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A resource for Agribusiness

Zim, China citrus deal to open new frontier 24 Agriculture in Africa: Impact of COVID-19 What is January disease?

Table of contents

Editor's note and contacts	. 11
About the publisher & contributors	H
Zim, China citrus deal to open new frontier	1
Agroecology and an organic farming strategy	.3
South African topfruit season looking very positive	. 5
The value of demand and supply data in agricultural value chains	. 7
How agricultural markets are largely misunderstood	.9
Zim launches key climate change knowledge documents	11
A decade of improved and climate-smart maize through collaborative	
research and innovation	14

Zim, World Bank, collaborate on NDCs report	18
The importance of wetlands	21
Agriculture in Africa: Impact of COVID-19	24
Things are looking up for Zimbabwean agriculture	26
Rabbit farming tips	28
Tales of a young goat farmer	30
What is January disease?	32
Future of Philippine agriculture through eyes of Japan-trained farmer .	34
African women in agriculture suffer disproportionately in COVID-19	
pandemic	37

Editor's note and contacts

The season was characterised by good rains which were in the range normal to above normal rainfall. The question is, have we been able to store the surplus water at individual farm level since not all seasons are the same?

Agriculture depends on water; its utilisation and conservation. Climate change awareness and knowledge is key to the success and future of agriculture in Zimbabwe.

Limited awareness and inadequate knowledge in terms of the climate system as well as over-reliance on agriculture, forestry and water resources exacerbate the country's vulnerability.

Consequently, it is prudent that as farmers we familiarise with the national strategic documents that were recently launched so as to bridge the knowledge gap. Farmers should familiarise with these critical documents, which are, The National Climate Change Learning Strategy; Climate Change Mainstreaming Module for Development Planning; National Adaptation Planning Process Communication Strategy; and Green Climate Fund Country Programme.

Knowledge is not static hence 21st century farmers need to be aware of their surroundings.

Enjoy this edition as we endeavour to bridge the aforementioned gap.

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Zim, China citrus deal to open new frontier



economy by 2030 as set by President Mnangagwa.

Growing value added exports, both by quantity and variety, is at the core of this development strategy.

The country's export development and promotional agency, ZimTrade, is negotiating with Chinese authorities on behalf of Government and deal announcement is now imminent.

In an interview with The Sunday Mail Business, ZimTrade chief executive officer Allan Majuru, said such a deal will give local farmers access to a market worth US\$500 million annually.

He said the deal was meant to bit market barriers that exporters encounter.

Ishemunyoro Chingwere

imbabwe and China are set to sign a citrus fruits export deal that Zimtrade has described as 'farming industry transforming.'

The deal, which will further entrench economic corporation between the two countries, is set to open up a new frontier for locals who have previously relied on the European market.

The consummation of such agreements, is in sync with Government's export development strategy under the National Development Strategy 1 (NDS1 2021 to 2030).

NDS1 is the economic blueprint with which Government expects to foster rapid economic growth towards an upper middle income $\,$

"... for exports to take place, there are government to government protocols that govern the movement of agricultural produces and other products," Mr Majuru said.

"On the citrus protocol with China, this is expected to open up direct access to a huge market for local farmers.

"The good thing about Zimbabwe taping into the Chinese market is that it will ease the over reliance on the European market, allowing the country to diversify and hedge against price volatility by concentrating on one market," he said.

Under the protocol, Mr Majuru said, citrus fruits to be exported to China, include orange, mandarin, lemon, grapefruit, limes, tangelo and grapefruit.



Local farmers' prospects are further boosted by the fact that different varieties of citrus that are grown in Zimbabwe are in demand the world over.

However, the ZimTrade boss notes, despite the present demand the exports promotion agency is constantly looking at market trends to ensure that Zimbabwe continue producing new varieties that are growing in demand.

Examples include the growing demand for soft citrus as well as that for lemons and limes.

Citing the Trade Map, ZimTrade notes that in 2019 China imported citrus fruits worth around US\$594 million.

The figure shows that the Chinese market has the wherewithal to make huge impact on Zimbabwe.

The bulk of their present imports come from South Africa.

No official comment could be obtained from the Chinese Embassy, with an official who declined to named insisting details would be release in due course.

Zimbabwe has climatic condition that allows the growing of many fruits and vegetables on high demand the world over.

The country is a major supplier of fresh produce to many countries in Europe and cargo planes have never stopped coming to Zimbabwe to collect the products ever-since some of them imposed economic sanctions on Zimbabwe two decades ago.

Some indigenous farmers have taken a driving seat in the agriculture sector and have demonstrated their prowess in tobacco, horticulture and other foreign currency spinning crops.

Source - Herald

Agroecology and an organic farming strategy



Zimbabwe Smallholder Organic Farmers Forum National Coordinator Nelson Mudzingwa talking about his farm in Shashe, Masvingo province, by one of his fish ponds.

"Agroecology can increase farmers' profits": Jonathan Reeves, livelihoods adviser at the British Embassy Harare explains why the national agroecology and organic farming strategy currently under development is the way forward. He sees huge potential for farmers from Zimbabwe and the region to boost food and nutrition security and sell to the organic export market. Read on...

It is a dangerous and widespread fallacy that agroecology leads to lower productivity than conventional, fossil-fuel-based agriculture. Major reports over the last few years by the UN Food and Agriculture Organisation and Biovision, the International Panel of Experts on Sustainable Food Systems, and the Committee on World Food Security's High Level Panel of Experts all challenge this narrative.

Huge potential for sales

A form of organic agriculture that largely replicates conventional monoculture but replaces chemical inputs with organic ones is indeed likely, on average, to slightly reduce yields. This form of agriculture can become economically attractive where markets for certified organic produce offer farmers a premium. There is huge potential for Zimbabwean farmers to sell to this expanding organic export market: and one part of the agroecology and organic farming strategy will seek to facilitate the growth of this source of foreign exchange.

Escape route to resilient food and nutrition security

Agroecology, on the other hand, promotes diverse farming systems where different animal breeds and plant varieties interact to generate a higher overall level of production than conventional farming. This higher level of production also tends to be more stable in the face of volatile weather and input prices. In other words it brings greater resilience, as was demonstrated in the aftermath of Cyclone Idai. What's more, agroecology can increase farmers' profits since they are not spending money on expensive chemicals and hybrid seeds.

Zimbabwean farmers have been struggling due to low and erratic rainfall, decades of chemical soil abuse, and high input



prices. In this perfect storm, agroecology offers an escape route to resilient, sustainable food and nutrition security. The agroecology strategy will set out how to scale up success stories to deliver the kind of food security the country once enjoyed.

Improving the efficiency of conventional farming

Agroecology can be viewed as a transformative journey. It starts with improving the efficiency of conventional farming, for example by precision application of fertilisers and water conservation practices. Pfumvudza is a great example of this. It continues by replacing chemical fertilisers with organic fertilisers, such as manure or vermicompost, and nitrogen-fixing cover crops.

Partners in our UK Aid-funded agriculture programmes, such as Foundations for Farming, who pioneered pfumvudza, FAO, Practical Action and Fambidzanai Permaculture Centre (in the Livelihoods and Food Security Programme, LFSP), are already helping many farmers in 12 districts to incorporate these elements.

Through this approach, last season, LFSP pfumvudza pilot farmers obtained an average of 8 tonnes of maize per hectare, with those applying the full set of practices, including early mulching, achieving 12 tonnes. LFSP trained over 200,000 farmers in pfunvudza and agroecology in 2020. The Community Technology Development Organisation and other partners are now ramping up similar work in 18 districts under the Zimbabwe Resilience Building Fund.

Shashe Agroecology School and water-harvesting techniques

Farmers can then go further by redesigning agroecosystems to function in tune with nature, emphasising diversity and synergies. We also see good examples of this in Zimbabwe, such as the integration of crops, livestock, fish and trees at



Infiltration pits for water harvesting, LFSP, Kwekwe

the Shashe agroecology school and the incredible water harvesting techniques pioneered by the late Zephaniah Phiri. The agroecology strategy will seek to promote and scale-up these good indigenous practices.

It is all about being resourceful: doing more with less. I would emphasise that this national strategy was commissioned by the Ministry of Lands, Agriculture, Water and Rural Resettlement. The next stage of the policy discussion should consider how to re-shape subsidies to promote agroecology, including water harvesting, for resilient food security and for jobs and revenue for the country. Simbi inorohwa ichapisa!

South African topfruit season looking very positive

By Nichola McGregor

Ideafruit is a grower and exporter of topfruit with operations situated in the Western Cape, South Africa and international offices in the UK and Singapore. The UK office markets Ideafruits' own production into UK and European markets, while working with other grower partners around the world to supplement customer requirements. Ideafruit UK Ltd is also Organic accredited.



export volumes may be higher in most varieties.

"There were some production areas damaged by hailstorms and early frost, but for most of the regions the early part of the crop is looking good and pack-outs are very positive."

Ideafruit is fully integrated into the pome fruit value chain. It has its own orchard base and pack and market fruit from other third-party growers as well.

"We grow and procure fruit of desired quality and quantity in a sustainable manner. This year we are fortunate to have a good crop. That said we rely on Mother Nature and a lot can still happen. Packed fruits are tailored to each individual market according to client requirements and specification"

Later season

The topfruit season in South Africa is running around 7-14 days later than normal, on some varieties even later. Although some of the initial planning was impacted by this shift, Marinus said that it is not necessarily a bad thing as it has given industry more time to deal with some of the issues caused by Covid restrictions earlier in January.

Summer pears are already in transit and they are now entering the bulk of the crop with Packham's Triumph and Abate Fetel

"The fruit growing season in South Africa has been very positive," said Marinus Van Der Merwe, Group Product Director. "We are coming out of a few years of drought that was particularly bad in 2017/18 and both volume and quality were under pressure. We are currently experiencing normal weather patterns and irrigation resources are at promising levels."

The official estimates are that apple and pear volumes from South Africa will be up on last season. These are of course subject to adjustment as the season progresses. Marinus expects that the final





that are being harvested. Royal Gala strains and Early Golden Delicious are currently the main focus.

