

# Cocoa farmers deploy drones for disease, pest control

By Elias Ngalame

**T**HE use of drones and artificial intelligence in West Africa's cocoa production belts is helping farmers to monitor and control pests and diseases, significantly minimising production costs.

With support from Cameroon UNDP accelerated laboratory, farmers in Tambe in Cameroon's Centre region were provided with drones and artificial intelligence technology that they use to monitor the myriad of diseases affecting their cocoa crop.

Cameroon drone inventor William Elong is working with the farmers to provide data on pest and disease detection, enabling them to apply chemicals on time.

Antoine Mani Tonye, a cocoa farmer in Ebolowa, Cameroon's South region, says he can now tell if a cocoa pod will do well at maturity or not thanks to artificial intelligence that provides farmers with frequent updated data on present or potential disease attack.

Farmers also say they have seen healthy yields and an improvement in their income since they began planting a disease-resistant variety developed in a laboratory and receiving information from drone surveillance.

They say over 30 percent of production losses are caused by pests and diseases but with the drone surveillance, they are able to prevent massive destruction of crops.



*A cocoa farmer operating a drone on his farm in Tambe, Centre Province of Cameroon. Photo Credit: Elias Ngalame*

"I receive regular information updates on my phone via SMS messages, which enable me to take the necessary steps to ward off any menace," Agbor John, a farmer in Yaounde, said.

In this hilly rainforest region, cocoa is grown commonly under trees, making movement by farmers consequently difficult.

But with the introduction of drones and artificial intelligence technology most of the farmers say they are able to overcome these obstacles.

"Since the introduction of drones for monitoring my cocoa quality has improved and income as well," Agbor said.

There are 600,000 cocoa farmers across Cameroon, and it is a vital sector for rural communities. But cocoa is a fragile crop with yields that tend to decrease over time, putting farmers' livelihoods at risk. That's why the African Development Bank (AfDB) and UNDP have committed funding to the Institute of Agriculture Research for Development (IRAD), where research is focused on creating adapted seed varieties and the use of technology via drones to update farmers with the right information at the right time.





**A drone used for experimental purpose by the UNDP Cameroon Accelerator Lab hovers in a cocoa field plantation. Photo Credit: Elias Ngalame**

“We seek to improve quality and quantity for the wellbeing of our farmers,” said Kang Ekungwe, a senior agriculture official in the Southwest region.

Low-tech labour has been cited as being among the reasons for the low profitability and little transformation in agriculture in much of sub-Saharan Africa.

Crop failures have also become more common in the face of climate change.

But experts say better technology could spur more processing, distribution, and marketing, all of which could boost food security and create more jobs.

In Cameroon, IRAD is setting up more seed production fields across the country.

A new high-yielding seed variety called “Brazilian cacao” is now widely in use.

“Before, our parents used to grow a variety called ‘tout-venant’, but today, thanks to advances in research and technology, we have access to improved seeds,” said Samba MViena, the chairman of AKOM-COOP-CA, a cooperative of farmers.

“You get the first yields 18 months after planting them, with flowers and a few pods on some stems. After two or two and a half years, or three years, you can already get a perfect crop.”

The improved incomes from growing the high-yielding cocoa seed varieties have helped to stem the migration of young people from rural villages to seek work in the city.

“Their decision to engage in the cocoa sector stems from the availability of improved seeds and the new intelligence monitoring technology that allow for quick and bountiful harvests,” Samba said.

Yannick Fosso, a trader, buys cocoa from across the region and sells it in Cameroon’s economic capital, Douala.

“The season runs from August to January. I make all my year’s earnings during those six months,” he said.

“When you look at the plants, you can see that Brazilian cocoa is a better variety than the ones that our parents used to grow. Its colour is much brighter, the pods never get black, they are entirely red. So when you brew it, it comes out with a very good colour and taste.”

Cocoa is Cameroon’s second export crop. The majority of the Central African nation’s annual output of about 220,000 tons is shipped overseas from Douala’s Atlantic port.



**A technical team explaining the use of drones. Photo Credit: Elias Ngalame**