

African Farming

and Food Processing

Europe €14.50 - Ghana C1.3 - Kenya KSH150 - Nigeria N200 - South Africa R18 - UK £9 - USA \$15

Poultry

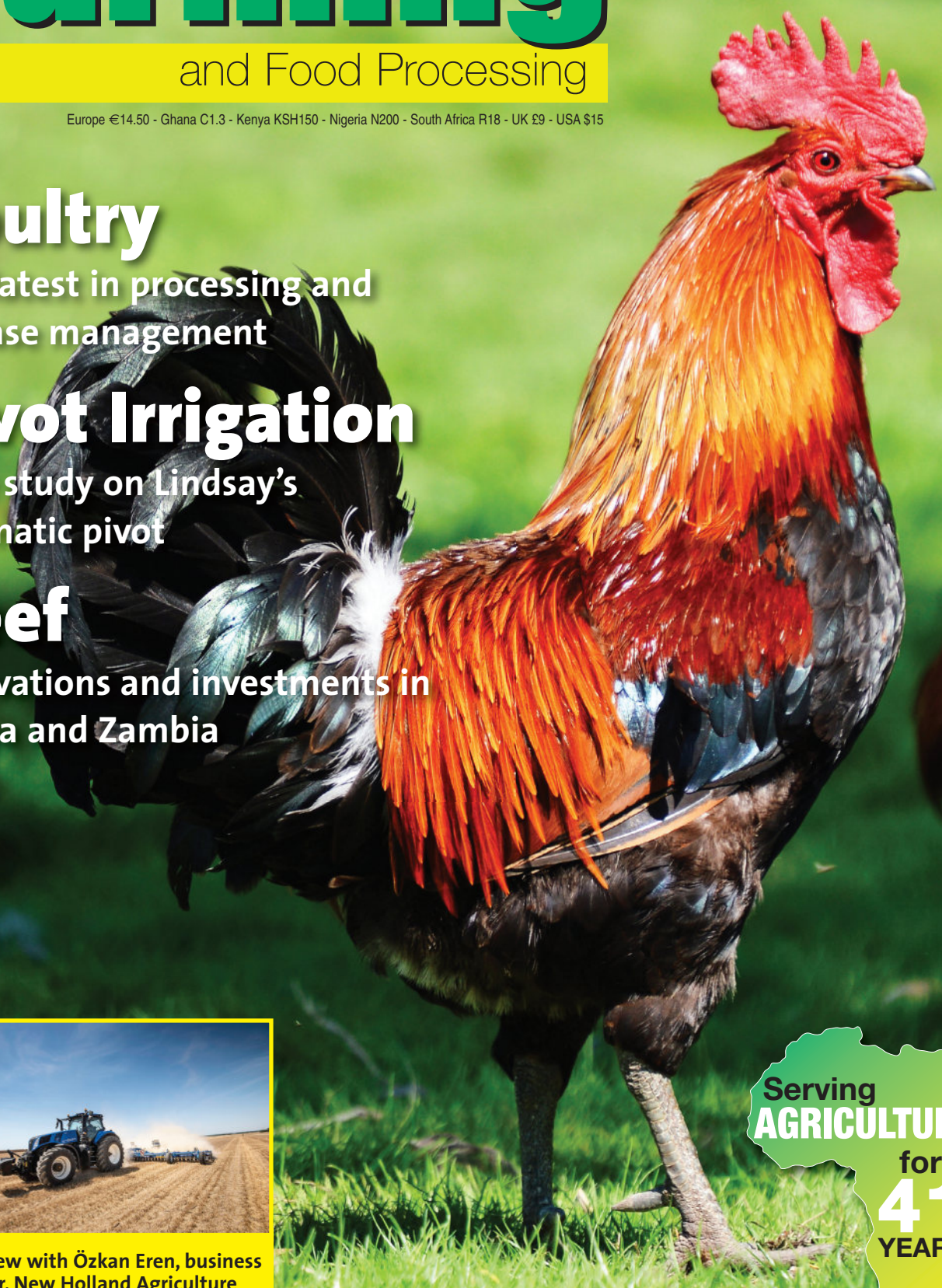
The latest in processing and disease management

Pivot Irrigation

Case study on Lindsay's Zimmatic pivot

Beef

Innovations and investments in Kenya and Zambia



Interview with Özkan Eren, business director, New Holland Agriculture Africa & Middle East. p24





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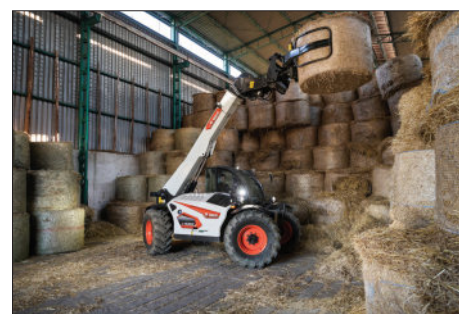
Recent funds, grants and programmes to support rural businesses



Image credit: Adobe Stock/monticellilo



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African Farming and Food Processing

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Farming Calendar 2021

AUGUST

18-19 Africa Agri Expo Virtual Connect 2021 ONLINE
<https://africa-agriexpo.com/>

SEPTEMBER

21-23 23rd FOODAGRO Tanzania TANZANIA
www.expogr.com/tanzania/foodexpo/

OCTOBER

19-23 EIMA International 2021 BOLOGNA, ITALY
www.eima.it/en/

NOVEMBER

04-05 International Conference on CAPE TOWN, SOUTH AFRICA
 Farming Systems and Sustainable Agriculture
<https://waset.org/farming-systems-and-sustainable-agriculture-conference-in-november-2021-in-cape-town>

18-20 23rd FOOD AGRO Kenya NAIROBI
www.expogr.com/kenyafood/

Readers should verify dates and location with sponsoring organisations, as this information is sometimes subject to change.

Durban to host Intra-African Trade Fair (IATF2021)

THE SECOND INTRA-AFRICAN Trade Fair (IATF2021) has been rescheduled to take place in Durban, KwaZulu-Natal, South Africa, from 15-21 November 2021.

The Trade Fair was previously due to be held in Kigali, Rwanda from 8-14 December 2021.

The decision to move the Trade Fair to Durban was made by the Advisory Council of IATF2021 at its 10th meeting held virtually on 25 May 2021. This decision was arrived at after formal consultations with the Government of Rwanda, who indicated that logistical constraints related to the COVID-19 pandemic had adversely affected the progress of construction of a new facility to host the event.

Chief Olusegun Obasanjo, IATF2021 Advisory Council chairman and former president of the Federal Republic of Nigeria, commended the government of Rwanda, Afreximbank, the AU, the AfCFTA Secretariat and all IATF stakeholders for showing great resilience in adapting to the uncertain environment arising from the COVID-19 pandemic situation.

Obasanjo added, "Relocating IATF2021 to Durban saves us time on the calendar and will enable African countries and corporates, as part of their recovery strategy, to take full advantage of the Trade Fair, which is also an important component of the implementation of the African Continental Free Trade Agreement under which trading commenced this year."

AfDB to support economic growth in Côte d'Ivoire

AFRICAN DEVELOPMENT BANK will support the creation of agricultural value chains in Côte d'Ivoire to create more jobs and make economic growth more inclusive, revealed AfDB's president, Dr Akinwumi A. Adesina, at a recent meeting with Ivorian Prime Minister Patrick Achi.

Since 2015, the AfDB has quadrupled its investments in Côte d'Ivoire, bringing its portfolio to US\$2.7bn.

"The African Development Bank will support the Ivorian government in the creation of agricultural value chains in banana, mango, palm oil, cashew, coffee and cocoa products ... there will be investments to transform rural areas into areas of wealth for the people," said Adesina.

The African Development Bank president added that it was important to make Côte d'Ivoire's economic growth more inclusive by putting more emphasis on job creation and ensuring the transformation of rural areas. The African Development Bank will



Image Credit: Adobe Stock

The AfDB will engage in strategic investments to transform the rural areas in Côte d'Ivoire.

support the government's 2021-2025 National Development Plan.

President Adesina commended the Ivorian government's efforts in fighting Covid-19, which had also helped to revive the country's economy.

"Côte d'Ivoire was in an exceptional trajectory with an average growth rate of 7% from 2016 to 2019. Unfortunately, because of Covid-19, growth has dropped to 2% in 2020. But with the economic recovery and vaccinations helping, the tourism, services, transport and manufacturing industries are recovering. We expect the Ivorian economy to rebound by 6.2% this year and 6.5% in 2022," Adesina commented.

Prime Minister Achi welcomed the AfDB's continuing support and expressed the Ivorian government's deep appreciation for its assistance.

The Ivorian minister of finance, Adama Coulibaly; minister of planning, Nialé Kaba, and minister of agriculture, Kobena Kouassi Adjoumani, attended the session, along with African Development Bank's director general for West Africa, Marie-Laure Akin-Olugbadé and her deputy, Joseph Manuel Riberio.

KasuwaGo app to facilitate buying and selling of farm produce in Nigeria

ACCORDING TO A news report published in regional news outlet, Daily Trust, Dr Toyin Ajibade, from the Faculty of Agriculture, University of Ilorin, and her research group, has developed the KasuwaGo app which facilitates sale and purchase of farm produce.

As mentioned in the News Agency of Nigeria report, Ajibade revealed that the app was developed in response to their interactions with farmers and customer. The team includes Dr Michael Olabisi, Dr Mywish Maredia, and Dr Eric Crawford from Michigan State University, Dr Toyin Benedict Ajibade from the University of

Ilorin, and Dr Hakeem Ajeigbe of ICRISAT and CDA-BUK.

The KasuwaGo Mobile App will create a resilient and well-functioning value chain/market system by providing a virtual marketplace for sellers (farmers) and buyers (consumers). It will facilitate transactions via a digital platform, while fostering an offline partnership between farmers and traders. The project was funded by the Feed the Future initiative of the USAID, through the Legume Systems Innovation Lab, but the software does not intend to create any contract or relationship with USAID or the US government.

Aviagen South Africa exports GP chicks to Zambia

AVIAGEN SOUTH AFRICA completed its first Grandparent (GP) export to their exclusive Ross distributor, Ross Breeders Zambia, early in 2021

The chicks were transported to Ross Breeder Zambia via OR Tambo airport and were collected by Ross Breeder Zambia's own aeroplane, and flown to Lusaka airport. Since the supply base was local, the chicks were transported to the breeder farm via truck, which resulted in reduced logistical times.

Due to AI in Europe and the COVID-19 restrictions preventing Ross Breeders Zambia from using the usual export routes, the logistics and the local Aviagen South Africa teams provided a solution to assure food security for the people of Zambia, through the local export operation.

Andrew Clarkson, general manager, Ross Breeders Zambia, expressed his thanks to the Aviagen team for their assistance in making this shipment a success; "We



Image Credit: Aviagen

The logistics and the local Aviagen South Africa teams provided a solution to ensure food security through the local export operation.

recently received our Grandparent shipment from Aviagen's Great Grandparent (GGP) operation in South Africa. We were very pleased with the high level of professionalism shown by Aviagen South Africa, and it was a pleasure interacting with their staff during this smooth process. As this was their first export of day old chicks, I feel they are well equipped and prepared for any future exports. Thank you once again for making it possible to keep to our placement programmes even during these difficult times," he said.

BIOMIN participates in EU-backed research project to improve animal health

BIOMIN HAS ANNOUNCED its participation in a four-year, US\$11mn EU-backed research consortium effort, to address the challenges of pig and poultry production. The consortium will be creating a new technology to analyse animal-microbiota interactions at the microscale and produce 3D visualisations.

The Project 3D'omics, which involves 13 partner organisations from 11 countries, and receives funds from the European Union's Horizon 2020 Research and Innovation Platform, is led by the University of Copenhagen in Denmark, and has the potential to improve the sustainability of animal production.

"Gut microorganisms have a systemic impact on many biological processes of farm animals. Because of this, understanding animal-microbiota interactions is recognised as one of the key steps to advance towards more efficient animal production, more sustainable procedures and to improve the welfare of animals," said Anton Alberdi, assistant professor at the Center for Evolutionary Hologenomics, GLOBE Institute at the University of Copenhagen and 3D'omics project coordinator.

"The role of animal host-microbiota interactions is crucial to understanding gut health, and thus improving animal health, welfare and performance," said Dr Christian Kittel, research programme director Gut Performance at BIOMIN. "We see continued interest in -Omics based tools that help our customers adopt precision animal farming, and we expect this interest to further increase in the future," he added.

