Communication platforms to improve agric in Uganda

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INSIDE THIS ISSUE

Technology drives long-term resilience in farming  7
Fish feed company opens in Tanzania  10

Kenya to equip beekeepers with new technologies  12
How digital agriculture can help Africa during COVID-19  18-19
Are you geared towards these developing trends?  22-23
GI OVO’s eggs tray inspector hits market  28
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Contents

Editorial Comment
Radio should help spur agriculture in Uganda ........5

Cover Story
Communication platforms to improve agric in Uganda ..........6

Business, Companies & Markets
Technology drives long-term resilience in farming ..........7

Regional News
Artificial insemination breeding to close milk deficit gap in Kenya ..........8
Chinese technology to boost mushroom output in Tanzania ..........9
Fish feed company opens in Tanzania ........10
Kenya to equip beekeepers with new technologies ..........12
Kenyan farmers turn to organic farming for better yields ..........14
Rwanda's farming start-ups gets a technical, finance support ..........15

Insight
How digital agriculture can help Africa during COVID-19 ..........18-19

International News
Are you geared towards these developing trends? ..........22-23
Destructive potato cyst nematodes meet their match ..........24

Technology News
GI OVO's eggs tray inspector hits market ..........28
65,000 Printed Copies

The East African Agrinews Magazine is distributed to professionals who are involved in the agriculture industry, international business, and investment in East Africa and around the world. These professionals are always looking for new ideas, products and services. With a print run of 65,000 copies per issue, the East African Agrinews Magazine’s estimated readership per issue is over 180,000. The East African Agrinews Magazine is printed quarterly and is distributed in both hard copy and electronic version (E-Magazine). 40% distribution is done through corporate and individual subscription, 20% through retail outlets, the rest through agriculture expos, shows and events as well as through strategic agriculture unions and associations.

Electronic copies are sent via email to our data base of 92,500 active online subscribers. Over 120,000 e-Magazines are downloaded from our website.

The readership profile of the East African AgriNews Magazine is key decision makers such as CEOs, Directors, Farm owners, Government departments, Procurement Managers, Farm managers, Agronomists, Small scale farmers, Commercial farmers as well as many other professionals within the agricultural sector in the East African region.

The publication has strategic alliances and partnerships with a number of regional and international agricultural and business organisations.
Editorial Comment

Radio should help spur agriculture in Uganda

Communication is the cornerstone of every relationship, business and even family. Wherever there is dialogue things are bound to be done better and for the best.

Plans by Farm Radio International (FRI) to establish and develop sustainable dialogue and knowledge sharing communication platforms for farmers in Uganda is the most welcome development for the sector expected to answer food security needs, something that is strongly becoming a concern the world over.

Theories of communication have always indicated that a well orchestrated communication plan yields amazing results. At this juncture many may not understand the relation between radio and farming but the initiative will have a huge impact on Uganda’s agriculture.

Radio is the oldest form of communication and is now cheap for the listeners to access, the gadgets are now cheap, with every digital device being compatible to receive a radio signal it means more listeners plus radios have become portable as they come, allowing farmers to easily carry with them to the fields, to do their work.

We hope the programming will cultivate the right mindset to drive passion that Uganda farmers already exhibit to harvest more and do it with ease from knowledge and experience shared through the radio.

Farmers often have less times to attend to training and lecturers but getting ideal knowledge for their growth through listening to radio has potential to make all the difference desired.

Kudos to the think-tanks that have identified radio as a medium to bridge the knowledge gaps with Uganda’s farming community, as technology slowly evolve to reach some of the remote areas of the country, radio can still be utilised. With time farmers will soon have access to internet and easily use search engines such as google to get information and videos that give them practical lessons.

Please remember to share with us your views, comments and letters.

Enjoy the read!

Andrew Maramwidze (Editor)
Cover Story

Communication platforms to improve agric in Uganda

Farm Radio International (FRI) intends to establish and develop sustainable dialogue and knowledge sharing communication platforms, housed and hosted by community-oriented radio stations in Uganda.

According to FRI, the focus of the platforms will be on facilitating and enabling inclusive, circular and regenerative agriculture.

With a grant from the IKEA Foundation, the Dialogue and Knowledge Sharing Communication Platforms in Uganda Project, will establish the building blocks for an enduring network of dialogue and knowledge sharing communication platforms, hosted by community-oriented radio stations, serving many rural communities of Uganda. “At least half of those served will be women, and one third will be youth - defined as less than thirty years of age.

“At the end of this two year phase, a comprehensive impact evaluation plan, with baseline measures, will be in place to allow for a future rigorous evaluation of the contribution of these platforms to the resiliency and quality of life for communities through planet- and people-positive regenerative agriculture.”

In this first phase of the project, a network of 12 platforms will be developed, each serving a unique geography and in languages spoken in the area. The building blocks established through this grant will take us toward the ultimate aim of providing a majority of rural people in both countries with reliable, continuous and powerful communication service through interactive platforms that share knowledge, facilitate dialogue, give voice, and stimulate positive change toward inclusive, circular, regenerative agriculture.

One of the main steps in this project will be to develop a rigorous evaluation methodology to assess the impact of these communication platforms on resilience and livelihoods.

The goals for this engagement will be to develop a comprehensive and rigorous evaluation design, plan and baseline measures that will allow for the long-term impact of dialogue and knowledge sharing platforms to be measured and documented.
Technology drives long-term resilience in farming By Hentie Breedt*

In times of economic uncertainty, making the right decisions has never been more critical. Having a successful farming operation in South Africa means you need to set long-term goals that foster resilience.

Without a solid foundation, your farming operation may be facing an uncertain future. Resorting to short-term solutions may seem like the best decision today, but your farming operation will be ill-equipped to handle the challenges of tomorrow.

Technology is the underpinning factor that will provide your farming operations with the resilience it needs for a sustainable future. The decision to use technology applies to all aspects of a farming operation, especially when deciding on the correct mechanisation equipment to purchase for your farm.

If you rely on equipment alone to ensure the success of your operation, you may miss out on the opportunities that come with technological innovation.

To ensure the prosperity of your farm, your approach needs to be less equipment-orientated and more solution-driven. Gone are the days when a tractor was just a tractor, or a harvester was just a harvester; your equipment now become the means to a long-term, sustainable goal.

