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Role Of Natural Enemies

Cornerstone For Sustainable Pest Management Strategies

As a response to the negative side effects of chemical control in the developed world, Integrated Pest Management (IPM) developed with an emphasis on reducing the role of pesticides. Later the role of natural enemies was recognized as being the cornerstone for sustainable pest management strategies.

The IPM concept initially stressed the combination of control tactics while afterwards the empowerment of farmers in managing their own agro-ecosystems became the focus. Reasons are given why integrated pest management

has been instrumental in making the Farmer Field School (FFS) prominent in sectors such as nutrient management, animal husbandry and health.

FAO started with an IPM project in subsistence crops in Africa, but because of its low impact on farmers' livelihoods changed to crops with a higher consumption of pesticides such as cotton and rice. Some pests like locusts require the attention of the central government. The multiple dimensions of desert locust problems are highlighted, and the realization that its solution is more operational than technical. Invasive

pests are a continuous threat, and classical biological attempts have been highly successful.

Some examples of technical IPM components such as varietal resistance, the judicious use of chemicals, agronomic practices, and biological control are given. However, it appeared that the adoption rate by farmers of proposed technologies is low. It is argued that farmers face very small windows of opportunities. Therefore, institutional development needs as much attention as technological improvement



2020 NAMPO HARVEST DAY POSTPONED

The COVID-19 outbreak is an unprecedented occurrence, and the global pandemic has, in a short space of time, impacted organisations in countless ways. We're living through a year that is uncharted, and things around us are changing extremely fast.

Following the stringent measures implemented by the South African Presidency, which included prohibiting gatherings of more than 100 people, Grain SA has been monitoring the developments of COVID-19 and under the guidance and recommendations of the World Health Organization, the Presidency of South Africa and the Department of Health, have made the difficult decision to postpone the 2020 NAMPO Harvest Day which was scheduled to take place from 12-15 May 2020 at NAMPO Park, just outside Bothaville.

The 2020 NAMPO Harvest Day will be postponed to 11-14 August 2020, given that Government policies and guidelines permit the postponed date. Grain SA will evaluate and review the date by the end of June 2020 if necessitated by governmental regulations.

Grain SA is committed to implementing appropriate action plans in relation to the developments of COVID-19. "The health and safety of visitors, exhibitors, staff, sponsors and the entire agricultural community during the NAMPO Harvest Day are paramount and an event of this magnitude poses too great a risk to continue during the initially stipulated dates. Guided by these priorities and best practice, the decision to postpone the event was a necessary one," Jannie de Villiers, CEO of Grain SA said.

The NAMPO Harvest Day received 81 345 visitors over 4-days in 2019, with 775 exhibitors and which saw a record of 376 aeroplanes and

63 helicopters descending on NAMPO Park. The economic importance of the NAMPO Harvest Day is absolutely vital to the corporate, medium and small businesses from all over South Africa participating in the show. In addition, visitors and exhibitors to the 2019 NAMPO Harvest Day, contributed an average of R28 million to the local economy, notably in the Free State and North-West towns of Bothaville, Klerksdorp, Orkney, Potchefstroom and Stilfontein, with many small business owners relying heavily on the income injection made possible as a result of this agricultural platform.

"While we're taking precautions and doing some things a little differently, our aim is to still present a diversified agricultural trade exhibition of world standing benefiting our loyal and longstanding partners, the local communities and the broader agricultural sector as a whole. As we continue to adapt to the impact brought on by COVID-19, Grain SA will remain committed to applying risk-informed-decision making and keeping all stakeholders informed every step of the way," said Dirk Strydom, Manager of Grain Economy and Marketing.

Grain SA will continue to adapt and to navigate this situation together as a team and more importantly, a community. We recognize that this is a challenging time for all, and most importantly, we remain deeply committed to the safety of the agricultural sector. We encourage everyone to be kind and considerate and even in the presence of social distancing, we encourage everyone to be there for one another. Let's all help flatten the curve and support those who need it most.

The NAMPO Cape show, scheduled for 9-11 September 2020 in Bredasdorp, Western Cape is set to continue on these confirmed dates.

Important Update on the Kenyan Food & Hospitality Events

Montgomery Events East Africa, the organiser, has today announced that the Kenyan Food, Hospitality & Drinks Events, scheduled to take place at the New Sarit Exhibition Centre 21 – 23 April will be rescheduled following the recent announcement of Kenya's first case of COVID-19.

Following the announcement, the Cabinet Secretary of Health has suspended all public gatherings until further notice. This is an escalation from the 6th March when the Kenyan Ministry of Health banned all conferences and events of International nature in Kenya. Unfortunately, the combined statements make running the Kenyan Food, Hospitality Drink Events impossible and we have therefore had to reschedule the original dates.

Instead, these events will now take place 15 – 17 September 2020 at the New Sarit Exhibition Centre in Nairobi, Kenya.





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WELCOME

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Upcomming Events

THE KENYAN FOOD EXPO:

15-17 September 2020 (New Sarit Exhibition Centre in Nairobi, Kenya)

Agritech Africa 2020:

17-19 June (Cape Town International Convention Center (CTICC).

FoodAgro Africa 2020: 09-11

September Dar-es-Salaam, Tanzania

Nampo Harvest Day 2020:

11-14 August 2020 (Nampo Park, South Africa)

Dairy livestock & Poultry Expo:

17-19 June 2020 (Kenyatta International Convention Center, Nairobi, Kenya.)

Agri- Expo livestock 2020:

8-11 October (Cape town, South Africa)

CFIA 2020:

26-28 May, Park Expo Rennes

Ildex Vietnam:

22-24 July at SECC, HCM, Vietnam

INDO LIVESTOCK 2020:

08- 10 July Grand City Convex, Sarabaya-Indonesia

Nigeria International Poultry and Livestock Expo 2020:

06-08 August 2020 Intl. Conference Centre, Ibadan, Oyo State, Nigeria

Disclaimer: *Due to the Covid-19 World crisis, dates are subject to change on short notice.*

BIOSECURITY PROTOCOL FOR LIVESTOCK EXPOS AND SHOWS NOW AVAILABLE

The presenters and organizers of six of South Africa's biggest livestock events, have jointly committed themselves to a science-based biosecurity protocol for the hosting of their various events in 2020, as well as future events.

Events that will implement the biosecurity protocol

The six events involved in the initiative, and who will implement the protocol from the outset, will take place on the following dates in 2020:

- Bloem Show
- Nampo Harvest Day
- The Royal Show
- Nampo Cape
- Nampo ALFA
- Agri-Expo Livestock

The biosecurity plan

The biosecurity protocol below is specifically aimed at livestock events, and will now be implemented at the events listed above. Support will also be provided to smaller regional shows to help them implement this or a similar biosecurity protocol. The veterinary declaration, biosecurity plan and information document (annexures 1-4) are available for download here, by clicking on the document links below.

Veterinary declaration form – to be completed and submitted prior to the event

Biosecurity plan – please take note

Annexure 1: What is a biosecurity plan? – please take note

Annexure 2: Prevention of diseases by way of vaccination – please take note

Annexure 3: Overview of Foot and Mouth disease – please take note

Annexure 4: Daily observation – please take note and to be completed and submitted prior to events that are less than 28 days apart from a previous event.





What is integrated pest management?

"It's a process that may need to be changed several times within a season. It needs to be constantly evaluated and refined to maximise the benefits,"

Integrated pest management (IPM) combines the use of biological, cultural and chemical practices to control insect pests in agricultural production. It seeks to use natural predators or parasites to control pests, using selective pesticides for backup only when pests are unable to be controlled by natural means. IPM should not be confused with organic practices. It does not discourage spraying chemicals; it promotes spraying with selective pesticides only when the crop needs it, which generally means that less pesticide is used.

Stuart Kearns, Manager of Farm Biosecurity Programs at Plant Health Australia, said: "For IPM to be effective, producers need to be familiar with the life cycle and crop thresholds of pests, and to act when pest numbers begin to impact on crop growth and cause economic damage.

"Beneficial insects are encouraged and their numbers are regularly measured using beat sheets, sweep nets, traps or vacuums.

Definitions

Cultural control is the non-chemical management of pests using manual or mechanical means to change the soil and crop environment to discourage pest establishment.

Biological control is where predatory or parasitic insects and mites known as 'Beneficial's or 'good bugs' help to control chewing and sucking insects that affect the quality and productivity of crops by killing them or disrupting their

breeding cycle.

Chemical control involves the use of pesticides in the management of pests. It is used in IPM when biological and cultural control has not been enough to protect the productivity of the crop. Where chemical control is required, selective insecticides are chosen which target the pest, leaving the beneficial population unharmed.

"Patience is important. Although information about the density of insects in a field is recorded, action is only taken when pests reach a specific threshold level.

"When a spray is used, it can sometimes be confined to a particular area of the field rather than across the entire site," said Mr Kearns.

Populations of predatory insects can build up at specific times of the season. Over time these Beneficial's can build up enough numbers to reach a stable population within the local farming system.

While IPM has been around for many years it has only been adopted to varying degrees within cropping industries. Implementing an effective IPM program involves careful management of the interactions between the crop, environment, primary and secondary pests, beneficials and a lot of patience.

"IPM is included in many best management

practice programs, for example myBMP for cotton producers.

"It's a process that may need to be changed several times within a season. It needs to be constantly evaluated and refined to maximise the benefits," said Mr Kearns.

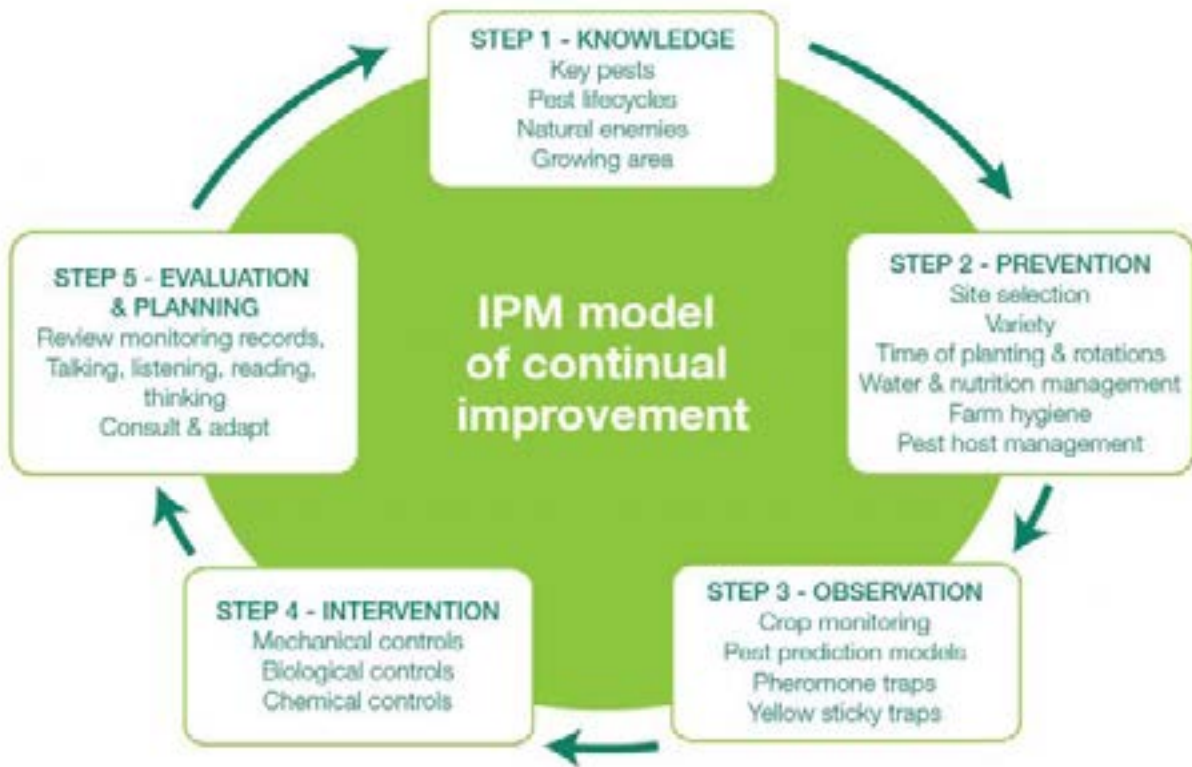
The model below outlines some steps for implementing and evaluating IPM practices. Making best possible use of available resources, expertise and consultants is essential in getting the balance right and reaping the rewards that an effective IPM program can deliver.

The Importance of Monitoring: Best Practices for Integrated Pest Management

Monitor overall plant health with a strong IPM program

The term Integrated Pest Management (IPM) is often misleading because a good IPM program looks at a bigger picture than just pests-overall plant health. Without a doubt, the best management practice for any IPM program is prevention, which is comparable to putting out sparks before they become raging fires.

A well-run IPM program includes regular monitoring for pests, diseases, nutrient deficiencies, irrigation problems, sanitation, and much, much more. Early intervention is instituted as soon as signs of damage are detected, rather than later when they are irreversible. In the



case of nutrition, a well-balanced fertilization program is a constant, rather than a stop-gap measure after imbalances are detected.

