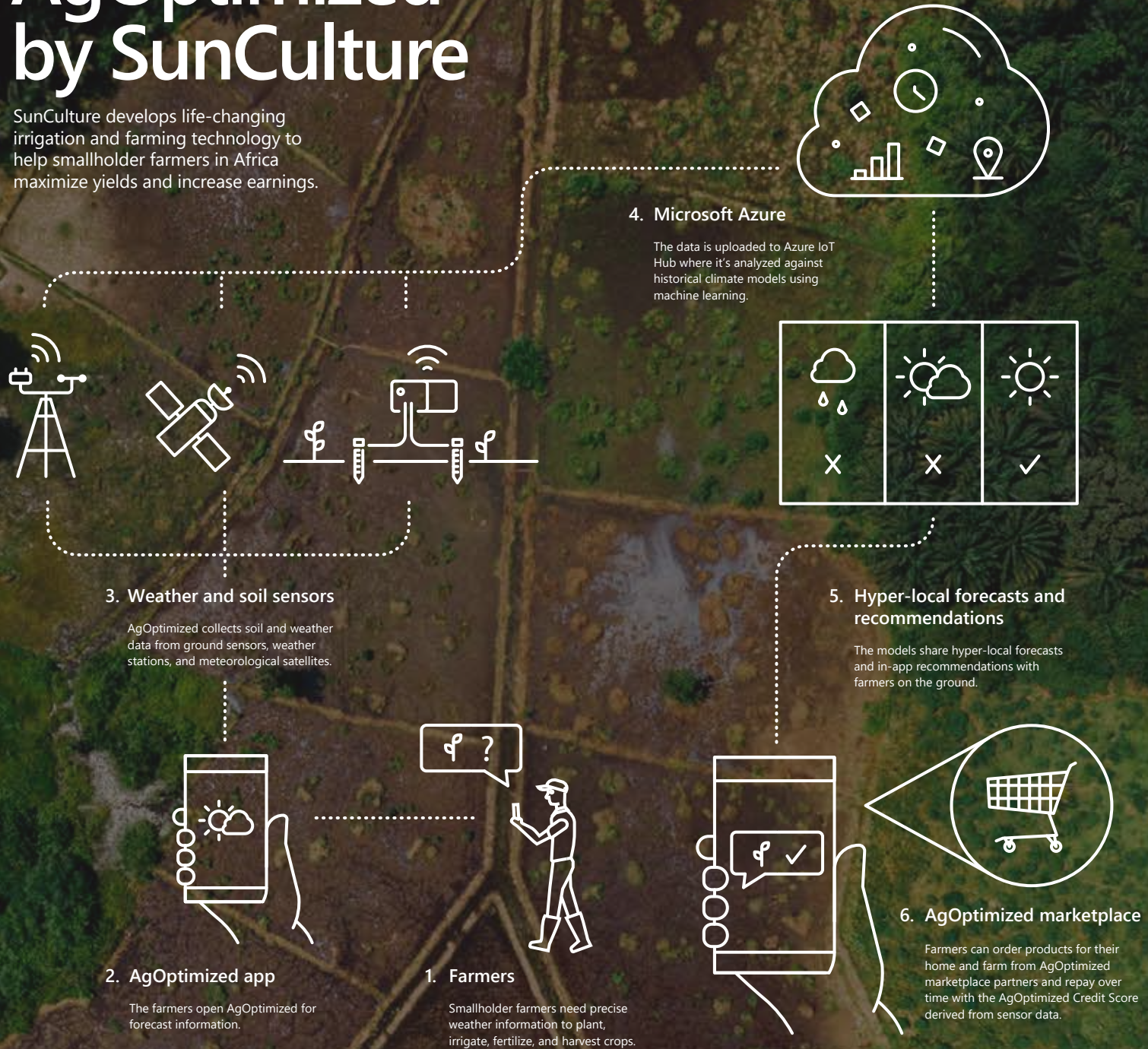AI for Earth

AgOptimized™ by SunCulture

SunCulture develops life-changing irrigation and farming technology to help smallholder farmers in Africa maximize yields and increase earnings.

4. Microsoft Azure

The data is uploaded to Azure IoT Hub where it's analyzed against historical climate models using machine learning.

3. Weather and soil sensors

AgOptimized collects soil and weather data from ground sensors, weather stations, and meteorological satellites.

5. Hyper-local forecasts and recommendations

The models share hyper-local forecasts and in-app recommendations with farmers on the ground.

2. AgOptimized app

The farmers open AgOptimized for forecast information.

1. Farmers

Smallholder farmers need precise weather information to plant, irrigate, fertilize, and harvest crops.

6. AgOptimized marketplace

Farmers can order products for their home and farm from AgOptimized marketplace partners and repay over time with the AgOptimized Credit Score derived from sensor data.

Challenge

96 percent of Africa's smallholder farmers (who comprise 60 percent of the population) rely on rain instead of irrigation for farming. But Africa's rainfall has declined more than 100mm annually since the 1970s, requiring farmers to be extremely precise with when and how they farm. To guide planting, fertilizing, and harvesting, they rely on traditional weather forecasts, which are typically too broad for the small land areas they are farming. As a result, their yields often fall well below the world average. Additionally, farmers typically overpay for household and farming supplies by 20-30%, affecting their ability to earn a maximum profit.

Solutions

SunCulture combines intelligent hardware, IoT, big data, and neural networks to help farmers practice precision agriculture. Their AgOptimized app collects soil and weather data from soil sensors in the ground, local and METAR weather stations, and meteorological satellites. AgOptimized uploads the data to Azure IoT Hub where it's analyzed against historical climate models using machine learning. The app then gives farmers detailed forecasts for their plots, as well as recommendations for planting, irrigating, fertilizing, and pest control to maximize yields at a lower cost. The farmers can also order farming supplies from SunCulture partners through the app's marketplace, which offers items at fair prices and provides farmers with economically empowering financing options.

Agriculture   Water   Biodiversity   Climate change

Microsoft