Therefore, this means you need to prioritise the latest technology to realise maximum efficiencies, optimal work performance, minimum downtime, higher outputs and achieve a higher resale value.

Solutions-driven technology can be applied to every level of mechanisation; for example, by using an efficient planter that optimises seed and fertiliser placement, yield percentages can be drastically increased.

As a farm increases in size and capacity, efficient data collection and management becomes essential. By introducing technology, data can be handled seamlessly. Data can be tracked and converted into appropriate and workable inputs for each step of the farming and cultivation process. Effective data management provides farmers with the insights they need to prepare for fluctuations in demand.

Whether it is soil preparation, planting, spraying or harvesting, technology will reduce fuel consumption while maximising profitability.

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Decision-making around future investments is crucial to ensure long-term success. One aspect of this is the resale value of equipment when it is no longer needed or needs to be replaced. Make sure you invest in equipment that, although it has a higher initial purchase price, will result in savings over its lifetime due to the latest technology. An almost assured high resale value offers an excellent long-term investment on the road to farming success.

The sustainability and success of any business is only as strong as its ongoing support structure, even more so in the farming environment. John Deere has one of the best dealer support networks in the world. We work hand-in-hand with our dealers to offer agricultural solutions, not only from an equipment and technology perspective but also with extensive after-sales support.

With trained technicians equipped with all the spare parts needed, our technology communicates service alerts in advance, directly from your equipment to your John Deere dealer, ensuring minimum downtime of machinery and tools, especially during critical times.

*Hentie Breedt is the Marketing and Communications Manager for John Deere Africa Middle East.
Artificial insemination breeding to close milk deficit gap in Kenya

Kenya’s dairy farmers in Busia are embracing artificial insemination (AI) in breeding exotic cows to bridge the 40 million litres gap of milk deficit within the county.

Denis Odhiambo, a Veterinary Doctor in Busia, said the initiative has reached to over 3,000 farmers within the county who have embraced AI technology with a view to improve breed that is more profitable with a potential yield of producing over 20 litres of milk per cow in a day compared to indigenous breeds.

“We managed to reach out to over 3,000 farmers within Busia County with the help of KCDMS, already 1500 have been inseminated through Fixed Time Artificial Insemination. Through the process we already have 150 calves and a number of in-calves,” said Odhiambo.

“In this programme we advise farmers to keep few cows but which can produce more in terms of milk and money,” he said.

Odhiambo noted that despite the climatic condition in Busia County, which is normally hot and very hostile to dairy farming, farmers adopt the technology to produce calf that are adaptive to the environment.

“In Busia and other surrounding areas milk productivity have been very low, but with this new improvement it has really improved,” he added.

He encouraged the young generation to engage in farming, especially dairy to supply milk to the plant for value addition. Busia County officer in charge of dairy farming, Radoli Shiundu who was also present noted that dairy farming is one of the majorly prioritized projects and being carried out in the county.

In support of this project, the county government has distributed about 1,600 dairy cows to farmers in every ward for the past five years now. Busia county has developed two dairy Parks in Butula and Teso North sub counties.

“We have put in place more strategies to improve dairy farming such as donating cows known as Heifer breeds to farmers which produce close to 20 litres of milk per day,” said Shiundu.

Shiundu confirmed that since the introduction of this breeds of cows into the wards, milk productivity has risen from 26 million litres to 32 million litres in the county, which is a great improvement.

“We also give seeds to farmers for the dairy feeds which helps in feeding our indigenous cows in the villages in order to produce high yields,” said Shiundu.
Regional News

Chinese technology to boost mushroom output in Tanzania

Chinese Juncao technology is expected to spell a bright future for mushroom growers and livestock keepers in Tanzania.

The Juncao technology has been developed by the National Engineering Research Center for Juncao Technology of the Fujian Agriculture and Forestry University (FAFU) of China.

The technology has a multi-faceted approach of cultivating mushrooms for food and medicinal purposes while at the same time addressing soil erosion for maintaining the volume of arable land, and also supporting livestock feed development.

Lin Zhanxi, inventor of Juncao technology, and chief scientist and director of the National Engineering Research Center for Juncao Technology of the FAFU of China, said Juncao technology is helping in adapting and mitigating challenges posed by climate change.

Yuan Lin, the economic and commercial counselor of the Chinese Embassy, said during the past two decades, the technology has taken root in more than 100 countries. One of the beneficiaries of the technology is Uyogaplus project an intensive program of health and economic empowerment of women and youth through mushroom production in Tanzania.

“We have been producing mushrooms by using sawdust, banana leaves, and other supplements which are very expensive. We are now in the process of adopting Juncao grass as a substitute for sawdust,” said Bathsheba Mchuza, Founder and Sales Officer for Uyogaplus project.

Uyogaplus has established a nursery for cultivating Juncao grass for growing mushrooms, said the 25-year-old female university graduate.

“By using Juncao grass to cultivate mushrooms the future looks brighter,” Mchuza said.

Mchuza is among 5,000 mushroom growers in Tanzania who are producing 1,000 tons of mushrooms annually.

Elly Ligate, a senior lecturer, researcher and national Juncao technological consultant at the SUA, with over five years of experience in Juncao technology projects in Tanzania, said the Juncao technology is being championed by the Ministry of Livestock and Fisheries in Tanzania mainland and the Ministry of Agriculture, Irrigation and Livestock in Zanzibar, adding that farmers and local government authorities in the country have widely accepted the technology.

“I see good opportunities as far as Juncao technology is concerned. This technology is comprehensive as it involves production of grass and mushrooms. The Juncao grass is very important in our country in eliminating challenges of shortage of fodder,” Ligate, an ecologist said.

“The second challenge that we want to address is environmental degradation. If we provide grass to livestock keepers it will improve carrying capacity and minimize the pressure on the land. In that case, management of the land will be a little easy,” said Ligate, a PhD graduate at Fujian Agriculture and Forestry University of China (FUFA) where he also learnt about the Juncao technology.
A consortium of university classmates in Tanzania led by Elisha Otaigo, a 32-year-old MSc Environmental Economics graduate has partnered with NovFeed TZ, to start a company that produces affordable fish feed using black flies.