Scouts play a pivotal role in IPM, and the importance of regularly monitoring crops should not be undervalued. Good recordkeeping is also a necessity, especially when evaluating whether control measures and nutrition programs are effective.

The precursor to using control methods should always be scouting in order to pin-point exactly which plants need treatment. Avoiding the overuse of pesticides and fertilizers is not only environmentally responsible; it also saves valuable time and money.

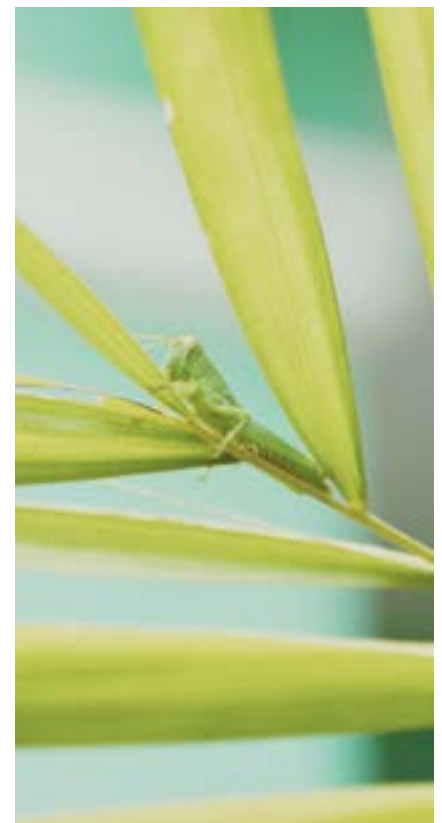
Try these best practices for an effective IPM program:

- Practice good sanitation by removing or quarantining any diseased or infected plants. Wash your hands before working with plants to avoid the spread of disease. Check new plants for problems, quarantine them if necessary.
- Know where to look for insects. Carefully examine leaf and stem axils, flowerheads and other tight places where insects can hide. Inspect terminals for damage or activity. Don't forget to look at the undersides of leaves and stems.
- Tap flowers and leaves on white paper to check for insects. Gently drop pots on a bench to see what flies out.
- Make use of sticky traps and indicator plants for monitoring pest populations.

- Monitor on a weekly basis and be consistent.
- Pay close attention to plant roots. Remove plants from pots and check roots for discoloration, rot and sloughing (when the root surface pulls away from the core).
- Know what healthy plants look like; become familiar with their appearance during different growth stages. Keep in mind that some plants have characteristics (variegation, striping, color) that are unique to their species and not an indication of problems.
- Look for mold, webbing, chlorosis, lesions, stunted or distorted growth, powdery residues, mottling, spittle and necrosis.
- Do not neglect healthy plants. Consistently check for healthy growing conditions that involve temperature, light and water.
- Accurately diagnose problems. Visual observations alone are not always enough, if needed, make use of soil testing and plant tissue analysis.
- Monitor nutrient and pH levels. Proper nourishment strengthens plants and enables them to tolerate pests, disease and environmental stressors better. Nutrient uptake is also influenced by pH levels.
- Avoid catch-all pesticide treatments. Treat the specific problem and only use enough for control.

tor prevents sickness; a mediocre doctor attends to impending sickness; an inferior doctor treats actual sickness." When it comes to IPM, seek to be the equivalent of the superior doctor.

A strong nutrition program is one of the hallmarks of an effective IPM program. KeyPlex's micronutrient and biopesticide products fuel the energy requirements necessary for plant defense, growth and reproduction.



An old Chinese proverb states: "A superior doc-



UGANDA-KENYA MILK WAR BOILS OVER WITH NO END IN SIGHT OF REGIONAL TRADE TIFFS

By MICHAEL WAKABI

The escalating trade dispute between Kenya and Uganda over milk exports, is just one of many facing all EAC partner states and underlines critical gaps in the regional integration project that could potentially harm the economies.

Dr Gideon Badagawa, the executive director of the Uganda Private Sector Foundation warns that unless resolved early, these trade tiffs could affect the region's investment profile.

At a glance, Uganda's trade with Rwanda is down to a trickle after a year-long of frosty relations; Tanzania has locked out Ugandan timber, sugar and maize; while Kenya, which has been open to imports of maize and beans from Uganda has been reluctant to open its market to manufactured products from Uganda and now even milk.

The South Sudan market, while open, still suffers from effects of conflict and insecurity.

Non-tariff barriers have intensified as member

countries become competitors amid regional protocols that eliminate taxes on goods originating from within the economic bloc as conceived under the EAC Treaty.

"This is going to hurt the region at some point. Put yourself in the shoes of an investor who set up in the region because he heard the presidents and other bureaucrats say East Africa was a single market and investment destination, but then later finds that for unofficial reasons, he cannot access half of that market," said Dr Badagawa.



USING TECHNOLOGY TO PLUG WASTAGE IN AFRICA'S AGRI VALUE CHAIN

"When you combine technology and operations, you can change the world. We are providing technology that makes life better for everyone; Nigerians and Africans."

Pan-African technology company, Cellulant Corporation has empowered Africa's agriculture sector with the hosting of its inaugural partners' summit in Lagos, Nigeria late last year. The summit explored how to leverage technology to help block inefficiency and wastages in Africa's agricultural value chain.

Through its payment and market solutions, Tingg and Agrikore, Cellulant will provide an increase in industry transparency.

The summit themed, Technology for transformation: Connecting everyone to Nigeria's \$50bn agribusiness opportunity and creating jobs for Africa's youth was attended by development partners including the African Development Bank, Shared Agent Network Expansion Facility (SANEF), Flutterwave and Deposit Money Banks, and many food processing companies.

According to Nairametrics, the \$50bn funding was made possible through the signing of a Memorandum of Understanding (MoU) between co-CEO Cellulant, Bolaji Akinboro, managing director, Wema Bank, Adedamola Adebise, Executive director NIRSAL representative, Kennedy Nwurah and Ken Njoroge, co-CEO Cellulant. The funding, through the partner's initiative, Agrikore will provide Nigerian farmers with the opportunity to do agribusiness in

a trusted environment.

Creating efficiency in the agri value chain

In a presentation titled Payments laying down the foundation for connecting Africa, Ken Njoroge, Cellulant's co-chief executive officer, said Africa has a comparative advantage in agriculture but needs efficiency in its value chain to achieve the desired impact on food security, job creation and economic development. "If you bring efficiency into the agricultural value-chain, ensure that crops don't rot on farms, trucks operate regularly, there are no youth unemployed in rural areas, and no factory producing below capacity; if we can connect these dots, we can bring efficiency that can power the transformation of Nigeria and Africa all across the board," he said.

Njoroge added that Agrikore and Tingg have been tested and affirmed to be connecting everyone in the agricultural farm sector while boosting transparency.

"The marketplace and payment platforms are connecting everyone. The payment platform ensures that everyone gets paid in real-time as transactions happen. We know it's working; we are working with 120 banks on the continent; large businesses are our customers. This is a collaboration that continues to benefit all parties," he said.

Bolaji Akinboro, co-chief executive officer of Cellulant, added that the "payment platform allows the farmer, aggregator, supplier, everyone to see how money is flowing in the system. It is for people who want to be part of an ecosystem that is profitable for them and which also provides jobs for hundreds of people."

Akinboro in his presentation titled, From farm to fork: Transforming the agribusiness in Nigeria through technology-what does the future hold, emphasised the need to strengthen Nigeria's agricultural value chain so as to derive maximum benefits in the entire sector.

"When you combine technology and operations, you can change the world. We are providing technology that makes life better for everyone; Nigerians and Africans."

"Technology is a critical enabler to solve many of the challenges experienced in the agriculture sector. In the last 15 years, Cellulant has actively contributed to connecting all key stakeholders in the value chain, who in the past never interacted with each other. The business has built a marketplace and payment platform that provides access to markets, digital financial services, and opens opportunities for all stakeholders to collaborate better and capture the \$50b market opportunity."



AFRICA'S YOUTH WANT TO CULTIVATE CAREERS, NOT JUST CROPS

SYLVIA NG'ENO

By 2050, sub-Saharan Africa will be home to a third of the world's young people, who will play a key part in feeding future generations. No region is this phenomenon of having more young people in the future more apparent than Sub-Saharan Africa.

However, the fact that young people in Sub-Saharan Africa often view agriculture as inefficient, socially immobile and technically uninteresting has led to a situation where the average age of Africa's farmers is 60 despite the median age being 19.

Threat and solutions

The combination of an ageing generation of farmers, high rates of youth unemployment and a rapidly growing population poses a significant threat to Africa's agricultural sector and future food security. As farmers grow older and young people move away in search of job opportunities, who will be left to feed the continent?

Involving more young people in farming is clearly crucial but major shifts in power dynamics and perceptions are needed.

Involving more young people in farming is clearly crucial but major shifts in power dynamics and perceptions are needed to ensure that Africa's next generation embrace agriculture. To attract Africa's next generation of farmers, we must highlight how agriculture can be a profitable and rewarding enterprise.

And with limited access to financing, markets and land, young people must also be empowered with continuing support and investment in order to overcome these obstacles.

Directly involving them in the agricultural supply chain and enabling them to develop skills and knowledge is essential, and central to the approach of our non-profit enterprise called Producers Direct.

Working with more than a million smallholders across Kenya, Tanzania and Uganda, we have learnt that to engage young farmers, we must also provide opportunities to access funds,

training and markets.

With young smallholders comprising more than a fifth of our farmer-led network, giving them important roles throughout the agricultural supply chain and providing them with continuous training and support has enabled them to develop leadership skills and vital knowledge.

For example, we currently have ten youth coordinators, 29 youth agents and 118 youth leaders providing essential services to smallholders – from digital tool support and market linkages to on-farm diversification assistance so farmers can branch out into producing and selling new crops.

Youth farmers bundle these products and sell them at markets, earning commission for their work and enabling smallholder producers to earn a profit.

Youth-focused initiative

Since January 2019, more than 3,000 farmers and young smallholders have received training through this pioneering model. Five Youth Forums have taken place so far across East Africa, bringing youth members together for mentorship and peer-to-peer knowledge sharing.



We must continue opening up lucrative opportunities that empower young people to embrace innovative tools and reshape perspectives.

The development and deployment of digital support services is also central to this youth engagement initiative, for instance with Farm-Direct. The service application provides farmers with real-time information through easy-to-understand charts, enabling them to gain market access, make better business decisions and improve crop yield and quality.

Youth coordinators and agents have been actively involved in the continuous testing and use of the application from the start — gathering data from farmers in paper form and digitalizing this into the central database. Selected youth members have also participated in the co-design process, helping ensure that local farmer needs are met as the application is scaled out to new user groups.

Benefits of the initiative

By appealing to the technical strengths and economic ambitions of younger people, this modernization allows them to build local agricultural knowledge, learn from older farmers

and ultimately carry their legacy into the next generation. Also, by spreading the use of these digital tools, it mutually benefits older small-holders too, providing opportunities to access new forms of financing and reliable markets for their products.

Thus, while the notion that the youth are the future of food security is nothing new, for young people to be driving the agricultural sector forward, we need to continue investing in them. Technology alone is not enough to engage future farmers but the potential it affords young people to finance, build and grow agri-busi-

nesses should not be underestimated.

The way forward

We must continue opening up lucrative opportunities that empower young people to embrace innovative tools, reshape perspectives, and give them leadership roles to carve out new enterprising routes that drive the agriculture sector forward.

Only then will Africa's fast-growing youth population be able to cultivate a more fruitful farming future for themselves.





ROOIBOS RETAINS GI PROTECTION STATUS IN THE UK

There has been speculation around whether South African products, such as Rooibos, will continue to enjoy Geographical Indicator (GI) status following the UK's withdrawal from the European Union. According to Dawie de Villiers, legal director for the SA Rooibos Council (SARC), the

short answer is "yes".

"By its inclusion in the Geographical Indication Protocol of the Economic Partnership Agreement (EPA) between the Southern African Customs Union (SACU) and the European Union (EU), Rooibos is currently protected as a GI in the EU. A GI links a product to a specific geo-

graphical area, which indicates the origin of where the product is produced, processed or prepared.

"This means that the word 'Rooibos' or 'Red Bush' can only be used for Rooibos tea imported from the winter rainfall areas of the Western and Northern Cape. This protection will last for



Register and await approval from the EU Commission. Since the EU has already accepted Rooibos as a GI under the EPA, we do not foresee any complications.

"Should we receive the green light, the industry then has the right to use the EU logo for Geographical Indication purposes. This logo is well-recognised by consumers in Europe and its use will provide an indication of the value of Rooibos as a unique product. In addition, when trademark searches are done in the EU register, it will confirm Rooibos as a protected name and registered GI, which isn't possible at the moment," says de Villiers.

Securing registration internationally

The inclusion of Rooibos won't lead to additional protection in non-EU countries, but it is the intention of the SARC to use the EU GI once registered, to continue the process with the World Trade Organization (WTO) and the World Intellectual Property Organization (WIPO) to secure the registration on an international level.