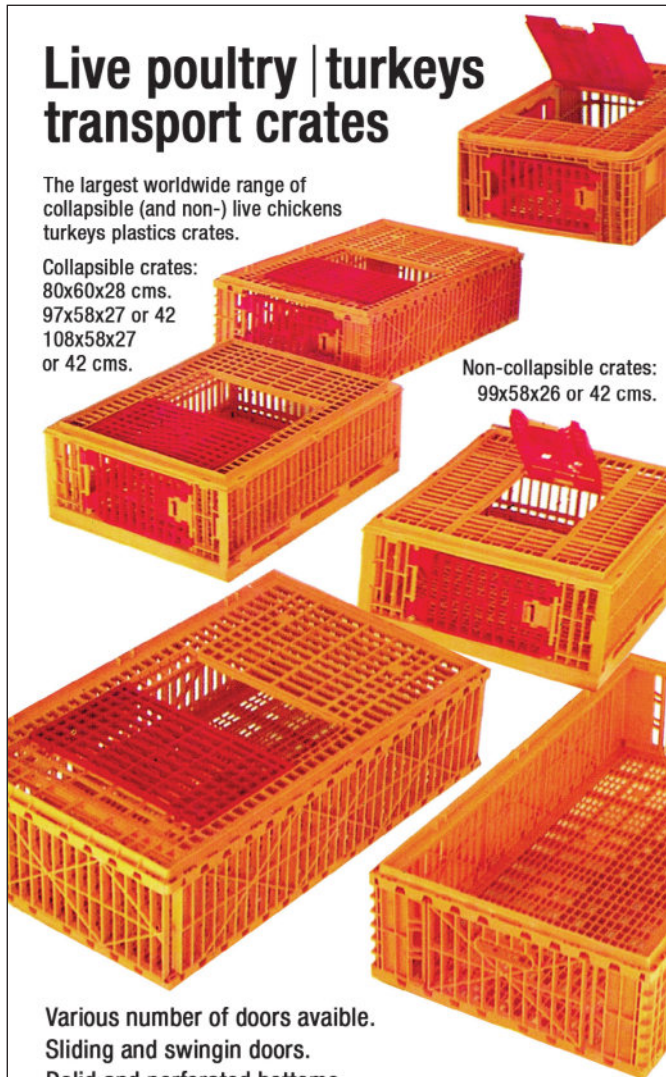
In the past too, BIOMIN has applied Omics technologies to address animal/bird gut health and performance.

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UPL launches NPP business unit

UPL, A LEADER in sustainable agriculture products and solutions, has announced the launch of Natural Plant Protection (NPP), a standalone brand housing its comprehensive portfolio of natural and biologically derived agricultural inputs and technologies.

NPP's extensive portfolio will play a vital role addressing farmers' pain points, including abiotic stress, soil health, residues, and resistance management, in developed and developing agricultural markets alike.

Fabio Torretta, CEO of NPP, UPL, commented, "NPP can change the world. It has the right capabilities, the right mindset, and the right technical skills and resources to drive a new era of positive, progressive change in agriculture."

Partnership to develop disease-resistant pigs

THE ROSLIN INSTITUTE have signed an agreement with animal genetics company Genus to produce pigs that are resistant to the respiratory disease called Porcine Reproductive and Respiratory Syndrome (PRRS), which costs farmers around US\$2.5bn each year, in the US and Europe alone. Researchers and the company hope the agreement will lead the way to disease-resistant pigs being available to global pork-producing markets. "Animal health is a keystone of animal welfare as well as bringing benefits to food-producing economies and global food security. This edit to the animals is a result of decades of work, and we're delighted to be helping to improve animal welfare by bringing this technological breakthrough to market through this partnership with Genus," said Dr John Lonsdale, head of enterprise at Edinburgh Innovations.

AgDevCo supports Victory Farms' East African ambitions

AGDEVCO HAS ANNOUNCED a substantial debt investment in Victory Farms, a rapidly growing aquaculture company in Kenya, to support the company's growth and impact in East Africa.

For decades the wild catch from Africa's Great Lakes has been declining, resulting in local markets relying majorly on imported frozen fish. Victory Farms recognised an opportunity to supply affordable protein to consumers in a more sustainable way by growing tilapia, a native species.

Victory Farms operates as a vertically integrated business, with its own hatchery, nursery ponds and deep-water cages in Lake Victoria, plus a processing plant and a distribution network comprising 45 wholly-owned retail locations. Its direct customers are several thousand market women who buy fish in small batches from outlets, before cooking and selling them in local food markets.

The company is currently selling 1.5 million fresh fish per month, which are grown using the best aquaculture practices from around the globe, without antibiotics. Victory Farms takes great care to protect and restore local ecosystems, working continuously to improve biodiversity on both land and water. The company aims to be carbon negative by using sustainable feed inputs, relying solely on solar power, and planting trees on degraded land.

Chris Isaac, AgDevCo's chief investment officer, said, "We are delighted to back Victory Farms' ambition to be Africa's leading producer of affordable and healthy protein. We see huge potential for East Africa's nascent aquaculture industry to grow and develop in a sustainable way, which should help relieve pressure on wild fish stocks."

Victory Farms' co-founder and CEO, Joseph Rehmann, commented, "We're excited to begin this partnership with



Image Credit: Adobe Stock

Victory Farms' direct customers are market women who buy fish from outlets before cooking and selling them in local food markets.

AgDevCo. Their long-term funding will more than double the size of our business. As we grow into new markets, and with AgDevCo's backing, we remain committed to being at the vanguard of environmental and social progress in the global fish industry."

With this transaction, AgDevCo becomes the largest investor in Victory Farms to date, alongside the founding shareholders and external investors DOB Equity, Msingi East Africa, Ceniarth, CIVF, MCE Social Capital and DEG.

AgDevCo was supported on this transaction by Law3Sixty and Kieti Law LLP in Kenya, Fieldfisher in the Netherlands and Charles Russell Speechlys in the UK. CrossBoundary Advisory provided commercial due diligence services under the United States Agency for International Development's Kenya Investment Mechanism Programme.

FAO launches Green Cities Regional Action Programme

FOOD AND AGRICULTURE Organisation of the United Nations (FAO) has launched the pilot phase of the Green Cities Regional Action Programme for Africa with an aim to scale-up fast-action measures for large, medium and small cities to make them more resilient towards unforeseen dangers and food and nutrition secure.

Six African cities, namely, Praia in Cabo Verde, Kisumu and Nairobi in Kenya, Antananarivo in Madagascar, Quelimane in Mozambique and Kigali in Rwanda will embark on the pilot phase of the programme, which is designed to eventually involve 1000 cities worldwide by 2030.

The FAO director-general QU Dongyu called upon committed cities and mayors to engage local innovators, entrepreneurs and young people to propose new solutions, digital technologies,

climate-smart practices and strategies to create green jobs and enrich the connections between urban settlements and their rural surroundings. He invited authorities to engage youth, especially in places where urbanisation is still in an early stage.

FAO launched the Green Cities Initiative (GCI) in September last year to underscore the major roles that urban demographic trends play in achieving the Sustainable Development Goals. Greener, cleaner and more resilient and regenerative towns can catalyse more self-sustaining opportunities as well as better lives. The GCI is geared to promote sustainable and resilient local food production and short supply chains, establish green agro-processing hubs, efficient food distribution systems and food environments, and establish efficient circular-economy driven management of water resources and food waste.

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FBSciences launches CarbonBoost line for climate-smart products

FBSCIENCES, A GLOBAL leader in agricultural biologicals, have launched their CarbonBoost soil health product line, to maximise carbon sequestration, increase soil carbon, and drive soil health.

FBSciences are tapping into their depth of research and expertise on the innate connection between soil and plant health to accelerate and amplify climate health benefits while boosting grower ROI and productivity.

The addition of FBSciences' CarbonBoost line to their portfolio will provide the opportunity

to mitigate climate change holistically from both a plant and soil health approach.

FBSciences' CarbonBoost product line includes four new crop-specific microbial products built with FBSciences' proprietary biostimulant technology, FBS Transit, which consistently provides increased yields, increased root length, superior nutrient uptake, mitigation of abiotic stress, and improved crop quality. The four microbial products include crop-specific microbial consortia in spore form designed to provide unique benefits optimised

for specific high acre crops.

The CarbonBoost line also includes two soil conditioning products, FBS Humate Plus and FBS Organics Humate Plus, which are FBSciences' highly concentrated and effective humic acid products. FBS Humate Plus launched earlier this year with extremely positive soil health benefits to growers, including a 15% increase in water use efficiency over a three-year period compared to the grower standard treatment, and a 13% increase in root length over a traditional humic acid.

FAO begins ISAVET training in Kenya

FOOD AND AGRICULTURE Organisation of the United Nations (FAO) has launched its first In-Service Applied Veterinary Epidemiology Training (ISAVET) for the first cohort of veterinarians and para-veterinary professionals in Kenya.

The programme provides a structured on-the-job training to develop animal health capacity to prevent, detect and respond to potentially zoonotic viral threats at source.

As many as 25 trainees, in collaboration with the director of veterinary services, will be trained for four months, with four weeks of formal training followed by three months of home-based mentored field projects at trainee duty stations.

"Field veterinarians and veterinary paraprofessionals are an

indispensable human resource. They contribute to effective surveillance, field investigation and emergency response. They have strong ties to the local community and are often first responders of an animal disease outbreak," said Carla Mucavi, FAO representative in Kenya.

To carry out early detection and response to potentially zoonotic viral threats at their source, veterinary field officers from the county, sub county and regional veterinary investigation laboratories (RVILS) require skills to conduct effective surveillance and outbreak response under a 'One Health' approach.

The ISAVET programme provides a structured on-the-job training to develop animal health capacity to prevent, detect and respond to potentially zoonotic viral threats at source, through an "In-service" training targeting field veterinarians and veterinary paraprofessionals in the agriculture sector.

"The Kenyan Government has committed itself to developing an efficient and effective veterinary service that will deliver animal health services to protect our animals. Kenya's veterinary services is anchored upon a strong surveillance system which aims at detecting endemic, emerging and re-emerging diseases, thereby providing support to evidence based disease outbreak response," said Harry Kimtai, CBS, principal secretary, State Department for Livestock.

In Kenya, most of the populations affected by disease outbreaks live in the rural areas where livestock plays a significant role in provision of food, as well as contributes to household income.

Epidemiological surveillance, field investigation and response, communication and disease prevention and control are some of the core competencies that are required in building the country's capacity for the management of priority zoonotic diseases at the Human-Livestock Interphase and Transboundary Animal Diseases at source.



Zoonotic diseases can have long-ranging socio-economic consequences.

UN deputy secretary-general calls for urgent action to meet food insecurity

WITH ONE IN five Africans facing hunger in 2020, UN deputy secretary-general, Amina Mohammed, called for the transformation of food systems at the Africa Regional Food Systems Summit Dialogue.

Mohammed noted that the world is witnessing a time of rising food insecurity and hunger, as between 720 million and 811 million people in the world faced hunger in 2020 (as many as 161 million more than in 2019). This is a problem faced by the entire world, but Africa has been particularly hard hit with about one

in five people on the continent having faced hunger in 2020 — more than double the proportion of any other region. Additionally one billion Africans could not afford a healthy diet in 2019 so malnutrition remains entrenched.

Mohammed continued by saying that while these are worrying trends she remains optimistic that the Sustainable Development Goal 2 (zero hunger by 2030) could be achieved, but the world must act with urgency. Transforming food systems could provide an opportunity to

drive progress across the board and this is the rationale of the Food Systems Summit where more than 140 member states have responded to the invitation to convene national Food Systems Summit dialogues.

The deputy secretary-general also advised that Goal 2 cannot be achieved in isolation, but that a range of intersecting challenges prevail across the food system which are undermining the progress to all SDGs. By acting now, not only will world hunger be reduced but it will also help in the fight against climate change.

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The need to reduce human intervention and shortage of labour has increased the demand for automated poultry processing machines. The use of IoT and AI in the food processing industry will grow in future.

Future of poultry processing

TYSON VENTURES RECENTLY participated in a US\$10mn funding which aims to bring an artificial intelligence robotics solution to the poultry processing market.

But this is not the first time, they have invested close to US\$215mn in the past five years. While Soft Robotics technology was used to carry out the function of bulk picking processes in the past, the increasing shortage of labour, pre and post-pandemic has brought forth an increased need to reduce human intervention in the poultry processing industry.