"The levels of apple stock from British growers is difficult to judge. Some smaller growers will be out of product by April while other, bigger growers can run until June," explains David Peachey, Managing Director Ideafruit UK Ltd. We supply mainly retailers and have programs to supply the fruit on request."

"We work closely with our partners and growers to ensure the long-term sustainability of all our businesses. By establishing what price our growers need to sustain production and what prices are in the markets we are able to give an end selling price that makes commercial sense for all parties involved. We do this

by keeping our costs as low as possible and having the leanest supply chain we can without compromising on service."

Brexit

"Brexit has not really been an issue for us as we ship directly into the UK from South Africa and we have always required the correct import documents. We always adhere to the highest protocol in terms of food safety compliance and quality so we can supply all market segments. The biggest challenge currently are delays at the UK ports which have down scaled staff levels because of the pandemic. This is unpredictable and adds extra costs. Planning from orchard to retail shelf is now more import than it has ever been," said David.

"One disadvantage of Brexit is that in the past if you needed a couple of extra containers of fruit you could normally get them sent over from The Netherlands, but now there is duty to be paid on these imports and all the extra paperwork," adds Steven Manson, Commercial Director at Ideafruit UK.

"When the UK first went into lockdown there was a shift from frequent shopping to weekly shopping, shopping online and click & collect. People were looking for fruit with longer shelf life which increased demand for top fruit and lessened demand for pre-prepared food or short shelf life products. Pack formats have stayed largely the same though."

Packaging

As for packaging, the industry is under pressure to lower the use of plastic and the amount of food waste, which is a good thing. These two principles do not always go hand in hand.

"Retailers have tried to sell loose apples, but what happens is that consumers will come along and pick up the fruit, put it down again and it gets bruised leading to much more waste. Packaging can be reduced but it must also be completely recyclable. There are people working on this and when fully recyclable / compostable packaging becomes available it will be embraced by producers and their partners. This is just part of a much larger worldwide over-reliance on plastic use," said David.

Source: FreshPlaza.com

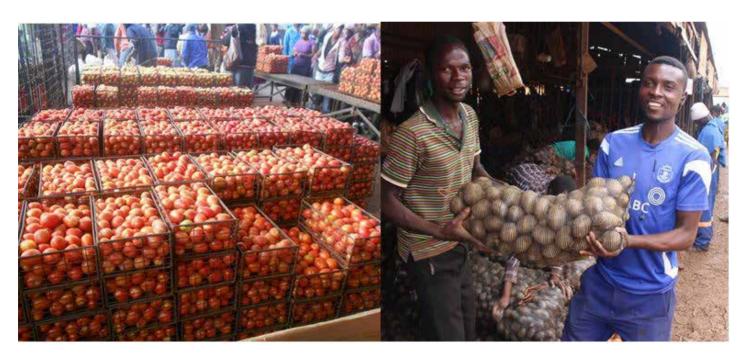


The value of demand and supply data in agricultural value chains

a large portion of their budgets from vegetables to fruits which will have become more affordable. Likewise, a sudden over-supply of vegetables can affect the demand for tubers like potatoes which often substitute leafy vegetables in some households. An oversupply of particular vegetables can result in consumers shifting from fruits to vegetables, thus pushing some fruits into the luxuries categories.

How data fuels transparency and risk assessment in agricultural value chains

Without data on supply and demand, it is difficult to ensure greater transparency in the distribution of agricultural incomes and wealth among value chain actors. Contractors and middlemen may continue to reap more rewards from agricultural commodities at the expense of farmers. By collecting data and analyzing it properly, it becomes possible to see profit centers or nodes along supply chains. One of the reasons financial institutions are risk-averse against the agriculture sector



By Charles Dhewa

Integrating data on demand and supply of agricultural commodities in both formal and informal markets can reveal inter-dependencies between diverse agricultural commodities. For instance, it is through data collection and analysis that policy makers, development agencies and potential investors can see the relationship between fruits, tubers and vegetables.

The fact that commodities in the market compete for the same consumer budget, it means a sudden increase in the supply of fruits can affect the demand for vegetables as consumers shift is because there is no data for reliable risk assessment. When data is available, financial institutions can easily see over-subscribed agricultural commodities as well as track the movement of commodities to pre-empty side-marketing.

The increasing power of ICTs

By limiting physical movements, COVID19 has raised the profile and role of ICTs like mobile applications as a major solution in agriculture-related data collection, communication and transacting. Farmers who were previously reluctant to embrace ICTs have started mastering Open Data Kit (ODK) and other



spend more time in the market, competing with each other to sell the same commodity.

actors has increased through integrating information from diverse sources.

digital tools. The demand for smart phones has also surged as farmers strive to stay virtually active in agricultural value chains. Government departments responsible for agriculture and ICTs have started spending more on digital technologies, with this trend set to continue intensifying.

After decades of conducting crop and livestock assessments manually, extension officers are fast jumping onto digital data collection platforms and tools. This has slashed the cost of collecting data as well as time spent collecting data. Instead of spending months cleaning and analyzing data, statistical agencies are now able to do the work within a few weeks and producing results while data is still fresh.

Improving data management and processing is already improving the quality and speed of information flows across all agricultural supply nodes such as production, harvesting, grading, transportation, marketing and value addition. Data is beginning to reduce cases where farmers spend more time in the market, competing with each other to sell the same commodity. Situational awareness among farmers and other value chain

Addressing fragmentation

Digitally-enabled data collection and analysis, is addressing fragmentation of information and decisions within farmers, traders, transporters and other value chain actors. Various non-standardized databases among different agricultural service providers like input providers, supermarkets, mass markets and processors will soon be a thing of the past in many African countries.

Consistent data collection and analysis will empower policy makers to strengthen their relationships with value chain actors. Ultimately, governments will be capacitated to creatively engage with ICT Service providers in order to carefully consider issues related data security and sovereignty. This will enhance the capacity of farmers and other value chain actors to know how data collected from them is used and for that purposes.

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How agricultural markets are largely misunderstood



By Charles Dhewa

When policy makers, development agencies, the private sector and ordinary people talk about agricultural markets, they rarely talk about consumer power. There is often too much emphasis on producers, financing, cold chain, transportation, value addition and processing, yet all these are meaningless if efforts are not devoted to understanding the consumer base. Farmers and financial institutions may put all their energy and resources in agriculture production but they will lose income unless there are enough consumers to make farming profitable through purchasing power.

The consumer base is about the size of population

Investors and government departments can put in place the right cold chain, transportation and appropriate infrastructure but if the consumer base is too small and consumers do not have sufficient buying power, the notion of making agriculture viable and sustainable remains a dream. Demand is often given. For instance, consumers do not start consuming more portions of food merely because there is surplus food on the market.

A household of six people will not change the pot size and start eating more merely because suddenly there are more tomatoes, meat, pulses or any other commodity. Appetite remains the same and that is why gluts are common where production is not matched with demand. VaPositori do not switch from their religious practices to start eating pork merely because pig production has gone up.

What does market advice mean under correct circumstances?

Contrary to policy makers who think production is more important than demand from consumers, stimulating production and providing market intelligence may imply advising farmers, irrigation schemes, parastatals and other food producers to reduce the size of land in response to the consumer base and consumption patterns.

In most cases, consumers are already being served by existing producers and markets such that any increase in supplies of commodities risks distorting the market in ways that significantly slash incomes for farmers and other food producers. Decisions to put several irrigation schemes under crop production can undermine existing production practices when current producers are already failing to earn profit from the current consumer base because consumers are few and cannot afford to pay more due to lack of employment and other sources of income.

Need to revisit role of agricultural policy makers In many African countries, ministries of agriculture and marketing authorities are over-extending their reach and muscling out the private sector. Unless it is for supporting food security, when ministries of agriculture over-participate in production and markets, they destroy the appetite for the private sector to invest in agriculture. Ministries of agriculture and marketing authorities should mainly focus on creating an enabling environment and regulating the market space so that there is fair distribution of income and wealth from agriculture. If marketing authorities go around rehabilitating irrigation schemes and livestock marketing infrastructure, what will the private sector and farmer unions do?

When government departments and marketing authorities invade other actors' mandates, they undermine commercialization of agriculture. Clear role definition can strengthen food production and stem overlaps as well as duplication of efforts. More importantly, markets are more than infrastructure. Travelling across Africa, one of the common sights are abandoned market sheds, livestock sales pens and other forms of infrastructure not being used because those who set them up did not consult the consumer base, users and consumers.

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Zim launches key climate change knowledge documents

By Maricho Reporter

imbabwe has launched four key documents aimed at improving climate change knowledge and awareness.

The country's vulnerability to changes in the climate system is worsened by limited climate change knowledge and awareness among the citizens and this is further exacerbated by the over-reliance on climate sensitive sectors such as agriculture, forestry and water resources, according to Mangaliso Ndhlovu, Minister of Environment, Climate, Tourism and Hospitality Industry.

The four documents launched are the National Climate Change Learning Strategy; Climate Change Mainstreaming Module for Development Planning; National Adaptation Planning Process Communication Strategy; and Green Climate Fund Country Programme.

"The unprecedented vagaries of climate change require that climate change be effectively mainstreamed in development planning and budgeting processes. As such my Ministry has developed a Climate Change Mainstreaming Research module to enhance the capacity of stakeholders critical in the planning process at national, sub-national and sectoral levels are able to integrate climate change considerations in planning and budgetary processes.

"It is therefore critical to enhance climate change knowledge and awareness to enable citizens to participate from a well-informed perspective in the fight against this scourge," said Ndhlovu.

In 2019, Zimbabwe received resources for the development of a National Climate Change Learning Strategy to address the existing gaps in climate change knowledge and awareness from the Swiss Agency for Development and Cooperation (SDC) through the United Nations Institute for Training and Research (UNITAR). This activity was jointly implemented with support from UNDP Zimbabwe Country Office.

The National Climate Change Learning Strategy systematically examines and identifies critical learning and skills development needs in key climate-related sectors, as highlighted in the country's Nationally Determined Contributions (NDC), National

Adaptation Plans (NAP) and other climate-related policies and strategies. The Strategy identified a number of specific climate change learning actions for the short, medium and long term that are most appropriate to the national context.