De Villiers further points out that the Transition Agreement signed between the UK and SACU (with Mozambique included), also affords other products included in the GI Protocol of the EPA, continued protection in the UK after BREXIT. Similarly, UK GI's (e.g. Stilton Cheese) will remain protected in South Africa.

Another win for the industry is that Rooibos will be receiving its own Harmonised Systems (HS) code, which will allow the industry to accurately track the movement of the product around the globe.

Geographical product tracking

"Every product in the world must be accompanied by an HS code when it is exported or traded. Up to now, Rooibos was grouped with other products in the legume category, which made it difficult to track the exact volume and movement of the product," explains de Villiers.

"Once it leaves our borders, each country, gives Rooibos another code under the legume category, making it problematic to monitor. Considering the Traditional Knowledge and GI agreements on Rooibos it has become a priority to adequately address the issue."

Working with the dti and SA Revenue Services (SARS) – responsible for this

legislation – the SA Rooibos Council has obtained a Rooibos-specific HS code for South Africa, where bulk Rooibos, packed Rooibos, Rooibos extract, etc. will be further classified. As a next step, it has applied for an international code with the World Trade Organisation (WTO), which means that Rooibos will have the same HS code everywhere in the world. This will allow the industry to better track the product and enforce geographical indication.

It will also help to ensure that no Rooibos is moved without being levied for benefit-sharing purposes.

The Rooibos industry, National Khoi-San Council (NKC) and the South African San Council (SASC) signed a first of its kind in the world access and benefit-sharing (ABS) agreement in November last year, which allows the Khoi and San communities to benefit from the sale of Rooibos.

As a signatory to the Nagoya Protocol, South Africa requires industries that trade in indigenous biological resources, such as Rooibos, to share benefits with traditional knowledge holders in a fair and equitable way.

"Obtaining an international HS code will be a milestone for the industry as the international community doesn't normally provide global codes for relatively small industries, such as Rooibos. However, we've been successful thus far and should be able to share some more good news in the coming months," remarks de Villiers.

as long as the EPA (or a successor agreement) remains in force.

"However, if Rooibos is to be included in the GI Register of the EU, it means that protection becomes permanent. The SARC, along with the Department of Trade and Industry (dti) have applied for inclusion of Rooibos in the GI EU

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7 EXPERT TIPS ON HOW TO GET CAPITAL FOR YOUR AGRIBUSINESS SUCCESS



Lack of finance has commonly been cited as one of the key barriers to agriculture for the youth of Kenya. However, stakeholders recently challenged students during the Youth Agritalks at the University of Nairobi's College of Agriculture and Veterinary Services to look for innovative and alternative ways to get started.

Smart Farmer Africa convened the session, in partnership with the University of Nairobi's College of Agriculture and the Nairobi University Agriculture Students Association (Nuasa). It was attended by about 400 participants.

It was sponsored by the UN Food and Agriculture Organisation and Microsoft, with the support from other organisations, including World Animal Protection, Elgon Kenya, Equity Bank, Amiran Kenya, and Socca.

The seven keys to success

Turn your farming into a business to make it more attractive

Get your act right with banks: It is possible to get money from a bank, but you must demonstrate your ability to run a viable business.

"Some people have tried to get loans through banks but they were turned down. However,

after some training, their ideas proved to be viable and banks financed them," said Mr Silano Assanga of RTI.

Turn your farming into a business to make it more attractive: To remove the risk from agriculture and make it an attractive opportunity, we must start looking at through the lens of business, said Ms Esther Muiruri, associate director in charge of agribusiness at Equity Bank.

"Traditional bankers did not go to agriculture school and when you ask them to lend to agriculture they see the risk before they even consider giving a loan. They start asking, what if it doesn't rain? What of the diseases in the soil that we hear about? But in reality, crops need water and not necessarily rain, while crops do not necessarily need soil but nutrients," she said.

Be your seed capital: Start with what you have. Be the first finance resource for the idea you want to bring on board, said Mercy Limbua, a youthful food chain consultant. "Start saving from now (in college), such that by the next five to seven years when you are ready with your idea, you have the capital. Don't look at the time, it flies. When I was in college, I started a small business venture and saved any monies I made. By the time I was completing college, I had savings which I later topped up and began

my consultancy firm."

Assets can also be considered as finance: Don't look at access to finance as though it is only getting direct money. We youth tend to see money as the only solution to start or grow our businesses. We need to come out of that cocoon, be creative, and open-minded. If you have an idea and you need inputs or resources, you can be given the finance in form of a resource such as machinery, said Ms Limbua.

Approach institutions such as NGOs: You can also talk to organisations such as FAO, USAid, RTI, and others. They support youth. Some give money directly, others through capacity building and indirect financing. Do your research and find out who is giving or providing what.

Start or join a VSLA or group: "Village Saving Loan Associations have transformed lives. VSLAs are groups that save money and lend to members. Most are trained on table banking and can be an excellent source of financial support "Young people are saving and getting capital to start businesses," said Silvano Assanga of RTI.

Mobile loans: If you are taking mobile loans, use them for meaningful purposes.



Agri SA's tips for safe workplaces during COVID-19

Protect others from getting sick.

When coughing and sneezing **cover mouth and nose** with flexed elbow or tissue.



Throw tissue into closed bin immediately after use.

Clean hands with alcohol-based hand rub or soap and water after coughing or sneezing and when caring for the sick.



Avoid close contact when you are experiencing cough or fever.

Avoid spitting in public.



If you have a fever, cough or difficulty breathing **seek medical care early** and share previous travel history with your health care provider.

Protect yourself and others from getting sick.

WASH YOUR HANDS

- after coughing or sneezing
- when caring for the sick
- before, during and after you prepare food
- before eating
- after toilet use
- when hands are visibly dirty
- after handling animals or animal waste



Wash your hands with soap and running water when **hands are visibly dirty**.

If your **hands are not visibly dirty**, frequently clean them by using alcohol-based hand rub or soap and water.

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NIGERIA NEEDS TO CLOSE THE FINANCIAL INCLUSION GAP FOR WOMEN SMALLHOLDER FARMERS

Women smallholder farmers in Nigeria are involved in all aspects of agriculture. This ranges from producing food on farms to putting it on plates. They're involved in planting crops, livestock production, harvesting, marketing and processing of farm produce as well as food preparation and family care.

Yet, because they are women, they are held back by unequal access to resources – especially finances – that would help make them become more successful.

Agriculture contributes significantly to Nigeria's economy. It is also the largest employment provider, with female smallholder farmers making up almost half the number of agricultural workers. They also play an important role in aspects of sustainable development. This includes being a bulwark against hunger and poverty in rural areas. Yet the majority still struggle to access affordable financial services to help them develop their farming operations and livelihoods.

Nigeria has made progress in strengthening

regulations to enhance financial inclusion. But our study found that these regulations aren't as effective as they could be to transform agriculture.

In the study, we looked at the gender gap in access to finance among smallholder farmers in Nigeria. And the impact of this on sustainable development.

Our research showed that these women farmers tended not to have bank accounts. This meant they lacked access to financial services like savings, credit and transactions.

This gender gap needs to be closed. We propose that this be done by introducing policies that favour women farmers. This could include targets for financial inclusion. It could also include implementing policies through collaboration with public organisations, the private sector and civil society.

Including women smallholders

Financial inclusion is meant to ensure all people have equal opportunity to access and use

affordable financial services. These services include savings, credits, insurance, payments, transfers and remittances.

It's been shown to have very positive effects on the lives of poor people. In addition, financial inclusion and achieving gender equality has been shown to have a positive influence on sustainable development.

Yet, the plight of women smallholders is often ignored by policy makers, financial institutions and those working in the agricultural sector.

Our study found that a significant financial inclusion gender gap exists in Nigeria's smallholder agriculture. The largest gender gaps were in formal account ownership and savings. In other words, fewer women farmers had accounts and saved with bank financial institutions, non-bank or mobile money service providers.

Also, fewer women smallholders owned mobile phones compared to men. As mobile banking is growing in Nigeria, not having a mobile phone means that women are excluded.



consequences. For example, the financial inability to adopt modern technologies – or access information – increases vulnerability on a number of fronts. This includes climate change, food insecurity and malnutrition, all while the population is increasing.

In turn, this degenerates into a vicious cycle of income inequality, poverty and poor socioeconomic development. This affects not only the women smallholder farmers, but their children, households, communities and the Nigerian economy.

Recommendations

No single approach can tackle the interrelated causes and effects.

But our study identified the need for Nigeria's strategy to integrate gender-specific goals for financial inclusion in smallholder agriculture. It is also important to establish partnerships between different stakeholders. These would include government, private and non-governmental organisations that have a common interest in women smallholders' access to finance.

Such partnerships should implement and finance clear-cut strategies in bridging financial inclusion gender gaps in smallholder agriculture in Nigeria.

Approaches should include developing agricultural finance innovations that reflect the realities of women. They need to be affordable, based on the financial needs of farmers. For example, financial institutions should come up with and accept options – apart from land – that can be used as collateral for women smallholder farmers.

Similarly, successful models like the Nigerian Incentive-Based Risk-Sharing System for Agricultural Lending should integrate and empower women smallholders in their agricultural value chain financing models.

Finally, it is important that Nigeria's financial literacy agenda extend to smallholders and rural areas. And there should be systemic efforts at all level of society to ensure that women have direct access to finance and control.

Other factors contributing to women's financial exclusion include: poverty, low levels of literacy, limited education and limited assets. In addition, because of cultural and patrilineal traditions women typically don't own land. They also have limited decision making powers when it comes to money.

Other restrictions include the fact that most women are constrained from participation in the marketing of high value crops. And then there's institutional discrimination. An example is when financial institutions require a male signatory to grant a formal loan to a female farmer.

Need for financial inclusion

Nigeria tabled a revised national financial inclusion strategy in 2018. It identified the need to address gender gaps in financial inclusion. But no key performance indicator was set for women in smallholder agriculture.

Our study suggests this is a major omission. Failure to address the causes of women's financial exclusion in Nigeria's smallholder agriculture could result in a network of negative





COVID-19 effects on farming addressed





The World Health Organization now considers the novel coronavirus – COVID-19 – a pandemic. The rapidly evolving situation is raising questions throughout the United States. There are growing concerns about the virus and our reaction to it causing a significant downturn in the general economy.

But what about agriculture? There are six specific things of which farmers, farming families, agricultural employers and employees need to be aware. They also should plan for them.

1. Markets and farm prices. As we see growing levels of concern, closures and other protective practices, consumers will be making difficult choices about food as well as about eating away from home and overall spending.

Dairy is prominently featured in out-of-home eating and there may be disruptions in food-service sales. This will likely impact markets and prices.

There also have been bottlenecks at ports in other countries. Ships wait to be offloaded with U.S. dairy and other farm products. The Chicago Mercantile Exchange has postponed floor trading of all products until “further notice.” But electronic trading will continue.

Concerns about the effect of the virus on the general economy are likely to have an even larger impact on dairy prices. Many countries in the European Union already were hovering near a recession prior to the viral outbreak. China also was experiencing slower economic growth. The United States has enjoyed economic strength, but leading indicators prior to the pandemic suggested the country was past the peak of the business cycle and that an economic slowdown or perhaps a recession was coming. A world-wide recession like the one experienced in 2008 and 2009 would delay the previously expected milk-price recovery for at least another year.

2. Supply chains slowdowns and shortages. As logistics are disrupted and efforts are made to slow spread of the virus, multiple

industry sectors are being affected. “Panic buying” is creating additional concern. The American Veterinary Medical Association suggests that some animal-pharmaceutical products could be in short supply from at least some of the larger drug manufacturers.

If the virus spreads more broadly we could see issues with farm-product delivery and pickup as workers – milk-truck drivers for example – stay home due to illness or because they’re caring for family members.

The same concerns would affect dairy processors. Slowdowns also could impact fertilizer, fuel and other input movement and availability in the spring. In an extreme case we could see concerns with utilities based on input availability or labor shortages. But utility companies generally do a good job of contingency planning, which helps buffer the impact of unforeseen events.

3. Farmer health. Farmers are a relatively older population compared to the general worker population. The average farm operator is 58 years old – at least 10 years older than workers in most other sectors. Twenty-six percent of farm operators are age 65 years and older. About 12 percent of principal farm operators are age 75 and older, according to the 2017 Census of Agriculture.

Data from other countries that have done more extensive testing suggest that COVID-19 has a much greater level of severity for people in their 60s and older. Recommendations from the Centers for Disease Control and Prevention and state and local public-health experts are critical for the farming population.

4. The farm workforce. Even if the infection rate stays in single digits it’s very likely workers will need to be away from work. That’s especially the case given school closures and-or workers needing to stay home to care for sick or elderly family members. Fear of the virus and lack of in-

formation also may lead to greater levels of absenteeism.

5. Worker safety and personal-protective equipment. There are shortages of personal-protective equipment and other equipment vital for safely operating a farm and keeping workers and animals healthy. N95 respirator supplies are limited and may be needed this spring for handling dusty grain as a result of sub-optimal harvest conditions in 2019. There also are concerns about availability of protective gloves, which have become commonplace in dairy operations.
6. Other disruptions. Sparse population and less frequent travel may provide natural social distancing for rural communities. But schools and churches are being closed and told to halt normal routines and events. Classes and services are being taught online. This may be difficult for some rural residents because high-speed internet service isn’t available in some areas of the state. That includes some communities with a strong agricultural base.