At present, the increased reliance of AI and automation in the processing industry is the only way to continue business in the food industry.

In addition, the demand by quick service restaurants for high volumes of portioned products has made it mandatory to keep machines that offer quick and large amounts of sliced, deboned or cubed pieces of meat, which is in so much demand right now. The challenges for the poultry processing industry are many—whether it is food safety, cutting and deboning with maximum productivity in little time or automating the entire process, to reduce human intervention. There are various industry leaders who are constantly innovating the poultry processing industry.

Foodmate's OPTIX Intelligent Thigh Deboner

Foodmate introduced the OPTIX – the intelligent thigh deboner, their second intelligent deboning solution with X-Ray measuring technology in 2019. Their latest launch, the Automatic Transfer Loader is an effective solution as a replacement for human labour during the pandemic. The Automatic Transfer Loader takes the product from the cut up line and places the product in the OPTIX.

PPO's Hyperspectral Imaging Technology

P&P Optica (PPO) has started with its new project which entails the development of the company's advanced software, and insights for the food processing industry. The new technology includes artificial intelligence (AI) tools that will enable processors to collect, view, and analyse detailed information about food composition and quality in real-time. PPO was already using the Smart Imaging System which applies hyperspectral



Image Credit: Meyn Food Processing Technology B.V

The Killer M2.0's offers increased speed and productivity, along with safety of the user.

imaging to collect comprehensive data on the product it inspects. The system then provides information on quality metrics, such as the fat/lean ratio for bacon and sausage, tenderness of steaks, and identifies muscle myopathies in chicken.

PPO's system can identify foreign material and contaminants, such as rubber, cardboard and clear plastics, which other detection methods such as x-rays and metal detectors seem to miss.

SINTEF's Gribbot

At least five years ago, the engineers at SINTEF, Scandinavia's independent research centre, developed a DENSO VS 087 robot, also called the Gribbot, to harvest chicken fillets. The Gribbot consists of a transport system, a machine vision subsystem, a robot arm and a compliant gripper. The DENSO VS 087 robot-based concept used 3D machine vision as the eye, and the DENSO robot serves as its arm, and the compliant gripper functions as the hand.

DENSO VS 087 is an IP67-rated robot, suitable for working with food raw material, and the fastest robot arm in its class. The equipment is interlaced in LabView, including the 3D machine vision and the system's gripper is also controlled via the

built-in solenoid valves in the robot arm. SINTEF used the built-in electrical wiring of the DENSO V087 to send and receive necessary signals from the gripper and connected the machine vision to the controlling computer, which could be accessed via LabView.

The Gribbot can process a chicken breast in about 2-3 seconds, which translates into one or more Gribbots doing the work of 30 operators. The innovation will result in huge savings for the industry, and save human labour from repetitive tasks.

The Gribbot seems to be a promising technology for the food industry. The potential benefits are many, such as, optimising the entire production, making the operations cost and time efficient, and an optimal utilisation of raw materials. In future, the system can be applied to other, similar tasks throughout the food processing industry.

Marel

The I-Cut 122 TrimSort can cut various high-value boneless products, from a single stream of incoming products, distributing accurately into two streams at a high speed. The integrated TrimSort functionality and smarter software allow for the distribution of

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different combinations of cut products to the two integrated belt pairs. This further reduces human intervention. All of this is done in one smart system with a small footprint, without the need for additional machines.

The I-Cut 122 TrimSort can portion a fillet into a smaller fillet, useful off-cuts and trim. The smaller cut fillet can be used for many supermarket and QSR products, such as fixed-weight fillet packs or whole muscle meat burgers. The cut-off medallions, strips or cubes, together with trim, are sorted on the second, lower internal conveyor belt which takes these portions to another process, so that they can be used in quick service restaurants, for whole muscle chicken wraps, chicken salads or 'crispy tenders'.

The super-fast opening and closing belts do a reliable, meticulous sorting job, in close cooperation with the cutting knife which has an accuracy of five grams. Marel's product specialist Morten Dalqvist says, "When a tenderloin is your input product, TrimSort can drop the tip, leave perfect cubes on the upper belt and drop the tail too. Such a job needs no operators to separate quality products from trim, making the I-Cut 122 TrimSort a labor-saving solution."

The I-Cut 122 TrimSort is also equipped with the latest handling and communication software, which can keep the collected data connected to each product on the belt, allowing distribution to suitable destination.

Sharing product data through the process allows Marel machines to work together helping the processors to meet the requirements of retail, quick service restaurants and catering customers for high-quality portioned products in large volumes.

Meyn Food Processing Technology B.V

Meyn has been a pioneer in creating full automated smart processing systems, with product launches such as the iconic Meyn Maestro Plus which accomplishes fully automated in-line giblet harvesting, the Meyn Rapid Plus M4.2 breast deboner, and the more recent Meyn Wing cutter HY Pro, a slaughtering solution which accommodates continuous increasing line speeds, and improves food- and worker's safety.

The Meyn Killer M2.0, the latest launch from the brand, executes a uniform and controlled cut for an optimum bleed-out. The new guide mechanisms result in limited



The I-Cut 122 TrimSort can portion a fillet into a smaller pieces, useful off-cuts and trim.

shackle movements, reduced dragging and the fixed positioning of the head allows for a stretch and an optimal cut. It reduces time taken to slaughter flocks of different sizes, and switches between frontal cut or decapitation and changing stun methods. Processors with consistent and uniform flocks can also order the Killer M2.0 with economical, mechanical adjustments.

The smart design of the Killer M2.0's also increases safety of the user, as the control panels and buttons for daily operations are placed away from moving parts and knives, and separated by sliding doors. The doors are fitted with grids, which offer perfect visual tracking of the process at eye level, making it easier for the operator to adjust the machine when needed.

The product zone is easily accessible for regular cleaning and inspection. The open underpart of the solution avoids pilling up

The I-Cut 122 TrimSort comes equipped with the latest handling and communication software, which can keep the collected data connected to each product on the belt

of dirt in the machine and the designed frame eludes collected water, avoiding bacteria growth.

BAADER

BAADERING is a process which separates soft and solid components, and produces high quality ground meat, without bones, cartilage and sinews. BAADER's latest machine, new BAADER 608 which supports the BAADERING process, sets new standards for food quality, value creation, process safety and user-friendliness.


The interior of the machine and the control cabinet are easy to access, and the opening of the front requires no tools. The BAADER 608 has a new kind of product scraper that reduces contact between the product and the machine, ensuring that it retains its structure.

The support rollers improve hygiene, whereas the pressure roller can be lowered for better handling, cleaning and adjustment options.

Drainage slants in the housing allow for proper water drainage, and the discharge belt allows for segregation of by-products.

The provision for automatic adjustment of the squeezing belt, and the support chain tension makes the process safer. The new hydraulic perforated drum tension makes it more user-friendly. The touch display makes operating the BAADER 608 easy, as various parameters can be set for different products, and retrieved at any time. The machine also comes with an interface for further data processing.

Sustainability

If on the one hand, the poultry processing companies are investing in smarter and faster machines which work to a large extent on automation and produce quality boneless chicken meat, there are others such as Putnu Fabrika Kekava, the biggest Latvian poultry processor which plans to invest in environmentally friendly technologies and build its own solar plant to reduce carbon emissions. Putnu Fabrika Kekava's parent company Linas Agro Group plans to implement an ambitious sustainable strategy by 2030. The company aims for efficient use of resources such as water and electricity and also intends to opt for sustainable packaging, besides reducing the emission of greenhouse gases through the use of renewable energy sources. 

GI OVO launches EggsCargoSystem XL for duck and turkey eggs

FOLLOWING THE SUCCESS of EggsCargoSystem® for chicken eggs, GI OVO has now developed the EggsCargoSystem XL, specially designed for the transport of duck and turkey eggs.

The system consists of a tray which offers maximum comfort and protection to the eggs against breakage; along with the capacity to hold a maximum of 20 eggs at a time.

In addition, it consists of a pallet with the dimensions 120x90 cm. These pallets are

exactly matched to 12 stacks of trays per row.

The system consists of a divider, which makes keeping the empty trays on top of the stacks unnecessary.

The stacks of eggs can also be slid over the divider, making the work swifter and faster. The system can be built up to five rows, containing 7,200 eggs per pallet. The entire system can also be picked up and unpacked with robots.

In the case of bad roads, the EC protector can be used, which connects the top layer of eggs with the row below, with a plastic lock, and helps prevent the top layer from jumping up when the vehicle is in motion, thereby reducing the risk of unnecessary damage to the eggs.

All parts of the EggsCargoSystem XL are made of durable plastic, with an anti-aging additive. If desired, the system can also be provided with Clean Compound, an additive which, in combination with professional cleaning of the parts, reduces the risk of contamination to a minimum. GI OVO can supply the system in almost all RAL colours and provide customer-specific instructions.

www.gi-ovo.com

Poultry Africa to be held in 2022

VNU EUROPE, THE organiser of the Poultry Africa Expo, has rescheduled the third edition of Poultry Africa (powered by VIV worldwide), which was supposed to take place in September this year. Poultry Africa will return to Kigali next year, from 5-6 October, at the Kigali Convention Centre.

The decision has been taken, keeping in mind the current travelling restrictions all around the world, and the continuous uncertainties resulting from the outbreak of coronavirus.

Poultry Africa 2022 is expecting more than 2000 professional visitors at KCC, of which 40% are estimated to be international poultry professionals from East, West and North Africa.

Poultry Africa has been organising a number of engaging and interesting webinars this year to bring useful insights and global solutions concerning the African market. The first two sessions focused on animal health practices to overcome biosecurity issues in Uganda, and food security solutions related to the poultry production value chain in Nigeria, respectively.

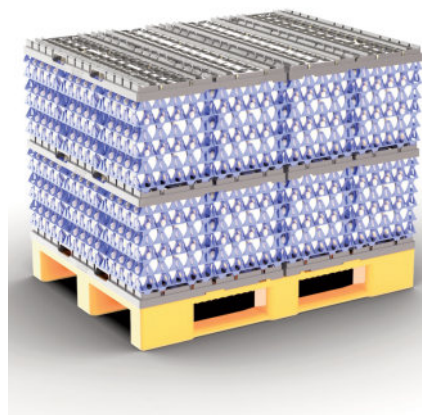


Image Credit: GI OVO

The EggsCargoSystem XL offers damage-free transport of duck and turkey eggs.

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South African poultry industry today faces a number of challenges, ranging from the quality and origins of feeds, high feed prices and the recurrence of avian influenza and disease outbreaks such as listeriosis and salmonellosis. Omniolytics has a solution.

Leveraging the power of AI, Cloud and IoT

A RECENT OUTBREAK of highly pathogenic avian influenza (HPAI) at a farm in South Africa, which led to the immediate suspension of trade in the country's poultry products, has been seen as a serious threat to South Africa's poultry sector.

In fact, in April 2021, South Africa's animal health agency reported a new outbreak of HPAI to the World Organisation for Animal Health (OIE). According to the report, the presence of the HPAI virus variant was confirmed at a poultry farm after around 300 birds had died in the first week of April, leading the outbreak to be seen as a threat to South Africa's poultry sector.

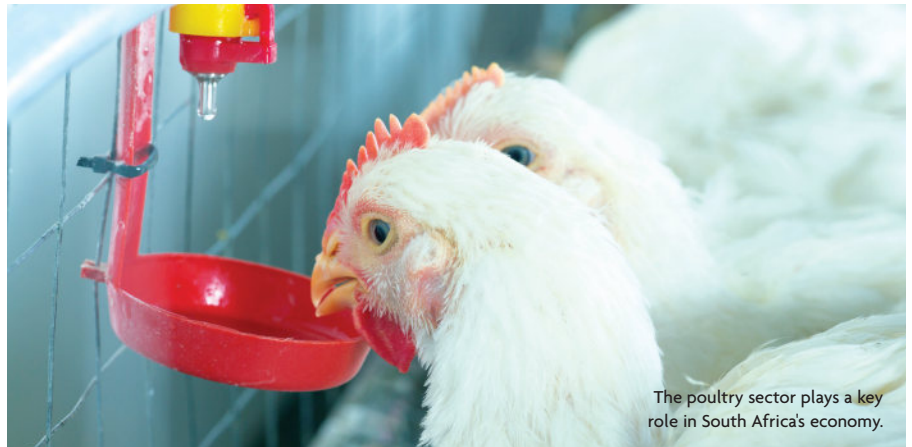
The South African poultry industry is facing a number of challenges, ranging from the quality and origins of feeds, high feed prices and the recurrence of avian influenza and disease outbreaks such as listeriosis and salmonellosis.