The Learning Strategy makes it imperative that climate change education, training, public awareness, public participation and public access to climate change information be prioritized in Zimbabwe bearing in mind that "an educated society is an empowered society." This will reduce the impacts of climate change by enabling societies to be a part of the solution.

Ndhlovu said the Green Climate Fund (GCF) has been instrumental



in channeling resources aimed at building resilience to climate change related vagaries.

Zimbabwe is being supported by the Fund to strengthen its enabling environment for climate change mainstreaming. One of the ways has been through development of the National Adaptation Planning Communication Strategy that will propel climate change communication and advocacy in so far as it translates to behavioral change and adoption of climate smart interventions underpinning the resilience building agenda.

"In an effort to enhance Zimbabwe's capacity to mobilize multi-lateral climate finance, the country received support to strengthen GCF Focal Point referred to as the National Designated Authority (NDA) and develop a Green Climate Fund (GCF) Country Programme. Zimbabwe's GCF Country Programme outlines national climate priorities and Zimbabwe's strategy for engagement with the Green Climate Fund.

"The Country Programme also contains a strategy for building Zimbabwe's Project Pipeline and Portfolio towards enhancing climate action in line with the national climate priorities that are aligned with the country's economic blueprint, National Development Strategy 1 (2021-2025). The identified national priorities for the Zimbabwe's GCF Country Program over the next four years are: Renewable Energy and Energy Efficiency;

Integrated Waste Management; Sustainable Forestry Management; Climate Smart Agriculture; and Early Warning and Disaster Risk Reduction," according to Ndhlovu.

The GCF Country Programme will allow the Zimbabwe to tap into economies of scale, access more funds at a time and partner with a wider range of stakeholders and development partners to increase impact, efficiency and transparency.

The four documents have been aligned with with national development policies and strategies such as Vision 2030, and the National Development Strategy 1 2021-25.

Climate change has been mainstreamed in NDS 1 which sets a thematic area on "Environment Protection, Climate Resilience and Natural Resources Management" and goes further to set a sector outcome of Improved Climate Action.





A decade of improved and climate-smart maize through collaborative research and innovation

A ten-year partnership led by CIMMYT and IITA tackles climate-induced risks in maize production, developing and deploying new climate-adaptive varieties benefiting over 8 million households in sub-Saharan Africa.

By Shiela Chikulo

The food security and livelihoods of smallholder farming families in sub-Saharan Africa depend on maize production. The region accounts for up to two-thirds of global maize production, but is facing challenges related to extreme weather events, climate-induced stresses, pests and diseases, and deteriorating soil quality. These require swift interventions and innovations to safeguard maize yields and quality.

In this Q&A, we reflect on the results and impact of the long-term collaborative work on drought-tolerant maize innovations spearheaded by two CGIAR Research Centers: the International Maize and Wheat Improvement Center (CIMMYT) and International Institute of Tropical Agriculture (IITA). This innovative work has changed guises over the years, from the early work of the Drought Tolerant Maize for Africa (DTMA) and Drought Tolerant Maize for Africa Seed Scaling (DTMASS) projects through later iterations such as Stress Tolerant Maize for Africa (STMA) and the newest project, Accelerating Genetic Gains in Maize and Wheat (AGG).

In this Q&A, three leaders of this collaborative research reflect on the challenges their work has faced, the innovations and impact it has generated for smallholder farmers, and possible directions for future research. They are: B.M Prasanna, director of CIMMYT's Global Maize Program and of the CGIAR Research Program on Maize (MAIZE); Abebe Menkir, a maize breeder and maize improvement lead at IITA; and Cosmos Magorokosho, project lead for AGG-Maize at CIMMYT.

Q: Briefly describe the challenges confronting small-scale farmers prior to the introduction of drought-tolerant maize and how CIMMYT and IITA responded to these challenges?

B.M.P.: Maize is grown on over 38 million hectares in sub-Saharan Africa, accounting for 40% of cereal production in the region





and providing at least 30% of the population's total calorie intake. The crop is predominantly grown under rainfed conditions by resource-constrained smallholder farmers who often face erratic rainfall, poor soil fertility, increasing incidence of climatic extremes — especially drought and heat — and the threat of devastating diseases and insect pests.

Around 40% of maize-growing areas in sub-Saharan Africa face occasional drought stress with a yield loss of 10–25%. An additional 25% of the maize crop suffers frequent drought, with yield losses of

up to 50%. Climate change is further exacerbating the situation, with devastating effects on the food security and livelihoods of the millions of smallholder farmers and their families who depend on maize in sub-Saharan Africa. Therefore, the improved maize varieties with drought tolerance, disease resistance and other farmer-preferred traits developed and deployed by CIMMYT and IITA over the last ten years in partnership with an array of national partners and seed companies across sub-Saharan Africa are critical in effectively tackling this major challenge.

A.M.: Consumption of maize as food varies considerably across sub-Saharan Africa, exceeding 100 kg per capita per year in many countries in southern Africa. In years when rainfall is adequate, virtually all maize consumed for food is grown in sub-Saharan Africa, with a minimal dependence on imported grain. Maize production, however, is highly variable from year to year due to the occurrence of drought and the dependence of national maize yields on seasonal rainfall. One consequence has been widespread famine occurring every five to ten years in sub-Saharan Africa, accompanied by large volumes of imported maize grain as food aid or direct imports.

This places a significant strain on resources of the World Food Programme and on national foreign exchange. It also disincentivizes local food production and may not prevent or address cyclical famine. It also leaves countries ill-equipped to address famine conditions in the period between the onset of the crisis and the arrival of food aid. Investment in local production, which would strengthen the resilience and self-sufficiency in food production of smallholder farming families, is a far better option to mitigate food shortages than relying on food aid and grain imports.

C.M.: Smallholder farmers in sub-Saharan Africa face innumerable natural and socioeconomic constraints. CIMMYT, in partnership with IITA and national agricultural research system partners, responded by developing and catalyzing the commercialization of new maize varieties that produce reasonable maize yields under unpredictable rainfall-dependent growing season.

Over the life of the partnership, more than 300 new climate-adaptive maize varieties were developed and released in more than 20 countries across sub-Saharan Africa where maize is a major staple food crop. Certified seed of over 100 stress-tolerant improved maize varieties have been produced by seed company partners, reaching more than 110,000 tons in 2019. The seeds of these drought-tolerant maize varieties have benefited more than 8 million households and were estimated to be grown on more than 5 million hectares in eastern, southern and west Africa in 2020.

Q: In what ways did the drought-tolerant maize innovation transform small-scale farmers' ability to respond to climate-induced risks? Are there any additional impacts on small scale farmers in addition to climate adaptation?

B.M.P.: The elite drought-tolerant maize varieties can not only provide increased yield in drought-stressed crop seasons, they also offer much needed yield stability. This means better



performance than non-drought-tolerant varieties in both good years and bad years to a smallholder farmer.

Drought-tolerant maize varieties developed by CIMMYT and IITA demonstrate at least 25–30% grain yield advantage over non-drought-tolerant maize varieties in sub-Saharan Africa under drought stress at flowering. This translates into at least a 1 ton per hectare enhanced grain yield on average, as well as reduced downside risk in terms of lost income, food insecurity and other risks associated with crop yield variability. In addition to climate adaptation, smallholder farmers benefit from these varieties due to improved resistance to major diseases like maize lethal necrosis and parasitic weeds like Striga. We have also developed drought-tolerant maize varieties with enhanced protein quality – such as Quality Protein Maize or QPM – and provitamin A, which improve nutritional outcomes.

We must also note that drought risk in sub-Saharan Africa has multiple and far-reaching consequences. It reduces incentives for smallholder farmers to intensify maize-based systems and for commercial seed companies to invest and evolve due to a limited seed market.

Drought-tolerant maize is, therefore, a game changer as it reduces the downside risk for both farmers and seed companies and increases demand for improved maize seed, thus strengthening the commercial seed market in sub-Saharan Africa. Extensive public-private partnerships around drought-tolerant maize varieties supported the nascent seed sector in sub-Saharan Africa and has enabled maize-based seed companies to significantly grow over the last decade. Seed companies in turn are investing in marketing drought-tolerant maize varieties and taking the products to scale.

A.M.: The DTMA and STMA projects were jointly implemented by CIMMYT and IITA in partnership with diverse national and private sector partners in major maize producing countries in eastern, southern and western Africa to develop and deploy multiple stress-tolerant and productive maize varieties to help farmers adapt to recurrent droughts and other stresses including climate change.

These projects catalyzed the release and commercialization of numerous stress-resilient new maize varieties in target countries across Africa. Increasing the resilience of farming systems means that smallholder farmers need guaranteed access to good quality stress resilient maize seeds. To this end, the two projects worked with public and private sector partners to produce large quantities of certified seeds with a continual supply of breeder seeds from CIMMYT and IITA. The availability of considerable amount of certified seeds of resilient maize varieties has enabled partners to reach farmers producing maize under stressful conditions, thus contributing to the mitigation of food shortages that affect poor people the most in both rural and urban areas.

C.M.: The drought-tolerant maize innovation stabilized maize production under drought stress conditions in sub-Saharan Africa countries. Recent study results showed that households that grew drought-tolerant maize varieties had at least half a ton more maize harvest than the households that did not grow the drought-tolerant maize varieties, thus curbing food insecurity while simultaneously increasing farmers' economic benefits. Besides the benefit from drought-tolerant innovation, the new maize varieties developed through the partnership also stabilized farmers' yields under major diseases, Striga infestation, and poor soil fertility prevalent in sub-Saharan Africa.

Q: How is the project addressing emerging challenges in breeding for drought-tolerant maize and what opportunities are available to address these challenges in the future?

B.M.P.: A strong pipeline of elite, multiple-stress-tolerant maize varieties — combining other relevant adaptive and farmer-preferred traits — has been built in sub-Saharan Africa through a strong germplasm base, partnerships with national research partners and small—and medium-sized seed companies, an extensive phenotyping and multi-location testing network, and engagement with farming communities through regional onfarm trials for the identification of relevant farmer-preferred products.