Only time will reveal the severity of the impacts on agriculture from COVID-19. We urge everyone to take reasonable precautions to limit the spread of the disease and its influence on your businesses and lives. Hoarding of farm supplies could cause even greater problems for the sector. But prudent purchases of necessary inputs might minimize disruptions to one’s farm business. Please keep informed, listen to the experts, and follow the recommendations of federal, state and local agencies and authorities.

John Shutske is a professor and Extension specialist in the department of biological systems engineering at the University of Wisconsin-Madison. He also is the director of the UW-Center for Agricultural Safety and Health. Mark Stephenson is the director of dairy-policy analysis and an Extension specialist in the department of agricultural and applied economics at UW-Madison. He also is the director of the UW Center for Dairy Profitability.





A FARMER'S GUIDE TO CORONAVIRUS MEASURES

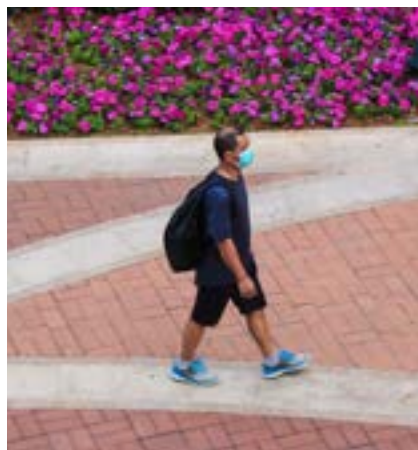
The minister of agriculture, Thoko Didiza, called an urgent meeting on 16 March to deliberate regarding the measures that the agricultural industry should take, following the announcement about the country's coronavirus strategy. The meeting was attended by industry role-players such as representatives of organised agriculture bodies.

In a press release the TAU SA stated that they attended the meeting and that all industry role-players gave input on which steps to take. A task team was subsequently established consisting of the Department of Agriculture and representatives of organised agriculture. TAU SA is represented on the task team and said that the team would convene on 19 March, after which all decisions taken will be communicated with the industry.

There is also a process underway by the National Economic Development and Labour Council (NEDLAC) to establish a more comprehensive response to the COVID-19 outbreak. This is according to a press release by Agri SA. Meanwhile, farmers are advised to adhere to the protocols announced by President Cyril Ramaphosa.

Coronavirus guidelines for farmers

Organised agriculture bodies such as Agri SA, TAU SA and Free State Agriculture (FSA) all released statements that encouraged farmers to



adhere to the banning of all gatherings of more than 100 people. Organised agriculture and other industry role-players have all cancelled or postponed unnecessary gatherings.

Farmers should also study the guidelines set out by Agri SA in accordance with guidelines published by the World Health Organisation (WHO) and make it available to their employees. The guide is available in several languages. Adhering to the guidelines will ensure a safe and healthy work environment for all involved.

In a press release by FSA, the organisation em-



phasised that farmers should know the symptoms of Covid-19 and be vigilant with regard to symptoms among employees. The most prevalent disease signs include fever, a dry cough and difficulty breathing. They also advised to be especially vigilant if the person showing symptoms recently travelled to an affected area, especially internationally.

If any person is suspected of having the coronavirus, they are advised to call the National Covid-19 emergency number on

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'Bringing The Right Balance Between Great Genetics And Commercial Success'

becomes more data driven. Using the sales data, which is becoming more specific to genus and colour, and could go to variety specific (not there yet) would give us the answer of what product the consumer is buying exactly. This would give us the chance to increase the market size, and produce more tailored to the consumer wishes.

What will you bring to Syngenta Flowers?

I am very excited to be back. The organisation is changing fast and so is the world around us. With the new leadership, Syngenta Flowers is on its way to become a market leader. I will use my knowledge and experience in my daily work together with my colleagues to make our portfolio to one of the most competitive in Europe.

What is your favourite flower?

I would say Thunbergia, in the past I grew quite a few when I had my own nursery. After spending 10 years at Beekenkamp, I became quite fond of Begonia's, the garden vegetative types. Viola's I still like, as for me they are the first sign of spring, and my dad and uncle's used to grow quite a few of them.

Martijn Kuiper new Head of Product Management Syngenta Flowers Europe

Syngenta Flowers announces the appointment of Martijn Kuiper (MBA) as new Head of Product Management EAME. The company has been focusing on growth and innovation in recent years and Kuiper is determined to drive that focus, bringing the right balance between bringing great genetics to the market with a commercial perspective.

Enkhuizen (NL), February 26, 2020 – Today, Syngenta Flowers announces the appointment of Martijn Kuiper (MBA) as new Head of Product Management Europe. The company has been focusing on growth and innovation in recent years and Kuiper is determined to drive that focus, bringing the right balance between bringing great genetics to the market with a commercial perspective.

Martijn Kuiper brings a wealth of experience and knowledge to the team. In the past 20 years he has spent time all around the world in the floricultural industry, this has given him a broad experience how the industry functions. The last decade he was Sales Manager North America, South America, Asia and Pacific with Beekenkamp. He started his career in in the Kuiper family owned pot plants business and already worked with Syngenta Flowers as Senior Trial Officer for biennials and perennials before joining Beekenkamp. Martijn recently completed his MBA that gave him a very broad view of the business, market developments, enabling him to play in broader discussions on a high level.

Martijn Kuiper replaces Sandra Verlaet as Head of Product Management, who held this position on an ad interim basis since November 2019. Sandra Verlaet can now fully focus on her role as Head of Marketing. Verlaet: "We have a good product portfolio and are strong in a number of products. Connecting this to the market with the right balanced commercial perspective is crucial. Kuiper brings that knowledge and experience to the team. The future has never been so colorful, we are facing a blooming and bright future."

We asked three questions to Martijn:

What can we learn from floriculture in North America?

The North American market is more retail driven. 70% of ornamentals is sold through the Big Box retailers. They have a large saying in the selection of the genetics. Home Depot is (Nr1 in sales of ornamentals in the US) is pay by scan, meaning only the product which is sold and scanned by the registrar will be paid to the grower. In this way the grower becomes a full scale service provider to the retailer, maintaining inventory, caring for the plants etc. To improve their sales, the demand planning

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BOOSTING NIGERIA'S FERTILISER SUPPLY TO 200,000 FARMERS

The Africa Fertiliser Financing Mechanism (AFFM) has launched a \$2.2m project to provide fertiliser suppliers in Nigeria with financial support to improve supply for 200,000 smallholder farmers. The trade-credit guarantee project is AFFM's first in the West African nation and will involve 10 fertiliser suppliers, 12 hub agro-dealers and 120 retail agro-dealers. The project will also train farmers in proper fertiliser use and other agricultural best practices.

The trade-credit guarantee project is AFFM's first in the West African nation and will involve 10 fertiliser suppliers, 12 hub agro-dealers and 120 retail agro-dealers.

A project launch held earlier this month in the capital Abuja, was attended by senior director of African Development Bank's Nigeria Regional Office, Ebrima Faal and government and industry partners. Participants discussed the proj-

ect and its implementation with AFFM's local partner, the Africa Fertiliser and Agribusiness Partnership, or AFAP.

"We will leverage on existing networks and look for creative solutions to increase the availability of fertiliser in the country," said Nana-Aisha Mohammed, AFAP's representative at the ceremony.

Improving smallholder productivity

Umar Musa, Assistant Director of FMARD's Farm Inputs Support Services Department who represented the Nigerian Federal Ministry of Agriculture and Rural Development (FMARD) said AFAP should work with the Nigerian government and other actors in the fertiliser value chain to ensure that the project complies with Nigeria's policies and sector strategies.

"We expect this project to support smallholder farmers and improve their productivity in order

to help the country increase its local production and consumption of fertiliser," he said.

"We are confident that the project will increase access to quality and affordable fertiliser by smallholder farmers and hence contribute to the transformation of the agriculture sector in Nigeria," said Marie Claire Kalihangabo, AFFM coordinator.

Kalihangabo expressed her gratitude to the Government of Nigeria for their financial support to the Africa Fertiliser Financing Mechanism.

The Bank's Nigeria Regional Office Faal said the National Fertiliser Quality Control Act 2019 further serves to reinforce the government's commitment to the sector.

"This programme is timely because the government has placed measures to encourage local production of fertiliser," he said.



WHY WE MUST RETHINK THE POTATO FOR A SUSTAINABLE USE OF RESOURCES

We must change how we handle our resources. A rapidly growing population, increased demand for produce and the threat of climate change bring with them risks to the food supply chain, and new approaches must be looked at to enable a sustainable future.

Perhaps often overlooked within the food crisis though is the potato, which has long been a popular staple of westernized diets and is now rising to prominence within new, emerging markets. Burgeoning demand is good for producers and processors, but is this increase from consumers feasible and stable with the current global state?

A growing demand

A huge part of society's diet for the last 400 years, the popularity of potato shows no sign of slowing down. According to the latest figures, it's estimated that 388,191,000 tonnes of potatoes are produced annually, with China and India combined accounting for a third of all harvested potatoes. The total value of the products is close to \$100bn.

However, this current trend shows how the potato market has changed over recent years. In the early 1990s, the majority of potatoes were grown and consumed across European and North American markets. Since then however, there has been a huge rise in production within markets such as South America, Africa and Asia.

Emerging markets are repositioning the potato as an alternative to rice and wheat, thanks to its nutritional value and being more sustainable to grow – China, in particular, is doing this to help feed the world's largest population due to the pressures of growing less water-intensive crops.

Studies suggest that growing potatoes requires 30 per cent less water than rice, and also returns a higher yield per hectare.

The range of uses for potatoes has also instigated its rise in popularity – especially processed potato products. The likes of frozen French fries and potato chips are increasingly becoming consumed more, with 15-20 per cent of the total crop harvested in China alone being used for processed potato goods; a figure which is increasing year-on-year.

An ever-increasing population, partnered with diets of developing markets changing, has also fueled the rise in demand for potatoes over the last decade.

Problematic production impacting yields

Although the increase in demand is a positive sign for the industry, it can also create challenges in terms of ensuring there is an availability of harvests.

Climate change is a huge global concern, touching all industries and sectors, and comes as a massive threat to the quality and overall yield of potatoes. The unpredictability of weather conditions can impact how, where and when crops can be grown, due to the changes in which are caused to the land and climate. In a time when optimized yields are integral to meeting demand, we need to be more reactive in the field to find new ways to manage production in a destabilized environment.

A recent example of where climate change impacted potato yields was during the summer of 2018, when large droughts hit Europe. Potato production in the Netherlands, Belgium, France and the United Kingdom dropped due to the

unusually extreme heat and lack of rain, with the harvest dropping by around 30 per cent on average.

However, in contrast, other markets have seen such bumper harvests in recent times that they haven't been able to handle the sheer amount of produce. In 2017, India's largest potato production region saw such a harvest that producers and farmers couldn't handle the crop, leaving large amounts wasted due to limited infrastructure.

In both instances, there has to be a change in





the behavior of the supply chain to deal with potential circumstances and optimize yields as much as possible. Dynamic technology-based solutions must be implemented to ensure any harvest is grown as sustainably as possible to meet both the growing demand for potatoes from an ever-increasing population.

Meeting the customer requirements

Consumers are the biggest drivers of change within all sectors and industries – and the potato industry is no exception. There will always be a want for high quality produce, but a change in consumer trends, behavior and preferences is helping the industry's supply chain to re-evaluate its production process – it must become more flexible and agile to meet the characteristics desired by the customer.

Take the potato chip as an example. Brands have stringent requirements on the potatoes they will use, based on knowing what the customer wants. For potato chips, they must be round or oval, be no more than 75mm in length, and have less than a quarter dry matter to make the potato chip look more appealing to the customer.

French fry brands have requirements too. To ensure there is no darkened end once fried, which can be undesirable to the consumer, there must be a reduced sugar content of 0.25 percent.

The answer to meeting these requirements is through technology. By adopting innovative

potato sorting machines utilizing optical technology, areas such as toxins, defects and the overall size of the produce can be detected early in the supply chain and allow the customer to get the type of potato desired. This, in turn, helps reduce the pressure on producers, as they can both optimize yields and deliver high quality through harnessing the power of sorting systems.

Combating waste through efficient grading and repurposing Within potato production, sustainability is key. To protect resources, we must ensure that yields are optimized, and waste is reduced as much as possible.

Customer demands, expectations and requirements mean potato sorting and grading machines become an integral part of the supply chain and help allow for any potential defect-ed produce to be repurposed. Especially with processed potato goods, where the market is seeing new products being released, finding alternative uses for a potato which doesn't make the grade for one use can be done efficiently. Grading technologies such as Near Infrared (NIR) can help supply chain select specific potatoes for certain uses at any stage based on the suitability.

In a working example, a potato may be graded by the sorting machine and be deemed unsuitable for using as a French fry due to a defect. This doesn't mean it has to be totally removed from the supply chain, but an alternative pur-

pose can be found.