According to tech giant IBM, the poultry industry was valued at more than US\$3.21bn in 2019, and makes up more than 16% of the total gross value of agricultural production in South Africa.

AI, Cloud and IoT

Start-up company Omniolytics, which develops smart farming solutions, is using IBM technology to address the need for commercial and emerging poultry farmers in this valuable industry to make informed, real-time decisions on potential threats and forecast dangers within the broiler house facility, and provides farmers with early

OmniFarm is built on IBM Cloud and collects, processes, analyses and visualises comprehensive insights collected from integrated wireless sensors, coupled with production records and activities across the production cycle.



The poultry sector plays a key role in South Africa's economy.

Image Credit: Adobe Stock

warnings on potential issues – making their processes more efficient and improving production standards.

Working with IBM, Omniolytics has developed an approach that uses Internet of Things (IoT) technologies to collect data on the environmental conditions of production facilities and day-to-day management activities and processes of poultry to improve animal health, mitigate losses and assist producers in improving production efficiency, helping address food security concerns.

The suite of solutions uses IBM Watson and machine learning capabilities to identify and learn the typical behaviour of birds resulting in improved management practices. Farmers are then able to receive a more complete picture of the wellbeing of their flocks, delivered on IBM Cloud, identifying processes and environmental deviations which could point to a potential problem.

Speaking about this, Omniolytics founder Michael Samson said, "We're introducing solutions to the market which help improve feed conversion ratios, mortality and growth rates and benchmarking practices across their production facilities. This will ensure accurate future predictions across the value chain and make poultry farming more sustainable."

"Agriculture plays a crucial role in the success of our local economy, and through the EEIP programme we've been able to support Omniolytics at a critical stage of their business growth. By improving access to IBM's Cloud and AI technologies and

increasing the adoption of a range of digital solutions as we incubate and support start-ups – we've set out to not only support local demand, but also ensure our entrepreneurs become globally competitive. This is crucial in a post-Covid world and we'll continue to provide innovative technology startups with advice, support and the best technologies available in the market," commented Craig Holmes, technology leader, IBM Southern Africa.

North Africa

The Food and Agriculture Organisation of the United Nations (FAO), and the Egyptian Poultry Association (EPA), have signed a memorandum of understanding (MOU) to further their partnership to improve the performance of the poultry industry. The MOU aims to achieve the common goals of the two parties in the field, through providing advanced and innovative technological services to various production systems of the poultry industry. FAO and EPA also intend to promote integrated approaches for sustainability.

HE Al-Sayed Al-Qusayr, minister of Agriculture and Land Reclamation, said, "The MOU comes as a new and important step towards achieving the goals of promoting the poultry industry in Egypt, and preserving this national industry by achieving advanced standards of biosecurity and combating animal diseases that affect poultry and can be transmitted to humans, such as Avian Flu." 

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Increasing investments and innovations lead the way for the livestock industry in Kenya and Zambia, Nawa Mutumweno reports.

Beefing up: Recent trends in the livestock industry

CATTLE FORMS A primary source for food security and nutrition through the provision of beef and milk across Africa.

According to FAO, the demand for animal source foods (ASFs) will rise in the next 30 to 40 years, alongside the growth in human population, resulting in an increase of consumer purchasing power and urbanisation.

Therefore, producers and other actors are poised to make remarkable investments in livestock farming systems and value chains. The impact of these investments on people's livelihoods, public health and the environment will be unprecedented.

A robust analysis of livestock producing systems and value chains, an understanding of trends in consumption of ASFs, and an assessment of returns to different investments are essential to formulate and prioritise policy actions.

Kenya

The livestock sector accounts for about 4.4% of the country's GDP (US\$3.4 billion in 2017), contributes about 2% to the country's export earnings, with beef accounting for 15% of this.

The livestock sector boasts around 18.8 million cattle, and employs 50% of the agricultural labour force, and generates a significant number of jobs along the value chain. As many as 3.6 million households own cattle, which contributes 40%-73% to their total income.

The UN food agency has advised the Kenyan government to prioritise certain investments within the existing policy framework to facilitate strong foundations to tap into emerging livestock-related opportunities.

The Kenya Meat Commission has been a major player on the beef stage over the years, establishing a niche in exports, dominating the European meat market, and earning a supply quota in the process. However, in the past, diseases, such as Rift Valley Fever, had a severe toll on efficient veterinary services, which affected supply. Dr Monica Juma, cabinet secretary for defence, said a robust business plan was in



The livestock sector employs 50% of the agricultural labour force, and generates a significant number of jobs along the value chain.

Image Credit: Adobe Stock

place to ensure the success of operations.

KMC's export market footprint comprises: the Middle East, East Africa, Central Africa and North Africa.

Zambia

The leading firm on the market is Zambeef Products, which is a successful agribusiness story. Investing about US\$3.2mn in its retail network in 2017, it currently operates over 228 retail outlets, including its Master Meats in Nigeria and Ghana and its strategic partnerships with Shoprite, the South African retail chain.

It has five abattoirs and three feedlots in Zambia, with a capacity to slaughter 230 cattle per year. About 80% of Zambeef's cattle are sourced from small-scale farmers, thus providing them with a ready market. The company has established live-cattle buying centres across the country, thus allowing even a farmer who is selling just one animal to have easy access to the market, and to achieve a more decent price, avoiding middlemen. Farmers are also paid on the day they supply cattle.

In 2017, the UK-based CDC Group invested US\$65mn in Zambeef, which saw the firm focusing on its core business of cold chain food processing, as it continues to roll out its expansion programme in Zambia and beyond.

In May 2021, Zambeef doubled the price it pays to small-scale farmers for their cattle in the last year. According to chief operations officer Mike Lovett, the rise was due to a result of a shortage of cattle in the market due to the 2018/19 drought, increased competition, and a growing demand for

meat. Zambeef also provides transport for deliveries to the centres, to help reduce costs of doing business for the farmers.

Innovations

Ghana-based mobile information service CowTribe allows farmers to subscribe to veterinary services over the phone and creates a tailored schedule plan for each farmer. The system identifies when a farmer needs certain services and sends a notification directly to their phones.

CowTribe collects the farmer's location, the services required, and transmits the order to partnering vets who then provide the service. The mobile veterinary service targets over 300 million smallholder farmers in remote areas in Africa without access to quality and affordable livestock services.

Policies

The Malabo Montpellier Panel analysed lessons from Ethiopia, Mali, South Africa, and Uganda that have sustainably grown their domestic livestock sectors to provide recommendations for unlocking the economic potential of animal agriculture and becoming self-sufficient. Their report reviewed challenges facing Africa's livestock sector ranging from feed quality to animal health and food safety issues, and highlighted the role of livestock in the empowerment of women.

The recommendations covered policy, trade and finance, resolving the conflict between pastoralists and crop farmers, harmonising regulations and recognising the rights of herders and creating financial services, such as livestock insurance. **E**

MetAMINO provides essential amino acids for poultry and piglets

METHIONINE HAS ALWAYS been, and will remain, the first limiting amino acid for efficient poultry production, be it for meat or eggs. So ensuring the most cost effective source is used has always been, and remains, crucially important.

So how should one decide between the two most commonly used sources, DL-Methionine and MHA-FA? Price is obviously important; but of equal importance is the Bioefficacy, the amount of DL Methionine that is required to replace MHA-FA. This important number is 65%; in other words, every 1 kg of MHA-FA only needs 650 g of DL-Methionine to ensure the same supply of methionine to the animal.

This number is backed up by numerous, properly conducted scientific trials carried out across the globe. Consistently – in poultry, pigs and aqua species – the evidence continues to confirm the 65% Bioefficacy number.

Such trials range from simple comparisons to complex university studies. The simple comparison is just as important as trials conducted in research facilities; while one confirms the fact of 65%, the others explain the reason behind it.

Typically a simple farm trial will take two



Methionine is the first limiting amino acid for efficient poultry production.

houses, side by side. One house of birds is fed on feed containing an MHA product, while the other has feed of exactly the same composition except, every one kg of MHA product is replaced by 650 g DL Methionine. The outcome: birds in both houses perform the same in terms of growth, FCR and carcass composition; but those fed using DL Methionine produce more profit, because the feed is cheaper.

The University studies help to understand why there is a difference. As MHA products are absorbed more slowly than DL Methionine from the gut, there is more

opportunity for the gut microbiota to “steal” it, preventing its absorption. This slow rate of transfer is due to the presence of polymers (in the MHA-FA liquid) and the slow transport system used by gut cells. Furthermore, MHA products need to be converted to L methionine in the liver. The consequence of all of this is that less methionine is available for muscle cells to grow when MHA products are used in feed at the wrong bioefficacy value; and so growth is slower and less efficient. By radio-labelling, both DL Methionine and MHA products, it can be shown that far more methionine is incorporated into muscle tissue when DL Methionine is used, when compared to birds fed with MHA products.

All of these data and reports will be available for customers, through their local Evonik contact.

Now customers can make the calculations themselves. If they visit <https://metamino.evonik.com/> they can see the economic benefits of using MetAMINO – DL-Methionine from Evonik. They can also read the most up to date research on the bioefficacy question, and weigh up the evidence. They can make the calculations, and choose the best from Evonik and MetAMINO.

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Zinc fertilisers are essential in boosting cereal-crop yield

IN SUB-SAHARAN AFRICA, soil health concerns are largely due to poor nutrient supply in the soil. Increasing population pressure on agricultural land has led to a breakdown of traditional practices, resulting in much higher nutrient outflows. Also, there is insufficient support to small farmers to implement soil and cropping practices that could potentially reverse this depletion.

A consequence of poor soil health is the high prevalence of food and nutrition insecurity due to lower agricultural production, less fodder for cattle, less fuel wood for cooking and less crop residues and cattle manure to recycle nutrients to soils.

Although zinc is an essential micronutrient for plant growth, zinc input has received far less attention than nitrogen, phosphorous or even irrigation. Almost half of cereal-growing areas globally have soils with a low level of plant-available zinc. The application of zinc fertilisers is essential in such soils to boost cereal yield and grain zinc

concentration. Numerous studies have indicated that maize grain yield, for example, increases significantly when zinc fertilisers are applied to zinc-deficient soils. This calls for a better understanding of the critical role that zinc fertilisers play.

Not only are half of the world's agricultural soils deficient in zinc, so is a third of the global population as a result. The use of zinc-enriched fertiliser (for instance zinc-coated urea or zinc-enriched NPK) in Turkey, Australia, South Africa or India

has resulted in significant increases in yields, as well as boosting zinc concentration in rice and wheat. The best way to increase zinc density in grain has been demonstrated to be foliar applications.

A recent study revealed that "agronomic biofortification using a foliar-applied fertiliser containing iodine, alone or in combination with selenium and zinc, is effective in improving grain iodine concentration." The study also examined potential iodine losses during the prepara-

tion of foodstuffs with the enriched grains, and found that iodine levels had lowered but remained significantly higher than foodstuffs prepared with non-enriched grains.

In zinc-deficient soils, zinc application increases maize yield due to increased kernel numbers and kernel weight in inferior grains. An adequate zinc supply in maize plants maintains high pollen viability and a sufficient carbohydrate source.

It is critical to consider global micronutrient balances in order to improve crop yield and quality and human health.

This calls for an enabling environment based on strategic cooperation with the fertiliser industry supplying the products, scientific organisations assessing the extent and impact of micronutrient deficiencies in soils, plants and human populations.

(The article was written by Simon Norton, International Zinc Association, Africa Desk, rachel@ngage.co.za)



Half of the world's agricultural soils are found to be deficient in zinc, leading to a third of the global population suffering from zinc deficiency.

West Africa Trade & Investment Hub provides financial grant to boost fertiliser production

THE WEST AFRICA Trade & Investment Hub (Trade Hub) has announced that it has awarded a US\$1.4mn co-investment grant to OCP Africa Fertilisers Nigeria Limited. The hub, funded by the United States Agency for International Development (USAID), said the grant would help boost specialised fertiliser production in Nigeria to help farmers grow crops on a commercial scale and support food security in the country.

Michael Clements, Trade Hub's chief of party, stated, "Trade Hub has awarded a US\$1.4mn co-investment grant to OCP Africa Fertilisers Nigeria Limited to install modern blending equipment within its fertiliser blending plant facility, under construction in Kaduna State".

