

## Maize project supports partners in COVID-19 response

As the world continues the fight to overcome the COVID-19 pandemic, food production, employment, income and welfare of people in Africa, as well as in other parts of the world, need to be given extra attention. More than 70% of the rural population in West and Central Africa depend on subsistence farming, and this is already under threat from climate change.

The COVID-19 lockdown is now disrupting the supply of critical farm inputs such as seed during the planting season, which can result in low farm yields, food price hikes, and limited food availability, particularly for the poor and most vulnerable groups.

May and June are the most critical months for planting maize and other cereals in this region. The COVID-19 lockdown is

forcing many African governments to develop guidelines that keep agricultural value chains alive while adhering to public health guidelines.

The Stress Tolerant Maize for Africa (STMA) project, which is jointly implemented by the International Maize and Wheat Improvement Center (CIMMYT) and [IITA](#),

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Stress tolerant maize varieties thrive in harsh conditions.

## IITA scientist wins international award

[IITA Plant Pathologist Alejandro Ortega-Beltran](#) was named the [William Boright Hewitt and Maybelle Ellen Ball Hewitt Award](#) recipient for 2020. He will receive the award in August from the [American Phytopathological Society \(APS\)](#) in Denver, Colorado. This award recognizes a scientist who, within seven years of receiving his/her PhD, makes an outstanding, innovative contribution to the control of a plant disease.

“Alejandro has contributed immensely to the development and adoption of an atoxigenic biocontrol technology to reduce aflatoxin contamination in North America and Africa. Often working in difficult environments, he has contributed to the development, testing, and registration of aflatoxin biocontrol products, as well as demonstrating product value and transferring biocontrol technologies to commercial

partners,” a letter from the nominators read. He is the 10th recipient of the award since its inception in 2002.

Ortega-Beltran, who also received the IITA Board of Trustees “Outstanding Young Scientist Award” in 2019, joined the Institute in January 2016 at the headquarters in Nigeria, where he works in close collaboration with [Ranjit Bandyopadhyay](#).



Alejandro Ortega-Beltran, the William Boright Hewitt and Maybelle Ellen Ball Hewitt Award recipient for 2020.

At IITA, Alejandro has helped to energize IITA’s ongoing biocontrol projects, making significant contributions towards scaling-up and expanding biocontrol in Africa. He coordinates Aflasafe’s main laboratory and advises

Aflasafe laboratories in Kenya, Malawi, Mozambique, Tanzania, and Zambia, and he also Pakistan's aflatoxin management program.

IITA has developed and commercialized [Aflasafe](#), a natural biocontrol product that farmers use to control aflatoxin contamination in crops such as maize and groundnut. When used appropriately, Aflasafe reduces aflatoxin contamination by between 80% and 90%. This ensures that farmers and consumers eat safe food as well as sell their produce at premium market prices. Aflatoxin is a known carcinogenic predisposing people to liver cancer and stunted growth in children.

Alejandro's role in IITA's Aflasafe work is extensive and includes the review of manufacturing and commercialization strategies of investors, co-designing laboratory and manufacturing facilities, ensuring their correct construction and operation, and improving the manufacturing process as part of the Aflasafe Technology Transfer and Commercialization (ATTC) Project funded by the Bill & Melinda Gates Foundation and USAID.

Watch Alejandro as he explains how Aflasafe works in the following video: <https://www.youtube.com/watch?v=xypLODSXjkb&list=PL48GL1y1VagXgTRM1NJN69qLQaNVejVW6&index=5&t=0s>



Alejandro supervising Aflasafe application in a maize field in Loulouni, Mali, by farmer Binta Diarra. September 2019.

## Maize project provides support to partners in COVID-19 response .... [Continued from page 1](#)



Woman roasting corn supplied by smallholder farmer.

has developed and deployed multiple stress-tolerant and productive maize varieties to help farmers adapt to climate change. CIMMYT and IITA are working in collaboration with diverse national and private sector partners in eight countries in Eastern and Southern Africa and four countries in West Africa.

In West Africa alone, the national partners and seed companies in Benin, Ghana, Mali, and Nigeria produced 49,293 metric tons (MT) of certified seed of stress-resilient maize varieties in 2019 under STMA with a continual supply of breeder seed from IITA. The available certified seed of resilient maize varieties will enable partners to reach farmers on time to plant and produce maize during the COVID-19 lockdown in different locations, and benefit more than 3.5 million households.

According to IITA Maize Breeder, [Abebe Menkir](#), the ability of smallholder farmers to increase food production is critical during this pandemic and beyond. He added that the production and availability of an additional 19 MT of breeder seed and 1441 MT of foundation seed of stress-resilient maize varieties with partners in the four STMA project participating countries would contribute to the further multiplication of foundation and certified



Stress tolerant maize variety (at right) thriving under harsh conditions.

seed for planting in 2021.

"Such strengthened adaptive capacity of our partners and the partnership platforms created by STMA will contribute to building the resilience of farming communities even when the impact of COVID-19 lingers beyond 2020," he concluded.

## Got a story to share?

Please send your story with photos and captions every Tuesday to [iita-news@cgiar.org](mailto:iita-news@cgiar.org) or Katherine Lopez ([k.lopez@cgiar.org](mailto:k.lopez@cgiar.org)) and Uzoma Agha ([u.gha@cgiar.org](mailto:u.gha@cgiar.org)) for headquarters and Western Africa, Catherine Njuguna ([c.njuguna@cgiar.org](mailto:c.njuguna@cgiar.org)) for Eastern and Southern Africa, and David Ngome ([d.ngome@cgiar.org](mailto:d.ngome@cgiar.org)) for Central Africa.