Once the defect has been removed, the potato can be 'scaled down' from its use as a French fry to, if quality allows, a hash brown or novelty children's potato product. Any potatoes which were once graded as waste can now be used to support a producer's 'bottom line', which not only cuts back on food loss, but also improves sustainability of the supply chain.

At TOMRA, our innovative potato sorting machines are designed with making the most out of a harvest in mind and guarantee the removal of discoloration, defects, bruises and rot. Our sorting solutions can sort by defects, biological characteristics, shape and size, structure, color, density and foreign materials, to help producers increase yields and quality of produce for customers.

A new era in sustainable potato production

The planet is facing challenges. The ever-growing population and climate change will pose questions on how we grow, produce and process resources – and the potato industry is no exception to this.

With a global increase in demand, potato production must adapt to maximize its value, optimize yields and increase the quality of produce through the use of technology solutions.

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A NEW MOROCCAN FLOUR MILL INSTALLATION BY ALAPALA



Alapala recently completed the installation of the newest flour mill reference in Morocco in January 2020, as also its third turn-key flour mill project in Morocco. Flour Mills is a family-owned company and in a long time business partnership with Alapala. They are today active with a to-

standards.

The mill has equipped with the latest Alapala technology consisting of Similago II roller mills (DAVG), Quadro Plansifters with larger sieve boxes (GPAK) and control sifters (RKEM). An op-

tical of 900-ton wheat processing capacity in two locations, as the new mill is located near one of their existing plant in the El Jadia region.

The plant has a 300 TPD capacity processing local semi-hard wheat and produces three different types of bakery flour for mainly domestic consumption. The mill is installed in a completely new 6 floors concrete building, which is also designed and constructed in conformity with high sanitation

tical sorter is also used in the plant for very fine cleaning of wheat before milling, to ensure the highest level of food safety is achieved.

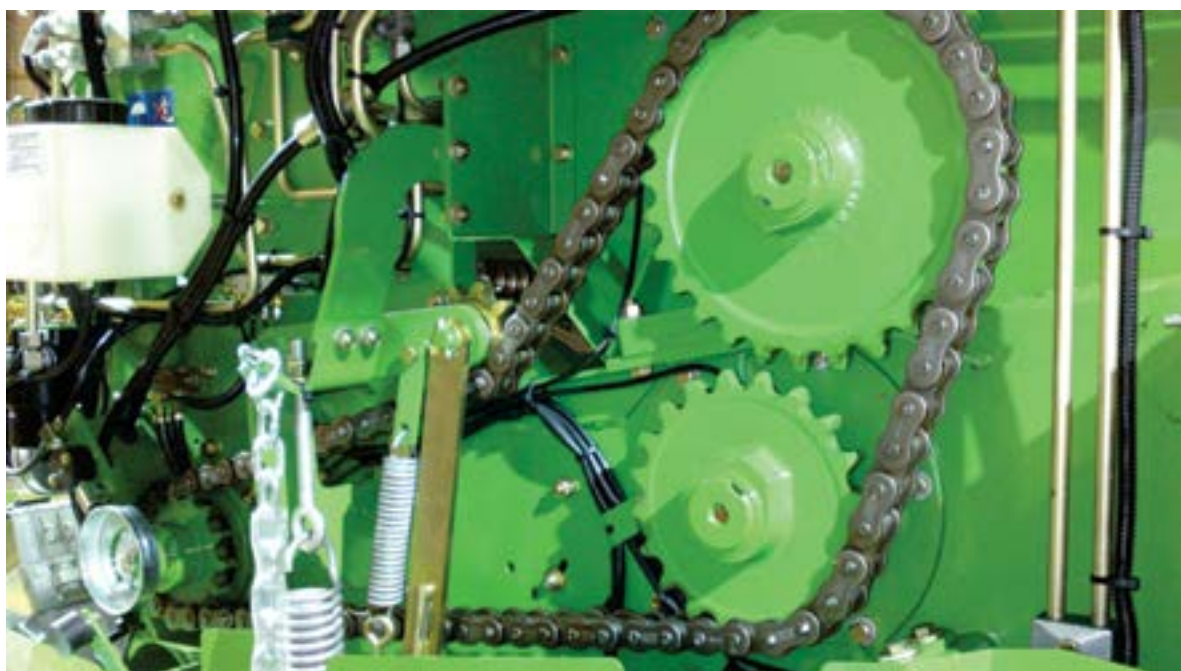
The plant operates efficiently with an advanced automation system, that allows the centralized monitoring and management of the complete cleaning, milling and packaging processes. The system enables generating detailed production reports, with also real-time error diagnosis and long-distance connection functions.

Alapala is one of the leading suppliers for milling machinery and turn-key flour mill installations in 100 countries with over 650 references worldwide. Founded in 1954, the company has been taking big strides to fulfil its vision and today between one of the top 1.000 exporters in Turkey by exporting 95 percent of its production.

Alapala is very active in the Africa market with its local existence via branches, country offices, and a wide representative network; as well as numerous flour, semolina and maize mill references throughout the region ie. Senegal, Zambia, Angola, Kenya, Tanzania, Mozambique and Ghana.



BMG-TSUBAKI RS100HT CHAIN AGRICULTURAL MACHINERY



The Tsubaki HT series chain provides a significantly higher tensile strength than the ANSI G8 series chain, by applying through-hardened pins and link plates of the next larger pitch size in the ANSI G8 series. Compared to the previous series, the wear-life of the HT Series is doubled by using solid bushes instead of curled bushes. The HT series chain also provides a higher fatigue strength and is best suited for low operating speeds (up to 50 m/min). Dimensions of the chain are identical to the H

Lindy Morton

BMG's service to the agriculture sector focuses on the importance of the investment in quality equipment and components for high efficiencies and optimum productivity across all farming disciplines.

"The highly-experienced BMG team offers farming sustainability solutions that focus on the correct use of suitable equipment for the specific task and the efficient application of advanced technologies," explains Gavin Kirstein, National Tsubaki Product Specialist, BMG. "Through the Boer Slim/Smart Farming concept, BMG's agricultural experts work closely with farmers, to help them cope with constantly changing trends in agricultural machinery.

"BMG's extensive range of engineering components, which conform to all relevant quality assurance and specification certifications, is carefully selected for local farmers, to ensure optimum performance – even in tough operating conditions.

"A recent success in agricultural engineering for one of our key Japanese suppliers – Tsubaki – was solving the chain breakage problems on harvesters, as a result of excessive shock-loads in the field.

"During the harvesting season, it is essential that round balers operate efficiently to ensure maximum yield for the farmer. Shock loads

during baling weaken an inferior chain, which can lead to unacceptable stoppages for farmers who are working to tight deadlines. The pressing process also exposes chain to extreme forces, which conventional chain cannot withstand for an entire season. Farmers have been unhappy with the loss of productivity during the downtime of their balers and they resent chain replacement costs.

"Tsubaki's solution was to develop a heavy-duty reinforced roller chain to meet the high-volume capacity of agricultural machinery in tough operating conditions, with no risk of breakage during operation. The robust Tsubaki RS100HT chain for balers has a 25% higher maximum tensile strength, improved anti-shock performance and greater fatigue strength, when compared to chain manufactured by other companies.

"Almost 70% of global OEM baler manufacturers now choose the Tsubaki heavy-duty chain series as standard for installation in the main drive system. Feedback from farmers indicates that they are satisfied with higher productivity, reduced maintenance requirements and reliability throughout the season, with no loss of production from downtime.

"A further benefit, is that heavy-duty Tsubaki chain can also prepare perfect bales, as these chains are suited to the high pre-tension settings required to allow easy storage and shaping of hay."

Series chain.

BMG's wide range of high-quality replacement agricultural components is engineered to improve productivity in the farming sector, to operate efficiently for extended periods, with minimal maintenance requirements and to reduce costs in the long term.

New to the company's range are slogging hammers and wheel sloggers, used to loosen and tighten bolts and nuts quickly and easily; BTC gearboxes, designed specifically for packhouses and Motoline solar inverters for photovoltaic (PV) water pumps. Dual direction multi-purpose gearboxes, PTO clutches and components and heavy-duty coupler bearings have also been launched recently.

The company provides solutions to all key players in the agricultural sector, including local manufacturers of equipment and implements, as well as agricultural re-sellers and the farmer.

Suggested captions

BMG supplies Tsubaki RS100HT heavy-duty reinforced roller chain to meet the high-volume capacity of agricultural machinery in tough operating conditions, with no risk of breakage during operation. The robust Tsubaki RS100HT chain for balers has a 25% higher maximum tensile strength, improved anti-shock performance and greater fatigue strength, than chain manufactured by other companies.



Case Ih Appoints Techno Plant As Distributor For Jordanian Tractor Market

Case IH has signed Techno Plant to distribute its tractors in Jordan, with the new partner firm already having taken delivery of a fleet of six units, spanning three different models, for demonstration to farmers across the country – and more are on the way.

While Jordan has a relatively small market for new tractor sales, it is one which Case IH – a brand of CNH Industrial with a more than 175-year history and a wide range of models – has committed to with its new partner. Together with Techno Plant, it plans to focus on the popular 55-110hp sector in particular, but also has

larger models for which market development is planned.

Techno Plant, which is based in Amman, employs ten staff and was founded in 2002. The business has already placed its first stock order for Case IH tractors, comprising a 45hp JX45T, two 55hp JX55T models and three 110hp Farmall JX 110 units, and the machines are available for demonstration to interested farmers and agricultural businesses across the country. In the near future, Case IH and Techno Plant plan to expand the product offering for Jordan's farm businesses. A particular focus will be larger tractors of up to 225hp and both small and

big square balers, for use in large-scale farming projects in the south of the country.

With a distinctive red-and-black livery, Case IH is well-known across much of the world for its range of tractors, harvesters and other farm equipment. The brand traces its heritage back as far as the foundation of the original IJ Case business in 1842. Case and the agricultural equipment arm of International Harvester came together in 1985 to create the Case IH brand. Since 1999, Case IH has been part of CNH Global, which later became CNH Industrial.





Arc Launches New Maize Information Guide For Farmers



cation which comprises a current collection of scientifically proven data on maize production, insect identification and disease management; weed and nematodes control.

ARC created the app with the goal of integrating agriculture and information technology that will assist commercial and smallholder farmers to increase their yields per hectare and contribute to food security.

Maize is one of the top staple foods in South Africa and globally. Due to its affordability, it contributes significantly to food security and nutrition. Because of this, ARC continues to be committed to providing farmers and industry with technological solutions aimed at enhancing good quality food production. "Every innovation that we make is aimed at more convenient, accessibility and enablement of new possibilities," said Dr Shadrack Moeephuli CEO.

The Maize Information Guide can be downloaded free of charge from Google Play Store.

The Agricultural Research Council (ARC) is launching the first-ever South Africa Maize Information Guide for maize producers and smallholder farmers across

the Southern African Development Community (SADC) region.

The maize information guide is a mobile appli-



As pressure mounts globally to produce more food with fewer resources, agriculture is gaining strategic importance. At the same time challenges are mounting. From climate change, political and economic uncertainty, ongoing cost and price pressures, lack of access to capital or inadequate financial support, adverse legislation, to artificial tariffs and trade exclusions, or poor infrastructure bedevil the industry globally and especially in Africa. In this challenged and confusing landscape, technology presents a unique opportunity for farmers and the entire agricultural value chain to run more sustainable businesses – reducing costs and increasing yields by enabling smarter, more precise, and faster, decisions. Ever-greater volumes of data available to ever-more players across the agricultural value chain is generating untold new opportunity for agriculture in the Fourth Industrial Revolution.

S.M.A.R.T. Campaign for smallholder farmers

John Deere is committed to driving Africa's green revolution by bringing more land into sustainable, scientifically managed and mechanised production. This is increasing yields, expanding agricultural ecosystems and growing export volumes and agricultural earnings across the continent. John Deere equipment and solutions are designed for all farmers, irrespective of size of holding or scale of production. Our S.M.A.R.T. campaign, for example, focusses on providing emerging farmers – who can't afford their own tractors – access to mechanisation. This directly supports our goal of bringing more of Africa's land into commercial food production while increasing yields through the appli-

cation of appropriate technology.

To this end, training and education play a critical role in our S.M.A.R.T. strategy – along with collaboration and the sharing of insights amongst farmers, communities, industries, and governments. For bigger operations using larger and more sophisticated equipment, John Deere has an open platform called More Tools where farmers share – and acquire – data from a personally selected segment of providers and off-takers. The data universe that each farmer assembles on More Tools enables much faster, better-informed and much more accurate decision making. More Tools is dramatically increasing the efficiency, reducing the waste and damage, increasing the yield and significantly improving the incomes of farmers across the world.

John Deere manages a professional and independent dealer network to market, sell and support John Deere equipment in the field. As a global technology company, John Deere is intensely focussed on providing competitive agricultural solutions to its full range of customers farming in almost every ecosystem and market on the planet.

AAT 2020

We believe that the 2020 AAT Exhibition and Conference is the first of its kind, the "Agritechnica" of the African continent. ATT is an opportunity to demonstrate that Africa has a key role to play in global food production.

