

High tech, high yields? The Kenyan farmers deploying AI to increase productivity

Level 1: Elementary / Pre-Intermediate

1 Warmer

a. These countries are the world's leading producers of the following crops. Match the countries with the crops.

- | | |
|----------------|--------------------|
| 1. Brazil | a. olives |
| 2. China | b. sunflower seeds |
| 3. Ivory Coast | c. coffee |
| 4. Spain | d. potatoes |
| 5. Russia | e. maize |
| 6. USA | f. cocoa |

2 Key words

a. Fill the gaps in the sentences using these key words from the text.

crop

fertiliser

pest

tool

- A(n) _____ is something that you use to do a job.
- _____ is a natural or chemical substance that helps plants to grow.
- A(n) _____ is a plant that farmers grow for food.
- A(n) _____ is an insect that damages plants.

humidity

knowhow

moisture

optimistic

plot

- _____ is the knowledge you need to do a specific job.
- If you are _____, you are hopeful about the future.
- A(n) _____ is a piece of land you use for a particular purpose.
- _____ is the amount of water in the air.
- _____ is the amount of water in the soil.

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AI apps are increasingly popular among small-scale farmers seeking to improve the quality and quantity of their crop

Carlos Mureithi

30 September, 2024

- 1 In Kenya, coffee farmer Sammy Selim got some advice from a tool that uses artificial intelligence. Virtual Agronomist asked some questions before telling him he should use three types of fertiliser in specific quantities to get a harvest of 7.9 tonnes of coffee.
- 2 "My God!" Selim said when he received the report. He had planned to use much more fertiliser than Virtual Agronomist was recommending. "That would be a waste of money."
- 3 AI apps are becoming more and more popular among small-scale farmers who want to improve the quality and quantity of their crop.
- 4 Pests, diseases and a lack of technical knowhow mean farmers often lose their crops. Selim started using Virtual Agronomist on his 0.4-hectare farm in 2022. With its recommendations, his farm produced 7.3 tonnes of coffee, his best harvest ever. He's optimistic that the new recommendations will work too. "Technology helps," he said.
- 5 Before he started to use Virtual Agronomist, Selim used "general farmer's knowledge" to put fertiliser on his plants. The farm's productivity was low. In one season, he only produced 2.3 tonnes of coffee.
- 6 The story is similar for farmers trying to determine what pests and diseases have damaged their crops.
- 7 On a recent sunny morning on his 0.6-hectare farm, he pointed his phone's camera at a maize plant using PlantVillage, an AI app that diagnoses pests and diseases.
- 8 A voice assistant identified the pest and gave him advice on how to control it. "We were just guessing in the past," said Mutisya.
- 9 Both PlantVillage and Virtual Agronomist use a "lead-farmer" model. Farmers with smartphones use the tools not only on their own farms but also on neighbouring plots. PlantVillage is free to use, and so is Virtual Agronomist for all crops apart from coffee. It charges 300 Kenyan shillings (about 1.70 British pounds) for that advice.
- 10 For farmers such as Boniface Nzivo, AI is a game changer. He uses a system called FarmShield to check temperature, humidity and soil moisture and advise him when to water his cucumbers – all things that he used to have problems with.
- 11 "I don't waste time trying to work out how much water to use," he said while inside a greenhouse for growing the plants, which need the correct water supply. "It's a great technology."

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3 Comprehension check

a. Answer these questions about the text.

1. What does AI stand for?
2. How many types of fertiliser did the app tell Selim to use?
3. Why do farmers often lose their crops?
4. How big is Selim's farm?
5. How much coffee did Selim produce after he used the app's recommendations?
6. What does PlantVillage do?
7. Where exactly do farmers with smartphones use Virtual Agronomist and PlantVillage?
8. How much does it cost to use PlantVillage?
9. What does FarmShield do?
10. What do cucumbers need?

4 Key language

a. Match the words to make expressions from the text.

- | | |
|---------------|-----------------|
| 1. small | a. supply |
| 2. game | b. assistant |
| 3. water | c. intelligence |
| 4. voice | d. scale |
| 5. artificial | e. changer |

b. Use two of the expressions from task a to fill the gaps in the sentences.

1. All plants need a regular _____.
2. Apps that use AI have been a _____ for many farmers in Kenya.

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5 Discussion

a. Discuss this question.

- Is AI a good thing? Why (not)?

6 In your own words

- a. Use an internet search engine to find more information about the uses of AI in farming. Find as much information as possible.
- b. Report your findings to the class.