CGIAR maize breeding in sub-Saharan Africa continues to evolve in order to more effectively and efficiently create value for the farmers we serve. We are now intensively working on several areas: (a) increasing genetic gains (both on-station and onfarm) through maize breeding in the stress-prone environments of sub-Saharan Africa by optimizing our breeding pipelines and effectively integrating novel tools, technologies and strategies (e.g., doubled haploids, genomics-assisted breeding, highthroughput and precise phenotyping, improved breeding data management system, etc.); (b) targeted replacement of old or obsolete maize varieties in sub-Saharan Africa with climateadaptive and new varieties; (c) developing next-generation climate-adaptive maize varieties with traits such as native genetic resistance to fall armyworm, and introgressed nutritional quality traits (e.g., provitamin A, high Zinc) to make a positive impact on the nutritional well-being of consumers; and (d) further strengthening the breeding capacity of national partners and small and medium-sized seed companies in sub-Saharan Africa for a sustainable way forward.

A.M.: The DTMA and STMA projects established effective product pipelines integrating cutting-edge phenotyping and molecular tools to develop stress-resilient maize varieties that are also resistant or tolerant to MLN disease and fall armyworm. These new varieties are awaiting release and commercialization. Increased investment in strengthening public and private sector partnerships is needed to speed up the uptake and commercialization of new multiple stress-resilient maize varieties that can replace the old ones in farmers' fields and help achieve higher yield gains.

Farmers' access to new multiple-stress-tolerant maize varieties will have a significant impact on productivity at the farm level. This will largely be due to new varieties' improved response to fertilizer and favorable growing environments as well as their resilience to stressful production conditions. Studies show that the adoption of drought-tolerant maize varieties increased maize productivity, reduced exposure to farming risk among adopters and led to a decline in poverty among adopters. The availability of enough grain from highly productive and stress-resilient maize varieties can be the cheapest source of food and release land to expand the cultivation of other crops to facilitate increased access to diversified and healthy diets.

C.M.: The project is tackling emerging challenges posed by new diseases and pests by building upon the successful genetic base of drought-tolerant maize. This is being done by breeding new varieties that add tolerance to the emerging disease and pest challenges onto the existing drought-tolerant maize backgrounds. Successes have already been registered in breeding new varieties that have high levels of resistance to MLN disease and the fall armyworm pest.

Opportunities are also available to address new challenges including: pre-emptively breeding for threats to maize production challenges that exist in other regions of the world before these threats reach sub-Saharan Africa; enhancing the capacity of national partners to build strong breeding programs that can address new threats once they emerge in sub-Saharan Africa; and sharing knowledge and novel high-value breeding materials across different geographies to immediately address new threats once they emerge. Source - CIMMYT

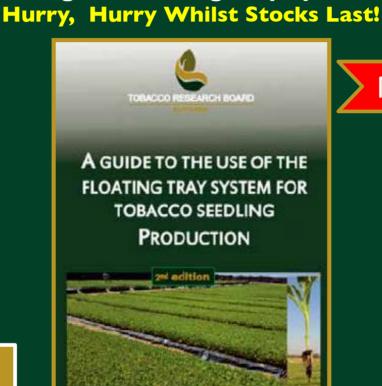


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Kutsaga Research- Maximizing Economic Value

Zim, World Bank, collaborate on NDCs report

Maricho Reporter

The World Bank is assisting Zimbabwe to compile the country's Nationally Determined Contributions updated report which will help government to coordinate green economic recovery efforts in line with national climate goals and climate-resilient strategies. The bank is taking-up the project in consultation with Ricardo PLC, a global engineering and strategic, technical and environmental consultancy business.

The NDC enhancement project will allow Zimbabwe to take stock of emerging evidence from emissions modelling and investment analysis, as well as economic and technology trends.

The project will be carried out through the Climate Action Enhancement Package (CAEP), with support from the World Bank's NDC Support Facility and the Zimbabwe Reconstruction Fund (ZIMREF). NDCs are a country's commitments to mitigate climate change which should be achieved by 2030 under the Paris Agreement.

The agreement makes provision to track collective progress in making these mitigation contributions through the Transparency Framework, Compliance Framework and the Global Stock Take which will start from 2023 and every five year thereafter.

Speaking at the Zimbabwe NDC-update inception meeting last week, World Bank senior agriculture specialist Nkulumo Zinyengere said that the updated report will assist the nation in communicating actions that will facilitate and effectively unlock financial investments.

"Zimbabwe's first NDC outlined a series of actions required for both adaptation and mitigation, and outlined a governance framework, monitoring and reporting steps, and support required information to facilitate implementation. It also emphasised that further collation and analysis of information on support for financial investment, capacity development and technology generation and transfer is required.

"This NDC enhancement provides an opportunity for Zimbabwe to be clearer in communicating adaptation and mitigation actions, outline a roadmap for their delivery, better reflect finance needs, and establish an institutional framework and Measurement, Reporting and Verification system to facilitate effective NDC implementation," he said.

Zinyengere said the assignment will comprehensively highlight areas with adaptation and mitigation co-benefit.

"As stated in the first-generation NDC, Zimbabwe's economy is founded on sectors vulnerable to climatic change namely agriculture, forestry, energy, tourism, and industry, among others. The agricultural sector which constitutes between 10 and 15 percent of Gross Domestic Product (GDP) is largely rain-fed and hence highly sensitive to climate change.

"Since 2010, Zimbabwe has been experiencing a slowdown in economic growth, with the growth rate sharply declining from 12 percent in 2011 to 1.5 percent in 2015. The decline is largely attributed to the underperformance of the agriculture sector, which at its peak contributed with 19 percent of the GDP." Speaking at the same event Ricardo PLC project director Dr Ryan Hogarth said that the project will be a roadmap in unlocking potential investments for mitigation and adaptation schemes.

"We will coordinate with UNEP/SEI, who are responsible for modelling the updated economy-wide report on greenhouse gas emission trajectories in a business as usual and mitigation scenarios and assess the mitigation potential to 2030. Based on the results from this analysis, we will assess the scope for raising the ambition of Zimbabwe's NDC target.

"The local and international mitigation experts will identify the specific mitigation projects that need to be implemented to meet the revised target. We will also extract data, where available from the analysis, on the investment costs of the projects. These cost estimates will be used to develop a high-level investment/financing plan for the prioritised projects, with consideration of Zimbabwe's climate finance landscape," he said.

He added that the updated NDC report will articulate overarching arrangements and a financial and institutional framework for the implementation of economy-wide prioritised mitigation and adaptation projects, as well as a MRV framework.

Director of Climate Change Management Department under the Ministry of Environment, Climate, Tourism and Hospitality Industry Washington Zhakata also said the country will continue to engage and collaborate with development partners in strengthening its

competitiveness in promoting low carbon economy and green investments.

"Zimbabwe will remain focused in strengthening the establishment of a mitigation system that realises the opportunities of a low-carbon economy while being mindful that an inclusive and just transition requires time and well planned low-carbon and climate resilient development," he said.

Zhakata said the World Bank is assisting the nation to achieve its Sustainable Development Goals, by aligning innovations techniques which will scale up the country's NDCs.

"In 2016, the Government of Zimbabwe launched the NDC Implementation Framework which seeks to guide the execution of the current energy sector focused on NDCs. The implementation framework was supported by the World Bank." "This project aims to update Zimbabwe's targets and actions to reduce greenhouse gas emissions. Zimbabwe's first-generation NDC set a target of reducing energy emissions per capita by 33 percent by 2030 relative to a projected business-as-usual approach, conditional on international support."



MARICHO MAGAZINE



The importance of wetlands



By Nigel Matope

Wetlands, according to the Ramsar Convention on Wetlands, are areas where water is the controlling factor the environment and associated plant and animal life. They occur where the water table is at or near the surface of the land or the land is covered by water.

In Zimbabwe there are seven recognized Ramsar sites, namely Chinhoyi Caves, Monovale vlei, Driefontein grasslands, Cleaveland dam, Mosi a Tunya, Lake Chivero and Manyame.

Wetlands are a critical part of our natural environment and ecosystems and play a key role in supporting biological diversity. Wetlands support birds, fish, reptile, amphibian and plant species during critical life stages. They provide roosting, breeding grounds, feeding habitat and refuge during extreme weather events. They are also used as migration corridors for animal species such as mammals and water birds.

Wetland values



Wetlands have unique biodiversity ranging from migrating birds that cross oceans to rare plants. They provide essential services and products which can benefit communities positively and contribute towards sustainable livelihoods and resilient communities.

Economic value

Recreation, Education and Research - Wetlands offer great recreational facilities such as tourism, fishing and bird watching. These activities can be harnessed and proceeds channeled towards community development. Nature related tourism is a trend globally with many tourists coming to photograph, film or document wetland biodiversity. Migratory birds are of particular interest to most researchers and tourists. Wetlands are also excellent sites for students to study vegetation structure, ecological functions, biodiversity, natural ecological processes and plant animal interactions.

Income generation can be derived from many natural products found in wetlands. Wetlands support a rich variety of flora and fauna species which can be sustainably harnessed at local and commercial levels to generate income and support livelihoods. Some of the products that can be extracted include fish and timber products for income generation purposes.

Ecosystem value

Flood control wetlands, owing to their low topographic position relative to uplands, offer flood protection. They store water and slowly release surface water, rain, groundwater and flood waters. Vegetation in wetlands also impedes the movement of flood water and distribute more slowly over floodplains.

Groundwater replenishment is another positive benefit of wetlands. Aquifers and ground water are replenished by surface or rain water that infiltrates and percolates to underground water sources. Wetlands are connected to underground sources of water, retaining water and provide time for it to filter down and replenish depleted sources. The water is used for home, industrial and agricultural uses. Wetlands also assist in maintaining surface water levels which is crucial given the threat of climate change globally. Wetlands are essential for provision of a proper functioning hydrological cycle.

Biodiversity is life that is supported by wetlands. Many species of birds, fish, reptiles, amphibians, mammals and vegetation depend on wetlands for breeding, foraging and shelter. They provide unique habitats for species that cannot survive outside



of the wetland environment. The loss of wetlands is of particular concern to their survival. The species diversity in wetlands especially that of insects is of vital importance in supporting food chains at the lowest levels.

Sediment and nutrient retention, export and water purification are vital processes that occur in wetlands. Wetlands trap sediments and retain excess nutrients and other pollutants such heavy metals. These functions are vital in wetlands that are connected to underground water sources that provide shelter and drinking water to people and wildlife.

