of consumers, resulting in lower demand for luxury agricultural products.

As a result, the impact will be felt much wider than just the agricultural sector. The drought may also have socio-economic consequences. Job creation in the agricultural and related manufacturing sectors will slow down should the dry conditions continue into 2016.

Despite the anticipated impact of the drought, FNB is not overly concerned about a substantial increase in farmers who may not be able to meet commitments. Our book is very healthy, well diversified and many farmers have the ability to increase gearing levels slightly. This will enable the bank to review individual needs on merit with the view to possibly restructure or refinance facilities of farmers in need.

We believe that our agricultural client base and our relationship team have proven themselves as superior and we remain totally committed to the industry. Our "through-the-cycle" credit extension policy will enable us to assist most of our farming clients despite one or two below average seasons. We have been involved in agriculture for longer than 175 years, have invested substantially in both the primary and secondary agriculture sectors and will continue to do so within the current regulatory credit environment.

Dawie Maree, Head of Information and Marketing at FNB Business Agriculture

Monitoring the globe

The ARC active in GEOGLAM—a global agricultural monitoring initiative

Worldwide the call for improved agricultural monitoring information is growing. This is because of the growing need for food security management and the need to provide farmers and decision makers with information for adapting to and mitigating the effects of climate change. South Africa, having a major agricultural sector, shares this need for efficient, comprehensive and accurate agricultural monitoring information.

This has raised the desire to strengthen the international community's capacity to produce and disseminate relevant, timely and accurate forecasts of agricultural production at national, regional and global scales. The Group on Earth Observations (GEO), an inter-governmental and international organizations partnership, responded by initiating GEOGLAM (GEO's Global Agricultural Monitoring initiative).

GEOGLAM with the goal to strengthen the international agricultural community's capacity to produce and disseminate relevant, timely and accurate forecasts of agricultural production at national,

regional and global scales through the use of Earth Observations (EO), aims to:

- enhance national agricultural reporting systems, including through a geo-spatial education curriculum to enable training of participants worldwide;
- establish a sustained international network of agricultural monitoring and research organisations and practitioners; and
- harmonize the operational global agricultural monitoring systems based on both satellite and in situ observations, including through improved coordination of satellite observation.

South Africa, including the Agricultural Research Council (ARC), has been part of this prestigious initiative since its inception 3 years ago. GEOGLAM now has over 300 members, including such key organizations and programmes as the FAO's Global Information and Early Warning System, the US Department of Agriculture's Foreign Agricultural Service, the USAID Famine Early Warning Systems Network, the Institute for Remote Sensing and Digital Earth of the China Academy of Sciences - Crop Watch programme, the European Commission's JRC/MARS programme, and Agri-Food Canada, to name a few.

One of the first coordination initiatives was JECAM, the Joint Experiment for Crop Assessment and Monitoring. The aim of JECAM is to reach a convergence of approaches and methodologies, to develop monitoring and reporting protocols and best practices for a variety of agricultural systems. JECAM is enabling the global agricultural monitoring community to compare results based on disparate sources of data, using various methods, over a variety of global cropping systems. The JECAM experiments facilitate the development of international standards for data products and reporting, eventually supporting the development of a global system for agricultural crop assessment and monitoring. As such, JECAM is fully integrated into GEOGLAM as its research and development component.

In South Africa, the Free State Province is regarded as a JECAM site and research on crop estimation methodology and crop condition monitoring should be focused here as a contribution to the global initiative. The ARC led National Crop Statistics Consortium (a public / private partnership that includes GTI (Pty) Ltd. and SIQ (Pty) Ltd.) has made major strides in developing the "Producer Independent Crop Estimation System" (PICES). This system is globally unique and is considered a contribution to GEOGLAM as a best practice methodology.

The GEOGLAM initiative supports the Agricultural Market Information System (AMIS), another global initiative, hosted by the UN Food and Agriculture Organization (FAO) by supplying AMIS with earth observations derived global crop condition information (Fig 1). GEOGLAM was tasked to "coordinate satellite monitoring observation systems in different regions of the world in order to enhance crop production projections and weather forecasting data." Within this framework, GEOGLAM developed the Crop Monitor reports, which provide global crop information through a set of maps and pie charts that depict crop stage and crop condition by region, as well as climatic drivers affecting these conditions.

The objective of the Crop Monitor is to provide AMIS with an objective and transparent assessment of crop growing conditions, status, and agro-climatic conditions likely to impact global production. This activity covers four primary crop types (wheat, maize, rice, and soya) within the main global agricultural producing regions. These assessments have been produced operationally since September 2013 and are published in the AMIS Market Monitor Bulletin. The Crop Monitor reports provide map and text summaries of crop conditions as of the 28th of each month, according to crop type.

South Africa's participation in these global initiatives has led to continual improvement of the countries national agricultural monitoring and crop estimation systems. It ensures that the country has a system based on international best practice using cutting edge Earth Observations technologies.

The following websites can be visited for more information:

- *(www.jecam.org)*
- *(http://www.geoglam-crop-monitor.org/pages/monthlyreport.php)*
- *(http://www.amis-outlook.org/amis-monitoring)*

Mr Terry Newby
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E-mail: terry@arc.agric.za

Big picture pos

Zambia is in a good position to take full advantage of its agricultural assets in the future

sitive

"It is an over-worn cliché to say that Zambia will one day become the 'bread basket' of the region but there is no doubt that, despite of current challenges, the future of Zambia's farmers, both small and large scale, as suppliers of food products to the region and as drivers of Zambian economic growth is very positive." This is according to Rob Munro, Director of Strategy at Musika, a Zambian non-profit company that works to stimulate private sector investment in the smallholder market.

He explains: "Zambia is struggling with a number of difficult macroeconomic challenges at the moment, a power shortage and a drought, all of which affect the farming economy as much as, if not more than, the rest of the business sector. But while the short term picture is quite tough for Zambian agriculture, there is certainly good news at the 'big picture' level–Zambia still has plenty of land and water, a stable political environment and a highly resilient, resourceful and diverse farming community. In an age where food is in ever increasing demand locally, regionally and globally, Zambia is in a good position to take full advantage of its agricultural assets in the future."

Immediate challenge is the drought

He continues: "the most obvious and immediate challenge is the drought that is affecting many parts of the country which will undoubtedly affect yields and agricultural income, which in turn limits the ability of farmers and agribusiness to invest in the growth of the sector." Last year, Rob was quoted as saying that unpredictable agricultural policies, particularly on grain marketing, also constrain the growth of the sector and affect investor confidence. However, at the start of the New Year, he feels that "while the challenges remain, the direction of travel on this I think is certainly positive."

With regards to the current drought conditions, Rob adds that "there has been strong collaboration between public and private sectors on making farmers—particularly smallholder farmers—aware of the impending drought and advising on risk mitigation practices such as planting short season or drought tolerant crop varieties. A particularly good example is the Ministry of Agriculture facilitating the integration of commercially available weather insurance into its innovative 'e-voucher' scheme for the delivery of its Farm Input Support Programme through private sector input supply channels."

Rob says Musika's "support to the Ministry of Agriculture's 'e-voucher' programme has not only extended subsidised access by smallholder farmers to a wide range of agricultural inputs but has also accelerated the growth of the agricultural inputs market significantly in the districts in which it was piloted."

Another highlight of Musika's activities last year was its "intensified support to the growth of the agricultural markets in the more isolated regions of Northern Zambia. Over the last year, these regions have seen a substantial increase in the number of agribusinesses offering inputs, technology, information and market access to the farmers of the region. This is of particular relevance in a year such as this where the 'traditional' Southern and Central agricultural heartlands of Zambia are experiencing drought; in an era in which such climatic challenges will only increase, the growth of the agricultural industry in the high rainfall North can only be a good thing for the country."

Limitless opportunities

Various local suppliers to the agri sector agree with Rob's optimistic outlook for Zambia. "The agricultural sector in Zambia is a dynamic sector," says Pierre Lombard, CEO of NWK Agri-Services in Zambia, "it has its ups and downs. However it remains one of the main contributing sectors to Zambia's GDP. What makes it exciting is the interest people and companies have in the country and the opportunities to expand and improve on current activities."

He adds: "there are thousands of small scale and emergent farmers contributing to the majority of the agricultural output. With help and guidance, they have the potential to grow and increase their contribution and therefore contribute to the development of the agricultural sector as a whole. In short, agricultural opportunities in Zambia are limitless."

With regards to the drought that Zambia is currently facing NWK's Pierre Lombard

says: "if the country allows for free trade in imports and exports and stability as well as free floating in the Zambian currency it will mitigate any yield loss by a possible increase in price."