The blending equipment will help bridge the gap where there is a lack of specialised fertilisers to grow crops on a large scale, and support food security in the country.

According to the statement, the planned facility and equipment will produce various fertiliser blends customised to the needs of rice, maize, soybean, cassava, tomato, and other staple crops grown in Nigeria.

The statement highlights that the speciality blends of fertilisers can increase farmers' yields by 50% to 85% per hectare, depending on the crop. Clements said, "This project is quite a unique one, and we are excited to partner with OCP Africa to complement the Nigerian government's policy to leverage locally available resources to expand food production capabilities. Such policies contribute significantly toward achieving the food security goals in Nigeria, in line with the USAID Feed the Future initiative," he noted.

In other news, OCP Group has become a member of the European Sustainable Phosphorus Platform (ESPP), for the promotion of sustainable phosphorus management. The group will exchange knowledge

and best practices with the ESPP's 40+ members, and an expansive network of scientists and companies, spanning the entire value chain of phosphate and phosphorus, promising to discover new innovative ways to use the resource optimally.

OCP mines, processes, manufactures, and exports phosphate products from leading phosphate reserves in Morocco to its clients, which reach farmers in Europe, in Africa, America, and across the world. As a responsible custodian of the phosphate resource, OCP advocates to farmers to use the 4R's: Right Fertilizer, Right Rate, Right Time and Right Place. The 4Rs look at soil health and agricultural practices to make sure fertiliser use is managed correctly, and the recycled phosphorus can be used where appropriate. The core challenge facing the industry is to meet the growing demand for phosphate sustainably.

The ESPP was formed in March 2013 from a declaration by organisations committed to sustainable phosphorus. It ensures knowledge sharing and networking opportunities that contribute to a long-term vision for phosphorus sustainability in Europe, where it is based, but also through its member organisations in other continents such as Japan and North America. Members of the ESPP cover a wide range of expertise across the phosphorus value chain, including phosphorus mining and processing, water and waste treatment, agriculture, phosphorus reuse and recycling and phosphorus innovation and technologies.

As a member of the ESPP, OCP will contribute to discussions, aid research conducted by the platform, and promote sustainable phosphate management.

From biting into a cultured burger, vertically farmed lettuce or genetically modified tomato, options abound as technologies revolutionise the way our food is made.

IDTechEx predicts how food will be made in the future

THE RESEARCH BY IDTechEx covers the wide range of established and emerging technologies in food and agriculture.

Cultured meat

This involves directly culturing the same or very similar animal cells that make up conventional meat to create meat products completely indistinguishable from conventional meat, and without the need for slaughter.

In December 2020, the industry received a major boost when Singapore became the first region in the world to grant regulatory approval for commercial sale of a cultured meat product, made from plant protein and cultured chicken cells produced by Eat Just.

Vertical farming

A method of growing crops indoors under controlled environmental conditions, with crops grown in vertically

stacked layers to save space, it enables yields 20-30 times higher per acre than normal agriculture. By using advanced growing methods such as hydroponics and LED lighting tailored to the exact photosynthetic needs of the crops, vertical farming can achieve yields hundreds of times higher than the same space of conventional farmland.

Almost any location can be used for vertical farming, with companies operating out of old unused shipping containers and the walls of skyscrapers.

Precision agriculture

Precision farming is a promising emerging approach, in which individual plants (or at least regions of a field) can receive targeted treatment increasing agricultural yields in a sustainable manner.

It requires multiple new technologies, spanning robotics, imaging, machine vision and low-cost sensors.

Hyperspectral imaging

One technology that can monitor plant health and catch diseases early, minimising the risk of wastage and lost crops, is hyperspectral imaging. Rather than expressing an image as red, green, and blue (RGB) values at each pixel location, hyperspectral imaging instead records a complete spectrum at each point, creating a full 3D data set.

Biostimulants and biopesticides

Biostimulants could boost crop yields while reducing the need

for fertilisers and boosting soil health and biodiversity, while biopesticides could provide much-needed new modes of action, without causing environmental damage.

Genetic engineering

Crop biotechnology is a set of tools and disciplines that modify organisms for increasing yields, or developing an innate resistance to certain diseases. **B**

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Synomics identifies genomic pathway for improving resistance to CMD

SYNOMICS, A BIOLOGICAL insights business, has identified a genomic pathway for improving resistance of the cassava plant to Cassava Mosaic Disease. Cassava is the third-largest source of carbohydrates globally, and forms a staple part of the daily diet in the developing regions.

Synomics used its proprietary combinatorial analytics and prediction engine (adapted from a platform proven in human disease genetics), to analyse data from more than 5,000 cassava samples, and found potential routes for improving the crop's resistance to CMD.

The platform identifies novel genetic variants, in particular, the combinations of Single Nucleotide Polymorphisms (SNPs - pronounced 'Snips'), that orchestrate the whole function of the gene that determines the traits of a plant. When statistically linked to a phenotype (for example, a plant's height, leaf shape, disease resistance, and other traits), these SNPs become QTNs (Quantitative Trait Nucleotides)- which are considered the "holy grail" of genetics.

During the research, 67 unique QTNs were identified, narrowing down the search for scientists to develop new and more targeted ways of increasing disease resistance, either through selective breeding, gene-editing or new crop protection products and treatments.

Peter Kristensen, CEO of Synomics, says the business has developed the platform to enable agricultural scientists and producers to get an



Image Credit: Adobe Stock

Synomics analysed data from more than 5,000 cassava samples, and found potential routes for improving the crop's resistance to CMD.

even better understanding of the crops that they grow. "Our platform provides insights they have not been previously able to liberate from the data they already hold or has already been published," he explained.

"Synomics is in many respects the missing link between the huge amounts of raw data that farmers and scientists hold and a company's own research and development team - interpreting the data and leading the team quickly to areas of immediate interest," added Peter.

"Whilst current state-of-art practices are limited to looking at the impact of each individual SNP in isolation, scientists know that many traits are the result of SNPs (and genes) acting in complex combinations. Synomics is able to analyse and map these combinations, identifying previously disregarded SNPs as highly relevant."

The science:

Synomics' platform was able to identify novel genetic variants and produce biologically relevant results, for example identifying 285 and 136 unique candidate genes for CMD, not reported before in the literature, related to one-month and three-month disease cases, respectively. Furthermore, it was able to identify crucial biological mechanisms underlying CMD, through the novel technique of using well-researched ortholog genes as replacements for poorly annotated species, such as cassava, to find enriched pathways.

Peter said these results show the value that the Synomics' platform has in discovering novel targets. "In this particular study, 67 QTNs were identified as either disease resistant or susceptible loci for CMD and will pave the way for further functional validation and for potential use as gene introgression or editing targets."

Identifying a small number of high-impact SNPs and QTNs is much more valuable to scientists than simply identifying a large number of SNPs and QTNs. By using Synomics' platform, scientists are able to target genes for intervention, with more certainty, and bring products/solutions to market rapidly and at less expense.

"If we can find ways of treating the disease and increasing the yield, we can address one of the biggest food security issues in the world," Peter concludes.

Africa's first high-tech greenhouse facility in Ethiopia produces first vegetable seeds

BASF's new production facility in Ethiopia's Amhara region, has seen its first produced seeds enter the global vegetable seed market. It is the first high-tech greenhouse complex in Africa and offers ideal year-round production conditions for other plants such as sweet pepper, tomato and cucumber.

Vicente Navarro, senior vice-president of BASF's vegetable seeds business, said, "We invested around US\$9mn into this new facility. It will provide us with extra supply reliability and flexibility to serve our customers worldwide. Sustainable food production is very important to us and we want to do our part. That is why we are very proud of this new facility: It makes us a frontrunner in terms of establishing the first sustainable high-tech seed production site in Ethiopia with fully automated processes for climate

control including humidity, heating and irrigation."

The premises cover a surface of 15 ha, with two hectares occupied by state-of-the-art greenhouses, while the rest is used for open field seed production facilities and infrastructure. According to the last report, there were around 70 permanent employees working at the new site. In addition, BASF has also provided employment to more than 100 seasonal workers, recruited from the surrounding areas, and trained in-house.

Sustainability and commitment to social responsibility

The facility fulfills BASF health, safety and environmental standards, and goes beyond Ethiopia's common sustainability requirements. To reduce its carbon footprint, the facility uses renewable energy sources to generate electricity, and solar panels for providing adequate heat to the greenhouses. Furthermore, the facility has its own wastewater treatment plant and all the waste it produces can be recycled on site.

Ben Depraetere, managing director, Nunhems Ethiopia PLC and country head of BASF's vegetable seeds business in Ethiopia, concluded, "I am very proud to see that apart from delivering seeds to Ethiopian smallholder farmers, we are also actively involved in projects for reforestation and soil erosion control in the area. We want the local community to benefit. That is why, for example, we also supply the community around our site with safe drinking water, have invested in building new road infrastructure and established a fund to create job projects for unemployed young people from the surrounding area."



The new production facility offers ideal year-round production conditions for other plants such as sweet pepper, tomato and cucumber.

Image Credit: Adobe Stock

Dr Terry Mabbett, speaks about the importance of fogging as a means of indoor disinfection, and the range of fogging machines offered by Swingtec for different spaces.

Indoor disinfection using hot and cold fogging

EASE AND SPEED of spread of respiratory diseases from person to person indoors was already well-established in the public health arena, but the on-going worldwide COVID-19 pandemic has put this danger under the spotlight. Corresponding requirements for regular, complete disinfection of indoor situations is equally well appreciated. Effective treatment requires complete disinfection in both space (volume) and surface area. This can only be achieved by harnessing a spectrum of droplet sizes, including small aerosol droplets which 'hang' in the air for space disinfection, and larger droplets which settle out to disinfect horizontal and vertical surfaces.

The only efficient and safe way to achieve complete and effective indoor coverage is by fogging the chemical disinfectant through custom-designed, professional fogging machines which can effectively apply chemical disinfectant using water as the carrier liquid.

Indoor disinfection against viral infection

A succession of influenza A viruses (H5N1 bird flu virus and H1N1 swine flu virus) causing zoonotic diseases which can be transmitted to humans, and corona type viruses (SARS and MERS) originating in animals, have raised the profile of indoor disinfection. And no more so than in Asia and the Middle East where the full effect of these virus diseases was previously felt. However, the Corona virus COVID-19 pandemic has alerted and focussed minds worldwide on the crucial importance of indoor disinfection, including hospitals, offices, shops, factories and all modes of mass transit and transport – aeroplanes, ships, trains, trams, metros and buses.

Indoor disinfection presents a wide spectrum of situations of different size and



Swingfog SN50 in action at a university in Thailand

Image Credit: Swingtec

shape, and therefore volume (space) and surface area comprising walls, floors and ceilings as well as fittings, fixtures and equipment, some of which will be movable and some not. Frequency of disinfection will be governed in part by the turnover of people entering and leaving the enclosed space. Promptness and speed of application is another important consideration in areas such as railway stations and airports with rapid throughput of commuters and travellers.

Next consideration is safety of the delivery system or formulation and the carrier liquid used to disperse the disinfectant chemical. Some applicators must use oils or solvents to achieve the required droplet size and distribution of droplet sizes and of sufficiently small diameter to meet the requirements of an aerosol. Additional safety considerations relate to the potential aggressiveness of disinfectant chemicals. This means applicators must be designed and developed to cope with the standard range of proprietary disinfectants, without sustaining damage through any corrosive effect of the chemical.

The applicator must simultaneously satisfy a range of requirements through its versatility of use and robustness. And with regard to safety and convenience the applicator should be operated free-

standing and by remote control, to ensure the operator(s) is not within the enclosed space while treatment is in progress. However, there will be situations like railway carriages, aircraft cabins, ship's cabins and series of small not interconnected rooms where portable units carried by the operator may be required.

Overriding requirement of application method and applicator specification is capacity to produce and alter as necessary droplet size and droplet size distribution to fulfil the dual and specific requirements of space and surface disinfection. There are many small and inexpensive electrical sprayers which can be carried or placed on a table while applying disinfectant and which may work to an extent within small enclosed spaces or rooms. However, they will invariably generate non-uniform, heterogeneous droplet spectra with limited reach and coverage, which makes them unsuitable for successful disinfection of larger surface areas and space volumes.

