



# Understanding smart farm automation

*Farm automation, precision farming and smart farming are strategies utilized by today’s farmers.*

Modern agriculture looks little like the early days of farming. All aspects of farming have been modified by the access farmers now have to technologies to meet the demands of their work and the pressure a growing population places on farmers to produce quality food.

Farm automation, precision farming and smart farming are strategies utilized by today’s farmers. These technologies have become important ways for farmers to optimize the production of food and improve its quality. According to the Food and Agriculture Organization of the United Nations, agricultural production must increase by 70 percent in order to meet global food demand by 2050, by which time the population could be 9.7 billion persons.

Smart farming can make raising livestock more accurate and controlled. While farm automation is a broad term, precision smart farming zeroes in on exact measurements between variations in land conditions and livestock, according to Techie Loops, a technology information website. Examples of farming automation technology include:

- ◆ Autonomous vehicles and machines
- ◆ Drones

- ◆ Robotics
  - ◆ GPS guidance
  - ◆ Micro-forecasting and weather forecasting
  - ◆ Soil sampling
  - ◆ Yield mapping
  - ◆ Use of artificial intelligence
  - ◆ Geomatics
  - ◆ Statistical processes, and more.
- Farmers can employ these technologies to save time and also manage labor shortages. Robot-assisted irrigation systems, for example, can maximize efficiency of water distribution where it is needed the most. Weeding robots can use artificial intelligence and computer vision to target field areas and reduce use of pesticides. Driverless tractors can make labor cheaper for farmers by plotting the machine’s route and letting it run the course automatically. Harvest robots also exist to grab crops gently (some with vacuum technology) and reduce reliance on field workers. Some harvesters can determine ripeness of fruit via AI technology, according to Eastern Peak, a provider of custom hardware and software solutions for businesses.
- Technology is changing farming in many ways. Innovations in automation can make operations more efficient and less costly.



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