

Hundreds of sustainable and profitable agribusiness opportunities available in Nigeria – IITA DDG

[CGIAR-IITA Deputy Director General, Partnerships for Delivery, Kenton Dashiell](#), has encouraged Nigerians to take up sustainable and profitable opportunities in the country's agriculture sector. He made this appeal during his keynote address at the National Conference on Agricultural Innovations for Food Security in the Post COVID-19 Era.

In his presentation, Dashiell highlighted multiple technologies and solutions that could help sustainably achieve food security. He emphasized that farmers and other actors in the different agricultural value chains must use proven technologies appropriately and precisely to succeed. Adhering to excellent farm practices and standards will guarantee high levels of productivity, including increased crop yields.

Dashiell also advocated the use of location-specific advice and reviews to optimize the knowledge of local experts. "If you are working to improve your production practices and you are in Kano State, you need to find experts and advice from people in Kano because they know the right way to do it. If you are in Oyo State, go to your experts in Oyo State," he said. He encouraged people to work with State Agriculture Development Programs or other local experts such

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L: IITA DDG-P4D, Dr Kenton Dashiell spoke extensively about opportunities in the Nigerian agriculture sector.
R: NABDA Assistant Director of Agricultural Biotechnology, Dr Rose Gidado, giving a keynote address.

The gender equity gap: An inside look at vegetable producers and traders in northern and central Tanzania



A group of farmers from Manienga Village, Mvomero District in Tanzania, stand in front of a mother vegetable nursery plot. (Photo: Jonathan Odhong/IITA)

Researchers have found that female vegetable farmers and traders in northern Tanzania earn less than their male counterparts while providing the same amount of labor, highlighting the need for more effort to tackle gender inequalities in agriculture.

A [study](#) published in The European Journal of Development Research (February 2020) analyzed how gender inequality has affected agricultural production and trade in Northern and Central Tanzania. The researchers used vegetables as the case study because horticulture is one of the fastest-growing subsectors of agriculture in Tanzania, with vegetables increasingly produced as cash crops.

They identified the causes of this disparity as women's inability to access or own farmland, lack of access to knowledge or market information, and lack of decision-making power regarding household income.

For example, when asked about the frequency at which they meet extension agents, men heads indicated that they had met government extension officers in the previous four months on average twice as often as women.

"Limited access to knowledge (through extension agents) in certain ways, therefore, also becomes a barrier for women's participation in certain vegetable production value chains like the fruit vegetables which require more skills and training," notes [IITA](#) Social Scientist and Gender Expert, [Gundula Fischer](#), who led the study.

"Additionally, income control may be a prerequisite for participation," adds Fischer. This assertion was corroborated by a woman vegetable farmer in Kiteto District who took part in one of the focus group discussions during the study. She notes, "Without pesticides, you won't succeed (in tomato production). That is why farmers of this crop are men, and we women are very few."

When it comes to income sharing after selling the vegetables at the market, women also seem to be disadvantaged, especially in male-headed farm households. Perceptions of shares of income generated by husband and wife diverged remarkably. While men producers rated their share at 95% (and that of their wife at 5%), women producers saw themselves contributing 40%.

Although, for the most part, husbands and wives do not share income information, study participants described a small number of contrary cases. In these instances, the husband and wife pool their income and together decide how to spend it. Both men and women viewed households with a high level of cooperation as more likely to move out of poverty.



Meet Monica Paschal, successful vegetable and poultry farmer in Babati district Tanzania. (Photo: Jonathan Odhong/IITA)

These findings highlight the need for community interventions that transform gender relations. At the household level, "household methodologies" help husbands and wives define shared goals and closely work towards their achievement. Gender-transformative interventions should also target customary leaders and raise their awareness and readiness to support the unlocking of women's economic potential. At the policy level, the study also calls for a more substantial consideration of gender issues in Tanzania's Horticultural Development Strategy.



Women sell vegetables at a roadside market in Linthipe EPA Malawi. (Photo: IITA/Jonathan Odhong).

Got a story to share?

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as seed companies, agro-dealers, and universities.

