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.