Pressures

Wetlands around the world are negatively affected by human activities which change the natural patterns of wetting and drying, frequency and magnitude of flow and floods, water quality and condition of in-stream habitats.

Invasive alien species pose a huge threat to biodiversity in wetlands ecosystems. They degrade habitats and out compete local indigenous species for resources. Some become dominant predators in the ecosystem which is a danger to local species diversity.

Runoff is affected by agriculture in both rural and urban settlements and urbanization in urban areas. This affects sediment transportation and deposition as the soil is loosened by agricultural activities. Application of fertilizers and pesticides also leads to eutrophication when carried by overland flow to surface water storages which creates a conducive environment for algae growth. In urban areas, tarmac surfaces prohibit infiltration leading to generation of overland flow and flush

floods. Runoff also picks up pollutants such as heavy metals from tarmac surfaces.

These factors undermine the ability and capacity of wetlands to support biodiversity. It also reduces the resilience of wetlands to cope and respond to environmental changes such as climate change.

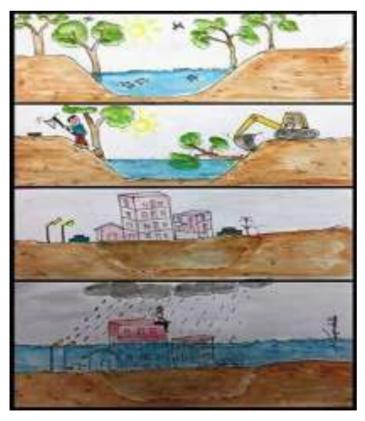
The future of wetlands

Attitudes and perceptions are important in determining how wetlands are preserved, conserved and managed. Survival of people is linked to the practice of sound sustainable policies and practices between development and environment. If used sustainably, wetlands services can be enjoyed by generations to come. Too many development practices currently fail to account for sustainable management of wetland resources which can be an extinction level event already in progress.











Agriculture in Africa: Impact of COVID-19

By Jeff Megayo

(ACT AFRIQUE) - Initially, the COVID-19 pandemic did not threaten food availability in sub- Saharan Africa due to adequate reserves for most staple crops in 2019. Access to food was instead the focus as borders closed and global supply chains weakened. Almost a year after the pandemic outbreak, it is now evident that agriculture production and its allied industries are struggling.



The pandemic is reminding us that women are key to a green revolution in Δ frica

Prices increased for most staple foods in many countries, thereby worsening the region's food and security situation. Last year, the FAO estimated that 235 million people struggled to have regular access to nutritious and sufficient food in Africa. This health crisis has forced many more people into this group.

Farmers, food processors and marketers also faced challenges. Border closures negatively affected input supply chains and the processing capacity of most small units. In many countries, major domestic logistics disruptions persist due to curfews and other policies intended to curb the virus's spread.

Nonetheless, men and women are not confronted with the same constraints in the agriculture sector. Even before the outbreak of the pandemic, women faced more hardship compared to men. Gender bias and other challenges persist, stripping women of agency and controlling productive resources in the sector. The ongoing pandemic's effects should remind all stakeholders that agriculture must be gender transformative if there is any chance for sub-Saharan Africa to achieve zero hunger by 2030 as per goal 2 of the Sustainable Development Goals.

Agriculture from a gender perspective

Despite governments and their partners' efforts to reduce gender inequalities, gaps remain between legislation and implementation in the agriculture sector. In Ghana, for example, most farmers are women, particularly in rural areas where over 70% are engaged in agricultural value chains. They produce 70% of the food stock consumed by households. 95% of them are involved in some form of agro- processing. On the other hand, men mostly produce cash crops for exports.

Notwithstanding their importance in the region's food security, women are still disproportionally disadvantaged compared to men. They face significant challenges in access to land and credit, transportation, education, technology, policies, and many more. Moreover, women have more considerable work burdens since they must also meet the demands of care responsibilities at home.

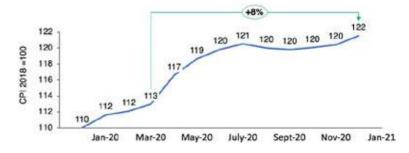
A gender analysis: Ghana, a case in point

An analysis of various areas of the agro-food sector in Ghana reveals grave disparities between women and men conditions and their effects on production outcomes.

Gender and access to land

"Some of us are able to turn those infertile lands to fertile lands by employing good agricultural practices, but when that happens, the land is taken away from us by the men and replaced with other infertile land".

This was the statement of a rural village woman in Ghana during a cross-section of women farmers during field visits of an FAO study. The land issue is a gender gap issue in Ghana. For example, men have 3.2 times more of total farms than women and 8.1x more medium and large farms2. This disparity indicates a marked bias against women's access and control of land, particularly in rural areas of the country.



In Ghana, the consumer price index for food and non-alcoholic beverages increased by 8% from March to December 2020 MARICHO MAGAZINE



- Fishing activities (production)
- Focus on commercial potential of forestry
- Engaged in production of both small ruminants and large livestock
- Cash crops such as cocoa, palm trees, cotton and rubber
- Deciding on land allocation for various crops and managing laborers



- Fish processing and marketing
- Mainly use forest products for household needs
- Focus on poultry and small ruminants
- Smaller and less valuable crops such as groundnuts and soybean
- Harvesting and carrying products to farmhouses

exacerbate their activities or erode their profit margins. For example, current technologies used in smoking fish are archaic, require hard work, and pose health risks to women. On the other hand, development programs favor technology implementation in fishing production where men have a larger presence.

In another example, while women carry farm produce on their heads to their homes, men are more likely to use bicycles, motorbikes, or donkey carts.

Blue barns represent proportional number of medium and large farms owned by women in Ghana.

In Ghana's agriculture sector, formal laws and unwritten norms contribute to gender inequality within communities. Women are often temporary "custodians" of land passing from father to male heir. Rural women end up owning land in old age, significantly impacting their ability to gain financial freedom.

Gender and crop production

Men focus on cash crops (e.g., cocoa, cotton, palm trees) mainly destined for exports, while women produce 70% of food crops mostly consumed domestically. Yet, women are often merely paid or unpaid laborers on farms. This situation has many implications.

First, they have no control over critical decisions such as allocation of crops for commercial activities or household consumption. For example, while women have agency over food utilization in households, they do not control its production. Also, they are disadvantaged from cash/industrial crop intervention programs that promote income.

Gender and food processing and marketing

While men primarily undertake fish production in Ghana, women are mostly involved in the processing and marketing of fish products. In this area, women face gender constraints that

Prevalent division of labor based on gender norms prevents women from engaging in profitable activities in the sector.

Gender and agro-food financing

Overall, access to finance is one of the critical constraints in agricultural production in sub-Saharan Africa, but women are more excluded. Agricultural produce traders are mostly women, yet official credit programs do not usually cover their trading activities, viewed as informal. Although access to credit has improved, mainly due to the advent of microfinance institutions, challenges remain. Women have limited access to collateral because assets are often registered in their husbands' names in rural areas. Also, distance from formal financial establishments represents a barrier to access financial services.

Division of labor based on gender norms

Men and women play different gender roles across agricultural commodity value chains. This promotes disadvantages for women who are limited to performing labor-intensive and time-consuming tasks that may not be financially rewarding. Furthermore, responsibilities in the sector are distributed according to types of crops and livestock whereby women produce less valuable crops and livestock.

Nevertheless, these divisions of labor are still not well defined because, in addition to their tasks, women still support men in their work. Women provide unpaid labor on fields grown by their husbands and feed or clean their livestock.

Women's presence in policy planning and implementation

Women are underrepresented in rural development planning committees. This circumstance creates a gender bias against women farmers because men and women have differing needs due to their roles and responsibilities. For example, in the marketing and distribution value chain, women may need access to clean public restrooms during their menstrual periods when they travel to supply centers. The nonexistence of this sanitation provision negatively affects women and their productivity.

Unfortunately, stakeholders hardly recognize these differences in rural development planning processes, marginalizing a large sector workforce.

What avenues could stakeholders explore to achieve a

fundamental change in the sector?

It is an excellent start to empower women engaged in agriculture, but this is an underwhelming act. To truly bring about a green revolution in Africa, we all should adopt a gender lens, and every program in the sector must be gender transformative. In other words, we must design plans to reduce gender gaps and barriers in agency and control over resources in agriculture. There are many actions that we could take to begin the process of rethinking agriculture development in Africa. These include:

- Questioning and redefining the roles and responsibilities attributed to men and women in the agri-food value chains;
- Broadening the debate on inequalities, particularly regarding access to and control over agriculture resources;
- Mainstreaming equal participation in decision-making, as well as appreciation and social and economic recognition of the contributions of men and women in development;
- Transforming the social relations that generate inequality, without marginalizing men;
- Raising awareness about prejudice, discrimination, inequalities, and subordination mechanisms to combat them:
- Empowering men and women and ensuring that power is shared equally between them in development planning processes. This strategy is critical in gradually changing customs that create an unintentional bias against women in access and use of farming resources.

Let's grow from empowerment to transformation

The ongoing pandemic may have exposed weaknesses in the agricultural value chains of many African countries. However, it also revealed opportunities to boost productivity and enhance farm products' quality in the region. But we could not possibly seize these opportunities if women remain marginalized in agricultural value chains.

Stakeholders are increasingly gender intentional in programs; however, for Africa to truly become the world's breadbasket, every agriculture investment—irrespective of its size— must be gender transformative. In other words, we must alter formerly neglected areas of the sector, such as data-gathering, policymaking, and technology, with the objective of increasing women's access and control of resources.

This challenge cannot be achieved by anyone alone. Investors, governments, donors and other institutions should seek closer collaboration with local expertise (e.g., researchers, innovators, policy makers, consultants, and community leaders) in order to revolutionize agriculture in Africa.

Jeff Megayo is an Investment Officer in ACT Afrique's Dakar offices.