"Zambia is endowed with a large land resource base of over 40 million hectares of arable land" says Michael Bentley, Dealer Principal, Action Auto in Zambia "and the country is abundant with water resources having 40 per cent of the water in Central and Southern Africa. This means Zambia has unimaginable opportunities for food production to feed the entire sub-Saharan region!"

Susan Mennell, Managing Director at CFAO Zambia Limited, says "with the poor copper prices and mine closures Zambia is going to look to the agricultural sector for more exports. Zambia is able to produce excellent crops and excesses can be exported."

Exposing the agri community to technology

In 2014, a small team of Spintelligent, an events company based in Cape Town, took a massive leap of faith with partners ZNFU (Zambia National Farmers Union) and Musika, and launched, Agritech Expo, the first outdoor agri trade expo in the country at the GART Research Centre, in the heart of Zambia's agri community in Chisamba. An immediate success with the farming community, last year's second edition drew more than 11 700 visitors, over 100 exhibitors and 150 members of the press. VIP visitors included the country's President Edgar Lungu, the Vice President, Mrs Inonge Wina, the Zambian and German Agri Ministers and many other dignitaries and agri experts.

"The President's visit was a very significant boost, as it gave the much needed political buy-in especially going forward" says Dr Evelyn Nguleka, ZNFU President. She adds: "it is gratifying to note that the expo had support from farmers, agri-business firms and policy makers."

Musika's Rob Munro says "before Agritech Expo, Zambia never had a means by which

the whole agricultural community, from smallholder farmer to corporate agribusiness, was able to come together to see, understand and invest in new technology. In my opinion, Agritech Expo has been hugely influential in exposing the community to this technology and driving forwards the advancement of modern farming in Zambia."

This year, Agritech Expo expects to welcome some 15 000 farming professionals, from emerging, to small holder to commercial farmers, and agri experts, in Chisamba from 14-16 April. Liam Beckett, event director of the event: "it is a unique opportunity for them to share best practice, get training, test and try out new products and technologies and brainstorm about current challenges such as productivity and competitiveness as well as the effects of current adverse weather conditions."

He adds "we continue to innovate and offer our partners and visitors more technology, demonstrations, free workshops and specialised zones to learn and opportunities to do business. We will have 130 exhibitors, including some of the leading international suppliers to the agriculture industry, 20 live crop trials and 11 machinery demonstration fields.

"There will also be an extended livestock zone, an irrigation zone, an SME business zone, 4x4 test track, a sprayers arena and technical and practical workshops for emerging farmers as well as VIP business lounges for commercial players."

He continues: "energy is a constant challenge in this sector and we want to show the farming community the different options that there are available at Agritech Expo's exciting new "Energy Park".

Already Zanaco (Zambia National Commercial Bank) has confirmed that it is returning as the exclusive diamond sponsor of the event. Other big names in the farming sector that will be there Expo are AFGRI, who are platinum sponsors, and Action Auto, JCB, John Deere, SARO and Zamseed who are all gold sponsors.

Outreach programme

Meanwhile, more than 540 students and 17 teachers at the Golden Valley Basic School in Chisamba, Zambia are already reaping the benefits of the Agritech Expo Outreach Programme that was launched last year. The school is situated on the GART Research Centre where the annual expo takes place, and the event organisers decided to raise funds to assist the school with much needed building renovations, equipment supply and management of the school's farm. The Outreach Programme is an on-going project and the next phase is already underway.

Annemarie Roodbol

Agritech Expo dates and location:
14-16 April 2016
GART Research Centre, Chisamba, Zambia
Website: www.agritech-expo.com

Mid-term budget targets relief

Drought relief assistance high on the agenda for Western Cape agriculture

On 2 December, Alan Winde, Minister of Economic Opportunities, delivered his mid-term budget speeches for the Departments of Agriculture and Economic Development and Tourism.

Allocations were made to respond swiftly to the most pressing needs in the agriculture sector and to projects which had the most potential for job creation.

In agriculture, Minister Winde announced the Western Cape Government's drought relief assistance.

Minister Winde said farmers in the Central Karoo and the West Coast have been severely impacted by low rainfall.

"Early predictions suggest that around 40% of the normal yield will materialise. In a bid to minimise the economic impact of the drought, we have allocated just over R6 million for relief in this adjustment budget.

"This process is separate from the application for a disaster declaration the Western Cape Government has submitted to the National Government. We estimate that around R60 million will be needed in drought relief to assist farmers in the Central Karoo and the West Coast," said Minister Winde in his speech.

Minister Winde outlined the application process for farmers.

"Currently a request for funding is being prepared for submission to the National Treasury, with the support of the Department of Agriculture, Forestry and Fisheries. This allocation will determine the additional support we are able to offer farmers. We envisage it will mainly be used for the purchase of fodder for their animals.

"Depending on the conditions of the disaster aid scheme, this funding can be granted to us in a once-off payment or in instalments over a set period.

"Farmers will be able to register for assistance with the Provincial Department and we will communicate these details as the process unfolds."

Minister Winde also urged farmers to put their own contingency plans in place.

"Risk management is a critical element in every business, and we urge agri-businesses to prioritise this by making provision for the leaner years, during prosperous times."

A further amount was allocated to eliminate the presence of Brucellosis at a farm in Beaufort West.

"As soon as it was detected, through routine inspection, the farm was placed under quarantine. Our vets are guiding the farmer to come to a solution in the best interests of the farming sector in the area, and are continuing a testing campaign on the farm. R1.9 million is being reallocated to managing the situation.

"I call on the farmer community to work with us in combatting animal diseases. We appeal to farmers to operate responsibly and to alert the vets in the event that they suspect their animals are ill."

In Economic Development and Tourism, Minister Winde announced a R1 million investment into the further development of an Air Access strategy.

"Project Khulisa has set the goal of increasing the number of international arrivals from 1.5 million to 2 million each year. We're on track to reaching this objective. Figures from the Cape Town International Airport show an average 11% increase in the number of international arrivals over the recent period.

I have been told by a number of tourism establishments that they are nearly fully booked for this season. To further drive these increases, we have to make sure our destination is accessible. In this regard, direct flights are key to ensuring visitors are easily able to reach the Western Cape."

Agri-processing and Oil and Gas were identified as another of Project Khulisa's priority sectors and to support small businesses in these sectors, the Cape Capital Fund receives R3 million. Skills development, with a focus on developing artisans, was allocated R1.8 million.

Not a pretty picture

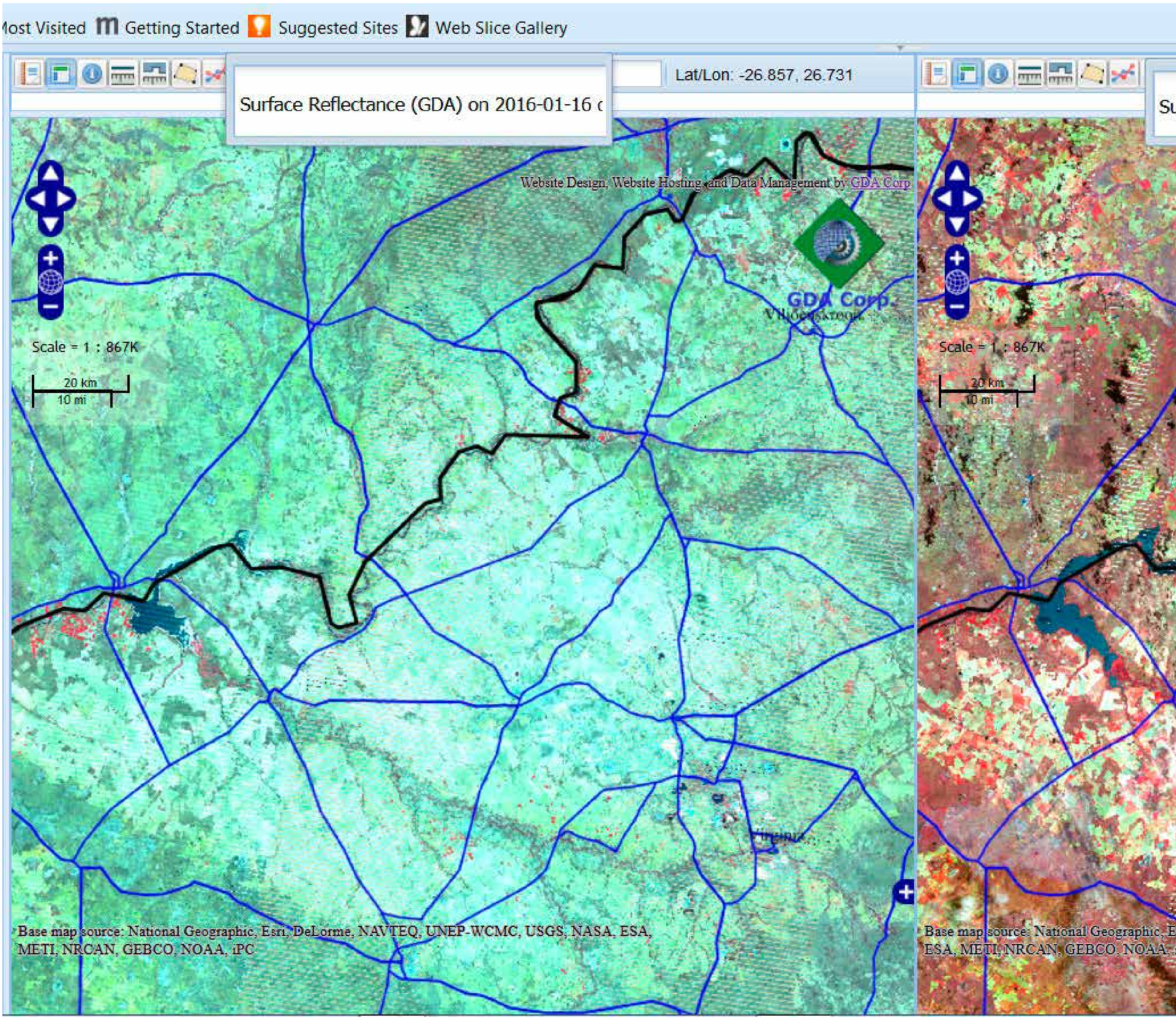
Satellite imagery reveals extent of drought damage

