Combining cutting-edge and low-tech innovation: Tanzania leverages AI to speed up development of climate-proof bean varieties

[At Tanzania Agriculture Research Institute,] TARI partner the Alliance of Bioversity International and [International Center for Tropical Agriculture] CIAT’s trial farm, researchers are working on a project called Artemis, which is using Artificial Intelligence (AI) to speed up breeding.

Follow the latest news and policy debates on sustainable agriculture, biomedicine, and other ‘disruptive’ innovations. Subscribe to our newsletter.

SIGN UP

For the last three years, [CGIAR researcher Dr. Teshale] Mamo has been cross-breeding the popular yellow beans with higher yielding, disease-tolerant varieties from Colombia – where the Alliance of Bioversity International and CIAT operates the largest genebank for beans. The new varieties will be tested in different locations and made available to National Research Stations across Africa.

The cross-breeding process took three years because “phenotyping,” identifying traits like how many flowers plants have, was done manually. Generally, to collect enough data to understand how plants respond to the environment, breeding takes five years or more.

Artificial Intelligence-based phenotyping can speed-up the breeding cycle by 50%. “With food security pressures, speeding up the breeding processes will help us get new varieties to increase productivity on farms,” says Dr. Mamo.

Meet Bruno: a digital tool made from bicycle parts and selfie sticks, and other easily accessible local materials that could fix a bike, microwave or radio. With two android phones strapped to its sides, it can quickly capture data like number of pods in seconds.

This is an excerpt. Read the original post here