The company is being supported by the Youth in Agribusiness Compact (ENABLE-TAAT), led by the International Institute of Tropical Agriculture (IITA) through its youth in agribusiness initiative. The institution links the ambition and enthusiasm of youth to the planned modernization of several strategic commodity value chains; rice, wheat, maize, sorghum and millet, cassava, sweet potato, bean, fish and small livestock, in a manner that reduces food imports, increases value addition, and achieves nutritional security in Africa.

Otaigo and his partners have created employment for four youth to manage activities through the farming unit. NovFeed also uses a business model that has created income opportunities for 21 other youth and women—they take the farm products on credit, sell at the market, return the agreed cost to the company, and keep the profits. This model solves a capital challenge that is common to many startup entrepreneurs.

“I was inspired to work with Otaigo and his partners because I want to be a good farmer like them. They have taught me how to manage the farm following good agricultural practices. Also, I earn income that supports my livelihood,” said Kulwa Misana, who works as a caretaker at NovFeed.

Although the company’s core activity is fish feed production, it also has two equally important units: Open field and green-house farming of vegetable and fruit crops such as tomato and capsicum (red, yellow, and green).

These are grown throughout the year using the drip irrigation system taking water from a borehole to a water reservoir. The other is the piggy unit that produces quality cross pig breeds—Duroc, Large white, and Landrace—to pig farmers.

NovFeed also uses their farm for practical learning, inspiring youth to engage in agribusiness. So far, the team has trained and assisted four youth entrepreneurs in starting their own farms. The objective is to create a chain of youth who believe in agribusiness as employment.

“We hope that these youth will be ambassadors to others about agribusiness: that they can engage in farming even when they are educated, earn money, and make an impact in the community by being job creators,” Otaigo said.

The team recognizes the role of ENABLE-TAAT, the youth compact of the Technologies for African Agricultural Transformation (TAAT), in their achievements. The youth compact supports youth enterprises with mentorship and links them with experts and technologies. For NovFeed, ENABLE-TAAT soft skills training programs on passion, focus, expertise, and teamwork are key elements making the company thrive.

“Training with the youth for a year and a half now has nurtured my passion for farming. I got technical support from the scientists, especially in agribusiness, which also opened my eyes to see the big opportunities in agriculture,” Otaigo said.
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Kenya to equip beekeepers with new technologies

Farmers in Kenya’s Mwithiga Village in Lare Ward Njoro Sub-County are switching to beekeeping as an alternative source of livelihood, less vulnerable to climate change.

According to Robert Gacheche, Chairman to Lare Beekeepers Association, an umbrella body that brings together 38 Farmer Interest Groups, many of the arid and semi-arid parts of the Sub-County have huge potential for the production of hive products.

However existing beekeeping technologies are not suitable in a changing climate of increased temperatures and low moisture situations.

He says household incomes in Lare Ward were increasing following a joint venture between the National Agricultural and Rural Inclusive Growth Project (NARIGP) and County Government of Nakuru to train beekeepers in the region on modern honey production methods, value addition and proper agronomical practices that are enabling farmers to yield honey products that comply with the accepted chemical residue level limits.

Gacheche reveals that through the partnership, research institutions and state agencies have also trained over 200 volunteer bee keeping extension officers on different pests, beehive hygienic standards and diseases.

"After the short term training the volunteer extension officers are deployed to their communities to conduct a range of community capacity building and enhancement activities such as training on beekeeping technologies, provision of extension services including on-site training, monitoring, inspection, harvesting, mentoring, quality control, marketing and record keeping," said Gacheche.

He adds: “We have also learnt that in addition to producing honey, bees play an important role as pollinators of crops, pastures and trees, thus contributing to food security, environmental conservation and availability of carbon sink contributing to climate change adaptation.”

In the partnership, NARIGP and the County Government of Nakuru have inked deals with various financial institutions and cooperative societies aimed at offering training and affordable financing to beekeepers within Njoro Sub-County.

According to County NARIGP Agronomist Jennifer Bett, Lare Beekeepers Association has received Sh500,000 to upscale its operations.

She explains that beekeepers in the sub-county have been equipped with skills on online marketing opportunities, record keeping, productivity and quality management, business registration and legal issues among others. The bee farmers are also being trained on maintaining books of account and making tax returns. The program also has an agribusiness component mainly targeting women and youth encouraging them to take up a leading role in co-operative management and also embrace agriculture as a way of employment.
Meyn launches Killer M2.0
High-speed slaughter solution offering flexibility, precision, and safety

Poultry processing requires continuous investment in developments to meet today's challenges, declining margins, demand fluctuations, food safety and workers' safety. These are all factors to consider. Meyn realized that smart processing solutions are the answers to these challenges. After the release of the iconic Meyn® Maestro Plus for fully automated in-line giblet harvesting, the Meyn® Rapid Plus M4.2 breast deboner, and the recently released Meyn® Wing cutter HY Pro, a leading slaughtering solution was needed to accommodate continuous increasing line speeds and improve food- and worker's safety.

This first half of 2021, the Meyn® Killer M2.0 has set its stainless-steel feet on the processing floor.

The Meyn® Killer M2.0 has 3 unique advantages:

1. High performance and precise cut for line speeds up to 15,000 bph

The Meyn® Killer M2.0 executes a uniform and controlled cut for an optimum bleed-out. Due to the new guide mechanisms, shackle movement is limited, dragging is reduced, and the head is fixed uniformly. The neck is stretched to allow an optimal cut, ensuring maximum performance.

2. Flock and cut adjustment within seconds.

The new Killer M2.0 is designed to reduce the adjustment time substantially. A huge benefit for processors having to deal with different flock sizes, switching between frontal cut or decapitation and changing stun methods.

The M2.0 offers three different electrical adjustments, allowing to switch and adapt within seconds:

- Adapt height of the cutting unit to flock size
- Switch between frontal cut or decapitation
- Optimize the head guide angle after controlled atmosphere or electrical stunning

Processors with consistent and uniform flocks have the option to order the Killer M2.0 with economical, mechanical adjustments.

3. Smart design increases (food) safety

(Food) safety is top of mind. Regulations are becoming stricter every year. Making it challenging to keep up, especially for the slaughtering department. Smart design of processing solutions helps poultry plants come a long way.

The Killer M2.0's control panels and buttons for daily operations are placed away from moving parts and knives, separated by sliding doors. The doors are fitted with grids, offering perfect visual tracking of the process at eye level and making it easier for the operator to adjust the machine when needed, whilst staying safe.