As predicted and observed, the drought has decimated grain production and livestock inventories.

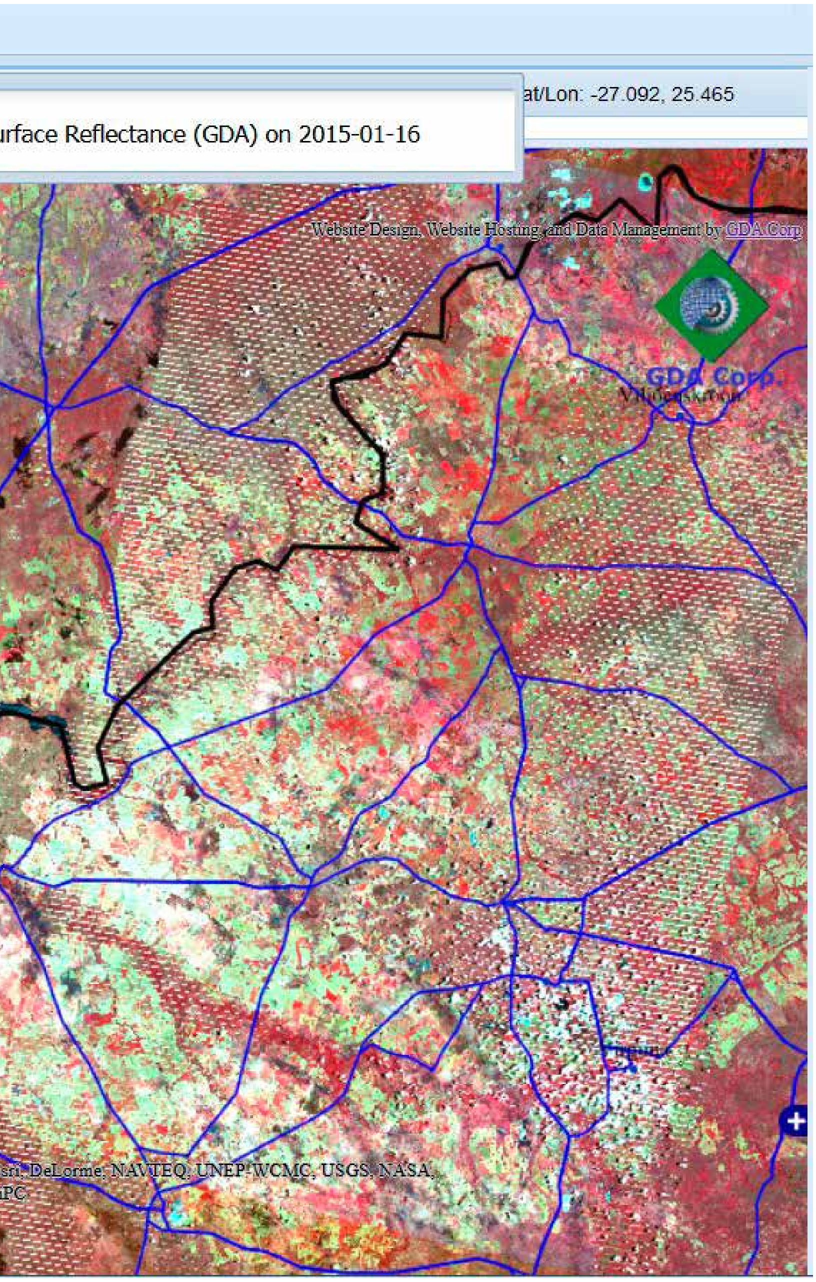
Click on the Yearly Slider on ZONESCAN to see the extent of the damage. Satellite imagery shows most of North West and western Free State did not have enough rainfall (45-mm in 20 days) to sow or for plants to emerge. Below you will see satellite imagery comparison between Jan. 11, 2016 and Jan. 11, 2015 from Viljoenskroon. Red is green vegetation and blue is bare soil. The only vegetation in Jan 2016 is center pivots located near rivers.

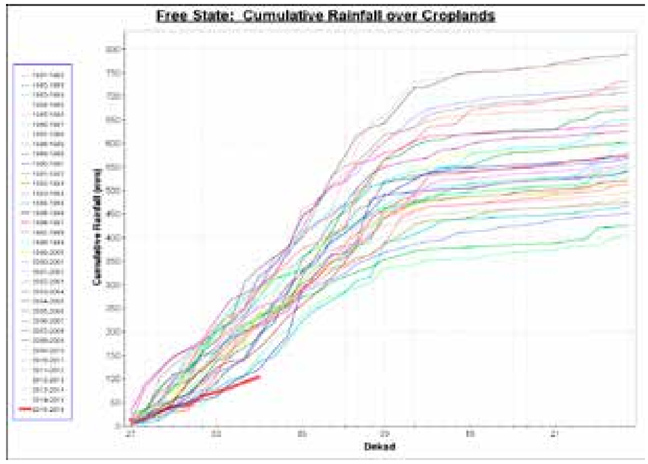
CEC will release planted area estimates on Jan 27th and maize area should be at historic lows. The forecast shows good rainfall this week but in so many places, it is too late to plant now. Information courtesy of ZONESCAN and USDA.

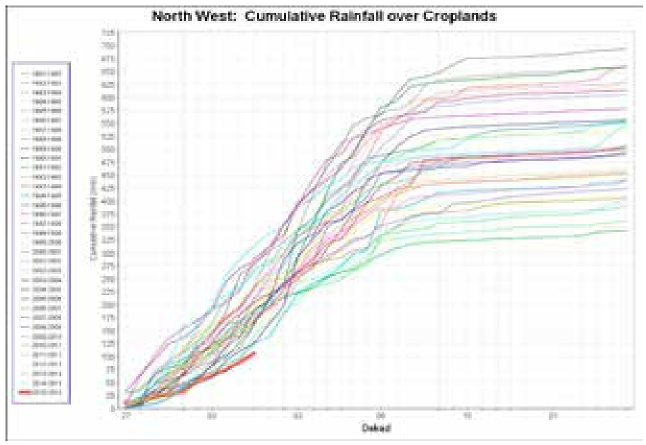
For more information, see www.agriscan.co.za.