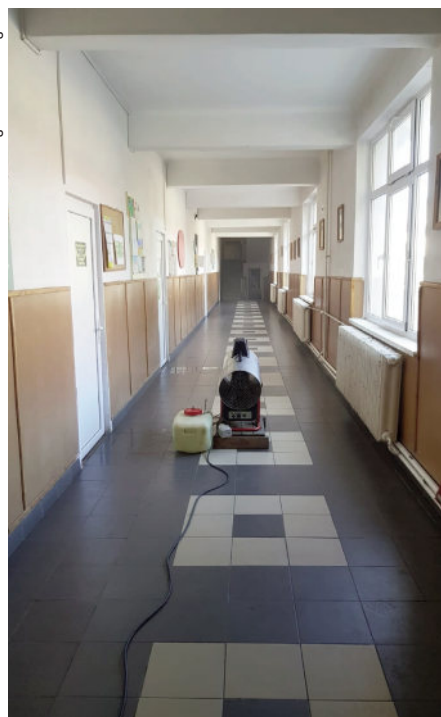
Cold fogging with water based formulations

The only efficient and safe way to achieve complete and effective indoor coverage is by fogging the chemical disinfectant through custom-designed, professional fogging machines which can effectively apply chemical disinfectant using water as

the carrier liquid. Swingtec GmbH of Germany has a range of cold fogging machines which meet all the requirements outlined above for effective, versatile and safe disinfection of indoor spaces and surfaces using water as the carrier liquid. "Air (space) disinfection and surface disinfection combine to fulfil the complete and effective disinfection process" says Swingtec, while highlighting how requirements of droplet size and therefore droplet behaviour are very different for space and surface disinfection.

Air disinfection requires the generation of ultrafine droplets which stay suspended as an aerosol to disinfect the entire space including the nooks and crannies that otherwise would be hard to reach. Surface disinfection requires a larger size of droplet, but still able to stay suspended in the air for sufficient time before they sediment and impact evenly onto all surfaces – walls, ceiling and floor.

Image Credit: Swingtec



Fontan Compactstar in place and ready for action in a Romanian school.

"Our professional machines come equipped with range of nozzles and restrictors which allow flow rates to be adjusted accordingly for production and delivery of larger or smaller droplets," says Swingtec. Electrically-driven cold foggers which are custom- designed for stand-alone, remote operation and with water as the carrier liquid are the first and foremost choice for indoor disinfection. Swingtec offers two highly professional models depending on the area/volume to be disinfected from a single standing position.

Fontan Starlet

The Fontan Starlet which is operated from a standing (stationary) position and equipped with a spray gun is designed for the disinfection treatment of small rooms and spaces. Fontan Starlet is designed for the disinfection of rooms up to 500 sq m in area and 2000 cubic metres in volume, which in practical terms means, for example, a room measuring 20 m in length, 10 m in width and 10 m in height. This will include a whole range of situations for high priority disinfection including open-plan offices, classrooms, laboratories, hospital wards and doctors' surgeries.

Fontan Starlet is offered in two different versions, a standard version with a brush-type motor and a stainless-steel version with a brushless turbine, the latter developed for disinfection using more aggressive chemical formulations such as hydrogen peroxide and even per-acetic acid that aggressively attack standard steel and coloured metal materials. Extra volume versatility is offered by different size options of the fog liquid chemical tank, namely the 6-litre, 11-litre and 34-litre sizes, all made of polyethylene and supplied with compatible tank holders.

The Fontan Starlet is a machine of compact dimensions measuring 37 x 30 x 36 cm (without fog liquid tank). Empty weight is 12.7 kg and 11.0 kg for, respectively, standard and stainless steel versions. Power specifications are 1.5kW single phase AC (standard version) and 1.2 kW single phase (stainless steel version) output when measured with water.

This highly adaptable and versatile cold fogging machine can be operated in either ULV (ultra low volume) or LV (low volume) modes by selecting the appropriate dosing nozzle. In ULV operational mode all dosing nozzles, of stainless steel as standard, deliver a droplet volume median diameter (VMD) of < 30 µm.

Standard version: Liquid output rate for ULV application is 0.8 l/h up to 7.9 l/h depending on dosing nozzle used and 10.7 l/h without a dosing nozzle. Equivalent rates for LV application are 1.9 l/h up to 26.2 l/h depending on dosing nozzle and 44.6 l/h without a dosing nozzle.

Stainless version: Liquid output rate for ULV application is 0.7 l/h up to 6.5 l/h depending on the dosing nozzle used and 8.7 l/h without a dosing nozzle. Equivalent rates for LV application are 1.7/h up to 25.8 l/h depending on the dosing nozzle used and 41.0 l/h without a dosing nozzle.

Fontan Compactstar

For much larger areas and volumes is the Fontan Compactstar, an electrically-driven

Fontan Starlet is offered in two different versions, a standard version with a brush-type motor and a stainless-steel version with a brushless turbine

cold fog aerosol applicator. The Fontan Compactstar is a semi-automatic machine started manually but stopping automatically when the fog liquid tank has been emptied by the operation or after a pre-selected volume of fog liquid has been discharged. The solution line and the nozzle system are rinsed manually from the rinsing bottle.

This machine features a stator in the ventilator tube and developed by Swingtec to allow treatment of a large room, with a correspondingly large surface area and volume (space). The space and surface area is treated effectively and efficiently from a single position and without having to move the machine. The stator provides uniform vertical and horizontal distributions of droplets over an area of approximately 60 m x 40 m, large by any reckoning and typically including factory floors, warehouses and abattoirs. Even larger areas and volumes can be accommodated by the installation of complementary fans for simultaneous operation with the Fontan Compactstar.

The low pressure operation system of 0.35 bar afforded by the Fontan Compactstar allows the operator to use relatively large size (diameter) nozzles. This in turn permits use of suspension powder delivery systems (formulations) to be easily and adequately discharged through the cold fogging machine.

Despite the size and scope of treatment achieved the Fontan Compactstar is a relatively light-weight and compact unit weighing in at 35 kg without the fog liquid tank, and measuring 65 x 40 x 84 cm without the fog liquid tank. Air flow and volume capacity achieved by the axial ventilator with stator is 4850 m³/h. Power specification is 1.1kW single phase AC.

This large capacity but still highly versatile cold fogging machine has two sizes of fog liquid tank, 15-litre and 34-litre, each with an integral pneumatic mixing device function which can be disabled if required. Liquid output, calibrated and measured using water, is 2.9l/h to 8.6l/h depending on the size (diameter) of dosing nozzle fitted. The volume median diameter (VMD) of droplets produced for all standard, stainless-steel, dosing nozzles is <30µm.

Hot fogging on the move using water

There are situations such as railway carriages, aircraft cabins, cruise liners and series of small interconnecting rooms where the fogging machine may have to be carried while in operation. This will require use of thermal or hot foggers designed to use oil or solvent based carrier liquids to disperse the chemical which clearly places environmental and human safety restrictions on use of thermal foggers for wholesale indoor disinfection.

Without special modification, the standard thermal fogger cannot cope with a water-based fog liquid, because when operated with water, it is unable to generate the narrow and homogenous droplet spectrum below 30 μm VMD (Volume Median Diameter) in accordance with WHO specifications. The droplet spectrum produced with water-based fog liquids is much wider with droplets from 0 μm up to 200 μm . Those in excess of 40-50 μm are unable to suspend as aerosol droplets in the air. Instead they settle and sediment in front of the fog generator to form wet spots and unacceptably large and concentrated chemical deposits.

Swingtec overcame and solved this problem by designing an attachment called the 'High Performance Fogging Tube' which was custom designed to allow its Swingfog thermal fogging machines to use water-based fog liquids. When fitted with the 'High Performance Fogging Tube', instead of the standard one, the portable Swingfog SN 50 thermal fogger generates a droplet spectrum below 30 μm using liquid (water) flow rates of up to 27 litres/hour. The same benefits are achieved with Swingtec's larger truck-mounted or stationary thermal foggers. Thus the same ideal droplet spectrum is achieved by fitting the 'High Performance Fogging Tube' to the Swingfog SN 81 and SN 101 thermal foggers operated at liquid (water) flow rates of up to 60 litres/hour.

In summary the benefits of Swingtec hot and cold fogging technology for indoor disinfections are:

Cold fogging machines and hot fogging machines, the latter fitted with the custom-designed 'High Performance Fogging Tube', can be used to fog a wide range of chemical disinfectants using water as the carrier liquid

The portable Swingfog SN 50 thermal fogger generates a droplet spectrum below 30 μm using liquid (water) flow rates up to 27 litres/hour.



Fontan Starlet stainless steel unit deployed for disinfection of an operating theatre at a hospital in Germany.

Image Credit: Swingtec

Excellent air (space) disinfection and surface disinfection is achieved

Use of water-based fog liquids is cost effective and safe for operators, the public and the environment

The Swingtec ranges of hot and cold foggers means operators can disinfect a spectrum of space volumes and surface areas effectively and efficiently using machines operated in portable, stationary and truck-mounted modes as appropriate

Hot and cold fogging provides a versatile application option in speed and frequency of indoor disinfection.

The indoor situations described here (transport, hospitals, schools, factories,

offices), in relation to disinfection against the on-going worldwide COVID-19 pandemic, will be subject to regular and routine programmes of cleaning. As such the accumulation of dirt and grime which could affect the efficacy of fogged disinfectant should not be a problem. This is in direct contrast to the disinfection of poultry houses and livestock premises, where accumulation of high deposits of dirt and animal and feed debris is known to impact on the efficacy of disinfection by fogging.

Disinfection by fogging in animal production is still critically important but only as a 'terminal disinfection' at the end of a thorough cleaning programme. **E**

Authors' note

COVID-19 – two way movement between man and animals

COVID-19 IS A zoonosis virus originating in animals and subsequently transferring to humans, but since the corona virus pandemic started there has been a not inconsiderable transfer of disease in the other direction from humans to animals.

What's more some of the most concentrated outbreaks of human disease have occurred in abattoirs, meat processing plants and other food production factories. Meat processing plants and other food production premises face a complicated mix of issues which may result in higher rates of virus transmission. Research suggests that the virus particles persist on surfaces for a longer period of time in the low temperature conditions required in these food manufacturing plants. In addition maintenance of social distancing on production lines is difficult for workers who will often live together in housing provided by their employer.

Perhaps the biggest outbreak of this virus disease in captive mammals, following transfer from infected humans, was in Denmark where the entire mink farm population of some 17 million animals was culled. Of particular concern was the development of a 'mink strain' of the virus and fears this could be passed back into the human population via workers at the farm.

Özkan Eren, business director, New Holland Agriculture Africa & Middle East, speaks about how the agricultural machinery market is faring in the pandemic era, training workshops for farmers, and some future projects.

Fast track to future: Technology, sustainability and customer support

How has African agriculture thrived during the pandemic? Tell us about your turn towards sustainability.

The pandemic has been affecting all businesses with more or less impact and challenges. But the overall demand for Agricultural machinery was good, for most of 2020, compared to other economic sectors. Now that we have entered 2021 with a really strong demand coming from all regions, it shows how much the economy relies on this sector.

Last year, in Africa, the tractor segment was almost flat compared to the previous year, but the combine segment saw an increase, and one out of every three tractors, and more than 40% of combines sold in Africa, were from our brands. As of today, the order intake is good, and we are setting everything possible to meet the needs and deliver the machines on time for New Holland farmers in Africa.

Apart from the pandemic, globally there are some crucial macro trends at play that will change our future. We, as New Holland Agriculture, have pioneered sustainable, innovative solutions for some 14 years. We are driving forward our brand's Clean Energy Leader strategy, consolidating its leadership in alternative fuels and extending its scope with innovative solutions.

We developed the Energy-Independent Farm model, which shows how a closed-loop between agricultural production and energy generation can make farming CO₂-neutral or even carbon negative. Now, we are on the next step to turning this into a reality, as the T6 Methane Power tractor will enter the New Holland range by the end of the year, and will be available to customers starting in Europe, and across the world.

We see sustainability as a business enabler that will give us a real competitive advantage going forward, and we have a role to play in supporting local farming communities through a sustainable development.

What kind of tractor models and innovative features are seeing more demand now?

New Holland Agriculture offers cash crop producers, livestock farmers, contractors,



Technological advancements will enable sustainable farming and maximise productivity.

Image Credit: CNH Industrial

vineyards and ground care professionals the largest choice of easy-to-operate tractors, harvesters, balers, material handling and seeding equipment. We are ideally placed to meet the growing demand and specific requirements of the African markets. All our New Holland Agriculture branded tractor ranges combine muscled up performance, with plenty of features, giving the farmer the cutting edge tractor technology to survive through the toughest conditions in Africa.