ATT is also an opportunity to show how ad-

vanced agricultural technology and innovation has become, along with what this technology might look like in future. The exhibition and conference is also a great opportunity to learn from one another and build relationships that will unlock Africa's vast agricultural potential, repositioning the continent as tomorrow's global agricultural giant. John Deere is excited to participate in a platform of this stature, sharing our world-leading insights in support of Africa's green revolution.

John Deere was particularly encouraged by the presence of so many companies not traditionally associated with agriculture. This demonstrates the importance of agriculture to ever-wider value chains as well as the role that agricultural technology and data are playing in broader economic development and social stability.

Future of agriculture production in Africa

Africa has the potential to be self-sufficient in food production – of both raw and beneficiated or processed foods. Africa could also be a leading global food and agri-business supplier. Building a world-leading agro-industrial sector in Africa will, however, require significant focus and coordination – across policy, legislation, integration, investment, infrastructure, technology and education. While these are all challenges for Africa, since 60% of Africans currently derive their livelihoods from agriculture, the sector provides the most effective mechanism to create the jobs, income and growth to ensure Africa's development, social stability and long-term prosperity.



Increased Tariffs On Chicken Imports

Necessary To Protect Local Market Says Fairplay Movement

The new poultry tariff, published in the Government Gazette today, has reflected that higher tariffs on predatory chicken imports from Brazil may well reduce importers' profits. Finance deputy minister David Maseko has approved increases to 62% on bone-in chicken portions, and to 42% on boneless portions. The SA poultry industry had applied for an 82% tariff on both categories.

But whether or not they will stem the tide of predatory trade and dumped chicken swamping South African shores, remains to be seen.

According to Francois Baird, founder, FairPlay Movement, this is the first test of the Poultry Industry Master Plan signed at the end of last year. "One of the plan's objectives was to 'contain' imports so that the industry could recover, grow and create jobs. Whether this level of tariffs does so remains to be seen."

To succeed, these new tariffs on chicken imported from Brazil as well as earlier higher duties on chicken imports from the European Union (EU), must prove to be sufficient to halt the surge of

predatory imports and prevent further job losses, mostly in impoverished rural areas.

Damaging impact

"FairPlay hopes this will be the case, but a steady rise in dumped EU imports after the lifting of bird flu bans suggests that further action will be necessary.

Chicken imports doubled between 2010 and 2018, discouraging investment in expansion and job creation. Because protection has been inadequate, most of the increase in demand for chicken in recent years has been gobbled up by predatory imports at the expense of small-scale farmers and their workers.

"The South African chicken industry is in trouble because imports have grabbed nearly 30% of the local market. Real protection for the local industry, and a spur to job creation, would be to limit imports to 10% of local sales. Restrictions in the EU have kept chicken imports in that region to around 7%, so a sharp cutback here would be possible," says Baird.

"It is, therefore, a pity that ITAC and the DTIC did

not grant the full 82% tariff increases that some experts and the SA poultry industry believe is necessary to protect the local market from the damaging impact of Brazilian chicken imports. Concerted action is needed against both Brazil and the EU in order to halt and then reverse the importers' steady and concerted takeover of our local chicken market through predatory trade practices.

"Imagine the local economic impact if the R6bn that was paid last year to foreign producers of imported chicken had instead been spent on local production and local grain, all of which would have generated local tax revenue and, significantly, local jobs in rural areas where they are most needed," adds Baird.

The master plan has lower objectives, but much can be achieved. However, it must be founded on the protection of the local industry against unfair imports. "If these new tariffs prove insufficient to generate a revival of the chicken industry, then a further increase will be necessary. Otherwise, the whole master plan, and all its crucial outcomes, will be in jeopardy," concludes Baird.



Kenya Facing The Worst Desert Locust Outbreak Recorded Since 1950

Kenya is facing the worst desert locust outbreak recorded since 1950. The outbreak has seen swarms of the insects invade the east African nation from Somalia and Ethiopia.

The locust invasion on the already vulnerable land is destroying farmland and threatening the local residents with devastating hunger. Moreover, and according to the United Nations, the onset of the rainy season in March will bring with it growth of new vegetation, which will in turn result in an increase of the fast-breeding locusts to almost 500 times their current numbers.

The only effective way to combat the locust menace, according to the UN, is through use of pesticide spraying. Additionally, approximately US \$70m is needed for this venture. However, this might not be easy, as some countries like Somalia has parts of it under threat from the al-Qaida-linked al-Shabab extremist group.

The severity of the situation cannot be emphasized more than as put by Jens Laerke of the UN humanitarian office in Geneva; a small swarm of the insects can consume enough food for 35,000 people in a single day.



Meanwhile, farmers in the affected areas are vulnerable and afraid to let their cattle out for grazing. Their millet, sorghum and maize crops lie on the destructive paths of the locusts. At the moment, about 70,000 hectares of land in Kenya are already infested.

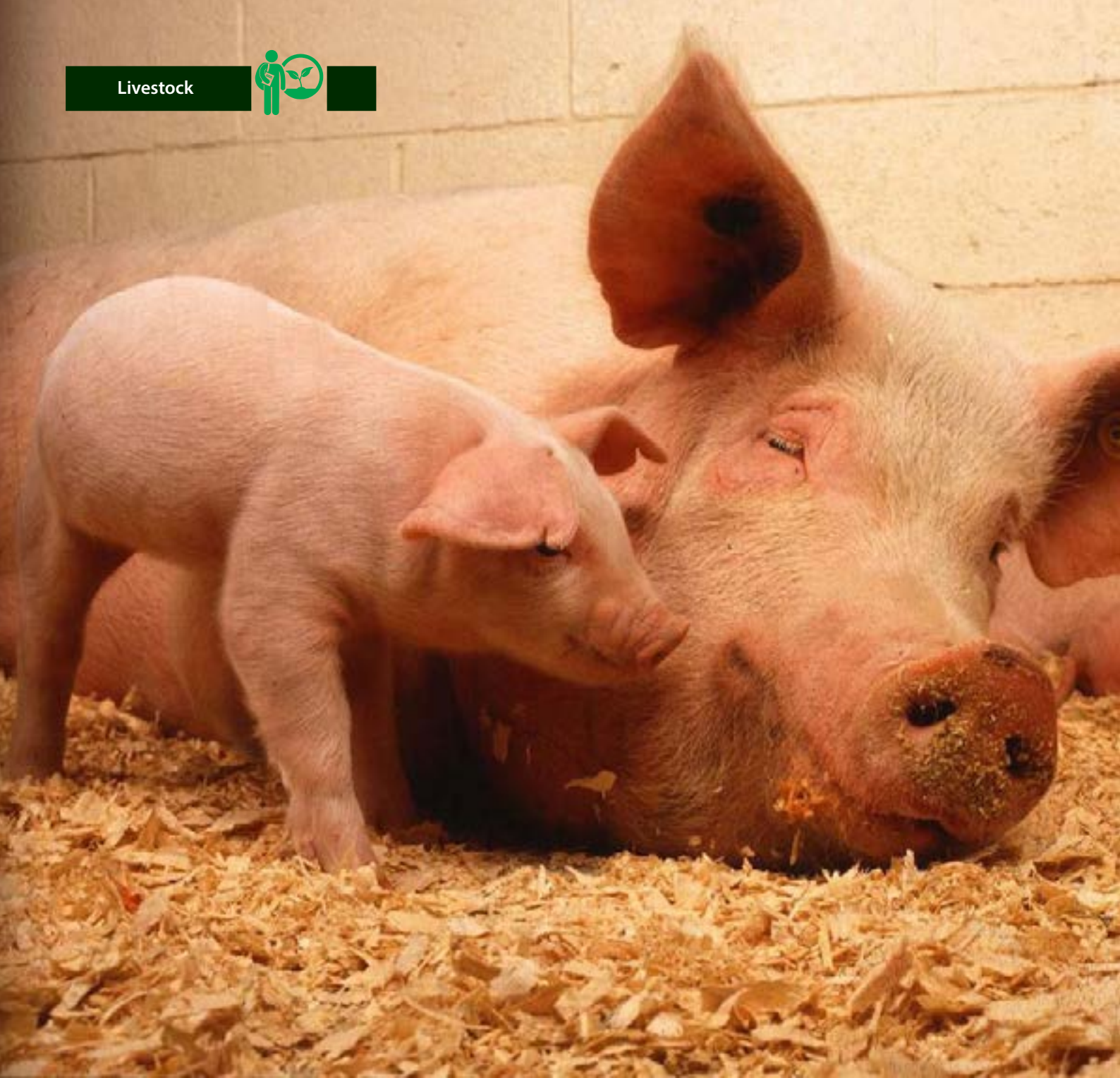
Regional authorities have warned that a single swarm can contain up to 150m locusts per sq km of farmland, an area the size of almost 250

football fields.

Mitigation measures

Kenya and Ethiopia both have four planes with spraying equipment. However, they might need

A changing climate has contributed to "exceptional" breeding conditions, said Nairobi-based climate scientist Abubakr Salih Babiker.



Zimbabwe Boosts Livestock Production With Pig Imports From Sa

Zimbabwe is finalising arrangements to import 230 Large White Landrace and Duroc pigs from South Africa as breeding stock, as part of a US\$45 million (about R630 million) EU-funded project to improve the country's livestock value chain.

Newton Chari, spokesperson of Action Aid, the agency leading the implementation of the pork sector revitalisation project, told journalists at a recent workshop in Bulawayo that Danbreed in South Africa would supply the breeding stock to be distributed to farmers in two provinces in northern Zimbabwe.

"We are expecting the [pigs] in a few weeks in the country. Danbreed will also be providing the necessary after-station services, which is required for the breed."

In June 2019, the EU launched the Zimbabwe Agricultural Growth Programme under which the project is being run.

The initiative, expected to run until 2023, was aimed at helping to identify challenges, as well as develop and implement strategies to address them in an attempt to boost the potential of livestock farming in Zimbabwe.

It specifically focused on the beef, dairy, poultry, pig and goat sub-sectors, Chari said.

In addition to working with farmers, the project would support private sector processors, integrators, research organisations, farmers' unions, and financial service providers.

Chari said the pig sector revival initiative was expected to not only help improve the genetics of the pig industry in that country over the project period, but also grow the national sow herd, while boosting farmers' viability by elevating them from subsistence to commercial production.

New deals for food transport will deliver food security

Securing our food supply has emerged as an imperative in the current global pandemic, prompting our government's announcements of measures to prioritise the supply of food.

But as we reel economically from the current coronavirus measures, other nations, too, are reporting looming food shortages – so serious that Europe has now loosened its import requirements on fresh fruit and vegetables in order to draw more supplies.

For Kenya, as the biggest horticultural exporter in Africa, this move by Europe to open its import door wider represents a rallying call for us all: and it is a call we can rise to.

For most of our agricultural production in recent weeks has been grounded on transport, and we now have a way forward.

Since the world's countries moved progressively into public closure, and passenger flights stopped, our volume of available air cargo has plummeted. We used to have six airlines taking cargo-only flights out of Nairobi, some, such as Cargolux, carrying 120 tonnes of produce on every flight; some, such as Lufthansa and AirFrance, running daily cargo-only flights.

Together, those flights accounted for about 60 per cent of our air cargo, while cargo carried in the bellies of passenger flights accounted for another 40 per cent.

That 40 per cent has stopped, but so too have the majority of cargo flights. Where we had cargo flights coming in and out that could carry 1400 tonnes a week, we now have enough to transport just 360 tonnes.

A big factor in this is South Africa. Most of these flights used to head to South Africa full of cargo from Europe, then stop at Nairobi on the way back to fill up with fresh produce for the return leg. But South Africa is now detaining cargo crew for 21 days as soon as they land, meaning firms can only fly out to Kenya empty. Some, like CargoLux, have just stopped. Others have reduced the number of cargo flights each week.

Our own curfew has also prevented the free movement of goods, meaning that sometimes we have not even been filling the 360 tonnes. Indeed, many of us saw the reaction to one driver carrying foodstuffs through the curfew, yet fresh produce needs to be transported at night or it gets overheated and ends up missing the local sales and markets, or day's flights.

However, last week, behind the scenes, we achieved a solution to this, with the registration of a rank of national food trucks.

In a scheme approved by the Ministry of Trade, the trucks have been given stickers for their vehicles – a Fresh Produce Vehicle Pass with the government coat of arms – to allow them to travel at night. The driver and registration details of every one of these vehicles has been lodged with the security services and circulated so that these

drivers are cleared to move.

These vehicles are now available to move foodstuffs at night both to export and for our local needs. Indeed, it is our vow that no Kenyan farmer shall be left with rotting fruit or vegetables because they can no longer get transport or get their foods to markets, so we have set up a helpline to guarantee food collections and sales. Any farmer can now call our helpline on 0722 408210 and get their crops picked up and paid for.

We have also launched a scheme whereby any one of these fresh produce trucks can go directly to any estate where the estate managers call us, and sell the produce on the spot, so residents in city estates can get their fresh food without leaving for markets.

For, across our nation, we need these crops.