# Study finds that growing own food is better than relying on markets

Think back over the last month. What types of food have you and your family consumed? Have you eaten a balanced and diversified diet? The answer may not matter; what matters is who or what influenced your food choices. These and more are the questions that researchers from the [IITA](#) set to find out.

The Researchers from CGIAR-IITA study was carried out a study in Uganda with rural households as the sample population. The researchers wanted to combat malnutrition, but before recommending policy options, they needed to understand how and why people eat what they eat. The study, titled [Farm Production Diversity: Is it important for Dietary Diversity? Panel Evidence from Uganda](#) was recently published in Sustainability.

There are two existing hypotheses. are First, i) when rural communities grow a variety of crops on their farms, they will have a balanced diet, thus solving malnutrition – especially undernutrition that is prevalent in most African rural communities. The other hypothesis points to markets as the more important determinant of a varied diet. Haruna Sekabira, a social economist with IITA, together with other researchers, set out to study these hypotheses. Their results showed that the better option for Uganda (where the market infrastructure is relatively poor, and the largest proportion of the population is dependant on agriculture) to combat rural hunger and malnutrition is via farm production diversity.

Moreover, merely having access to a market selling a variety of foods does not necessarily mean that households will consume a diversified diet. According to the researchers, “This is because, access to food is dependent on income access.” They further explain that, “chronic hunger has been attributed to food access being dependent on income access. Therefore, income inequality alienates poor households from food markets,” i.e., if you do not have money you will not purchase a variety of foodstuffs even though they are on sale. However, if one can grow a variety of

food in their garden, they will enjoy a balanced diet.

With the right pathway to solving rural malnutrition resolved, the study unearthed some other interesting findings that influence food choice at the household level. For instance:

Male-headed households have less diversity in their meals compared to female-headed households, i.e., members of a male-headed household are more likely to experience nutrition deficiencies than those in female-headed households. “This gender disparity, according to the study, may be explained by the fact that males control household incomes, yet females predominantly control feeding patterns and choices.

The head of the household owning a mobile phone also positively influenced household dietary diversity. Mobile phones enable access to information and knowledge about

types, content, and quality of foods eaten. Mobile phones also enabled access to remittances (mobile money) which enables consumption.

Education level and adult age: With sufficient education, household heads can learn and understand feeding basics, thus enhancing nutrition knowledge.

Remoteness was associated with better dietary diversity since remoteness it is linked to more land available for farming, allowing for more crops/livestock to be produced on the home farm.

Indirectly, therefore, policies that promote farm production diversity in Uganda [and rural Africa] are more relevant in improving food and nutrition security. This is not to say that Although markets do not have a role to play in dietary diversity. They do, however, growing more crops/animals on a household farm has a larger associated positive impact on household dietary diversity than market access.



Infographic highlighting some advantages of growing one's own food.

## Human activities are top contributors to globalizing plant pests

If there is anything the deadly COVID-19 pandemic has taught us, it is that diseases do not know boundaries. Humans are responsible for carrying and spreading diseases from person to person; this is also true for several plant pests.

Humans are the leading carriers of the intercontinental spread of plant pests and diseases—a fact that was established and documented almost 300 years ago.

Do you remember the cassava, yam, sweet potato, plantain, or avocado you carried with you the last time you traveled? Or that beautiful flower you brought from your Europe or Africa-wide tour? Well, they could have harbored a pest, which inadvertently boarded the plane or bus with you and that you unintentionally helped spread. This story reminds all of us how we can put a stop to the spread of plant pests and diseases.

[Lava Kumar](#), CGIAR-IITA's head of Germplasm Health and Virology Unit, says one way to prevent the human spread of plant pests and diseases is to declare plants at border checkpoints. "When you are traveling, a quarantine officer usually asks whether you are carrying food or not. You should declare what you are carrying so that it is inspected for pathogens. If it is safe, you will be given the green light to continue, if not, the officer will confiscate it for destruction." Note that one can carry processed food since it is usually safe from pathogens.

Kumar, however, advises that the right and better option is to get permission before bringing into a country plants or plant parts. "Quarantine officials will help you through the process of importing your favorite stuff," he added.

In this video (<https://www.youtube.com/watch?v=DKjEtmpjeF0>), Kumar explains how humans move plant pests from one place to another, how this can be curtailed, and the international measures being implemented to curb the intercontinental spread of pests and diseases.

Pests and diseases that are foreign to a country/continent are called Exotic Introduced Pathogens (EIPs). Below is a list of some EIPs in African countries/regions in which they were first confirmed. These EIPs have caused devastating losses at country, regional, and continental scale (see table).



Video story detailing human activities and the spread of plant pests and diseases.

Pest and disease	Country/Region	Year
Cassava mealybug	Central Africa	1970s
Banana bunchy top virus	DRC	1960s
Cassava bacterial blight	Central and West Africa	1970s
Banana Black Sigatoka	Zambia	1973
Asian soybean rust	Zambia	1978
Maize chlorotic mottle virus (responsible for maize lethal necrosis)	Kenya	2011
Banana fungal wilt caused by <i>Fusarium oxysporum</i> Tropical race IV (FoCTR4)	Mozambique	2014
Papaya mealybug ( <i>Paracoccus marginatus</i> )	Ghana	2010
Taro blight caused by <i>Phytophthora colocasiae</i>	West and Central Africa	2011
Fall armyworm ( <i>Spodoptera frugiperda</i> )	West Africa	2016



Virus indexing.