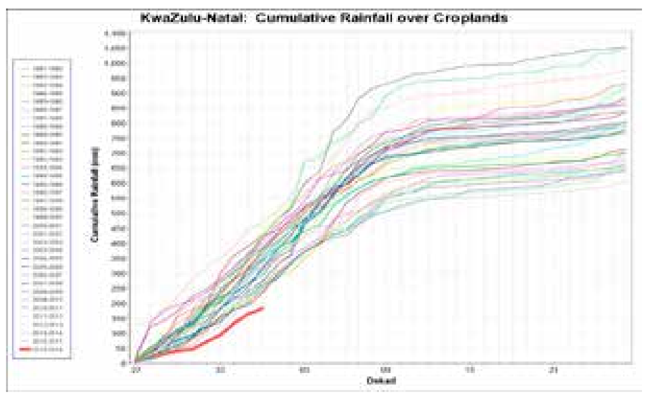


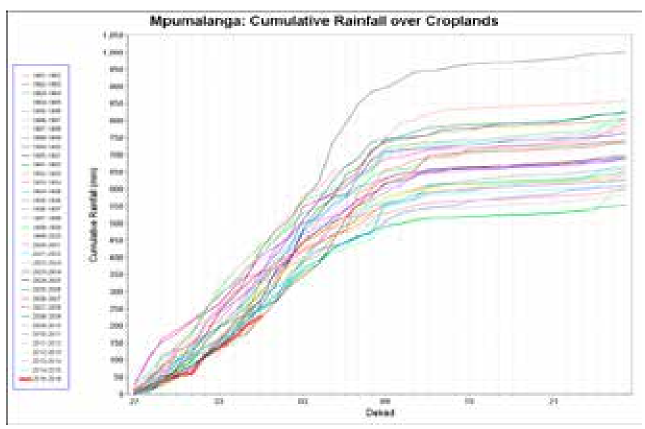
ZONESCAN
4D Agricultural Data What's happening NOW
250m











Use
noo

your
dle

Consumer favourite Maggi draws on indigenous Morogo for health benefits and agricultural opportunities

After three years of extensive research on various indigenous South African edible plants, Nestlé South Africa, the Council for Scientific and Industrial Research (CSIR) and the Agricultural Research Council (ARC) announced in October that their collaborative research agreement has resulted in the development of an innovative commercial product, the new Maggi 2 Minute Noodles with real Morogo.

This breakthrough announcement was made at the 5th CSIR Conference under the theme "70 years of Ideas that Work" where the CSIR was celebrating its 70th anniversary.

The development of this product is a result of a collaborative research agreement between Nestlé, Department of Science and Technology (DST), CSIR and the ARC, after the partners undertook to research South Africa's biodiversity to confirm their health benefits and potential nutraceutical and functional food applications.

Addressing delegates at the launch attended by representatives from the DST, CSIR, ARC and Nestlé South Africa, the Minister of Science and Technology, Naledi Pandor said, "The local knowledge that has been passed on orally from generation to generation is a vital part of a nation's heritage. In South Africa indigenous knowledge has massive potential for research, development, and innovation. The Department is proud of this key milestone where we successfully translated academic research into an innovative commercial product which will be enjoyed by South African consumers."

For 70 years, the CSIR has ensured that its technologies and know how have socio-economic impact that will benefit the country at large.

Speaking at the event about their role in the partnership, CSIR Group Executive for Strategic Alliances and Communication, Dr Rachel Chikwamba said, "We provided our expertise in the processing of indigenous products to jointly develop this innovative product with Nestlé that will benefit the people of our country. Working with the ARC, production of the vegetable ingredients will provide an opportunity for small scale farmers and support implementation of the AgriParks model."

"Our partnership with Nestlé is a great example of how public and private institutions can work together to address problems that are facing our country such as unemployment. These types of partnerships play a critical role in ensuring that the CSIR and industry support the implementation of the Bio-economy strategy in its objective to have the Bio-economy to contribute to the National GDP by 2030," said Chikwamba.

Various leafy green vegetables, including Cleome, Cow Pea and Amaranthus (popularly known as Morogo) were screened to assess nutrient bioavailability during digestion.

After conducting thorough research and consumer studies, Amaranthus was ultimately chosen because of its proven health benefits - particularly the presence of Beta Carotene, minerals and protein. Morogo refers to a group of at least three different dark green leafy vegetables found throughout Southern Africa and harvested for human consumption.

Commenting on their involvement in the partnership, CEO of the Agricultural Research Council, Dr Shadrack Moephuli said, "Through this partnership, we were able to develop the best agronomic practices and farming guidelines for morogo. We also evaluated the commercial viability of producing African Leafy Vegetables in a sustainable manner for commercial and smallholder farmers under irrigated conditions."

"The launch of this product fits within the ARC's objective to broaden the food base in order to achieve food and nutrition security through food science and technology development for improved product quality and yield," added Moephuli.

This partnership is also a demonstration of Nestlé's creating shared value business principle which states that for a business to be successful, it must create value for communities in which it operates.

"We believe that through partnerships such as this one where we are able to collaborate with experts in agricultural research and share our deep consumer understanding and product development; we continue to demonstrate our commitment to creating shared value in communities where we have a presence," said Ravi Pillay, Corporate Affairs Director for Nestlé South Africa."

"The addition of Morogo in our range of MAGGI Noodles is our response to our global ambition of being the leader in nutrition, health and wellness by leveraging global expertise for local preference, concluded Pillay.

This partnership supports the country's National Development Plan which aims to grow South Africa's economy through public—private partnerships. It is envisaged that this project will contribute towards much needed rural development and the revitalisation of rural communities through job creation particularly for young emerging farmers.

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Creating knowledge, jobs and skills

Department of Science and Technology hands over agricultural equipment to essential oils project in Giyani

Creating decent work and a skilled labour force, and generating new knowledge, are at the heart of the Department of Science and Technology's Hi Hanyile Essential Oils and Medicinal Plants Project.

On 14 December, the Hi Hanyile Project received much-needed agricultural equipment valued at R1 million, promised by Minister Naledi Pandor during an imbizo in Giyani, to help expand the bioscience research initiative and grow the business.

The equipment handed over included a Massey Ferguson tractor, a six-ton four-wheel trailer, a 1.5m Slasher, a three-row furrow maker, a Massey Ferguson three-disc plough and a 1.5m Kverneland Rotavator. This will be used to expand the project, creating more jobs in the area.

The Hi Hanyile Essential Oils project is funded by the Department of Science and Technology (DST). Scientists and traditional healers are collaborating in studies on indigenous plants which have led to the development of mosquito-repellent candles. The candles are much more effective than similar commercial products on the market.

The project was initially established as a Rose Geranium essential oil pilot project in 2000, and in 2004 another crop was introduced Lippia javanica an indigenous plant that is traditionally used to repel mosquitoes. Collaborative research between the Council for Scientific and Industrial Research (CSIR) and traditional healers led to the extraction of the active chemical component of the plant.

The Department's Deputy Director-General for Technology Innovation, Mr Mmboneni Muofhe, said the project was one of the Department's interventions aimed at contributing to decent employment, a skilled and capable workforce, and vibrant rural communities, as part of government's efforts to address unemployment, inequity and poverty.

"Government is revitalising agriculture by developing, promoting and creating market access for small and medium enterprises and cooperatives in the agricultural sector. Critical in this area is encouraging upstream agroprocessing activities by rural producers, like the mosquito-repellent products made by Hi Hanyile. This initiative has the potential to create work opportunities for young people, many of whom currently have no share in the benefits of economic growth and development."

To support the project-to-business transition, the DST engaged the Department of Trade and Industry-affiliated SA Essential Oils Business Incubator to assist Hi Hanyile through their incubation services, essential oil production know-how, quality assurance skills and services, and market linkages.

The DST also commissioned agricultural economists (Datacomb Consulting) to develop a business plan to enable the project to access other sources of funding, which includes a business model that capitalises on existing and future initiatives, and identifies potential sources of revenue, products, customers and partners, and an investment memorandum or prospectus.

Local chief, Hosi Ngove, said the Hi Hanyile Project was creating jobs and skills, especially for the local youth, who were being given an opportunity to develop themselves. As an example, he mentioned 28-year-old Thembani Sithole, who has been working on the project as a boilermaker for two years, never having had formal employment before.

"This is also an opportunity to partner with the local Giyani Science Centre, where a laboratory can be established to do more on the Hi Hanyile Project," said the Chief, announcing an additional 100 ha of the land for further development.

Site manager Petra Terblanche welcomed the new equipment, saying the project could now do real farming. Before, they had had to hire equipment to plough the land at a cost if R6 000 for three days.

"With the new equipment we will be able to farm more and produce more, which will translate into more resources for the project," she said. "This is a dream come true."

science
& technology
Department:
Science and Technology
REPUBLIC OF SOUTH AFRICA

Putting money to mouth

Countries prioritise agriculture in climate plans, but is the funding there?

Most countries have now shown their cards on how they intend to tackle climate change. Research out this week shows that agriculture is marked as a priority in the vast majority of national plans (known as Intended Nationally Determined Commitments or INDCs)—which should come as no surprise to UN negotiators. Agriculture and climate experts have beenhighlighting the sector's huge potential to both adapt to and mitigate climate change since 2009. Greenhouse gas emissions related to our food systems are estimated to account for up to 29 per cent of greenhouse gas emissions, and the sector run by the world's 500 million farmers stands to be one of the worst hit by the unpredictable weather patterns that a changing climate is causing. Given that we will need to feed roughly 9.6 billion people by 2050, this is a situation that demands action.