Things are looking up for Zimbabwean agriculture

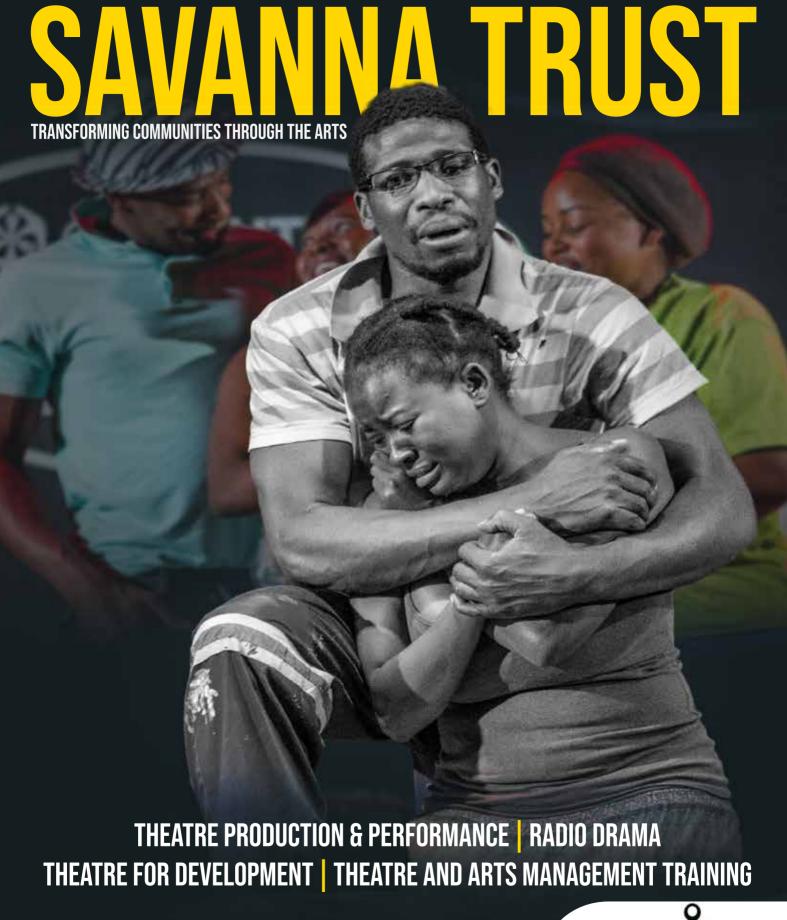


By Wandile Sihlobo

Global grain market players and analysts depend on major organisations such as the International Grains Council and the US department of agriculture for production estimates. However, these organisations could have an incorrect view of Zimbabwe's 2020/2021 grain production this time around. Both organisations forecast 908,000 tonnes, 17% higher than the previous season, which is still well below Zimbabwe's annual requirement of 1.8-million to 2-million tonnes. If correct, this would mean the country remains a net importer of maize until 2022.

However, the word from analysts on the ground, and official government production estimates, are far more bullish. On February 18 state-run newspaper The Herald noted that "this year's maize harvest is expected to surpass the 1.8-million tonnes recorded in the 2016/2017 season".

Admittedly, the government's agricultural estimates have a history of being more optimistic than market conditions warrant. Nevertheless, a cautiously optimistic view of Zimbabwe's 2020/2021 maize production and other agricultural activities is shared by the World Food Programme (WFP).



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In its report of February 16, the WFP indicated that "Zimbabwe's crop area planted could be higher when compared to last season ... crop conditions are reported to be largely good in most parts of the country, with the maize crop reported to be at its early to the late vegetative stage with the harvest likely to start in April".

Within a few days of the heavy rainfall brought by Cyclone Eloise to the Southern Africa region, I wrote a post in my blog asking questions about Zimbabwe's 2020/2021 maize production prospects. The feedback from various analysts on the ground also made it clear that the conditions were far different from global organisations' estimates. Perhaps, in the revisions, which will be out later in February in the International Grains Council's case and in early March from the US department of agriculture, the picture will be more in line with what domestic players are reporting.

Cyclone Eloise brought heavy rains mainly in the Masvingo, Manicaland and Matabeleland provinces covering Zimbabwe's southeastern parts. These provinces are not the major maize producers. These are primarily the central to northern regions, including the Midlands and Mashonaland provinces (west, east and central).

If Zimbabwe's maize production surpasses 1.8-million tonnes as the government and local analysts expect, Zimbabwe could be nearly self-sufficient in the 2021/2022 marketing year. Notably, the improvement will probably be across all agricultural activities, not only maize. This is essential for household food security, and maize imports could fall notably from the 2020/2021 marketing year level, which I estimate will be nearly 1-million tonnes to meet annual needs.

If that is the case there will be implications for SA's maize market. Thus far one of the main drivers of prices in the 2020/2021 marketing year has been growing regional demand, primarily from Zimbabwe. If this demand is curtailed there will be less pressure on SA's maize supplies, which could lead to a softening of domestic maize prices, which ultimately bodes well for food price inflation.

These developments come at a time when available data – planting estimates and crop condition reports – suggest SA could have its second-largest maize harvest on record, at about 16.7-million tonnes (from 15.4-million tonnes in 2019/2020). On February 25 the crop estimates committee will release its first production estimate, which might confirm this optimism.

In sum, the 2020/2021 production season has so far been favourable, not just for SA but for most of Southern Africa, including Zimbabwe.

This essay first appeared on Business Day, February 23, 2021 Wandile Sihlobo is the Chief Economist of the Agricultural Business Chamber of South Africa (Agbiz) and the author of "Finding Common Ground: Land, Equity, and Agriculture." He is also a Visiting Research Fellow at the Wits School of Governance, University of the Witwatersrand. Sihlobo is a columnist for Business Day and Farmers Weekly magazine.

Rabbit farming tips

By General Beven Mundida

Rabbits are fast growing animals that take 4 - 5 months to mature for slaughter. They reproduce very fast, kindling (giving birth) four times a year to an average of 8 kits per kindle.

There are different breeds of rabbits available in Zimbabwe, the California white, Chinchilla, Dutch, New Zealand white, Flemish giant, and the Angora.

A male rabbit is called a buck while a female rabbit is a doe and their young ones are called kits.

Housing

Managing rabbits starts with constructing a proper house. A rabbit house is called a hutch and may be constructed with wood, concrete or iron sheets depending on the material available to you.

Each adult rabbit should occupy its own hutch that measures 76.2cm long, 76.2cm wide and 45.7cm high. The weaned kits may be placed in hutches 76.2cm x 91.4cm x 45.7cm.

Every doe's hutch should have a nesting box, where she will give birth and care for her litter.

The floor of the rabbit hutch should be made of chicken mesh reinforced with a wire mesh to allow dropping to pass through, keeping the rabbits in a clean and dry environment.

Most people use wood to make the floor of the rabbit hutch. This soaks rabbit urine and keeps the rabbit in a dump/ moist environment that is not easy to clean.

This makes the rabbits susceptible to sore hocks which are wounds found at the base of the rabbits limbs. These wounds make it hard for the rabbits to walks around and the buck's ability to mount the doe during mating is compromised.



There should be a plastic sheet placed below the floor of the rabbit's hutch to help collect the rabbit's urine and droppings and this should be in a slanted direction to help the dung flow to a collecting gutter which also slants to a collecting point.

This makes it easy to clean and keeps the area dry. The outside structure that hosts the hutch can be made of wood or iron sheets.

The structure should face away from direct wind and the side that faces away from the direct wind should have a space between the roof and the wall for ventilation.

This space should be covered with chicken mesh to keep away cats and other animals, including rats.

Feeding

Rabbits are strict herbivorous and their diet should constitute of 80% fiber. Grass hay (Rhodes grass) is rich in vitamin A and D, calcium, proteins among other nutrients.

Fibre promotes a healthy gastrointestinal tract and healthy teeth as rabbit teeth are constantly growing and lack of fiber in diet causes overgrowth.

Any leafy greens that are eaten by humans are also safe for rabbits. Black jack, cabbage, vegetables, carrots, among others, are safe leafy greens for rabbits. It is important to gradually change from one leafy green to another as sudden change may cause gastrointestinal upset.

There are available commercial rabbit pellets in agrovets that can be fed to rabbit. A rabbits feeding schedule consists of:

- Birth to 3weeks mother's milk
- 3 to 7 weeks mother's milk and nibbles of pellets
- 2 months 50g per rabbit per day (weaned rabbit)

- 3 months 80g per rabbit per day (Introduce vegetables)
- 4 months 100g per rabbit per day
- Pregnant does 150g per rabbit per day
- Lactating does 200g per rabbit per day

Breeding

Rabbits are induced ovulators; their heat is stimulated by close proximity with a buck and ovulation will occur 10 to 12hours after mating. When breeding, the doe should be taken to the buck's cage and not vice versa. The buck marks his territory by urinating in his hutch. The presence of the buck and the scent of his urine will stimulate the doe to be on heat and mating will occur. When the buck mates the doe he will fall flat on his back as a sign of successful mating.

The doe should then be taken back to her hutch.

A farmer may check the pregnancy status of the doe by gently palpating the abdomen a week after breeding. A small round mass will be felt as a sign of pregnancy.

A rabbit that is near kindling will remove her fur from the abdomen and place in the nesting box. This is meant to keep her kits warm as they are born without fur. Once born, it is critical to check if the kits are feeding. Well-fed kits will have smooth hydrated skin and will spend most of the time sleeping.

Kits that appear dehydrated and keep moving from one part of the nesting box to the other are hungry. This will indicate that the doe is not feeding her young ones.

You may need to foster those kits to other lactating does. When fostering, rub your hands in the fur of the doe that is receiving the kits and also use her fur to collect the kits and place them on the nesting box. This is done to pick the scent of the new mother as she may kill the fostered kits with a foreign scent.

Common rabbit diseases

Rabbit diseases are mostly caused by poor hygiene and poor nutrition. The most common is coccidiosis caused by protozoan parasite that thrives well in most and dirty environment.

The other common condition is bloating; this causes high mortality in rabbits especially to weaners. This is caused by sudden change is feeds or through overfeeding of concentrates (rabbit pellets). Rabbits can also be affected by snuffles, a disease that is brought about by a bacterial infection.

Rabbits with snuffles tend to sneeze and have a running nose. There are many more common diseases. Like other livestock enterprises, rabbit farming is profitable as long as good management.