And Europe needs them too. There is false reporting that we cannot sell our vegetables in Europe now. The opposite is true. It is seeking not only our normal supplies, but different and wider goods with lesser quality issues for the interim.

All the crops we have managed to keep transporting have cleared effortlessly at the other end, and Europe is now introducing a Green Lane scheme to further fast track the importing and transport of fresh foods – as its own fresh food supplies collapse, most notably in Spain, which is suddenly without its migrant agricultural labour force from north Africa.

Thus, we are now chasing the final piece in our own jigsaw to move from rotting food to sold food in Kenya and sold food in Europe, by working to get Kenya Airways to resume flights for cargo alone. At the moment, it has stopped every flight, including its cargo-critical services to London and Amsterdam.

As a nation, we need to back our farmers, our food producers, and our food transporters and achieve our own food security



and deliver food security to our buying nations too. It's possible. We have the produce, we have the transport to the local markets and to the airport, we have planes.

Ours is now only to complete the chain we have almost now rebuilt and rise to the call for our rural food to feed our rural population, our urban population, and European populations too. Because we have the capacity.

One machine - countless materials.



Best forage quality through bale silage:
Increase milk & meat yield

- Hemp Silage
- Corn Silage
- ...



Baler-Wrapper Combination

LT-Master & VARIO-Master

- Variable Bale Sizes (Diameter: 0,6 m - 1,4 m)
- Maximum Bale Density
- Many different Materials: Hemp • Corn Silage CCM • Alfalfa • Grass
Sugar Beet Pulp • TMR (Total Mixed Ration) • Whole Crop Silage • And much more

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GOWEIL



African Development Bank approves \$1.5 million

***emergency grant to curb desert locusts
ravaging East and Horn of Africa***



The Board of Directors of the African Development Bank on Wednesday approved a \$1.5 million emergency relief grant to assist nine countries in the East and Horn of Africa on the control of swarms of desert locusts that are threatening livelihoods and food security.

The proposed assistance will be channeled to the Intergovernmental Authority on Development (IGAD), which has been mandated to mobilize resources on behalf of the African Union.

IGAD is collaborating with the UN's Food and Agriculture Organization (FAO) which is leading coordination of development partner support to provide desert locust invasion control, safeguard of livelihoods and to promote early recovery of affected households in the in the East and Horn of Africa. FAO will act as the Executing Agency for the grant.

The funds will be used to control the spread of the current locust invasion, prevent potential next-gen-

eration swarms and to conduct impact assessment and monitoring to enhance preparedness and awareness. A portion of the funds would also be allocated to administrative costs.

The nine beneficiary countries are Djibouti, Eritrea, Ethiopia, Kenya, Somalia, South Sudan, Sudan, Uganda and Tanzania.

Kenya, Ethiopia and Somalia have been particularly hard hit by the outbreak and widespread breeding of locusts that is expected to create new swarms in the coming weeks. The infestation poses an unprecedented risk to livelihoods and food security in an already fragile region and has caused huge damage to agricultural production.

In Ethiopia and Somalia, the outbreak is the worst in 25 years, and in Kenya, in 70 years.

In Ethiopia, the locusts have devastated more than 30,000 hectares of crops, including coffee and tea

that account for about 30% of the nation's exports. Despite government's interventions, swarms and breeding have been reported in large parts of the country. In Djibouti, over 80% of 1,700 agro-pastoral farms located in 23 production zones are affected by desert locust infestations.

At least 18 of 47 Kenyan counties are affected with more than 70,000 hectares of crops under infestation according to recent FAO reports. Locust swarms are devastating pastureland, maize, cowpeas, beans and other crops despite the government's efforts to curb the outbreak.

Locust swarms are reportedly also threatening Uganda, Tanzania, South Sudan, Sudan and Eritrea.

Efforts to control the infestations will require around \$147 million, of which \$75 million has been provided by governments, donors and UN agencies including FAO and the World Food Program (WFP). However, a significant funding shortfall remains.



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With Bonnox, you score between the posts !

Already, many farmers are aware of Bonnox's range of fine products: The "Money Saver", "Close Mesh", "Kombi Fence", "Square Mesh", "Multi Fence" and "Flexi Fence" were all meticulously designed to provide for every possible need. But what sets a manufacturer apart from the rest, is the ability to promptly observe and react to new trends and needs in the market.

The prefabricated fencing market in Africa currently needs a product which is inexpensive, as farmers are currently required to be thrifty with their money. Therefore, Bonnox decided to introduce their "Economy" range.

The only difference between this fencing and their existing "Elite" range, is that it is lightly galvanised instead of fully galvanised. Now a farmer can compare "apples with apples" when comparing Bonnox with competitors' fencing products.

"There are lightly galvanised wire fences on the market, but many of our clients ask for it under the

Bonnox brand name," says Anita Gent, Director of Bonnox.

"We therefore decided to also manufacture an economical version of the nine most popular products in our range of seventy products. This includes the "Money Saver", "Close Efficient fencing that lasts:

BONNOX supplies just what you need –quick as a "Flash Mesh" and "Multi Fence" ranges of 1,2m, 1,8m and 2,4 m. This offers the farmer an inexpensive solution of fencing for his stock, small and large game.

In areas where the effects of the elements are not very harsh on wire fencing, this inexpensive Bonnox will still last for many years, but fully galvanised Bonnox is still recommended for areas where the elements affect fences more severely.

As the "Elite" and "Economy" ranges look exactly the same, the labels on the existing "Elite" range are green while those on the economical range are royal blue. The price of the economical range is only 75% of the price for the existing range, but it is still being manufactured with the same Bonnox meticulousness and care. The wire still being from the same supplier.

Revolutionary methods of better care
for your livestock, poultry, pets...
even children

Porta-pen

A moveable pen
for sheep, pets & poultry

Porta-pens weigh only 27kg / 46kg each and are easily handled by two people.

Porta-pens are supplied in standard height of 1.2 meter (4') and standard length of 30 meter.

Unrolling a Porta-pen takes approximately one minute. Rewinding after use takes no more than two minutes.

After unrolling, the mesh is shaped into a wide circular enclosure with maximum of 10 meter (32'). Ends are joined in 2 seconds with a fencing dropper.

Porta-pens are designed for small livestock, but can be used for cattle, calves, horses, goats and pigs if iron standards are added at approximately 5 - 6 meter intervals to which the pen is loosely attached with binding wire.

Versatility does not end in its various applications as an instant fence for livestock, but can also be used for the following amazing variety of purposes:

With conventional support as fixed kraals for sheep, cattle, horses, pigs, goats etc.

To create corridors for handling livestock at milking sheds, dipping tanks etc.

As swimming-pool enclosures.

As playpens and partitioning for safeguarding small children.

When Porta-pens are no longer required for their original purpose, they can be cut into shorter lengths and then used for the following purposes:

As concrete reinforcements for dam walls, floors etc.

As tree guards

As trellises for climbing plants, sweet peas etc.

As garden fences

As burglar-proofing

As hayracks for cattle or sheep

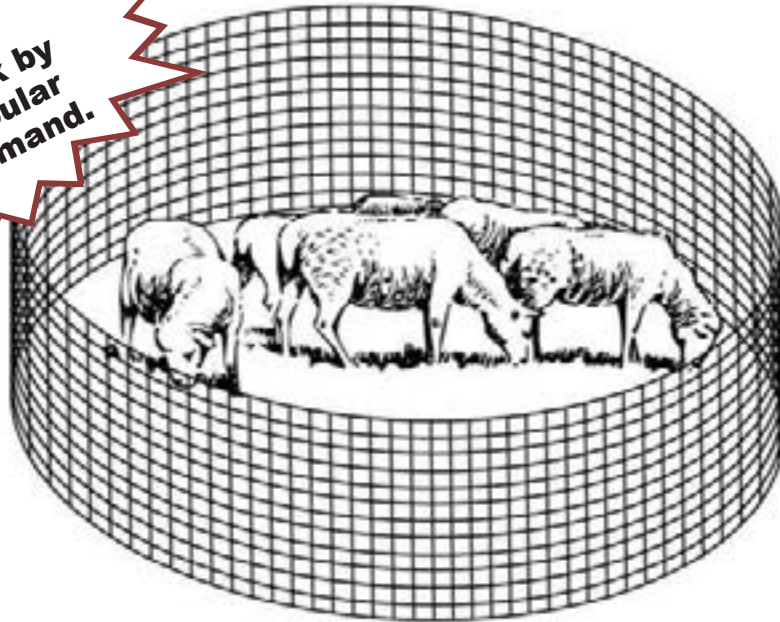
To support plastic sheeting for garden houses or tunnels for the growing of vegetables, flowers etc.

Where two or more units are combined to form a large circle, iron standards must be used. Also if Porta-pens are used for straight line fencing.

Bonnox PORTA PEN™

Versatile and mobile pens for livestock. sheep, goats and pets.
Vertical and Horizontal wire spacing 100mm x 100mm

**Back by
Popular
demand.**



Standard unit

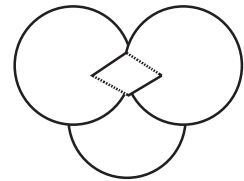
**10 meter
diameter**

With corridor

1.2m
Height



3 Porta-pens



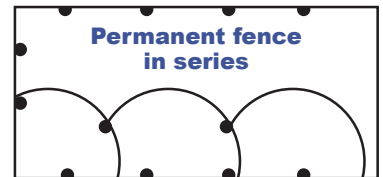
Standard height 1.2m

Standard length 30m

**2.5mm Wire diameter
Weight: 27kg**

**3.15mm Wire diameter
Weight: 45kg**

**Permanent fence
in series**



Back by popular demand ! ! ! ! !



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Zayed Sustainability Prize submissions from Innovators



The Zayed Sustainability Prize is calling on all innovators in Kenya with solutions addressing some of the world's biggest sustainability challenges, to submit an entry for its 2021 edition. Offering an annual winners' reward fund of US\$3 million and accepting online submissions until May 21st 2020, the UAE's pioneering global award for rewarding impact, innovation, and inspiration across five sustainability categories saw a record-breaking number of submissions last year with 2,373 entries received from 129 countries.

Organisations and high schools are invited to submit pioneering sustainability entries before 21 May 2020 deadline

The Prize has been gathering momentum across Africa since its inception – last year boasting a greater number of applicants than any other region worldwide, with Nigeria performing in the top five of all countries globally. At the annual awards show earlier this year, African innovators continued to prove that life-changing innovations are increasingly borne out of the continent. Okuafo Foundation, a Ghana-based start-up won the Prize in the

Food Category. Recognized for its smartphone application that uses A.I., machine learning (ML) and data analytics to predict and detect crop diseases and infestations, Okuafo's app also offers recommended solutions based on scientific knowledge, in real-time.

Now entering its 13th submissions cycle, the Prize has already awarded a total of 86 winners whose solutions or school projects have directly and indirectly, positively transformed the lives of 335 million people, around the world.

Commenting, H.E. Dr. Sultan Ahmed Al Jaber,

The 2021 calls for innovators in Kenya

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UAE Minister of State and Director General of the Zayed Sustainability Prize said: "With a 12-year record of recognizing and rewarding excellent solutions, we are confident that the Prize will continue to attract more of the most dedicated innovators to submit their entries, in support of resolving the world's most pressing sustainability challenges."

He added: "Inspired by Sheikh Zayed's legacy of commitment to global sustainability and humanitarianism, the Prize also aligns with the emphasis our national leadership has given this year to planning, preparing and finding solu-

tions for the next 50 years."

The Prize's US\$3 million annual fund awards US\$600,000 to the winner of each category. The Global High Schools category is split into six world region winners, with each school able to claim up to US\$100,000 to start or augment their project in their local communities. This category was introduced to the Prize in 2012 from the knowledge that empowering and enhancing communities of the future, necessitates that the next generation of sustainability leaders need to be engaged at the school level – today.

While the scope of submissions varies, core elements of each entry must lie in the innovative ways in which technology, applications and solutions are driving positive transformation of people's lives. For the Health, Food, Energy, and Water categories, organizations should demonstrate that they are improving access to essential products or services and have a long-term vision for improved living and working conditions. Additionally, many technological-based solutions often integrate with impactful long-term programmes and mechanisms like practical skills training, social entrepreneurialism, and gender empowerment.

The Zayed Sustainability Prize has a three-stage evaluation process, beginning with due diligence conducted by an independent research and analysis consultancy. This identifies the qualified entries and results in the selection of shortlisted candidates. Afterwards, evaluations are undertaken by a Selection Committee consisting of category-specific panels of independent international experts. From this shortlist of candidates, the finalists are chosen and then sent to the Prize Jury who select the final winners, across all five categories.

The evaluation of the Health, Food, Energy and Water categories focuses on three core criteria: Impact, Innovation, and Inspiration.

For 'Impact', submissions must demonstrate improved quality of human lives in a social, economic, technological, infrastructural, or environmental capacity. For 'Innovation', candidates should show a clear and unique value proposition, be disruptive or transformative, technically and commercially viable, and have been adopted in at least one market. The 'Inspiration' criterion requires organisations to demonstrate shared values with Sheikh Zayed's sustainability approach, have the potential to influence behaviour and actions in the wider community, and encourage others to develop complementary solutions for the advancement of sustainable and human development.