Yet progress on agriculture at the UN climate talks has been excruciatingly slow. The Durban agreement in 2011 called for technical discussions on agriculture to take place to inform negotiators how agriculture could be brought into the main climate negotiations, but these will now only be finalised in 2016. As a consequence, the idea that mitigating emissions from agriculture and improving agricultural productivity are mutually exclusive has remained. Agriculture is not explicitly mentioned in the draft text of the new agreement, although food security is proposed as a key objective.

However, a new concept that is taking root is proving that many interventions that help farmers adapt to climate change, can also reduce emissions, resulting in a win-win for farmers and the planet. 'Climate-smart agriculture' seeks to deliver three interconnected goals: improving food security, improving farmers' resilience to climate change, and minimising emissions, where possible. Climate-smart agriculture also takes into account social goals, for example, that many farmers in developing countries

are women, and that to advance agriculture means to tackle gender inequality in access to resources and knowledge.

It seems that although the UN Framework Convention on Climate Change (UNFCCC) has missed the huge opportunity the sector presents for taking action on climate change, individual countries have not.

Our analysis of the country level plans submitted to the UNFCCC has revealed that there is a huge appetite for technical and financial assistance to adopt this very type of climate-smart agriculture, that will help them tackle the challenge of feeding the world in the face of a warming planet. 80 per cent of countries have included agriculture in their climate mitigation target, and 64 per cent have noted agriculture's importance in climate adaptation strategies.

Perhaps most importantly, 30 per cent of countries, mainly in the developing world, have included agriculture mitigation targets that are conditional on international financial support. This is a clear call to action for UN negotiators in Paris: developing world nations need funds to support the reduction of agriculture-related emissions. Costs range from USD 2.5 million for a programme to reduce slash and burn in the Central African Republic, to USD 1.8 billion to reduce emissions from rice, implement biodigesters for recycling waste and expand agroforestry systems in Senegal.

Climate-smart agriculture is already making a difference. Take the example of dairy famers in Kenya. Currently, livestock contributes to 47—55 per cent of agricultural greenhouse gas emissions. Responding to this, the International Livestock Research Institute and the World Agroforestry Center are testing measures appropriate to smallholders, such as better feed production and feeding practices, which can boost livestock productivity levels while also reducing emissions per kilogram protein of milk produced. In Kenya, researchers believe these practices can mitigate 1.2 Million tonnes of CO_2 by 2018.

Rice production is responsible for up to 10 per cent of global manmade methane emissions. Southeast Asia is the world's largest rice producer, and so there is great potential for reducing emissions from this sector. Using a technique called Alternate Wetting and Drying, farmers can maintain or even increase yields by using less water in rice production. Irrigated fields are drained for short periods as crops grow, resulting in up to 30-40 per cent reduction of methane emissions and reducing water use by up to 30 per cent, helping farmers cope during periods of water scarcity. The International Rice Research Institute (IRRI) is working with the government of Vietnam to map the suitability of these practices for different regions to assist their scaling up.

The INDCs can serve as a roadmap to guide investment and technical support from the UNFCCC. Countries have spoken, and agriculture has featured highly on their agendas. Feeding the planet in a sustainable way will simply not be possible unless all nations are empowered to take action towards climate-smart food systems. We hope this message is well heeded in Paris.

Bruce Campbell, Director, CGIAR Program on Climate Change, Agriculture and Food Security.

This article first appeared in Outreach magazine: http://outreach.stakeholder-forum.org/

Turning back the heat

Carbon farming: To sequester carbon and reverse global warming

Many ecovillage communities have been experimenting with different means of carbon farming and have gone well beyond carbon neutral to become net negative carbon communities. These villages provide many examples and best practices for sequestering billions of tons of carbon and reversing global warming.

While there's no question that we need to reduce greenhouse gas (GHG) emissions, over the last 25 years emissions have actually accelerated. In 2013, there was roughly 50 parts per million (ppm) more carbon pollution in the atmosphere than in 1988. While we have to replace fossil fuels with renewables, other measures are needed as well.

The alternative we propose is to net sequester—go beyond zero—at the home, village and regional scale. We have many tools for accomplishing this—carbon farming, agroforestry, ecosystem restoration, and biochar, in everything from clothing to buildings.

Humanity has actually released far more carbon to the atmosphere from soil disruption, desertification, and deforestation since the beginning of agriculture than from fossil fuels.

So now we have the opportunity to reverse the process and rebuild and sequester megatons of carbon in our soils.

The safest and most effective approach is to capture it with millions of species of green plants, animals, insects, fungi and micro-organisms, burying it deep in soils in carbon-rich molecules that are stable for

centuries or longer. And because complex organic carbon molecules retain many times their weight in water, we can also restore vibrant life to billions of acres of parched, desertified areas that were once healthy forests or grasslands.

Unfortunately most of these carbon farming practices and techniques are not yet a part of the mainstream climate discussion. It is unspeakably ironic that the most effective, most beneficial, least risky and least expensive approach to reversing global warming is not yet on the table.

As years pass without strong global action on climate, the threat of the Earth's temperatures rising by more than 2oC has become increasingly likely and alarming. The 'emissions gap' between what our governments are willing to do and what is required is estimated to reach 8 to 10 billion tons of CO2 in 2020 and 14 to 17 billion tons in 2030.

An article on the Global Ecovillage Network COP21 website by Hans-Peter Schmidt entitled Humus or Famine states that deforestation and degradation release an estimated 4.3 to 5.5 Gigatons of CO2 equivalent (Gt CO2eq) per year, with agriculture producing 5.0 to 5.8 billion metric tons more. We have lost between 55 and 320 billion tons of carbon or roughly 25 per cent to 75 per cent of the original humus content.

Healthy soil has humus levels between 3.5 per cent and 6 per cent. Our more intensively used soils are 2 per cent or below. But when the Europeans arrived in the Amazon River basin centuries ago, the native peoples had built the Terra Preta soils to 10-15 per cent –resulting in incredibly rich farming communities, in a region with naturally low carbon soils.

We can achieve the same by closing organic cycles, applying organic matter (composts, green manure and mulch), mixed cropping, continuous soil cover, minimising tillage, and applying biochar to our fields.

By increasing the carbon content of the soil to just 10 per cent worldwide over the next 100 years we could sequester the equivalent of 900 billion tons of CO2, reducing it by 110 ppm in the atmosphere, thus returning to pre-industrial levels.

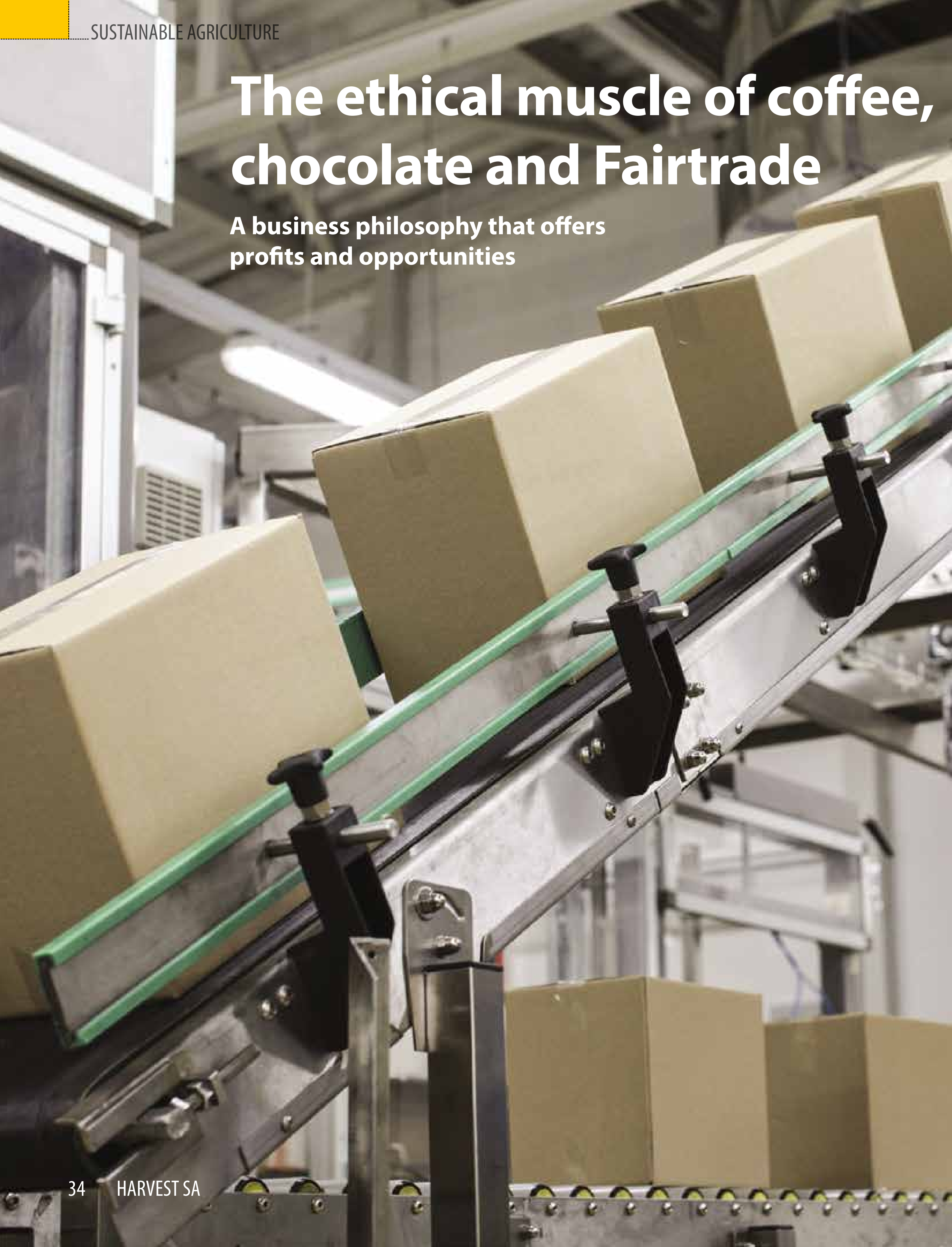
In another article on the GEN COP21 website, Albert Bates states, "We could sequester 1 gigaton of carbon annually by switching to carbon farming. And with biochar, increase this to 4 to 10 GtC per year using biomass-to-energy pyrolysis reactors." And then add tree planting, wetland restoration and bamboo stands. Reforestation, particularly at the edges of deserts, provides the largest available wedge to combat climate change, potentially contributing 80 GtC per year.