Finally, the Killer M2.0 is designed for maximum hygiene. The product zone is easily accessible for cleaning and inspection. The open underpart of the solution avoids piling up of dirt in the machine. The designed frame eludes collected water, avoiding bacteria growth.

The Meyn® Killer M2.0 is released for sale. Please contact your nearest Meyn® sales representative for more information.
Kenyan farmers turn to organic farming for better yields

Kenyan farmer Judith Mumbua noticed that using commercial fertilizers was creating problems for both her crops and the dirt on her farm in Mwania village, eastern Kenya.

“The chemicals affect soil by making it hard, and the plants, especially maize and beans, do very poorly,” she says. That was three years ago. Now, she has switched to organic farming, which, she says, has created a more positive outcome and a healthier way to grow crops. It is even better for her livestock, she says.

“There are benefits in the production compared to previous farming methods I explored by using chemicals and fertilizers from shops,” says Mumbua. Mumbua started organic farming after a training program at a local agriculture organization. She admitted this farming method has helped her curb the antimicrobial crop resistance her plants had experienced for a number of years.

“Antimicrobial resistance is when microorganisms such as bacteria, viruses, fungi and parasites change and no longer respond to medicine, making infections hard to treat and even manage in crops,” she explains.

Organic agriculture or ecologically-based farming is basically the use of green manure, compost, biological agriculture and biological fertilizers derived from animal waste. According to Mumbua, the method has increased her food quality and production.

Mumbua advises farmers to try to make organic medicines for crops using locally available materials such as leaves, chicken droppings, cow dung, goat and sheep droppings and even wood ash from the kitchen.

An agriculture teacher at nearby St Mary's school, Charles Itumo, also farms a small piece of land adjacent to the school where he teaches students.

His patch had not been producing well for past two years, he tells Africa Calling podcast. Organic agriculture experts visited his farm, and pointed out that his crops had antimicrobial resistance.

He turned to organic farming and is now passing the benefits of organic farming by not using chemicals down to his students. “Organic agriculture is farming without using chemicals. For example, one digs a compost pit and fills it up with kitchen waste materials to decompose - then it can be used later as manure on the farm,” said Wayne Muey, a grade 5 student at St Mary's Primary School.

“This helps a farmer save money and helps them in the healthy growth of the plants such as kales, spinach, onions and tomatoes.”

One long-time organic believer is small-scale farmer Peter Melonye, who lives in neighbouring Kajiado County. He has been feeding his livestock with organic feeds from his farm for the past 18 years. Melonye says his livestock produce quality milk, chemical-free and with no antimicrobial resistance strains.

“It is easier to treat a resistance free animal than the infected one. The infected cattle take a lot of time and money to treat,” Melonye observes. “Animals who feed on farm remains provide milk and meat.”

In addition to his livestock rearing, farmer Melonye is also practicing mixed cropping, where he plants different crops on one piece of land. He says agriculture extension officers and local organizations have been a great help to him thanks to the decentralized government and agriculture system in Kenya.

Local and government-funded schools for training farmers teach what are the best crops for both human and livestock consumption are.

“Fungicide and antibiotic residue in crops encourage the emergence of resistant fungus and bacteria strains. It could also increase the risk of human resistance as well as other health risks,” Melonye cautions.

The use of the same type of products for a long time is the main cause of antimicrobial resistance on Kenyan farms, says Eustace Kiarie, organic expert at Kenya Organic Agriculture Network (KOAN).

“Good soil health enables health crops that are able to resist some of these pathogens. This ensures your livestock is also healthy,” she says, adding that farmers must regularly monitor their crops and treat problems immediately if they arise.

“We have seen an increase in terms of the products in the market that are naturally produced and are able to manage these pathogens effectively,” she adds.
Rwanda’s farming start-ups get a technical, finance support

UN-backed initiative IGNITE Food Systems Challenge has been launched in Rwanda to support innovations in the country’s food system.

With both technical support and $300,000 in financing, the initiative will be made available to help start-ups, cooperatives, and small and medium enterprises, to scale-up locally-driven solutions that contribute to the economy and address different gaps in supplying nutritious food.

The programme is an initiative by the UN World Food Programme (WFP) and Impact Hub Kigali, which offers resources that foster innovation and entrepreneurship, such as incubation programmes and bootcamps.

The partners are supported by the United States Agency for International Development (USAID), specifically its Bureau of Humanitarian Affairs, and the Danish Ministry of Foreign Affairs.

The initiative will run simultaneously in Rwanda, South Sudan and Uganda, and is being made possible with the support of $2 million from USAID.

“The biggest challenge for many entrepreneurs in Eastern Africa is not only access to funding, but also technical support that furthers their concepts,” said Jeremie Pigé, head of the WFP IGNITE Innovation Hub for Eastern Africa.

“Through this generous support by USAID, we are confident that we will be able to reach many bright and talented entrepreneurs in the region who might have been left behind.”

The IGNITE Food Systems Challenge seeks innovative solutions that contribute to food security in areas such as resilience to shocks and stress, access to safe and nutritious food, improved food supply chains, the empowerment of smallholder farmers, and the advancement of food security for all.

“With the IGNITE Food Systems Challenge, we will provide tailored support for local entrepreneurs to scale their impact in the Rwandan food system,” said Mafer Betancourt, Managing Director of Impact Hub Kigali.

“Ventures will undergo diagnostics at the start of the programme and will be able to co-design their own acceleration journey, indicating the support they require, from coaching to peer and expert support such as legal or accounting services, among others.”
BIOREBA

THE COMPANY

BIOREBA AG was the first company worldwide to produce and commercialize ELISA reagents for plant virus diagnostics in 1980. It is an independent company that was started in close collaboration with Agroscope, the Swiss centre of excellence for research in the agriculture and food sector. Since then, BIOREBA has established cooperation with numerous other research institutes and universities in many countries. Since its foundation almost four decades ago, the company has steadily grown and built a reputation for high quality diagnostics. Today, the research community and diagnostic laboratories around the world rely on our products for testing potatoes, grapevines, fruit trees, small fruits, vegetables, ornamentals and field crops.