Many still think of the old manual methods of farming as representative of the agriculture sector today. However, Dashiell debunked this view and cited several professional opportunities in the different value chains, which he insists people should approach as a business. He spoke of the importance of a business plan, a theme on which other speakers at the conference also focused.

Dashiell outlined some of the innovations that the [Technologies for African Agricultural Transformation](#)

(TAAT) initiative is deploying at scale to strengthen the cassava, maize, rice, aquaculture, and poultry value chains.

Earlier, the Assistant Director of Agricultural Biotechnology at the [National Biotechnology Development Agency](#) (NABDA), Dr Rose Gidado, spoke about the need to diversify the economy to attain economic growth and food security. Representing the NABDA Acting Director-General Prof. Alex Akpa, she commended the Nigerian government for implementing policies that have strengthened the agriculture sector. Still, she called for more action to help achieve optimum food production levels.

“Nigeria cannot attain food security with the current way agriculture is practiced,” said Gidado. For this to change, she continued, “the nation’s economic growth must be accompanied by diversification of the economy by adopting sustainable and innovative technologies that advance food production.”

The virtual conference, organized by the [AgroBusiness Times](#), focused on aggregating sustainable innovations for food security during the challenging times of the COVID-19 pandemic in Nigeria and globally.

New potato varieties introduced to combat potato cyst nematode

Scientists from NemAfrica, the nematology unit at [CGIAR-IITA](#), and the [International Centre for Insect Physiology and Ecology](#) (icipe) are currently assessing new potato varieties that are resistant to the potato cyst nematode (PCN) pest. These damaging pests significantly reduce yields and tuber sizes and consequently impact farmers’ income and food security in Kenya and the broader East African region. Researchers discovered them only recently as a new threat to potato in the area.

The Kenya Plant Health Inspectorate Service (KEPHIS) received eight new lines of potato in March 2020, subsequently certifying them for preliminary planting and testing under

Kenyan agroecological conditions. The scientists sourced the planting materials from the renowned James Hutton Institute (JHI) in Scotland, from crosses made using parents with the H1 gene,

which confers resistance to PCN, and the Phureja potato, which have highly desired taste and cooking qualities.

IITA Soil Health Scientist [Danny Coyne](#), who has been leading efforts to assess these new lines, says that besides their resistance to PCN, they selected the specific sequences based on additional attributes vis à vis farmer growing preferences in Kenya.

“We identified early maturing lines that have a short dormancy, which are key characteristics of Shangi, the most popular variety currently being grown by farmers, as well as being high yielding compared to the current local varieties,” says Coyne.



Farmers in Nyandarua, Central Kenya, tasting cooked potatoes from the new lines.

Scientists developed the lines as part of a breeding program for use in the UK. The researchers selected them for trials in Kenya because of their low dormancy, which Kenyan farmers prefer. Prof. John Jones (JHI), a PCN expert, had recently visited IITA and icipe to help identify the PCN and recognized that these lines might be useful, as they resembled Shangji.

Innovate UK, a UK Government innovation agency, provided funding to facilitate the procurement, processing, and assessment of the new lines. IITA staff, in cooperation with KEPHIS, established contained field trials to test the performance of the new lines under varying levels of PCN infestation, alongside the local variety Shangji.

George Ngundo, a plant health inspector at KEPHIS, called the introduction of the new PCN resistant varieties a welcome development toward fighting the PCN scourge on potato farmers. He pointed out that the varieties will be the first of their kind in Kenya as the country does not have PCN resistant varieties within the seed system.

Jesse Kamutu, a potato seed and tuber producer from Kinangop in Nyandarua County, who assisted with the trials, echoed those sentiments. “Farmers

in our area have been abandoning potato farming for other crops,” he says. “This is due to decreasing yields and poor quality of tubers;” he continues, “we did not (even) know why until we were shown the PCN pest.” PCN is a minute microscopic worm that feeds on and damages the potato roots. PCN is among the most damaging pests of potato, and because they are new and unseen, farmers did not associate PCN with the decreasing potato yields.

The local Shangji variety, commonly planted by farmers across Kenya and some parts of East Africa, has no resistance against PCN and is being ravaged by the pest. Authorities estimate that the pest has reduced potato productivity in the region by more than 40%, digging deeper into farmers’ income. From the field trials, the new lines far outperformed Shangji in overall yield, within a maturity period desirable to the farmer.