These things are not only do-able, but are already being done in ecovillages around the world. We can sequester more greenhouse gases than we emit. We can go back to pre-industrial carbon levels while restoring ecosystem health and replenishing our depleted soils. All we have to do is plant trees, build terra preta soils, and organically store carbon in our planet's terrasphere as did indigenous peoples of South America centuries ago.

Rob Wheeler, Global Ecovillage Network
rob.wheeler@ecovillage.org
You can read about Global Ecovillage Network success stories at: www.ecovillage.org/COP21. This article first appeared in Outreach magazine: http://outreach.stakeholderforum.org/

The ethical muscle of coffee, chocolate and Fairtrade

A business philosophy that offers profits and opportunities



Fairtrade is a common-good philosophy that aids better trading conditions for producers and the export of their products (particularly in Africa). In addition, it promotes sustainability associated with trade and in the manufacturing sector. It works by holding both manufacturer and consumer to higher social and environmental standards.

Fairtrade is a non-governmental organisation that sources and co-ordinates the ethical certification of products and their producers. It is aimed at promoting equality and sustainability in farming sectors in the developing world, including Africa, Middle East and South America.

Dating back to the 1960s, Fairtrade began with small initiatives by individuals and communities who wanted to make a difference in developing countries. They sought to buy their products in an ethical manner, through paying fair prices, establishing direct trading partnerships with these producers and sharing knowledge and information on production, market and quality requirements.

In the 21st century, the Fairtrade philosophy has become a worldwide trend, with Fairtrade practices on every continent, in all regions.

Fairtrade is finding traction in Africa and South Africa, where support for local farmers and small-scale is a meaningful contributor to employment and the economy. Throughout the process, from the labour used to manufacture the products, the contents of the products and the selling mechanisms used to market the final product, Fairtrade promotes the equality and sustainability of small-scale agriculture, trade and manufacturing.

What products are Fairtrade?

A product that carries the Fairtrade certification stamp has met the organisation's rigorous standards. These insist that profits from the sale of Fairtrade goods must be worked back to producers and farmers to improve labour conditions, promote sustainable, environmentally friendly farming and manufacturing techniques, and invest back into the business and its people.

While most (96%) Fairtrade products are agricultural goods, such as coffee, cocoa, bananas, cotton, sugar and flowers, they include clothing, cosmetics and beauty products, gold and consumable goods, such as soft drinks, wine and ice cream.

Popular companies that produce or use Fairtrade products in their manufacturing include American ice cream company Ben & Jerry's, chocolatier Cadbury's and over 100 global clothing retailers. In South Africa, Fairtrade products made locally and from Africa include Ciro coffee, Cadbury's and several established and emerging wine farms, including Fairvalley, House of Mandela and Palesa. Fairtrade products are available from Woolworths - one of Brand South Africa's 2015 Top 10 Most Valuable Brands- selected specialist food stores and some larger retail supermarkets.

Fairtrade quick facts

- More than half the bananas sold in Switzerland are products of Fairtrade.
- A quarter of all flowers sold in Germany are sourced by Fairtrade.
- While the hallmark of Fairtrade has been the export from source country to another region, over the last four years there has been an increase in domestic sales, keeping the Fairtrade cycle local.
- Demand for Fairtrade products is growing exponentially in Brazil, India and Kenya.

The business of Fairtrade: the triple bottom line

Fairtrade is based on the non-traditional commercial framework of the triple bottom line. Unlike the more traditional profit or loss bottom line, it looks at three levels of impact of products manufactured, marketed and sold: social, environmental and financial.

Simply, Fairtrade focuses on items that prioritise the people behind the product, followed by the positive impact the manufacture and consumption of the product has on the environment, and then on whether a profit is made from the product.

In South Africa, the triple bottom line means that what is produced from the business, goes back into the operation at all levels. Profits are used to attend to the educational and social needs of the workers: schooling, housing, social awareness, health and welfare. This, in turn, leads to more sustained job creation and employment security.

This philosophy falls in line with the ideals of South Africa's National Development Plan, particularly in the areas of social cohesion, creating more inclusive economies and encouraging active citizenry.

CD Anderson
www.mediaclubsouthafrica.com

Time to industrialise

China, litchis, red meat and fishing feature in this wrap-up of the most important stories affecting agriculture from the South African Government News Agency

Africa must be given time to industrialise, says Trade and Industry Minister Rob Davies.

Speaking at the 4th China Roundtable in Nairobi, Kenya, Minister Davies said under colonialism, African countries were drawn into the world economy as producers and exporters of primary products, mineral and agricultural commodities.

The Minister said that era also disadvantaged the Africa as her countries were importers of finished goods from former colonisers' countries.

"The value chains have not benefited Africa. Africa needs assistance so that it can weather the next wave of the financial crisis. We must create regional value chains. We must create space to slow down the importation of finished goods and we must be given space as a continent to industrialise," said Minister Davies.

The roundtable, sponsored by the Chinese government, is being hosted by the Kenyan government. It is organised by the World Trade Organisation (WTO) Secretariat ahead of the 10th WTO Ministerial Conference.

Kenyan President Uhuru Kenyatta also addressed the roundtable, which is casting the spotlight on Africa's perspectives on the future of the trading system.

President Kenyatta said the WTO must be supported to enable it to fulfil its mandate effectively. He said the 4th China Roundtable and the 10th Ministerial Conference provide an opportunity to reaffirm the centrality of the WTO in international cooperation.

President Kenyatta said Africa has prioritised industrialisation and deepening domestic economies, and is focusing on legal, institutional and structural reforms.

"If we are to industrialise, tariff escalation and peak tariffs should be eliminated. African economies producing competitively should not be halted with defensive trade remedies. Standards should not be the next frontier of protectionism," said President Kenyatta.

Meanwhile, Minister Davies urged Ministers responsible for Trade of the ACP [African, Caribbean and Pacific] Group of States to resist the attempt of ditching the Doha Development Round, as it will have negative implications for developing countries.

The ACP Group States Ministers of Trade also came up in support of the mandate of the Doha Round. The Ministers stressed the necessity for a clear commitment in Nairobi to conclude all unresolved issues in the Doha Developmental Round.

They urged all members to show the same political will to achieve consensus at the WTO Ministerial Conference as they did with the Bali Ministerial Conference.

The membership of the World Trade Organisation is divided over the Doha Development Round.

Most of the membership, including South Africa, say that the mandate of the Doha Round remains valid.

"The principles as well as the work issues under the Doha Development Agenda are important and this agenda has to be completed before anything else can be picked up.

"On the other hand, there are a few members who are of the view that the Doha Round is effectively dead and the work programme can address the outstanding issues but not within the current framework and the mandate of Doha," said Minister Davies.

The Doha Round is the latest round of trade negotiations among the WTO membership. Its aim is to achieve major reform

of the international trading system through the introduction of lower trade barriers and revised trade rules.