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In light of the world’s challenges during the COVID-19 pandemic, it is essential to point out that the pandemic brought to light the vulnerability of agricultural and food systems in poorer countries. According to various surveys, up to 80 percent of smallholders reported that their economic situation is worse now than before the pandemic. The World Bank Group developed a COVID-19 Household Monitoring Dashboard to monitor the impact of the pandemic and individuals in 72 countries worldwide. According to the Dashboard, in Ghana, 76 percent of households whose main source of income comes from agriculture, reported the decline in the last 12 months. Despite Africa’s challenges during the pandemic, digital agriculture could help African farmers be successful.

In many countries across Africa, hunger is increasing at a disturbing rate due to various factors. Years of armed conflicts, drought, extreme weather conditions and economic woes are playing a significant role. Apart from that, various government restrictions and measures aimed at curbing the pandemic have wreaked havoc on the continent’s food supply and worsened the already weak image of food security in Africa. Many factors are threatening food security. Lockdowns and restrictions caused major disruptions in food supply chains. Additionally, the border closures and restrictions of export and import of essential foods such as rice and wheat made many African countries vulnerable since they depend on these items.

Since it contributes to about 23 percent of the continent’s Gross Domestic Product (GDP), agriculture is undeniably one of the most important economic sectors. Research has shown that in sub-Saharan Africa, almost 60 percent of the working population works in agriculture. In rural parts of the continent, it is also the primary source of income and food. Lockdowns and other restrictions have made it difficult for farmers to sell their products as well.

The situation is particularly dire in East Africa. According to the latest statistics, seven million people across East Africa are at risk of starvation and another 33.8 million are at risk of food insecurity. More than 12.8 children in countries such as Uganda, Sudan, Somalia, Ethiopia and Kenya are severely malnourished due to food insecurity.

Digital agriculture is the use of digital technology in agriculture to collect, analyze, store and share electronic data related to agriculture. The UN has described the use of digital technologies in agriculture as something that will undeniably revolutionize the process. In the climate the continent is in at present, farmers need to keep innovating to overcome various challenges and meet the demand. Digital technologies enable them to meet the requirements and seize growth opportunities. One may wonder how the digital agriculture industry gets consumers while in reality, consumers may have an attraction to this concept because it allows them to have more knowledge about the products they buy. Consumers usually ask for quality and sustainably produced food and digital agriculture allows them to know where it is coming from.

The U.S.-based nonprofit Heifer International conducted a survey that showed that 40 percent of agricultural organizations had to at least temporarily close due to pandemics. However, the survey also found that there is hope in the combination of technology and agriculture, i.e. digital agriculture. Some of the challenges farmers in African countries face are more pressing than others. When asked about their needs after the first wave of COVID-19, most farmers expressed the need for agronomic advice, inputs, money and help in transportation and logistics challenges and in recognizing adequate markets for the crops. That is where digital agriculture proves to be useful, as it is enabling the food system to become more resilient to unpredictable systemic shocks such as this pandemic. For example, agricultural eCommerce platforms provide more direct linkages to markets, which prove valuable for overcoming the challenges farmers face.

Heifer International conducted digital agriculture research and found that many...
entrepreneurs create agri-tech services and tools for digital improvement agriculture across Africa. It is using all available technologies such as AI, geographic information software and virtual reality to contribute to digital disruptions in agriculture.

Governments have already taken various steps in ensuring that smallholders involve themselves in digital agriculture. For example, about 13 percent of sub-Saharan farmers have already registered for services such as weather updates. Ethiopia created a farmer advisory service hotline, “80-28,” which has four million users. It is a free service that delivers information in local languages, which is a significant advantage. Rwanda is one of the countries on the continent where the government and various organizations actively work on implementing digital agriculture technologies.

In Rwanda, the main crop is coffee, with about half of a million coffee producers. The amount of coffee it produces limits its revenues. Hence, digital agriculture helps them make coffee a more profitable crop. That is why agribusiness NGOs such as TechnoServe, organize technology training in Rwanda and other countries in East Africa. The research showed that training enables farmers to become more knowledgeable about the best coffee growing practices. Along with other types of support, including financial, it helps farmers to adopt new technologies.

Kenya is also one of the countries where the agriculture sector plays a vital role in the economy. The statistics show that it provides a livelihood for 38 percent of the population and accounts for 31.5 percent of the country’s GDP. According to the Kenyan government, the country is at the forefront of digital innovations in agriculture and aims to adopt the 10-year Agricultural Sector Transformation and Growth Strategy. The goal of the strategy is to develop a modern agricultural sector that will support 100 percent food security. Most of the tools farmers in Kenya use at present rely on the use of mobile phones and mobile money. They use last-mile digital tools that enable digital transactions and facilitate communication between smallholder farmers and agricultural businesses. They also use market linkage tools and direct to farmers’ hubs.

The purpose of the first tool is to connect producers and buyers through the mobile app. Direct to farmer hubs are the type of shops where service providers provide their services directly to registered farmers. It is also possible for farmers to take orders directly from buyers and not through third-party mediators.

The research shows that young people are willing to go into agriculture. However, they feel that they lack access to funds and training which would enable them to do so. Hence, it is essential for governments to provide education and enable people to create a business that will ensure sustainable income. Africa is a continent with a high percentage of young people. Practically, around 60 percent of people are younger than 25 years old and, as such, can enter the agricultural business. However, due to a lack of finance and knowledge, only 23 percent use agricultural technology for now.

Agricultural technologies can enable farmers to understand better where and how to grow to create a sufficient food supply for the continent. Additionally, through funds and education, plenty of young people can have a chance to find employment and build successful careers.

Technology affects all spheres of people’s lives, regardless of location. Each industry is changing, and that includes agriculture too. The market is more complex, and everyone, including farmers, deals with totally different requirements, especially as the world deals with the consequences of COVID-19. Agriculture has a significant role in the economy of the countries located on the African continent. Thus, both governments and farmers need to be aware that using digital agriculture will bring enormous benefits for them and the continent’s population, in general.
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WE BET ON ECOLOGICAL TRANSITION!
Are you geared towards these developing trends? By LINDI BOTHA

The COVID-19 pandemic has accelerated the rate of digital integration and sped up advancements crucial to the future success of many industries, including agriculture. Lindi Botha reports on the main trends that will influence farming this year.

As the world grapples with climate uncertainty and dwindling, increasingly costly resources, the urgency of finding solutions to these problems is intensifying.