For the Global High Schools category, their projects should be designed to be student-led with emphasis placed on the students being actively involved in the planning, implementation, and monitoring processes. Similar to the other categories, projects should demonstrate innovative approaches that will also be impactful and inspirational to others. The six world regions of the Global High Schools category are: The Americas, Sub-Saharan Africa, Middle East & North Africa, Europe & Central Asia, South Asia, and East Asia & Pacific.

Winners of the Zayed Sustainability Prize 2021 will be announced at the annual awards ceremony held during Abu Dhabi Sustainability Week, in January 2021.

For more information, please visit www.Zayed-SustainabilityPrize.com or visit our social media platforms on: Twitter, Facebook, Instagram, YouTube.



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Plant root hairs key to reducing soil erosion

The tiny hairs found on plant roots play a pivotal role in helping reduce soil erosion, a new study has found. The research, led by the University of Bristol and published in *Communications Biology*, provides compelling evidence that when root hairs interact with the surrounding soil they reduce soil erosion and increase soil cohesion by binding soil particles.

Soil erosion can have a devastating impact across the globe and a serious threat for modern agriculture. The increased demand for agriculture has led to forests and natural grasslands being converted to farm fields and pastures.

However, many of the plants grown, such as coffee, cotton and palm oil, can significantly increase soil erosion beyond the soil's ability to maintain and renovate. It can also lead to increased pollution and sedimentation in streams and rivers or, because these areas are often less able to hold onto water, can worsen flooding. This problem is particularly urgent considering the ever-expanding human population and climate change.

Researchers from the Universities of Bristol and Exeter have revealed the crucial function the microscopic roots hairs play in binding and reinforcing soil.

While the larger-scale root properties such as diameter, length and surface area have been extensively studied to understand their role in preventing soil erosion, the effect that micro-scale properties, such as root hairs, has is less well documented.

The research team looked at how wild plants *Arabidopsis thaliana*, which produced root hairs, compared with an almost identical *Arabidopsis* with the same root hair structure in reducing soil erosion.

They found that, when planted in sufficient density, plants with root hairs reduced soil loss almost completely – while otherwise identical plants without hairs could not stem the flow of erosion.

Three methods were used to explore the soil retention benefits of root hairs. First, the samples were placed in a sterile gel, in a petri dish, and then subjected to increasing centrifugal force. The study found that the hairless seedlings were easier to remove from the gel compared to seedlings abundant with root hairs.

Second, the study found that root hairs were also shown to stabilise the plant in the soil, as they increased the force needed to uproot the plant.

Third, in the experimental landscapes laboratory at Exeter, root hairs reduced water erosion to



almost zero.

Professor Claire Grierson, one of the study's lead authors from Bristol's School of Biological Sciences explained: "These findings could be the key in helping to tackle soil erosion. There are three possible ways root hairs could enhance soil, either the soil might bind directly to root hair surfaces, root hairs might release material that reinforces soil, or root hairs might release material that is processed by microbes into something that can reinforce soil.

"We hope our knowledge about the properties of plants that minimize soil erosion will allow the creation and selection of best-suited agricultural plants."

Professor Quine, an expert in Earth System Science at the University of Exeter, added: "This exciting, truly interdisciplinary project across biology, math's, engineering and environmental science has given us invaluable new insights into the influence of microscopic root structures on the macroscopic behavior of soils.

"I was amazed at the difference that root density

made in reducing soil erosion to almost zero, when root density was high, whereas soil loss was still significant when roots at the same density had no hairs.

"We are excited to explore how the hairs exert this extraordinary influence."

The team are now working to distinguish between these hypotheses and identify the molecules involved.

This research was an interdisciplinary collaboration led by Professor Claire Grierson at Bristol, environmental scientist Professor Tim Quine at the University of Exeter, and Professor Tannie Liverpool and Dr Isaac Chenchiah of the School of Mathematics at Bristol.

The research was supported by a Leverhulme Trust project grant, two BBSRC SWBio PhD studentships and an EPSRC-funded Bristol Centre for Complexity Sciences PhD studentship.

PaperMicro-scale interactions between *Arabidopsis* root hairs and soil particles influence soil erosion by C Grierson et al in *Communications Biology*.



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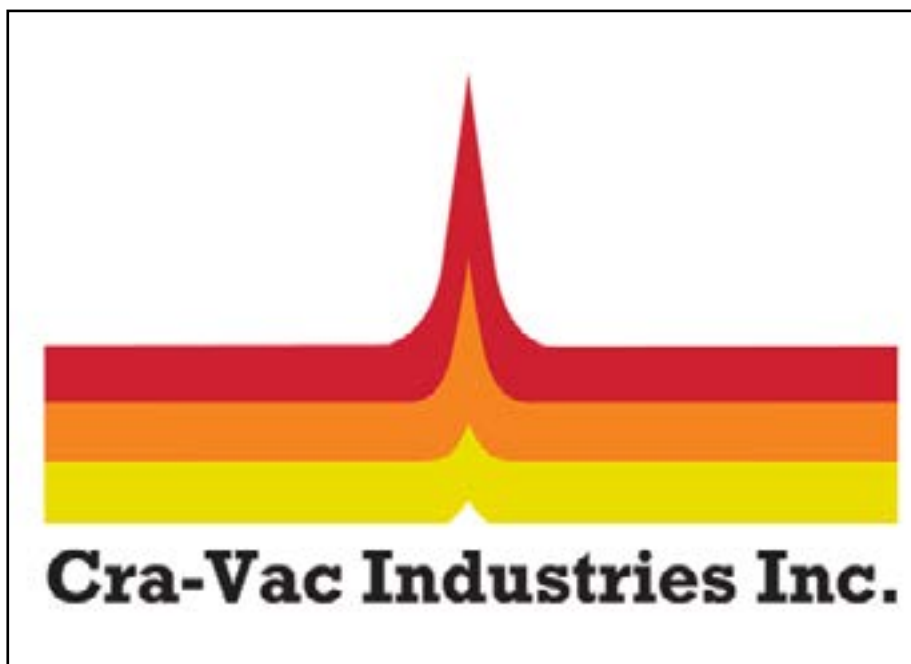
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- Swingtec GmbH

Irrigation & Drainage Systems

- Valmont Irrigation

Irrigation Equipment

- Eurodrip SA
- ICS France
- Valmont Irrigation

Maize Shellers

- Alvan Blanch Development Ltd.
- Bomford
- Nogueira/Pan Trade Services Ltd.

Manure Composters & Dryers

- PICHON

Material Handling

- Bentall Rowlands Storage Systems Ltd.
- PICHON

Material Handling - Bulk

- Bentall Rowlands Storage Systems Ltd.

Medicators

- Big Dutchman International GmbH

Micronutrients

- Omex Agrifluids Ltd.

Milk Replacers

- Coprex

Milling & Mixing

- Alvan Blanch Development Ltd.
- Big Dutchman International GmbH

Mills

- Alvan Blanch Development Ltd.
- Big Dutchman International GmbH
- Privé SA

Mills - Grain

- Bentall Rowlands Storage Systems Ltd.
- F.H. Schule Muehlenbau GmbH
- Nogueira/Pan Trade Services Ltd.
- Privé SA
- Silos Cordoba S.L.

Mills - Hammer

- Awila Anlagenbau GmbH
- Nogueira/Pan Trade Services Ltd.

Monitoring Equipment

- Valmont Irrigation

Oil Extraction Equipment

- Alvan Blanch Development Ltd.

Packaging Machinery

- Fairtrade GmbH & Co. KG

Palletizers

- Big Dutchman International GmbH

Pelleting

- Alvan Blanch Development Ltd.
- Awila Anlagenbau GmbH

Pig Equipment

- Big Dutchman International GmbH
- Lubing Maschinenfabrik
- GmbH & Co. KG
- Symaga SA

Pig Feeding/Drinking Equipment

- Big Dutchman International GmbH
- The GSI Group South Africa (Pty) Ltd.

Pig Flooring

- Big Dutchman International GmbH

Pig Health Products

- OLMIX
- Socorex Isba SA

Pig Housing

- Big Dutchman International GmbH
- Silos Cordoba S.L.

Plant Protection Chemicals

- Omex Agrifluids Ltd.

Planters

- Baldan/Pan Trade Services Ltd.
- John Deere (Pty) Ltd.

- Poettinger

Plastic Flooring, Poultry

- Big Dutchman International GmbH

Ploughs - Disc

- Baldan/Pan Trade Services Ltd.
- Vellag Ltd.

Ploughs - Mouldboard

- John Deere (Pty) Ltd.
- LEMKEN GmbH & Co. KG
- Poettinger

Poultry Consultancy Services

- BioPoint

Poultry Equipment - Drinking

- Big Dutchman International GmbH
- Lubing Maschinenfabrik GmbH & Co. KG
- Silos Cordoba S.L.
- The GSI Group South Africa (Pty) Ltd.

Poultry Equipment/Handling

- Bentall Rowlands Storage Systems Ltd.

Poultry Feeding

- Bentall Rowlands Storage Systems Ltd.
- Big Dutchman International GmbH

Poultry Health Products

- BioPoint
- OLMIX

Poultry Housing

- Big Dutchman International GmbH
- Silos Cordoba S.L.
- Symaga SA

Public Health

- Guarany Ind. Com. Ltd.
- Swingtec GmbH

Pumps

- Briggs & Stratton AG

Rice Parboilers

- F.H. Schule Muehlenbau GmbH SAME
- Rice Processing & Milling Equipment
- Alvan Blanch Development Ltd.
- Bentall Rowlands Storage Systems Ltd.
- F.H. Schule Muehlenbau GmbH

Rice Threshers

- Nogueira/Pan Trade Services Ltd.

Roll-out Nests

- Big Dutchman International GmbH

Seed

- ICS France

Seed Cleaning Equipment

- Alvan Blanch Development Ltd.

Seed Planting Equipment

- Baldan/Pan Trade Services Ltd.
- LEMKEN GmbH & Co. KG

Silos

- Alvan Blanch Development Ltd.
- Awila Anlagenbau GmbH
- Bentall Rowlands Storage Systems Ltd.
- Big Dutchman International GmbH
- Chief Industries UK Ltd.
- KEPLER WEBER
- Privé SA
- Silos Cordoba S.L.
- Symaga SA
- The GSI Group South Africa (Pty) Ltd.

Slurry Disposal

- PICHON

Soluble Fertilisers

- Hebei Monband Water Soluble
- Fertilizer Co. Ltd.
- Omex Agrifluids Ltd.

Spare Parts for Fork Lift Trucks

- Vellag Ltd.

Sprayers

- GOIZPER GROUP
- Guarany Ind. Com. Ltd.
- Jacto/Pan Trade Services Ltd.
- LEMKEN GmbH & Co. KG
- Maschio Gaspardo S.p.A

Sprayers - Crop

- GOIZPER GROUP
- Guarany Ind. Com. Ltd.
- Jacto/Pan Trade Services Ltd.
- Micron Group

Spraying Nozzles & Components

- GOIZPER GROUP
- Guarany Ind. Com. Ltd.
- Jacto/Pan Trade Services Ltd.
- Micron Group

Stored Products Protection

- Swingtec GmbH

Sugar Cane Equipment

- Case IH

Sugar Cubing Machinery

- Valtra Inc. - Africa

Threshing Machines

- Nogueira/Pan Trade Services Ltd.

Tillage

- LEMKEN GmbH & Co. KG
- Maschio Gaspardo S.p.A

Trace Elements

- Hebei Monband Water Soluble
- Fertilizer Co. Ltd.
- OLMIX
- Omex Agrifluids Ltd.

Tractors

- Case IH
- Deutz-Fahr
- John Deere (Pty) Ltd.
- New Holland Agriculture
- SAME
- Valtra Inc. - Africa
- Vellag Ltd.

Tractors - Spare Parts/Attachments

- Case IH
- Deutz-Fahr
- New Holland Agriculture
- SAME
- Vellag Ltd.

Trade Shows

- Fairtrade GmbH & Co. KG

Traders in Agricultural Equipment, General

- Vellag Ltd.

Turnkey Operations

- Bentall Rowlands Storage Systems Ltd.

Turnkey Operations

- Agricultural/Industrial Schemes
- Bentall Rowlands Storage Systems Ltd.
- Valmont Irrigation

ULV Spraying Equipment

- GOIZPER GROUP
- Guarany Ind. Com. Ltd.
- Swingtec GmbH

Vacuum Cleaners

- PICHON

Ventilating Equipment

- Big Dutchman International GmbH

Veterinary Products/Equipment - General

- Socorex Isba SA

Waste Disposal Equipment

- Big Dutchman International GmbH

Weed Control

- GOIZPER GROUP

Weighers - Animal

- Big Dutchman International GmbH
- Griffith Elder & Co. Ltd.

Weighers - Grain

- Griffith Elder & Co. Ltd.

Weighing - Sack Filling

- Alvan Blanch Development Ltd.
- Griffith Elder & Co. Ltd.

Weighing Equipment

- Big Dutchman International GmbH
- Griffith Elder & Co. Ltd.



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