The work programme covers about 20 areas of trade.

The Round is also known semi-officially as the Doha Development Agenda as its fundamental objective is to improve the trading prospects of developing countries.

SA exports first air shipment of litchis to US

The Department of Agriculture, Forestry and Fisheries has announced that South Africa has earlier this month exported its first air shipment of litchis to the United States.

"The department views this achievement as one of the major contributions on the country's initiative of expanding export markets, positioning South Africa as one of the significant exporters in the world.

"This achievement will enhance socio-economic growth as stipulated in, among others, the National Development Plan and the Strategic Plan of the Department of Agriculture, Forestry and Fisheries," the department said in a statement on Tuesday.

The department said the shipment was the result of a partnership with the relevant government departments and the litchi industry who negotiated for market access with the US and ensured South Africa was able to meet the US import requirements and regulations.

The fruit was packed at Riverside in Mpumalanga and landed in Atlanta, irradiated at Gateway in the US and then transhipped to the relevant agents in US.

"The feedback received was most encouraging and sales are reported to be going well, with the first commercial orders now being placed," the department said.

In 2014, the litchi industry recorded a contribution of approximately 2 390 jobs, both direct and indirect and about R120 million to the gross value income.

The department said the litchi industry had the potential to grow supported by the continuous production of healthy and safe fruit that will continue to position South Africa as a key player in the export market.

Compliance with phytosanitary market access requirements and other related measures is key to sustaining this export market.

Chairperson of the South African Litchi Growers' Association (SALGA) Market Access Committee Don Westcott said the litchi industry was hoping to have more commercial consignments being airfreighted out to the USA this season.

"We welcome the continued support from the Department of Agriculture, Forestry and Fisheries and our government in particular. This was really a great collective effort and a special success story for our industry," said Westcott

The department expressed appreciation to farm workers, growers, leadership of relevant associations, transportation, agents and plant inspectors to packhouses, as well as the Perishable Products Export Control Board and other relevant departments for making the shipment possible.

SA, US commit to resolving meat dispute

South Africa and the United States have committed to resolving the dispute over meat, Trade and Industry Minister Rob Davies says.

Minister Davies met with his US counterpart Ambassador Michael Froman on the sidelines of the World Trade Organisation's (WTO) 10th Ministerial Conference in Nairobi, Kenya.

The meeting, among other things, assessed progress made since a notice was issued by US President Barack Obama last month regarding withdrawing duty-free treatment for South Africa's agricultural exports under the African Growth and Opportunity Act (AGOA) if South Africa does not resolve the US' concerns.

In the letter, President Obama warned South Africa that if the negotiations on the outstanding issues related to the poultry issues are not resolved by 31 December then the US would suspend South Africa's duty-free treatment of South African agricultural goods into the United States.

Since the issuing of President Obama's notice, South African and US veterinarians signed the "Protocol for Poultry Meat and Day-Old Chicks" on 13 November 2015.

The protocol will secure the continued exports of poultry from those areas in the US that are not affected by Avian Flu in the event of any new outbreaks of the disease.

On Friday, 18 December 2015, the Deputy Minister of Finance Mcebisi Jonas published a notice in the Government Gazette amending Schedule 4 of the Customs and Excise Act by inserting rebate item 460.03 that provides for a rebate of the anti-dumping duty imposed on bone-in chicken pieces originating or imported from the United States for 65000 tonnes per annum.

"The International Trade Administration Commission (ITAC) also published guidelines on the allocation of the quota and the issuing of rebate permits. A volume of 16 250 MT will be available for use on a first come first serve basis from 18 December 2015 until 31 March 2016 where after rebate permits issued by ITAC will be required for use of the rebate item. With these publications the Government of South Africa implemented the agreement reached between the US and SA poultry industries in Paris in June this year", explained Minister Davies.

Minister Davies and Ambassador Froman said the implementation of the Paris agreement signals a significant milestone in the process of finalising the market access issues raised in President Obama's letter.

Both Ministers committed to working together to resolve the meat dispute. They said their officials will continue to engage constructively to finalise the last few outstanding issues.

Foot-and-mouth outbreak confirmed in Limpopo

The Department of Agriculture, Forestry and Fisheries has urged the farming community in Matiane, Limpopo, to work closely with provincial veterinary officials and not move cattle out of the area.

This follows the outbreak of foot-and-mouth disease (FMD) detected by the Provincial Veterinary Services on 8 December 2015.

The outbreak was confirmed by laboratory tests on 10 December 2015 and identified as a SAT 3 strain of the FMD virus. The outbreak occurred in Matiane in the Vhembe District, which is within the FMD protection zone of South Africa, where vaccination for FMD is routinely conducted.

The department said the affected area is very close to Greater Kruger National Park Complex that inhabits FMD infected buffaloes, which are a constant source of infection.

"The current drought situation has increased possible contact between cattle and buffaloes due to limited grazing and water sources," the department said.

The Limpopo Provincial Veterinary Services has intensified surveillance in the area and is also applying control measures such as quarantine of affected cattle and movement control of cloven hooved animals in the surrounding areas.

Vaccination of the surrounding areas in response to the outbreak will be initiated.

The department emphasised that the outbreak occurred within South Africa's FMD

protection zone, and therefore has no effect on South Africa's FMD free zone status and should not have any effect on South Africa's export activities.

All 2013 fishing rights appeals processed

The Department of Agriculture, Forestry and Fisheries has managed to process all the 2013 fishing rights appeals, Minister Senzeni Zokwana announced on Monday.

A total of 928 appeals have been processed from June 2015. An advisory team, appointed by the Minister, has worked tirelessly to this end.

All the appeals were considered and evaluated in the seven fishing sectors—except for line fish as the settlement out of court had to be sorted out. It is expected to be finalised next year.

The Minister explained that the finalisation of the appeals from the allocation of 2013 was critical as the department was currently rolling out the new allocations.

"Ten fishing sectors, whose rights expire from 28 February 2015 until 31 December 2015 are now due for allocation," he said, adding that the fishing sectors that are now due for the allocation of fishing rights were allocated rights for a period of ten years in the year 2005. He explained that when he assumed office in May 2014, the department had not yet started the process to allocate new fishing rights despite the fact it was known that they will expire in 2015.

"This was of great concern as the delays could justify the extension that only benefits those who already have the rights, while others having waited for 10 years are made to wait even longer. We could not continue to subject the people to such injustice."

The Minister therefore decided to exempt the current right holders in order to extend their rights for a period of 12 months while the department put in place credible processes for the allocations.

The new date of expiry of all the rights was approved to be 29 February 2016. This expiry date is only for sectors that were allocated rights in 2005, expiring in 2015.

The 2013 fishing rights appeals were lodged by the KwaZulu-Natal Prawn, Trawl Fishery, Shark Demersal Fishery, Tuna-Pole, Oyster Fishery, White Mussel Fishery, Squid, Hake Handline and Traditional Line Fish Appeals.

Given that between 2006 and 2013, 742 hake handline crew have never been able to harvest more than 2 500 tons of hake in any one season, the Minister said he will be considering the viability of expanding this fishery by accommodating an additional 700 crew rights reserved exclusively for small-scale fishers, particularly fishers that crew squid boats and who are domiciled in the Southern and Eastern Cape.

"The intention of this expanded fishery will be to ensure that these squid fishing crew may continue harvesting fish and earning an income during the squid closed seasons or when squid fishing vessels are not operating," Minister Zokwana said.

The decision whether to expand this fishery or not will be taken by the Minister once the results of the socio-economic and scientific studies have been completed and the data analysed.

Minister Zokwana assured that the department had dealt with the appeals in the most fair and transparent manner.

"We rose above all the challenges and constraints and stand ready and open to scrutiny because I believe that will help us improve going forward," he said.

Government was on the right track in overhauling the rights allocation system and transforming the fishing industry. "I am sure that we are on the right direction to speed up and truly uplift the fishers from the long history of abuse they have been subjected to for so many years."

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Coming up trumps Down Under

South African student-team wins top international case competition with sustainable food production project

A team of MBA students from the UCT Graduate School of Business (GSB) has been announced as the overall winner of the 2015 Global Business Challenge—one of the world's most prestigious graduate business case competitions—in Brisbane, Australia.

With more than R2 million in prize-money and judged by a panel of global CEOs and leaders from government and industry, the Global Business Challenge invites participants to design implementable and practical solutions to the world's biggest challenges.

This year's focus was on aiding the achievement of global food security through business ventures that seek to double food production by 2040.