General Beven Mundida is a livestock consultant. He can be contacted on +263 776 420 161. Email: gbmundida@gmail.com

Tales of a young goat farmer

By Tendai Ganyo

My name is Tendai "SABOOK" Ganyo. I am a 33 year old passionate goat farmer. My project, which I started in 2017, is in Nyazura Romsley, Makoni South rural district in Chidamunyu area.

As we grew up in our rural community, farming was not taken seriously but viewed just as a way of living and, source of school fees when some farm produce was sold. We did not think about value addition at that time.

At no time did I ever think that I would take farming as a profession until I became exposed to goat farming in South Africa. It really haunted me until I decided to come back home and start the goat project.

I did not have the capital to start but I believed in the idea. That mattered the most to me. I used proceeds from my rapoko harvest to buy the perimeter fence and the first breeding batch. I supply mostly breeding bucks (f1,f2 and f3) to aspiring goat farmers.

The market had is huge as there is always high demand for goats. This is a product that can bring you revenue with minimal stress. It makes farming enjoyable. In July 2020 I acquired a buck that is from a great bloodline of Lucas Burger in South Africa which I am confident will be a game changer.

Good genetics is a key aspect when it comes to goat breeding. Crossbreeding a boer buck with a Mashona and Matabele females has given me an edge because the 2 breeds are strong and very fertile making the project highly profitable.

I vaccinate my goats against pulpy kidney, anthrax and Contagious Abortion to reduce mortality rate and also practice dipping every week. It is important to always have drugs in store in case of diseases.

I am enjoying goat farming and I advise young people to consider livestock farming especially small livestock because it requires less capital to start. My breed can fetch as much as \$200 per goat. Who said farming is for the poor and for old people?

Remember no farmer no life.....

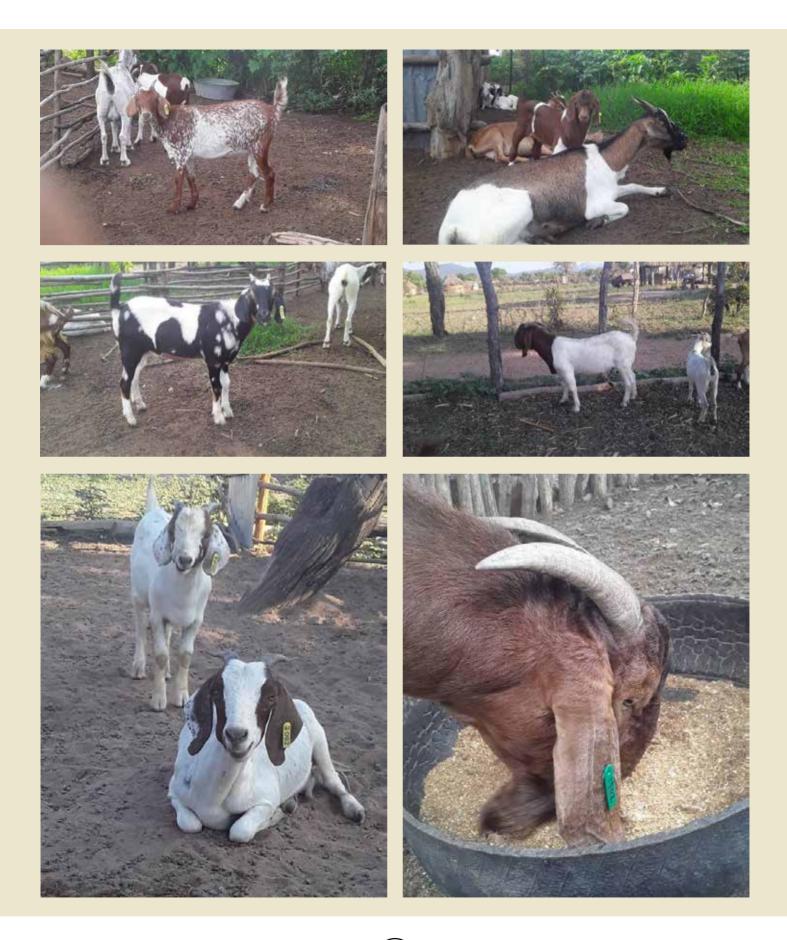












What is January disease?

Theileriosis, commonly known as January disease, is a tick-borne disease caused by the blood parasite. Theileria parva which is transmitted by the brown ear tick. The parasite affects white blood cells causing swelling of the lymph nodes. The disease occurs mainly in the rainy season, between December and March with most cases seen in January hence the name "January Disease". Lately this disease is being reported throughout the year. The disease usually occurs in high rainfall areas.

How does it spread?

It is spread through the bite of the infected brown ear ticks.

What signs do you see in an animal affected by January disease?

- Depression, listlessness, lagging behind with legs standing apart.
- Swelling of lymph nodes (especially the one below the ears and the ones in front of the shoulders)
- Decreased milk production.
- Loss of appetite.
- · Watery discharge from eyes and cloudiness of the eyes
- Bloody diarrhoea may be seen in the late stages.
- Difficult breathing with froth exuding from the nose and the mouth.
- Death follows 3 to 4 days after the first signs of disease.

What do you see in an animal that has died from January Disease?

- · Generalized swelling of the lymph nodes,
- · Froth in the windpipe and fluid in the lungs.
- The abomasal wall is swollen and haemorrhagic ulcers may be seen
- Clouding of the eyes is quite common.

What do you do if you suspect your animal is suffering from January disease?

 January disease is a notifiable disease, immediately contact your nearest Veterinary Office.

How do you control January Disease?

 Weekly application of tick grease in the ears, under the tail, on the udder in female cows and on the tail brush

- Thorough spraying or dipping of the animals weekly and application of tick grease in between dippings.
- Mixing of dip chemical must be according to the manufacturer's instructions.
- Animals must be totally immersed in dip chemical to ensure the dip reaches all parts of the body.
- Animals must be inspected for presence of ticks 48-72 hours after dipping to check for effectiveness of the dip chemical used.
- The control of Theileriosis can only be effective if consistent and effective dipping is carried out every week. Sound dipping infrastructure and effective dip chemical are critical in tick control.

When the disease occurs

- Infected property is placed under quarantine for 28 days.
- All clinical cases to be treated using buparvaquones (butachem, butalex and butacure) and oxytetracyclines (alamycin, limoxin, and hitet) administered intramuscularly according to the manufacturer's instructions.
- The treatment regime may be repeated after 72 hours if the cases have not fully recovered.
- A 5-5-4 day dipping interval (cattle are dipped three times in 2 weeks) under the supervision of DVS must be enforced coupled with tick grease application in between dipping session.
- After two rounds of applying the 5-5-4 day dipping interval (28 days), the animals are inspected 48 -72 hours after last dipping and if found to be free of ticks, quarantine is lifted and the farmer switches to weekly dipping.

Why do we dip our cattle?

Ticks spread many diseases to livestock. These tick-related diseases cause 75% of cattle deaths in Zimbabwe every year. Ticks are controlled through various dipping methods such as:

- Plunge dip,
- Spray dip and
- · Pour-on dip

In the first two methods the animals are completely submerged in the plunge or wet thoroughly using a spraying appliance containing an effective tick-destroying agent at the concentration specified in the manufacturer's instructions.

Pour-on is a concentrated oil based dip chemical containing a spreading agent which when applied topically allows the dip to spread over the skin of the animal.

What then is tick grease?

It is a tick-destroying agent used as a supplementary spot application tick control method applied by hand dressing to an animal.

When does one use tick-grease?

In cases of evidence of inadequate tick-control in some or all animals subjected to any of the three methods of dipping, tick grease hand-dressing is used to supplement in the following scenarios:

- ticks in the hidden areas remain alive after dipping because the water did not reach the hidden areas
- there is a certain tick species which could not be killed through the main dipping method
- The animal could not be found on the dipping day so has ticks on it.
- The animal is sick so remained in the kraal on a dipping day
- The animal is in poor condition in drought time so cannot swim across the dip tank
- Temporary shortage of the main dip chemical
- Clustering of ticks in hairless areas causing skin damage and annoyance

Brown ear ticks which transmit the deadly January disease also known as Theileriosis usually clusters in the ears of cattle. Applying tick grease will kill ticks and reduce cattle deaths from this disease.

How is tick-grease correctly applied?

The owner of the cattle may apply it to certain or all animals as necessary. It can be applied between dipping sessions.

Tick grease sticks better to hairless skin and generally has a fairly long residual period.

Please note: It should not be used as the only method of tick control.

Before application:

Restrain the animal, then clip or shave the following areas:

- tail brushes.
- polls and
- ears.

Then:

Apply thinly (or according to the manufacturer's instructions) and evenly by means of a brush or gloved hand to tick feeding sites such as:

- the inside surface of the ears.
- tail root/under the tail-head.
- udder and
- between and behind the hooves where ticks tend to cluster or to such other areas of the body where there are visible ticks.

Where to get tick greases

Liaise with your nearest veterinary office to collect tick grease at the GMB depot close to you. Collection is for free for all farmers with stock cards.

For more information please contact the following:

Mashonaland West

PVO Chinhoyi Tel: (067) 22751 Fax: (068) 23558

Mashonaland East

PVO Marondera

Tel: (079) 23088/2488/2601

Fax: (079) 26015

Midlands

PV0 Gweru

Tel: (054) 222401/2

Fax: (054) 220193

Masvingo

PVO Masvingo

Tel: (039) 262146/7

Fax: (039) 263992

Manicaland

PV0 Mutare

Tel: (020) 64576/77

Fax: (020) 67448

Mashonaland Central

PVO Bindura

Tel: (071) 6559/7101

Fax: (071) 7213

Matebeleland South

PVO Gwanda

Tel: (084) 20549/22478

Fax: (084) 23219

Matebeleland North

PVO Bulawayo Tel: (09) 68061-3 Fax: (09) 77658

Future of Philippine agriculture through eyes of Japan-trained farmer



By Stanley Buenafe Gajete,

Masbate, Philippines - Most sectors of the Philippine economy recorded a deep decline in 2020 due to months of lockdown arising from the COVID-19 pandemic.