Added to this is the delicate balance between producing enough healthy food to feed the population, protecting the environment, and ensuring that farming remains profitable. How these factors are addressed over the next few years will determine the success or failure of countless thousands of farmers worldwide.

The drive towards implementing farming practices that do not harm the environment intensified in 2021, and is set to grow. Societal pressure and the EU Green Deal will have far-reaching consequences, pushing the entire agriculture sector to adapt to its demands.

As far as crop protection goes, we can expect to see a turnaround in integrated pest management (IPM) solutions, as farmers will have to make do without their usual arsenal of chemicals.

Rod Bell, Chief Executive Officer of CropLife South Africa, explains that current trends in agriculture all point towards employing an array of strategies and methods of pest control instead of just one.

“It means a mind shift towards managing pests, not just eliminating them, and using pesticides only when absolutely necessary. If the past year is anything to go by, we’re likely to see further strides made towards IPM in the coming year.”

The potential impacts of the EU Green Deal, both negative and positive, are still being explored in the EU as well as its trading partners, including South Africa. But whether or not this country is able to deal effectively with these changing policies remains to be seen.

According to Bell, the ability of local regulators to approve the use of new technologies that will enable farmers to continue growing produce for export will largely determine whether or not these sectors will continue to flourish.

The plant science industry, he notes, has provided farmers with many tools to grow enough food, both sustainably and in an environmentally compatible manner. These include synthetic chemistry, biologics, new breeding technologies or even application technologies.

“The solutions are there, [although] it’s not a one-size-fits-all package, because the crop pest situations around the world are vastly different.”

The problem, he stresses, is that the South African regulatory system governing new technologies and products is so far behind that farmers here are at a significant disadvantage compared with those elsewhere who have these solutions available to them.

“This is a very serious threat, not only to our producers’ livelihoods, but to national food security. In fact, it’s probably more of a threat than any foreign policy on South African agriculture.”

The World Bank Commodity Markets Outlook predicts that the production of biofuels will increase in 2022. This could affect several food commodities, notably sugar cane and maize for ethanol production, and edible oils for biodiesel production. Analysts have forecast that by 2029, 25 percent and 14 percent of global sugar cane and maize output respectively will be used for ethanol.

Although Brazil, the EU and the US account for more than two-thirds of global biofuel production, the share of Asian producers has been growing, reaching 30 percent in 2020, up from 13 percent a decade ago. According to some estimates, global biofuel production could increase as much as 50 percent during the next five years.

While South Africa’s contribution to biofuels is negligible, the trend has a major impact on maize prices, increasing grain farmers’ profitability, while the meat industries and those reliant on buying feed are feeling the pinch.

Moreover, if current production estimates materialise, food prices could increase further, given that an additional two percent of world agricultural land would need to be allocated to biofuel crops.

Prof Ferdi Meyer, managing director of the Bureau for Food and Agricultural Policy, says that a biofuel-blending mandate of 10 percent or more would have an enormous impact on global grain markets.

“At present, the world doesn’t have enough grains to supply both the food and fuel markets, so the result would be an increase in [food] prices. We therefore don’t expect global grain prices to come down from their current highs during the next year or two, even as farmers move towards planting more.”

The outlook states that most of the world’s biofuel production is possible because of policy mandates. However, if crude oil prices continue to increase, biofuel production from some crops could become profitable, in which case energy prices could act as a floor for the prices
of food commodities. A trend that is likely to increase in 2022 is agribusinesses’ adoption of digital services for farmers. COVID-19 lockdown restrictions triggered a move towards online marketing platforms, and now that the sector has familiarised itself with the convenience of these services, they are expected to grow.

Niki Neumann, general manager of strategic innovation at AFGRI, says that new online business models and trading platforms will drive collaboration and efficiency across the supply chain.

“This includes platforms like HelloChoice, an online marketplace for the trading of fresh produce, and Axl, which provides a new way for equipment owners to put their idle machines up for rent and add revenue lines to their businesses.”

Neumann adds that the need to build a strong agricultural ecosystem that reduces service disruption and creates better transparency will lead to the greater availability of digital and online services.

“Technology is a business enabler, not [a business] solution, so it should always provide increased flexibility, profitability and convenience for farmers. Anything that addresses these needs will grow.”

The move towards precision agriculture will be boosted by big data, as greater insights will be realised by the sheer scale of information being collected on every front in agriculture. Big data provides farmers with comprehensive information on rainfall patterns, irrigation cycles, fertiliser requirements, and market movements.

This enables them to make informed decisions, such as which crops to plant for better profitability, when to apply inputs and how much, and when to harvest. The right decisions ultimately improve farm yields.

Neumann explains that data collection will expand to include connected devices and sensors on the farm and automated labour and financial management software. “The more data we produce in the industry, the more quality insights [we gain], and the more we learn.

Farmers can use these insights to drive the efficiency of their farming operations, advance decision-making and increase transparency for farm owners and stakeholders.”

Alternative financing and funding approaches by large financial institutions will also benefit from big data. Neumann says that emerging technologies and the growing availability of quality agricultural data, such as yield mapping and satellite insights, have advanced over the past five years and can now be used to build customised and increasingly accurate risk assessment models for farming.

“It is predicted to help improve [pest] control and reduce insecticide use. This is important to increase the yield potential against pests that, until now, couldn’t be managed through a biotyping characteristic or embedded insect tolerance.

Development of desirable plant traits are also being hastened by the advent of gene editing, a much faster process than genetic modification. Bayer, for example, is working towards producing crops that require fewer inputs, either due to a dwarfing characteristic or embedded insect tolerance.

Short-stature maize, which is currently being commercially registered, has been shown to provide the same yield as taller maize. But being shorter, the plant requires less energy and fewer inputs to grow, and is less susceptible to green snap and stalk lodging.

This reduces crop loss caused by harsh environmental conditions and extreme weather, including high winds.

Liza Bohlmann, media spokesperson for Bayer Crop Science in South and East Africa, says that advances in insect-protection traits have reduced the need for foliar insecticide applications and increased productivity per hectare.

“Bayer’s ThryvOn Technology will meet an important need in the cotton market and is predicted to help improve [pest] control and reduce insecticide use. This is the first biotechnology trait introduced for piercing and sucking insects; it supports healthy plant growth and helps to protect yield potential against pests that, until now, couldn’t be managed through a biotech trait.