For example, in the compact and utility segments, we mainly offer the TD, TT4 and TT3 Series of rugged, dependable and easy-to-use products, small in dimensions, but big in performance, sourced from Turkey and India, which make a big contribution to our share of the overall tractor market. On the mid-range tractors segment, we focus on the T6000, TS6, TD5 Series to perform a wide variety of agricultural and livestock farming operations, sourced from the UK, Mexico and Turkey. In countries where there are big farmers and large-scale farming operations relying on the most advanced technologies and high capacity, high productivity equipment, we see a demand for our flagship products and precision farming technologies.

How do technological enhancements help increase agricultural productivity?

Technology is disrupting the way business is made in Africa and we are on a fast track for adoption. This will affect the agriculture industry as well. Access to the best technologies and connectivity reinforce sustainable farming, optimising the use of inputs while assuring safer and more efficient operations with maximum quality and productivity.

Strategic partnerships with mobile data management platforms that integrate and visualise in-season agronomic and machine data, while providing significant decision support tools for customers. So, digitalisation is the enabler for automation and autonomous vehicles, and we are addressing this trend throughout all our strategies within the company.

We have been executing a pilot project in Kenya for a tractor fitted with telematics, which will leverage data to enhance the experience of our dealers and customers, to obtain good support and services.

Are there any schemes for farmers, including financial support and training?

Farmers around the world share the same fundamental challenge that every business has, to provide technical and operator

training support throughout the continent. During the pandemic, we have delivered commercial, operator and technical trainings to our dealers and customers in Africa through the digital platforms with live sessions. As a manufacturer, we also need to be alongside farmers and help them as they progress in mechanising and developing their business with comprehensive, all-round support. On this regard, we are providing financing and support packages through our dealers and we are also providing retail financial support for the special projects through international financial institutions and Exim banks of our manufacturing countries.

Tell us about New Holland's future projects in Africa.

The latest investment we have made is the acquisition of Raven Industries Inc, which is a leader in precision farming, which shows the commitment of our company to accelerate the full-scale offerings that our global customers need. Raven Industries will strengthen our competitive position by adding innovation capabilities in software, autonomous and precision agriculture technology.



Özkan Eren, business director, New Holland Agriculture Africa & Middle East.

Image Credit: CNH Industrial

Additionally, we have renewed flagship product lines and focused on connectivity, digitalisation and innovation with two new models, the T8 Genesis and T9 with PLM Intelligence. We launched this next gen T8 last year and now it has finally arrived in some markets and available for our customers across Middle East and Africa region. This next generation is fully connected, providing innovative features like remote display viewing and remote service diagnostics.

We signed a new partnership agreement with one of the biggest dairy producers in

Algeria for the supply of FR450, last year. Two years ago, Braud 9090X Olive Harvester penetrated the market in Morocco, followed by more units in 2020, in spite of the difficulties raised by the current global situation. We also launched the TT4 tractor models across Africa.

Now, we have new partners in Nigeria and Mauritania. We plan to continue developing and expanding New Holland Agriculture networks to be closer to our customers and provide them the professional support they need as mechanisation progresses. **E**

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John Deere launches all-new 9R-Series Tractor

DESIGNED TO MAXIMISE time in the field while optimising yield for farmers across Africa and the Middle East, John Deere has unveiled its newest model, the all-new 9R-Series Tractor.

The model is likely a competitor for the largest, strongest and most technically-advanced model in John Deere's fleet.

Offering maximum power and precision ag technology, the new 9R-Series is equipped with all of the original 9R specifications, with performance and efficiency upgrades.

Available in wheeled (9R), two-track (9RT) and four-track (9RX) configurations, the series enables farmers to cover more ground in less time with greater accuracy and quality. A larger cab improves the user experience while performance upgrades ensure efficiency and a reduction in operating costs.

With a 13.6-litre engine, the tractors can achieve between 390 and 590 horsepower, along with optimal fuel efficiency and a robust engine capacity throughout its operational life. The 13.6-litre engine offers 13.5% more horsepower than the previous 13.5-litre option, along with 3% more fluid efficiency, 50% less engine noise, a 27% improvement in reparability and a 13% reduction in maintenance costs.

Ultimate operator comfort and convenience is achieved with the 9R series through an extended headroom, wider entry path, larger integrated refrigerator, new seat options, touchscreen radio, footrests and more, all designed with daily operation in mind.

All 9R-series tractors are available in select, premium or ultimate cab packages, with varying degrees of user convenience and system capability.

Three new visibility packages also contribute to added operator



Image Credit: John Deere

The new 9R-series offers wheeled, two-track and four-track options with a range of user features across select, premium or ultimate cab package categories.

convenience, with additional lighting, sunshade and camera options available around-the-clock for smooth operations during extended working periods.

An increased max ballast contributes to maximum traction and drivetrain efficiency, while also reducing slip and increasing power at the drawbar to increase productivity.

Operators can keep on track with a Gen4 Command Center, AutoTrac activations and JDLink, which features a new StarFire 6000 Integrated Receiver, making the tractor ready-for-action the second it leaves the factory. **D**

Symaga's latest membrane sensor, SY-SM1, begins production

SYMAGA SILOS HAS begun production on its new membrane sensor, the SY-SM1.

The project, carried out following several months of research, has achieved an optimisation from previous membrane sensors, with an increased cost-competitiveness and safety for the sensor.

The SY-SM1 sensor is ATEX ZONE 20 certified, the zone with the highest explosion risk, and ATEX Zone 21. To guarantee safety for our team in manufacturing, SYMAGA has assumed the reference standard for the manufacture of ATEX equipment, UNE EN ISO / IEC 80079-34 under its quality system.

One of the main advantages of the new membrane sensor is its integration of a regulation column, which allows for sensitivity adjustment.

The sensor was specifically designed with easy assembly in mind, with the sensor adapting to the wavy shape of Symaga Group's silos' body sheets. The sensor is also able to be installed in the hopper of silos.

The sensor is especially recommended for the detection of the minimum level in powdery and granular products with easy flow and with a specific weight between 300 and 2500 kg / m³.

The new SY-SM1 membrane sensor is part of the 2020 product development plan, which highlights Symaga's continuous research and development work to improve its existing

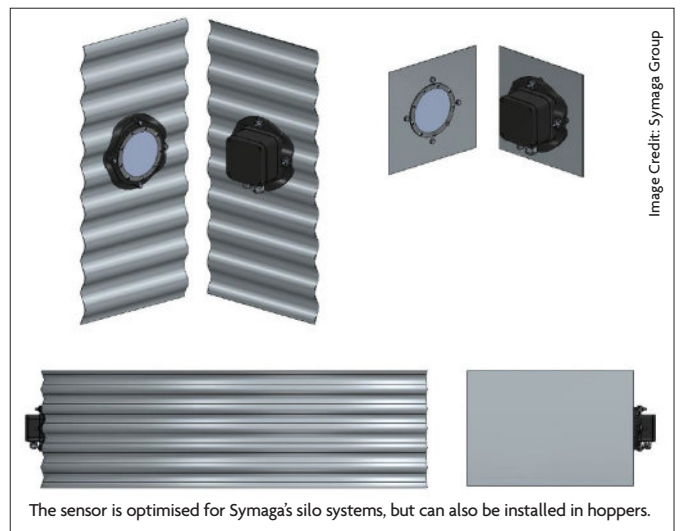


Image Credit: Symaga Group

The sensor is optimised for Symaga's silo systems, but can also be installed in hoppers.

range of storage solutions.

Testament to its practicality and safety, the sensor has been ATEX ZONE 20 certified, the zone with the highest explosion risk, as well as ATEX Zone 21.

Bobcat's new telescopic loader range provides a choice of seven models with Stage V engines.

Bobcat launches new telescopic loader range for agriculture

THE NEW GENERATION R-Series telescopic loaders cover maximum lifting capacities between 2.6 and 4.3 tonne with lifting heights from 6 to 8m. This is the latest phase in Bobcat's revolutionary 'Next is Now' programme, combining innovative product development and diversification with more intelligent, more connected technologies and services that reshape how work gets done on the farm.

Commenting on the R-Series launch, Gustavo Otero, president, Doosan Bobcat EMEA, said, "Telescopic loaders are a fundamental asset of our business strategy and a key pillar of our Next is Now initiative. Our new ground-breaking R-Series range offers superior machines that combine all-day comfort, maximum productivity and reliability, intelligent features, a robust build with intuitive operation and excellent 360° ergonomics. With these models and the increased investment in our telehandler business, we are aiming to double the production of Bobcat telescopic loaders by 2025."

The R-Series range of telescopic loaders from Bobcat comprises the models below:

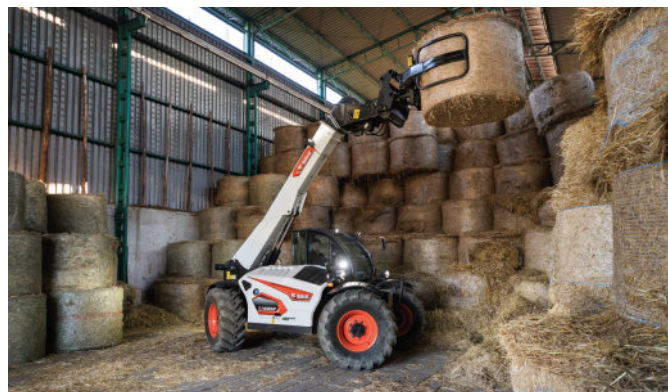
Compact models – TL26.60, TL30.60 and TL30.70

Large models – TL35.70, TL34.65HF, TL38.70HF and TL43.80HF

Otero continued: "Bobcat telescopic loaders are popular all around the world. We want to further improve our presence and accelerate our growth in all agricultural markets with this new generation of machines."

New cab offers premium workspace and operator experience

Bobcat R-Series telescopic loaders offer a premium workspace with a new cab design. The new high quality, contemporary interior of the cab features stand-out R-Series branding, colours and textures that clearly reflect Bobcat's DNA. In the ergonomic design, all surfaces have been optimised to offer increased space and visibility. Special attention has been paid to the storage spaces. The refrigerated or heated isothermal compartment makes a full day's work




The large Bobcat TL43.80HF telescopic loader.

"Our new ground-breaking R-Series range offers superior machines that combine all-day comfort, maximum productivity and reliability features."

on the farm even more enjoyable.

A Grammer Maximo Dynamic air suspension seat with heating, featuring a suspended armrest with joystick provides an outstanding ride and high operating comfort.

Designed for farming

In the new R-Series telescopic loaders, Bobcat has retained the well-accepted and successful box-welded frame design – with steel plate protection at the base of the machine – a signature feature of all Bobcat loaders. Thanks to the combination of well-balanced machines, a low centre of gravity, a heavy counterweight and a long wheelbase, Bobcat R-Series telescopic loaders can handle heavy loads at any height, easily and safely. 

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LEMKEN, a specialist in professional arable farming, has launched the new OptiStone automatic overload protection for its Juwel, Diamant and Titan ploughs.

Overload protection for LEMKEN ploughs

THE OPTISTONE FEATURES a closed system of highly stable leg plates at its heart, which is reliably protected against dirt and foreign objects, and a newly designed swivel bracket ensures high lateral tripping forces and optimal plough control in stony soils.

When an obstacle is encountered, the new LEMKEN overload element simultaneously deflects up to 37 cm upwards and 20 cm to the side. This provides a sufficiently large range of deflection to ensure consistently disruption-free work, even with deep ploughing. The tripping forces can be continuously adjusted from the comfort of the driver's seat to adapt to changing soil conditions. If the system catches below a slab of stone or roots, it is additionally protected by

The radical spherical plain bearing is durable, reliable and easily accessible for convenient maintenance.



The new overload protection OptiStone at the LEMKEN Juwel 10.

Image Credit: LEMKEN

a double-cut shear bolt to prevent damage to the plough.

The OptiStone overload protection features high-strength radial spherical plain bearings (to keep the plough bodies stable as the system deflects), which are firmly connected to the three-dimensional bearing points and therefore cannot unhitch. This represents a clear advantage compared to the overload protection systems with a four-point suspension more traditionally found on the market. The radial spherical plain bearing is durable, reliable and easily accessible for convenient maintenance. **B**

EIMA International 2021: Visitors and exhibitors eagerly await Idrotech Exhibition

A SURVEY CONDUCTED by GRS for FederUnacoma confirms the confidence of manufacturers in trade fairs and in particular the Bologna event.

