Boosting traditional food systems

Vendors showcase their merchandise during the 15th Pelum Food Festival. The food festival showcased foods from different regions of the country and how they were being preserved. PHOTO /CHRISTOPHER BENDANA

Agroecology is a holistic, scientific approach to farming that considers ecological and social factors, while organic farming is a specific set of practices, often certified, that prohibits synthetic pesticides, fertilisers, and genetically modified organisms (GMOs). Organic farming is considered one type of agroecological practice, but agroecology goes beyond just crop production to include broader aspects like social justice, economics, and traditional knowledge. As **Christopher Bendana** asks, which is better - agroecology or intensive agriculture?

At the Participatory Ecological Land Use Management (Pelum) food festival held in Kampala in October, one of the stalls had the most bountiful food. There was a huge bunch of matooke of the Kibuzi variety, pumpkins, cassava, and vegetables.

"Do you see the size of the Kibuzi bunch? It is from my farm," Mohammad Kasaija, a farmer from Harugongo Sub-county, Kabarole District, said proudly.

The stall belonged to one of the organisations supported with agro-ecology by Broederlijk Delen, a Flemish aid and development agency which specialises in improving the living conditions of rural communities in Africa and Latin America.

Bram Jacobs, the country representative of Broederlijk Delen, says agro-ecology is sometimes referred to as organic farming. The two systems are interdependent but different.

"Organic farming is mostly about avoiding chemicals. Agro-ecology, on the other hand, is a more systemic approach that looks at ecological solutions. It also has a broader definition that includes social aspects such as food sovereignty and farmers' rights. However, in practice, both frameworks are often close," he explains.

The food festival, the 15th of its kind, showcased foods from different regions of the country and how they were being preserved. Kasaija talks about farming as an environmentalist. His farming and agro-ecology work with the environment, discouraging the use of synthetic fertiliser.

"Intensive agriculture gives you more output, but organic farming comes with better health benefits," he says.

While the National Organic Agriculture Policy 2019 is supported by the country's current low land intensification, the government's daily development slogan has been commercial agriculture, promoting the growing of palm trees and sugarcane, both of which are highly intensive.

"We lost crop diversity. The soil health is compromised, and farmers are stressed. The plantations are large, but the expenses are high and profit margins very low, benefiting mainly agro-companies," Jacobs told *Sunday Monitor*.

On the other hand, Kasaija has a two-acre farm. He rears two cows, a few goats, and 400 kroilers. Part of the farm is a banana plantation, while the other is for vegetables. For higher harvests, his farm needed land intensification. However, but he has chosen organic farming, with the intention of preserving the ecosystem, including the soils, healthy.

"I have practiced organic farming for the last 15 years. I use chicken droppings and cow dung as manure for the banana plantation. On average, I sell ten bunches of matooke a month. I also sell all the kroilers in a season," he explains.

To fight crop diseases and pests, Kasaija uses organic biopesticides extracted from urine, herbs, and ash.

"They should make the choice based on the specific agriculture enterprise they are involved in. The scientists' role is to respond to farmers' concerns. If a farmer of organic jackfruits wants fruits that ripen at different times, we investigate that and try to get a solution,"

Dr Andrew Kiggundu, a principal biotechnology scientist with the National Agricultural Research Organisation (NARO),

"We do not kill the pests; we chase them away. They are also important for the ecosystem," he argues.

Relatedly, Andrew Ndawula Kalema of Talent Orchards, a 50-acre agro-tourism bamboo farm in Nakaseke District, combines traditional farming and intensive agriculture. A former agriculture journalist and editor at the New Vision newspaper, Ndawula is passionate about environmental protection and farming.

"I test and study different crop varieties and breeds before I fully adopt them, looking out for traits like pests and disease tolerance and palatability. The Kabwe variety of matooke takes a long time to mature, but it is more resilient to pests and disease and the vagaries of weather," he explains.

Kalema has also brought cherry tomato seedlings, since they are tolerant to diseases and weather vagaries. Like Kasaija, he practices circular agriculture.

"I do not buy fertilisers. But I tow the middle ground because some diseases, if left unsprayed, will lead to heavy losses. I do it the right way, and moderately," he says.

Experts view

Jacobs, a biologist, argues that the world must adopt organic farming for a sustainable ecosystem. He explains that countries like Belgium, which intensified long ago, are reaping the effects of industrial agriculture with its monocultural preference and the import of inputs like animal feed.

"Loss of diversity is not limited to commercial agriculture. Uganda has lost much of its crop diversity because farmers prefer high-selling varieties and animal breeds. When many farmers go commercial and intensify, agriculture will become more difficult," he notes.

He argues that ecological farming will lift farmers out of poverty at a much lower cost. Once road access is improved, farmer-gate prices will also go up.

Dr Victoria Sekitoleko, a former agriculture minister and Chairperson of the Uganda Agribusiness Alliance, says the problem begins with defining what many call indigenous crops.