The GSB team was made of four students from the 2014 and 2015 MBA full-time and modular classes: Ralph Thomas, Caryn Jeenes, Christopher Human, Robyn Fox, and was coached by senior lecturer Johannes Schüler. It won out against 69 other universities from 27 countries. In the final round it competed against five other teams representing Canada, Australia, India, Australia, Poland and Indonesia.

The team presented a fresh-water aquaculture production system called Fish4Africa that disrupts Africa's current protein supply shortages by offering a sustainably produced, market-accepted catfish product based on a scale-efficient, replicable medium-scale model that requires low capital investment and can generally be located in close proximity to demand.

A medium-scale project was chosen because of the high risk of doing business in Africa, which could potentially jeopardise a large-scale agricultural project.

Team member Ralph Thomas says the idea was inspired by an initiative in Graaff-Reinet called The Blue Karoo, which is also a catfish aquaculture project.

"They have been very helpful in providing us with information. The Blue Karoo initiative follows a well-designed, sustainable approach and achieves high socio-economic impact in the surrounding communities. Our model is based on their model, with a range of innovative modifications and adaptations that achieve replicability of the model," Thomas said.

He said the major advantages are that Fish4Africa is a medium-sized aquaculture farm and the capex requirements are much less than setting up a large farm; the model is replicable across the continent; it creates an affordable, protein-rich product, which is accepted by the market; and finally, the farms are sustainable in nature, making use of various innovations and relying less on third-party inputs.

"The Global Business Challenge is a wonderful opportunity for South African students to showcase their academic abilities on a global platform, while finding practical and commercially viable answers to real-world issues."

"Competitions such as this help foster the GSB's reputation as a global thought leader for innovative, sustainable solutions for emerging markets," Schüler said.

This is the second time that the current team has worked together. In January this year they competed as the UCT GSB case competition team at the John Molson MBA International Competition in Montreal, Canada, where they reached the semi-finals and won the 2015 Richard Outcault Team Spirit Award.

"I am extremely proud of the GSB team and am glad that the smart thinking and hard work paid off," Schüler said.

The Global Business Challenge is a partnership between the Queensland University of Technology (QUT) and Griffith University, and is supported by both government and industry in Australia. It was born in the lead-up to the G-20 (Group of 20) summit held in Brisbane in 2014 to addresses issues of global concern.

Jehan Bedford
Rothko

Makorokoto!

Zimbabwe Farmer of the Year Award Winner Receives Case IH Tractor

This year's edition of Zimbabwe's coveted Farmer of the Year Award, bestowed by the Zimbabwe Agricultural Society (ZAS), was won by Mrs Maengeni Bingandade, a small farmer from Mutare, in the eastern highlands of Zimbabwe.

Case IH and its dealer Southern Region Trading Co. (SRTC) supported the event and provided the first prize, a JX75T 2WD tractor donated by the dealer.

The farm was shortlisted by the jury in recognition of the quality of their produce presented at the exhibition and how it was displayed. The farm's well-managed homestead and fields, diversified through horticulture, crops and livestock, earned the first prize.

The official award ceremony was held on the Case IH stand at the Harare Agricultural Show, when guest of honour, Mr Filipe Nyusi, President of Mozambique made the symbolic

handover of the keys to Mrs Bingandade beside the Case IH JX75T.

The first prize JX75T two-wheel-drive tractor was delivered to Mrs Bingandade's farm on November 20 by Case IH distributor Southern Region Trading Company. The handover was a well-attended event with the participation of most Provincial and District Administrators as well as farmers from across Manicaland. It was presided by resident Minister and Governor of the province Hon. Mandi Chimene and Mr Dominic Kasere, General Manager of SRTC, who jointly handed the tractor keys and tool kit to Mrs Bingandade.

The handover was preceded by a tour of the residential plot led by the ZAS judges and Arex officials, who explained the reasons for their choice of Mrs Bingandade as the winner.

Hon. Chimene commended Case IH dealer SRTC for supporting the land programme spearheaded by the government and donating a tractor to a small farmer.

"By sponsoring an award like Farmer of the Year we aim to raise awareness of the possibilities that mechanisation offers to increase a farm's productivity and efficiency, benefiting its bottom line," explained Jason Smith of Southern Region Trading Company. "The JX75T is perfect for a small farmer like Mrs Bingandade, who needs a totally reliable tractor that delivers a high performance in a variety of applications, from soil preparation and operating implements to pulling trailers and transport."

Small farmer with big plans

Mrs Bingandade farms 3 hectares with diversified crops that include butternut, water melon, beans and maize, and raises cows, goats and chickens. "Our biggest challenges on the farm are the limited inputs, access to water and the small size of the plot of land," explains Mrs Bingandade. "We farm with a plough and cultivator, so the Case IH tractor will make a big difference to us: we will be able to spend less time in the field and increase the hectares we are farming. To be awarded was a huge honour, and it gave me motivation to strive for greater heights, to work harder."

Case IH JXT: Strong, efficient, engineered for high output and versatility

JXT tractors are simple, reliable and economical—true workhorses. The high-efficiency engines consistently deliver a powerful performance with exceptionally low operating costs. The turbocharger increases the oxygen available to the engine, optimising fuel combustion. The result: lower emissions and more power. With their high engine backup torque, they can deal effortlessly with sudden loads at constant engine rpm.

They are exceptionally versatile with transmissions engineered to deliver high output and PTO capable of powering a wide range of implements with ease and precision. Their hydraulic system adjusts the height of implements according to the soil and the requirements of the application based on 24 sensing positions. JXT tractors can also operate implements at low speeds thanks to ground PTO, whose speed is proportional to the tractor's travel speed.

The JXT is designed to provide a comfortable work environment, with outstanding visibility all round and easy access, ideal for hopping on and off while doing multiple jobs around the farm.

Silvia Kaltofen
Case IH Communication Specialist Africa Middle-East

Partnership takes South Africa one step closer to manufacturing life-saving vaccines locally

The Minister of Science and Technology, Naledi Pandor, said the Pfizer-Biovac partnership paved the way for South Africa to become a local manufacturer of life-saving vaccines.

On 3 November 2015 , Minister Pandor officially launched a significant public-private partnership between global pharmaceutical giant, Pfizer, and the Biovac Institute (Biovac), which aims to enable local manufacture of a vaccine against the pneumonia-causing bacteria.

Prevenar 13, which has proven to be effective in preventing pneumococcal infection in children from six weeks to five years, and in adults of 50 years and older, will be manufactured at Biovac's new commercial-scale facility in Cape Town.

Minister Pandor said that the partnership demonstrated South Africa's ability to do successful technology transfer in the bioeconomy space. "This demonstration of successful technology transfer with Pfizer is one of the prerequisites for unlocking future technology transfers that will see Biovac becoming the major vaccine manufacturer in Africa."

The Minister said this strategy would alleviate South Africa's continued dependence on imports and the consequent threat to security of supply of essential vaccines.

Jennifer Power, the South African Country Manager for Pfizer Inc., said, "Preventing pneumococcal disease is a priority for Pfizer in South Africa. We have already seen great results since vaccination was introduced, and we are pleased to partner with Biovac, sharing best practices, knowledge and skills to continue to make a real difference for patients. We are confident that this partnership will help ensure the sustainable supply of our pneumococcal conjugate vaccine for patients in South Africa."

Dr Morena Makhoana, the Biovac CEO, said, "Biovac is committed to developing and establishing a strong and locally relevant vaccine capability, and, more specifically, vaccine process and product development in South Africa. We believe that this partnership with Pfizer will strengthen our ability to deliver a potentially life-saving vaccine for South African children, as well as accelerate our technological knowledge in vaccine development."

The Minister of Health, Dr Aaron Motsoaledi, said that he believed that the vaccine partnership should be celebrated, as it would benefit not only South Africa but the region. He explained: "The launch of the local manufacture of pneumococcal conjugate vaccine is a stepping stone to the ultimate dream of developing our own vaccines on the continent, for the continent. "

The partnership facilitates technology transfer from Pfizer to Biovac, in compliance with international Good Manufacturing Practice standards. The process involves the formulation (combining 13 different strains or serotypes of bacteria called Streptococcus pneumoniae) and filling a syringe with this combination vaccine (Prevenar 13), resulting in a prefilled syringe, a new technology for Biovac.

Pfizer will also implement a skills-transfer process that will result in Biovac employees being able to continue with manufacturing the vaccines after the transfer period.

Biovac was established in 2003 as a public-private partnership with the aim of restructuring state vaccine assets to ensure domestic capacity in vaccine production, as well as a local skills base.

The Department of Health introduced Prevenar 13 to South Africa in 2011. Results from a laboratory-based survey, published in the New England Journal of Medicine in November 2014, showed that the introduction of the vaccine in South Africa substantially reduced invasive pneumococcal infections in children one of the top five killers of children under the age of five.

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