“This all aids our goal of providing solutions that use fewer inputs to produce the same or even more food per hectare.”
Destructive potato cyst nematodes meet their match in banana-fibre paper

With potato production in East Africa under increasing threat from the invasive and highly destructive potato cyst nematode (PCN) pest, an organic technology developed from banana plant waste material may well be the ultimate rescue. Known as ‘wrap and plant’, the solution involves enclosing potato seed before planting, in a thick absorbent paper that is made from the fibre of banana plants. This strategy provides a protective barrier for the plants against damage by PCN.

These findings of research led by the International Centre of Insect Physiology and Ecology (icipe), International Institute of Tropical Agriculture (IITA) and North Carolina State University, USA, working with various partners, have been published recently in Nature Sustainability.

“Initially, we aimed to understand whether the ‘wrap and plant’ technology can help to improve the delivery and effectiveness of nematicides, the chemical agents that are used to control parasitic worms that damage crops, such as nematodes,” said Juliet Ochola (Kenya), who was involved in the research as part of her MSc studies, completed in 2021, co-supervised by icipe and IITA while registered at Kenyatta University, Kenya.

She adds: “We established that when loaded with ultra-low dosages of nematicides, the banana paper enables the chemicals to be released in a slow and sustained manner and in very low but effective concentrations. The paper also facilitates the nematicides to be conveyed specifically to the root zone of the potato plants; the infection site of the nematodes, thus preventing contamination to non-target areas and organisms.”

As Prof. Baldwyn Torto, Head, Behavioural and Chemical Ecology Unit, icipe, explains, the most significant discovery of this study was that, even without the nematicides, the ‘wrap and plant’ technology protects potato from PCN damage.

“We established that the banana-fibre has unique sponge-like properties. Thus, through a process known scientifically as ‘hydrogen bonding’, the ‘wrap and plant’ paper is able to soak and physically bind the critical chemical signals released by potato crops that allow the PCN to hatch, find and infect the plant’s roots. We confirmed this to be the case, as we recovered these chemicals from the paper,” he states.

The banana-fibre characteristics make the ‘wrap and plant’ paper dense, rigid and sturdy, such that it remains intact in the soil while also allowing the plant’s roots to germinate and thrive. Although the paper is durable, it is also biodegradable, and it eventually decomposes.

First detected in Kenya in 2015, the PCN pest has now widely spread across major potato growing regions in the country, and in Rwanda and Uganda. “Our estimates show that PCNs are causing potato production declines of more than 60 percent, with projections indicating an even worse scenario,” notes Prof. Danny Coyne, Soil Health Scientist, IITA.

“The current study demonstrates that the ‘wrap and plant’ paper, whether containing nematicides or not, and depending on the practices of individual farmers, can increase potato yield by up to five times. This is by preventing the damage by PCNs as well as other nematode species.”

The ‘wrap and plant’ technology is a promising boost for food and nutrition security as well as household incomes, as it will help to safeguard production of potato, East Africa’s second most important staple crop.

It also contributes to the vision of a circular economy by transforming banana-fibre, often regarded as an agricultural waste and a nuisance for farmers, into a raw material for a pest control innovation. This could create opportunities for entrepreneurs and farmers. Besides reducing overuse or misuse of chemical pesticides, the ‘wrap and plant’ technology will also support environmental protection by assisting to curtail the growing trend where farmers are compelled to clear forests in an unsustainable manner to create productive fields that are free of PCNs and other pests.

Overall, this breakthrough in PCN control demonstrates an environmentally-friendly way to counter disruptions in sustainable food systems.
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Zoetis A.L.P.H.A. Initiative Improves Livestock Health and Farmers’ Livelihoods in Sub-Saharan Africa with 1.7 Billion Doses of Vaccines and Medicines Administered in Four Years

Livestock health and farmers’ livelihoods have been dramatically improved in Sub-Saharan Africa, following the administration of 1.7 billion doses of vaccines and medicines and over 650,000 diagnostic tests through Zoetis’ African Livestock Productivity and Health Advancement (A.L.P.H.A) initiative, now in its fourth year.

The initiative – founded in 2017 with a $14 million grant from the Bill & Melinda Gates Foundation – is dedicated to improving animal health and livelihoods in the region by increasing access to quality veterinary vaccines, medicines and services, diagnostic laboratory networks, and animal health training.

In four years of activity, the company has made significant progress in establishing the infrastructure and training to improve the state of animal health and productivity. Ten new fully operational serology laboratories have been established across Nigeria, Tanzania, Ethiopia and Uganda, and 13,234 farmers, veterinarians and para-veterinarians have been trained – with an estimated extended reach of 657,800 people through train-the-trainer programs.

The A.L.P.H.A. initiative is helping Zoetis meet its aspirations to grow veterinary care in emerging markets under its new Driven to Care long-term sustainability goals, which build on the company’s purpose to nurture the world by advancing care for animals.

Glenn David, Executive Vice President and Group President at Zoetis, said: “Studies show that when households in a developing region acquire livestock, they report higher income, improved nutrition and better access to financial resources. Animal health is extremely important in contributing to sustainable development goals and economic opportunities in Africa.

“Over the last four years, we’ve demonstrated that greater access to medicines and technology can help farmers raise healthier animals and secure a more productive and sustainable food supply and income. The progress being made is critical to the economic development of the region and well-being of its people, especially as they face COVID-19 and worsening famine rates,” said David.

Through dedicated regulatory activities, Zoetis submitted 85 veterinary products for registration approval. The company also delivered 35 products – primarily for preventative care – to the markets, in addition to the Zoetis diagnostics portfolio in A.L.P.H.A. countries, which are all crucial components of sustainable development in the animal health sector. Four years ago, there were just four Zoetis products available to farmers in Sub-Saharan Africa to address the health of their herds.

According to Food and Agriculture Organization of the United Nations (FAO), 600 million of the world’s poorest households keep livestock as an essential source of income. Approximately 70% of the world’s “extreme poor” depend upon livestock, making animal health solutions necessary for sustainable livestock pro-
Animals are healthier, more productive
education and diagnostics to help them
farmers providing innovative solutions,
it’s reaching out to grassroots poultry
Lab, Ibadan Nigeria said: "The greatest
power fluctuations.
temperature ranges independently from 
vaccines are kept within their acceptable
without a power supply, which ensures 
temperature monitoring devices can work
Vaccine Refrigerators with remote tem-
safeguard equipment use). These Lite
five-year sponsorship agreements (to
ized refrigerators to 21 partners through
mation1. Reducing mortality and morbidity through better prevention, detection and treatment of animal disease can significantly shrink the footprint of farming in all regions and increase productivity. This means strengthening diseases surveillance, vaccinating animals, and increasing the use of diagnostics and training in responsible antibiotic use for bacterial treatments.