"We may only talk about pumpkins, millet, and yams, but what many call indigenous foods, like beans, maize, onions, and tomatoes, were introduced by the colonialists. There has been a preference for mono-culture crops where other organisms are cut out at the expense of the whole ecosystem," she explains.

Dr Sekitoleko argues that it is difficult to draw a line between organic and conventional farming systems, advising farmers to adopt what works for them.

"However, let us not compromise on quality for quantity. I use organic manure - a mixture of milk and sodium nitrate - to water the crops in my backyard farm throughout the year," she adds.

Dr Andrew Kiggundu, a principal biotechnology scientist with the National Agricultural Research Organisation (NARO), says farmers should be able to choose the technology that works best for them. Kiggundu has been involved in the breeding of crops resistant to pests and diseases.

"They should make the choice based on the specific agriculture enterprise they are involved in. The scientists' role is to respond to farmers' concerns. If a farmer of organic jackfruits wants fruits that ripen at different times, we investigate that and try to get a solution," he explains.

To better understand the difficulty of drawing a line between traditional farming systems, a study, From organic farming to agroecology farming, what challenges do organic farmers face in Central Uganda, published in Nature, a multidisciplinary science journal, found that organic farmers in Uganda are yet to fully embrace agroecological practices.

The paper, which assessed how organic farmers apply agroecological practices, cites the limited recycling of most residues and waste for use as organic fertiliser and a limited water harvesting system as factors limiting the incorporation of organic farming into agroecology.

There was also limited diversification by farmers with agroforestry. The system was prone to climatic shocks. The study defines agroecology as an ecology-based discipline buttressed by the five principles of diversity, synergies, efficiency, recycling, and resilience.

On the other hand, it lists the principles on which organic agriculture is founded as fairness, care, health, and ecology.

The health aspect involves enhancing and sustaining soil health, plants, animals, humans, and the planet as one. The ecology aspect is based on leaving ecological systems and cycles, working with them, emulating them, and helping to sustain them.

The principle of fairness builds on relationships that ensure fairness with regards to the common environment and life opportunities. The aspect of care ensures a sustainable health ecosystem for the present and future generations.

Diseases

Viral and bacterial diseases can decimate gardens and plantations within a few days, and their intensity is increasing. Jacobs, who is more scientific in training and knowledge than the farmers he supports, seems wary of plant viruses, and invests much of his energy in training farmers on prevention.

"Diseases are difficult to cure once present. So, it is mostly about prevention, encouraging practices like crop rotation, planting of clean materials, uprooting of sick crops, and sterilising farm equipment," he advises.

On the other hand, Jacobs also warns of diseases caused by chemicals used in intensive agriculture.

"We are going to have a big disaster with cancers due to the increase of chemicals like Mancozeb," he warns.

Jude Ssebuliba, the head of programs at Pelum, says the way forward in fighting pests and diseases is to have locally manufactured and certified organic pesticides as well as organic fertilisers.

"There is a need to invest more in organic farming to satisfy the increasing population. We are working with the National Agricultural Research Organisation (NARO) to increase the volume of good indigenous seeds. We work aggressively to fight pests and diseases, and we need to give the farmers the options to synthetic inputs," he explains.

Crop selection and movement have been part of human endeavor, and farming systems have changed, depending on the economic and population pressures - from hunters and gatherers to settlements agriculture, intensive agriculture, back to traditional agriculture.

The farming systems of our forefathers cannot suit this era of high consumption and high population. However, technologies come with challenges. Many extinct species in Uganda are not due to conventional farming. They were made extinct by subsistence farming, whereby farmers clear fragile ecosystems to open new agriculture land.

Populations and incomes are increasing, and eating habits will tilt towards meat and other high-value products that will have to be produced in large numbers.

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in era of high consumption

AGROECOLOGY

Definition: A holistic approach that integrates ecological principles with social, cultural, and economic considerations to create sustainable food systems.

Scope: Wider than organic farming, encompassing social and economic aspects like empowering farmers, supporting local communities, and using traditional knowledge.
Practices: Encourages practices like crop diversification, agroforestry, cover cropping, and water conservation to improve the entire farm ecosystem.
Approach: A scientific discipline that studies the interactions between the environment and all components of an agricultural system.

Organic farming
Definition: A specific method of production that avoids synthetic inputs like pesticides, fertilizers, and GMOs, and follows strict standards to ensure ecological integrity and animal welfare.
Scope: Primarily focused on the production process itself, with a set of rules and certifications to guarantee certain environmental and health standards.
Practices: Emphasises practices like crop rotation, using compost, and protecting habitats, but within the framework of certified organic standards.
Approach: A specific type of practice that can be seen as a component of agroecology.

Source: Internet

A vendor talks about her products during the Pelum Food Festival.

A Farmers' market. There is a need to invest more in organic farming to satisfy the increasing population.

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