IITA Postgraduate, Harrison Mburu, who is finalizing his master’s study at Jomo Kenyatta University of Agriculture and Technology (JKUAT), is directing the field trials and is very impressed with the outcome from the introductory planting in high altitude areas in Kenya. His master’s study has demonstrated

the damage caused by PCN and the need for PCN-resistant varieties that farmers like. Resistant varieties that are similar to Shangji, therefore, would be a good start, he said.

In late August, the IITA team organized a visual and taste test with farmers in Munyaka and Gathara areas of Kinangop. Farmers judged the different tubers on display without knowing which were the new lines. Based on texture, shape, the taste of cooked potato as French fries/chips, mashed and boiled, and the amount of time it takes to cook, the farmers’ responses will help the team to select the most preferred lines to multiply and develop into planting varieties.

However, initial interest from these tasting events has already stimulated excitement, with some farmers showing a preference for the new lines and offering their farms to multiply the seeds at large scale.

According to Dr Solveig Haukeland, Nematologist (icipe), identifying a new variety that is resistant to PCN, early maturing, gives a good yield, and is highly regarded on the market will change the fortunes of potato farmers in the region. The team is currently assessing the lines for resistance to other diseases in Kenya.



A display of potato tubers harvested from the trial plots for physical evaluation by farmers.

Take responsibility! Stop the spread of COVID-19!

Always clean your hands; practice physical and social distancing; wear face masks; avoid crowds and public places; keep a 2-meter distance from the next person; practice general sanitation and hygiene.

STEP impact goes beyond secondary schools to communities

The [Start Them Early Program](#) (STEP) of [IITA](#) is making more impact than was envisioned at the beginning of the program. STEP, which was initially meant to change the negative mindset of secondary school students about agriculture, has also begun to positively impact parents and the communities where these secondary schools are located.

The STEP program officially kicked off in 2019 with funding from the 2018 [Africa Food Prize](#) award, which the IITA DG, [Nteranya Sanginga](#), dedicated

to the program. STEP was initiated in three secondary schools each in DR Congo, Kenya, and Nigeria, for a 2-year dry run, with the plan of expanding to other schools and countries in Africa over the years. Despite the financial and technical challenges experienced, STEP has made substantial progress.

Recently in Nigeria, STEP was launched in Fasola Grammar school, Oyo town, after infrastructural transformation by the STEP team. Some of the changes include the renovation of the school hall, staff building, and laboratory while providing the school with new chairs, marker boards, and a projector. Others include building the school toilet and a STEP agribusiness center from scratch and sinking a borehole in the school from which the community now gets water. There is also a biogas tank where electricity is generated for the school, and the community benefits from it.

“This transformation happened within three months during the COVID-19 lockdown period,” said Bola Larinde, Coordinator of the STEP-Oyo project. “The school hall can also be used for community meetings as it can accommodate up to 200 people,” she added.

IITA, in conjunction with the Oyo State Government, recently inaugurated

STEP in Fasola Grammar school. His Excellency, [Governor Seyi Makinde](#) of Oyo State, was thrilled by both the transformation that had taken place in the school and the rate at which the mindset of the students had changed positively about agriculture. He noted this after the students made presentations, showcasing what they have learned from the STEP team, which included the use of modern equipment for farming, processing agricultural produce into finished goods, the use of ICT, and poultry rearing.

Some of the students have decided to build a career in agriculture, while some are already making plans to start businesses in the agricultural line to pay their school fees and support their families. “The students have also influenced their parents to accept the use of modern farming tools as it makes farming more fun,” said Dayo Adefioye, STEP Coordinator for Nigeria.

The Governor has initiated a STEP-Oyo State project with the aim of rapidly expanding STEP to more secondary schools, starting with one secondary school per zone, across the six geopolitical zones of Oyo State. His Excellency has also made Fasola school the infrastructural and agribusiness model for other schools in the State.



Top: Fasola community women, fetching water from the school borehole. Bottom: The students expressing their joy over having water supply in the school.



Top: The STEP center at Fasola school. Bottom: The biogas tank at Fasola school, converting waste to energy for the school and fertilizer for its farm.