After the standstill caused by the health emergency, trade fairs are once again the mainstay of the promotional and commercial activities of industrial companies, with even greater force, suggests an analysis of the sector carried out by the company GRS, on behalf of FederUnacoma.

The survey, conducted on a large sample of manufacturers and visitors, was presented by FederUnacoma's general director, Simona Rapastella, during the Federation's general meeting held in Varignana, near Bologna.

The vast majority of the companies surveyed (83%), recognise traditional trade fairs as a fundamental market protection. Almost nobody among the manufacturers (2%) thinks that they have outlived their function and that in the future they may be replaced by other types of events. Even higher (95%) is the percentage of visitors who consider traditional trade fairs irreplaceable.

In this scenario, the positioning of an event such as EIMA International, the

world exhibition of agricultural machinery, which is holding its 44th edition in Bologna from 19 to 23 October, stands out.

As many as 250 exhibiting industries have confirmed their presence at the Idrotech Show, one of the specialised areas of EIMA International. The exhibition will feature the some of the most advanced technologies for the use of water in agriculture,

The sustainable use of water resources is one of the central themes of EIMA International, the exhibition of agricultural machinery. The Bologna event reserves a large space for irrigation and water management technologies, the Idrotech Exhibition which, covering over 10 thousand square metres of exhibition area, confirms the success achieved for its debut at EIMA 2018.

According to the organiser of the event, the number of exhibiting industries could still increase in view of the strategic importance that the theme of water has taken on in recent years. Climate change is depleting the planet's water resources, as the reduction in rainfall and the increasing irregularity in their distribution

make it impossible to balance consumption and replenish reserves.

According to a recent FAO report, these reserves have shrunk by 20% in 20 years, bringing to 1.2 billion the number of people living in areas with a high water deficit. The emergency also concerns Europe, in particular the Mediterranean basin, which is increasingly affected by desertification (as informed by the European Environment Agency).

In a scenario characterised by a growing demand for foodstuffs, agriculture must necessarily increase production yields without worsening the water deficit, and the answer lies in the use of advanced technological solutions. Pumping and filtering systems, water delivery systems from "sprinklers" to hose reel wagons, from rain wings to fertirrigation equipment, and all the specific components including the most advanced control units and devices, will be showcased at EIMA Idrotech Exhibition. The programmes and technical seminars involving universities and institutions, taking place at the exhibition will further increase the knowledge of the visitors.

Automatic trailer stretch brake is now available and can be retrofitted to ARION 500/600 tractor. It operates using sensors in the transmission to record engine torque and transmission loads.

CLAAS to launch automatic stretch brake function for ARION 500/600

CLAAS IS LAUNCHING an automatic stretch brake function for the ARION 500/600 tractor with CMATIC transmission and air brakes to relieve the burden on the driver in difficult conditions, such as driving heavy trailers downhill and working with square balers, round balers, baler-wrapper combinations and trailed crop sprayers on sloping sites.

With four new functions to support the driver, the system automatically activates the



Pulsing action of the brakes effectively prevents overheating with automatic braking assistance.

Image Credit: CLAAS

trailer's air brakes as soon as critical thrust forces are exerted on the tractor that potentially

could result in the trailer jack-knifing. Drivers can actively increase the braking action of

the combination when driving by pulling back the drive lever in auto mode or the drivestick in drivestick mode.

For maximum deceleration the air brake engages automatically to reduce the trailer's ground speed and stretch the tractor-trailer combination. On slight slopes, the cruise control speed is automatically maintained by activating the pneumatic trailer brakes; on steep slopes and with heavy loads, excessive set cruise control speed is reduced. **B**

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Lindsay Corporation speaks to farmer Fanie Botha, who still uses the Zimmatic pivot his father-in-law bought in 1978.

Pivotal success with Zimmatic

Zimmatic pivot ensures long-life quality, says farmer Fanie Botha



Image Credit: Lindsay

BUYING A PIVOT is usually a big decision for farmers, as they require a fair amount of capital to invest in equipment, which ensures proper irrigation in their fields. Lindsay Corporation speaks to farmer in Northern Cape, South Africa.

Fanie Botha lives in Taiboschpoort, which is located just outside of Petrusville. "I farm with a little bit of everything. We make food for the nation here," he says, when he is asked about his favoured choice of farming equipment. His crops include corn, wheat, peas, sunflowers and lucerne.

Fanie has a 42-year-old Zimmatic pivot irrigating one of his fields. The pivot was bought by his father-in-law in 1978, and it was the second Zimmatic

pivot sold in the country. Back then, Zimmatic was new in the market and had to work hard to convince farmers to buy their products. Fanie says his father-in-law bought it all those years ago, because it promised to offer unparalleled durability and strength.

"Besides that, Zimmatic pivots were also lightyears ahead of all other pivots back in 1978. They had more features and capabilities than most other brands," he added.

The salesperson promised Fanie's father-in-law that the Zimmatic pivot would last at least 15 years. He could have hardly guessed that even after

so many years, the same pivot would still be operational.

"They really are tough. Look, we still need to do basic maintenance, as you should be doing on any pivot, old or new, but the fact that this one is still working without major issues is just astounding," Fanie explained.

The pivot has recently been adapted to work with Lindsay's FieldNET solution, so that Fanie and his team can control the pivot remotely. This adaptability is something that Fanie admires about Zimmatic's products too.

Fanie says he has added several Zimmatic pivots to his farm in recent years. When

asked what kind of challenges do they help him overcome, he says, for him, it is more important to know, that his money is being put to good use.

"Every time I buy a Zimmatic pivot, I know it will last for many years and eventually become my son's equipment to farm our land with. And that's what convinced me to make Zimmatic our preferred irrigation system," Fanie said.

Fanie has a standard answer at the ready for friends who ask him, which pivot to buy. "I tell people to go and buy any other brand of pivot. Then you look at how long it takes before that pivot starts to give you issues. When buying Zimmatic, you know what kind of quality you are getting and the chances that you will encounter issues are virtually zero," he stated. **E**

The pivot has recently been adapted to work with Lindsay's FieldNET solution, so that farmers can control the pivot remotely

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Corrie MacColl launches the Cameroon Outgrower Programme to empower 13,000 rural farmers

CORRIE MACCOLL, A subsidiary of global natural rubber supply chain manager Halcyon Agri, has announced the launch of its Cameroon Outgrower Programme which will equip 13,000 smallholder farmers in Cameroon with education and US\$28mn in financing, to develop 27,000 hectares of multi-crop farms around a core crop of 100% traceable rubber.

The 15-year programme will provide food and income security to rural communities by increasing yields on degraded or low-yielding farmland.

Cash crops will provide US\$139mn of total crop revenues for farmers to sustain livelihood and working capital needs, until the rubber generates US\$38mn of added annual income. The programme accelerates several United Nations Sustainable Development Goals. The planting of 13.5 million rubber trees will sequester large quantities of carbon on non-forested lands. The approval of land titles and the financing of resources drives sustained socio-economic development in rural communities. The process is facilitated by local coopera-

tives and a digital smallholder credit risk assessment and loan origination tool developed by LendXS, the digital credit services platform of financial access. The tool allows the programme's lending partner to efficiently process the individual farmer's loan applications and to accurately assess and track the individual repayment capacity of each farmer participating in the programme. Candidates will also receive classroom and practical education on sustainable, high-yielding agronomical practices, and financial management lessons.

IFAD's Private Sector Financing Programme to boost rural businesses

RURAL BUSINESSES WILL get a much needed boost from an ambitious new financing programme launched by the UN's International Fund for Agricultural Development (IFAD), as part of its broader efforts to address rising hunger and poverty levels in the world's poorest countries.

The Private Sector Financing Programme (PSFP) aims to spearhead an increase in much-needed private investment in small and medium-sized enterprises (SMEs), farmers' organisations and financial

intermediaries servicing small-scale farmers, which are too often neglected by investors. It will provide loans, risk management instruments (such as guarantees), and equity investments.

Lack of financing and access to financial services prevents rural SMEs and small-scale farmers from harnessing opportunities offered by a growing demand for more diverse and nutritious food globally. SMEs involved in food processing, packaging, transport and

marketing are essential to small-scale farmers, providing them with services, inputs, and market opportunities, which contribute to increasing their income and employment.

"We can end poverty and hunger! But to achieve this, we urgently need to stimulate more private sector investments to rural areas and unlock the immense entrepreneurial potential of millions of rural SMEs and small producers," said Gilbert F Houngbo, president of IFAD.

"With access to capital, they can attract more investors and partners, grow their businesses and create employment opportunities - especially for young people and women," he added.

PSFP has announced its first loan of US\$5mn to a Nigerian social impact enterprise, Babban Gona, which has a strong background in successfully moving small-scale farmers from subsistence to a more market-orientated model. The loan will

help Babban Gona support 377,000 small-scale rice and maize producers in Nigeria with a comprehensive package of training, quality inputs, and marketing services.

Babban Gona will also store and sell the harvest on behalf of its farmers when prices are higher. It aims to create up to 65,000 jobs for women and 66,500 jobs for youth by 2025. By committing these funds, the PSFP aims to stimulate larger contributions from other investors and help Babban Gona meet its target to raise US\$150mn to reach millions of small producers.

IFAD aims to mobilise US\$200mn for the PSFP from public, private and philanthropic sources, to leverage a total of US\$1bn in private investments. This will improve the lives of up to five million small-scale farmers. The PSFP will focus its investments on job creation, women's empowerment, building farmers' resilience and accelerating climate change mitigation.



Image Credit: Adobe Stock

IFAD aims to mobilise US\$200mn for the PSFP from public, private and philanthropic sources.

ABC Fund provides financial support to three West African agri-businesses

THE AGRI-BUSINESS CAPITAL (ABC Fund) has provided loans to three agri-businesses, to support their working capital needs, and help expand their businesses. The ABC Fund provided a loan of approximately US\$530,227 to Kaworo, a producer of grains (mainly maize, millet, sesame, cowpeas and sorghum) and seeds, to finance the purchase of grains for the 2021/2022 farming season. The loan will enable the company to increase the number of farmers it works with, providing additional income to more than a hundred new farmers. The scheme currently has 525 outgrowers, of which 28% are women and 40% are youth. In 2019-2020, Kaworo managed to produce a total of 1,753 tonnes of cereals.

Etablissement Yaffa et Frères (EYF), one of the largest local fresh mango exporters and the only company which delivers mangoes directly

from its packing facility to supermarkets by air freight, in Mali, has received approximately US\$294,176 in working capital, to purchase mangoes and meet related export costs, to cater to the increased European demand. The financial support will enable EYF to continue buying mangoes from the current 310 farmers, and employ 200 seasonal workers on the packaging site.

ROCFED, an exporter of mangoes from Côte d'Ivoire has received US\$354,28 approximately, to purchase mangoes from more than 200 producers at a higher rate, than the market price, and sell into European markets. The ABC Fund is a blended-finance impact fund, which provides catalytic financing to underserved yet profitable segments of agribusiness value chains in developing countries.

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AGCO pilots Precision Ag Line (PAL) support service for farmers using mixed-fleet operations

AGCO CORPORATION, A company that specialises in the design, manufacture and distribution of agricultural machinery and precision ag technology, has announced the pilot of its Precision Ag Line (PAL) programme, a tool designed to streamline support services for farming customers using AGCO solutions with mixed-fleet operations.

PAL makes precision farming expertise available to farmers using products from widely-used AGCO brands such as Challenger, Fendt, Gleaner, Massey Ferguson, and Precision Planting, even when those products are used in conjunction with equipment from other manufacturers. The result is more efficient solutions that lead

to satisfied customers and improved farming outcomes.

“Precision farming techniques can become complicated, especially when products from multiple manufacturers are used to accomplish them,” said Cody Light, field execution manager for AGCO’s fuse division. “PAL puts farmers in direct touch with our technical experts who are very experienced at aligning disparate systems into effective processes. This programme is directly aimed at ensuring our customers have the best farming outcomes and exceptional customer experiences with our products along the way.”

PAL leverages the AgriSync platform to ensure a seamless experience for farmers, dealers and AGCO’s technicians. The tool aligns with the dealer’s current support system to streamline access to the service. Customers of participating AGCO dealers can simply call or text a familiar number to speak with product and technical experts at the dealership or AGCO itself, for immediate assistance from some of the industry’s most capable precision ag specialists. The company plans to expand the programme to additional locations in 2021 and 2022.



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