Unique solutions improve animal health and sustainability through cold-chain management

“The A.L.P.H.A. initiative has helped vets enhance their technical knowledge, while also helping farmers improve productivity and make the sector more sustainable. Farmers in the region now embrace better farming practices, improving their profitability, income and quality of life,” said Dr. Ibrahim Ado Shuhu, President of the Nigerian Veterinary Medical Association (NVMA).

One of the key learnings of A.L.P.H.A. in the last four years is the importance of cold chain management for vaccines until the “last mile.” Given most vaccines can get spoiled in cases of temperature fluctuation resulting from frequent power supply issues, A.L.P.H.A. supplied specialized refrigerators to 21 partners through five-year sponsorship agreements (to safeguard equipment use). These Lite Vaccine Refrigerators with remote temperature monitoring devices can work without a power supply, which ensures vaccines are kept within their acceptable temperature ranges independently from power fluctuations.

Dr Funmi Ojelade, Lab Veterinarian, Chi Lab, Ibadan Nigeria said: “The greatest impact of the A.L.P.H.A. initiative is that it’s reaching out to grassroots poultry farmers providing innovative solutions, education and diagnostics to help them reduce costs and losses on their farms. Animals are healthier, more productive and enable farmers to improve their livelihoods.”

Working towards UN Food Systems Solutions

Promoting a rapid uptake of existing, scalable best practices and tools in animal health and husbandry is one of the solutions promoted by FAO that could reduce the emissions footprint of livestock farming by 30%. The impact of A.L.P.H.A., and more generally of community development through livestock productivity, supports better livestock health for more nature-positive, protein production that measurably improves natural resource use efficiency, limits the need for new farmland, and supports a growing population.

“Unique in our approach is the sustainability angle, which is essential to encourage a mindset shift in the livestock sector towards entrepreneurialism and ownership. Empowerment of the farming and veterinary sectors is critical to enable Sub-Saharan Africa to meet the rising productivity needs of the region in a sustainable manner,” said Dr. Gabriel Varga, Regional Director Sub-Saharan Africa at Zoetis and lead of the A.L.P.H.A. initiative.

“Project Shine” case study: Advancing livestock health contributes to stability and peace to the Fulani nomadic tribe in Northern Nigeria

The settlement of the pastoral Fulani nomadic tribe in local communities in Northern Nigeria has been a source of tensions in an unstable region for decades. A.L.P.H.A. partnered with the University of Jos, Nigeria, to establish positive relationships based on improvement of animal health, access to diagnostics and health solutions via mobile vet clinics, and trainings to improve farmers’ livelihoods and income to local communities.

With 15 farms involved in the training, increased surveillance of over 5,000 head of cattle and 30 animal health workers trained, positive impacts have been seen on productivity and income of locally established farms. Donation of goats to families – especially single mothers and widows – was a first step in establishing a regular source of nutrition and income to the poorest population in the region.

“A.L.P.H.A. has brought multiple benefits to the Fulani community, to the veterinary community and to the nation as a whole in facilitating access to animal medicines, vaccines and diagnostic services,” said Dr. Dare Omoniwa, Large Animal Veterinary Teaching Hospital, University of Jos, Nigeria. “Medicalisation of animals had a very big impact. It has been used to good effect to build unity, trust and peace in the region.”

These important learnings highlighting the role that Animal Health plays for the development of a more sustainable livestock production are critical to carry into the upcoming UN Food Systems Summit and follow-on COP-26.

About A.L.P.H.A.

The A.L.P.H.A. initiative, co-funded with the Bill & Melinda Gates Foundation in 2017 was first launched in Uganda and Nigeria, followed by Ethiopia in 2018 and Tanzania in 2019. This initiative is aiming at advancing livestock health and productivity in Sub-Saharan Africa through increased availability of veterinary medicines and services, and the implementation of disease diagnostics infrastructure. To ensure long term sustainability of this initiative, Zoetis is developing veterinary laboratory networks and outreach services into local economic hubs in partnership with veterinary associations, local food chain players and governmental institutions.

About Zoetis

As the world’s leading animal health company, Zoetis is driven by a singular purpose: to nurture our world and humankind by advancing care for animals. After nearly 70 years innovating ways to predict, prevent, detect, and treat animal illness, Zoetis continues to stand by those raising and caring for animals worldwide - from livestock farmers to veterinarians and pet owners. The company’s leading portfolio and pipeline of medicines, vaccines, diagnostics, and technologies make a difference in over 100 countries. In 2020, Zoetis generated revenue of $6.7 billion with -11,300 employees.

For more information, visit www.zoetis.com.

www.eastafrican-agrinews.com / East African Agrinews | January - March 2022
GI OVO’s eggs tray inspector hits market

Farmers in the egg production value chain will now benefit from GI OVO’s Tray Inspector, a machine that can identify, separate and remove the broken trays from your production line. According to the company, for more than 20 years EggsCargoSystem® sets the standard for egg handling worldwide and emphatically notes that a vital part of this egg handling infrastructure consists of durable egg trays.

“The trays are built to last, but they are often used for a long period of time. They can eventually develop small cracks or other deficiencies. Broken trays may cause broken eggs, a disrupted production process or even severe damage to your machines. That is why we created the ECS® Tray Inspector that identifies and separates the broken trays.”

The Tray Inspector is controlled by a PLC (Programmable Logic Controller) connected to a computer that runs specially designed software. In addition, the software analyses every tray and sees any sort of crack or malfunction and then decides to which stack the tray is transported: broken trays or correct trays.

“The ECS® Tray Inspector is modular and can be upgraded with several convenient additions to match your specific needs. Its basis consists of a conveyor line, a re-packer, an unpacker, a pusher - that pushes the sorted trays - and especially designed vision technology which detects the broken trays.”

GI OVO further says the machine can be expanded with various additions, such as several stacking devices, a camera that reads the age of the trays and the possibility to connect to other machines.
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