However, agriculture posted good growth, raising optimism among policymakers that this sector would remain one of the key drivers in stimulating the economy this year. The government believes it will stay on track, as it can withstand the pandemic's ill effects.

Agriculture has been the backbone of the country's economy, with more than 30 percent of the population directly or indirectly involved in this sector. Although it is a neglected sector, farmers

remain committed to providing food for the growing number of Filipinos.

One of them is 30-year-old farmer Neil Anthony Aban from Mobo, Masbate -- a province in the eastern Philippines, about 200 nautical miles from the capital Manila.

Farming was not Aban's original career choice, rather he was expecting to land a white-collar job in Manila. "I thought before that farming is really a very tiring job," Aban told Kyodo News, adding that in Masbate, "most people into farming are poor."

Having decided against taking up agriculture in college, he opted for a nursing degree. However, due to financial constraints, Aban failed to finish the course and ended up working on his family's small farm to help bring in money.

He trained under the local government's 4-H (Hands, Head, Heart, Health) Club training program

that encourages out-of-school-youth into farming to learn advanced techniques and strategies in agriculture.

"I was the only one who attended from my village. It was only a random decision I made as I was not busy at that time," he said. Inspired by the other farms they visited during the training sessions, he said, "In time, I would manage a farm like those." In May 2014, Aban joined 19 other Filipino participants selected for the Young Filipino Farm Leaders Training Program in Japan, where they trained at various regional host farms.

The Japanese government, through the Japan Agricultural Exchange Council and the Ministry of Agriculture, Forestry and Fisheries, supports the program, which officially started in 1986



for the benefit of Association of Southeast Asian Nations member states.

"I was so excited that time because that will be my first time going to Japan and to go outside the country," Aban said. The 11-month training program in Japan included studying the Japanese language, on-site farm training with Japanese host farmers, institutional development training on Japanese etiquette, farm machinery operation and farm research fundamentals.

"I stayed with a host family who handled organic farming. Their main product is oranges, but there are other varieties of fruits and vegetables there," he said, recalling with fascination his experience in witnessing Japan's advances in the agriculture sector.

"After some time, I realized the struggles of old Japanese farmers because they are the only ones taking care of their farms," he said.

Aban managed 10 hectares of farmland in Kanagawa Prefecture, southwest of Tokyo, from 7 a.m. to 5 p.m. He loved the Japanese work ethics, time discipline and hospitality. Aside from farm work, his host family also taught him marketing management, which is essential in production.

"There were many moments I wanted to surrender because it's really hard. But I always looked at the impact of this one-of-a-kind experience to my country." After eleven months, Aban completed his hands-on practical training from Japanese farmers and left the country. Although he was sad to leave, he was motivated to apply everything he learned from his experience in Japan back home in the Philippines.

"When they returned to the Philippines, they became champions in agricultural development by influencing members of the community, especially the youth, to go into agriculture," said Rosana P. Mula, assistant director of the Agricultural Training Institute in the Philippines.

"They need to incorporate the Japanese strategies and mechanisms to not only improve their respective farms but to share their learning with the young farmers in their communities," Mula said.

She also noted, "young Filipino farmers harness their leadership potential to lead their communities in sustainable development."

Upon returning to the Philippines in April 2015, Aban transformed his land, "literally" a backyard garden, into a larger production farm. He called it "Denny's integrated farm" that offers short courses on farming.

"I never thought that I could transform my farm into a learning site," he said, explaining the process of accreditation as a learning hub by the Agricultural

Training Institute. In December 2018, his farm became an official farm school, certified by the Technical Education and Skills Development Authority.



Neil Anthony Aban, as pictured in December 2018, converted his small farm into a farm training school in Masbate in the Philippines. (Photo courtesy of Neil Anthony Aban)(Kyodo)

Through the establishment of training facilities such as Learning Sites for Agriculture and Schools for Practical Agriculture, inschool and out-of-school youths can freely immerse themselves in hands-on farming activities.



"The training abroad inspired me to become a better person, to do work ethics effectively, to know the best technology and farm practices and to become a role model in the Philippine society."

"I hope I could add more classrooms in five years' time, develop more farming procedures and transform it into an eco-tourism site where visitors can do kayaking in the nearby river," he said. Aban feels inspired and motivated to share with others what he had learned and teaches the potential of agriculture, especially in times of crisis.

"It's really challenging. Before no one believes in me, no one wants to attend my training. From zero enrollees, now I have more than 200 participants," he said.

"Food is fundamental for the survival of humanity," Mula said, as she discussed the importance of Japanese training to encourage more people to go into agriculture.

Since 1986, a total of 592 participants have completed the training.

A new batch of 21 Filipino trainees awaits their departure for Japan, which was postponed last April 2020 due to the pandemic. "The global COVID-19 pandemic may have decimated a lot of

businesses worldwide, but it did not hamper food production. This program is important to educate people on the importance of agriculture and the ways and practices to make growing food sustainably for the generations to come," Mula said.

Although many farmers lack access to information technology, Aban is making a tremendous social change in Philippine agriculture. "I always tell them not to rely on harvesting and production alone. There are many ways to improve it. We need to see the value-adding components of each product as part of our strategies," he said.

For him, passion and patience are key ingredients for success, values that he picked up from his experiences here and abroad. "It's really my advocacy to help the youth and to help them appreciate agriculture in today's time. They really should be into farming because it's the Philippines' paramount potential," he said.

As Aban has proven, agriculture does not doom one to poverty but can lead to success in life. "Remember, I really didn't like farming before, until I was inspired by its greatness."

Source - KYODO NEWS

African women in agriculture suffer disproportionately in COVID-19 pandemic



By Verenardo Meeme

African women in agriculture are suffering disproportionately as the COVID-19 pandemic worsens existing structural economic, social and technological inequalities, a new survey shows.

Female farmers on the continent are struggling to perform their multiple roles in society during the pandemic and specific policy measures are required to accelerate the recovery in rural areas and alleviate existing gender inequalities. So says a survey conducted by the Alliance for a Green Revolution in Africa (AGRA), which sought to determine how rural women are coping

with COVID-19.

The respondents included 71 women over the age of 18 who are operating small and medium agribusiness enterprises (SMEs) across the four sub-Sahara Africa regions. Most of the women who responded were producing crops and livestock (52 percent) or involved in processing and distribution services (48 percent), with just a few engaged in commodity marketing and service provision.

Women are a key pillar in the continent's food and agricultural systems, comprising 50 percent of the agricultural workforce

and owning one-third of the SMEs that produce, process and trade in agricultural products and services.

Elly Siakasasa, CEO of FutureSeeds, a company in Lusaka, Zambia, involved in the production, processing, packaging, marketing and trading of certified indigenous legume seeds, was one of those who responded to the survey. Before COVID-19 set in, her business was thriving. Then the Zambian government responded to the pandemic by instituting various control measures in February 2020.

The timing was especially critical for FutureSeeds because seed production requires mandatory field visits by the Seed Control and Certification Institute, the authority that controls and regulates seed quality and standards in the country. FutureSeeds needed to meet farmers in the field and the restrictions stifled access to extension services, Siakasasa noted.

The pandemic has made it difficult for her firm to distribute and monitor high-grade seed because there have been no field visit reports to support the field verification in terms of germination rate, vegetative stages of the crops and management of the seed fields. FutureSeeds sources products from legume seed breeders and small-scale famers and sells its products to NGOs supporting poverty alleviation programs, nutrition and empowerment agribusiness ventures. The products are also distributed through agricultural dealers and government agencies under the Farmer Input Support Program for small-scale famers.

The pandemic forced Siakasasa to close her office and operate remotely by phone and internet. The company incurred high costs and liquidity challenges and now needs support to resume meaningful business across the whole supply chain. Restrictions on movement and physical gatherings further harmed the company as it relies on field visits to disseminate information and showcase products, personal meetings to negotiate prices and access to bulking centers and collection points.

"Existing technological challenges within the supply chain have made it difficult to manage our business well because issues of adaptation and switching to new communication and ways of doing business in the new normal are a nightmare," she said.

"We are just surviving, really hoping to get support to pull through this negative impact," she added. "We know the healing and recovery process may take years unless substantial amounts of support and technologies are given."

The COVID-19 pandemic restriction measures created inequalities. For instance, in some African cultures, women go to the market to sell food crops while men focus on cash crops. Women may turn the proceeds of their sales over to their husbands, who are the head of the family, for budgeting.

When restrictions on movements and curfew were enforced

in response to the pandemic, the reduction in travellers meant fewer customers at the markets and reduced work hours for women, resulting in less income. These sorts of scenarios further undermine the capacity of women to recover from the pandemic disruptions.

The disruptions have affected not only their livelihoods and agri-business enterprises, but also increased women's workloads, threatened their families' well-being and increased incidences of gender-based violence. The survey showed that 54 percent of women sampled have experienced domestic violence or know a woman who has. Additionally, 60 percent of the women reported they were unable to access financial services and 72 percent were unable to access markets

Siakasasa's experience demonstrates that local networks of female farmers can be useful in aggregating demand and serving as collection and distribution points for input deliveries. Siakasasa and her group are coping by using diversified marketing channels to widen their market reach and mobile tools/social media to contact key inputs suppliers. They are also reducing their operations.

The power of mobile technology for trainings and standard agricultural extension programs can address barriers that women farmers in Africa face, while reducing physical contact, the study found. Cash grant programs channeled through mobile money platforms can promote social distancing, increase women's privacy and security and lead to better outcomes. The study recommends integrating measures that involve the short-term injection of flexible finance, as well as training and bolstering the use of digital solutions to enhance recovery and improve resilience to future shocks.

Further, the study suggests the response should include measures to increase awareness about and reduce gender-based violence. It is therefore crucial to reinforce women's SME's knowledge and use of digital media and platforms to aid recovery and build resilience to future shocks, the study concludes.

Like elsewhere across the globe, investing in the empowerment of African women farmers has started to pay off, enabling them to contribute to the fight against COVID-19 and socio-economic recovery efforts. For instance, AGRA is working with partners to promote measures aimed at assisting the agriculture and food sector recovery while stimulating targeted responses to address disproportionate burdens on women and other vulnerable populations.

Source - Alliance for Science



sharing time, knowledge and creativity to benefit charities, government, communities especially women and young people.



