

Stability, Productivity & Savings: The Smart Farming Advantage



Farmers make their living by raising bees, fish, livestock and poultry, growing crops and other specialized farming. To yield profit from these activities, stability is essential. Living things (and farms) require a carefully controlled and maintained environment to thrive. There are aspects of farming that, when not properly monitored, can quickly upset the stability of an operation and eat into a farm's profitability. Today's farmers are discovering that going "smart" can save them from costs associated with leaking tanks, security breaches, inefficient energy usage and more. In fact, real-time management and monitoring can reduce operating costs a great deal.¹

In addition to reducing costs, smart farming gives farmers round-the-clock insight into their assets, contributing to farm stability, increased confidence and peace of mind. **Tank monitoring, security** and **farm office maintenance** are three key applications to incorporate when considering smart farming technology.

Tank Monitoring

On a farm, resources—chiefly water, but fuel, fertilizer, grains, seed and combustibles as well—are precious, and their conservation paramount. Their storage must be closely monitored, but manually measuring tank volume can be messy, imprecise and costly. Remote tank monitoring solves these issues, giving farmers increased confidence, reclaiming time spent manually checking pressure, gas and tank levels and bolstering the overall stability of farm operations.

With smart tank monitoring, farmers can respond quickly in unanticipated situations (like a leak or abnormal temperatures and pressure) and prepare for everyday events (like a low tank). It dramatically cuts down on service calls, reduces waste by providing notifications of leaks or out-of-ordinary usage patterns and aids in reporting of tank usage for farms requiring EPA compliance. And it gives farmers more time to plan restocks in advance, so they can buy at the optimal times and pay lower prices.

Storage of...

- Water
- Food products
- Grains
- Fertilizer
- Propane
- Produce seed
- Fuels
- Feed seed

...should be monitored at all times.

Securing the Farm Campus

Farms are big places, with outbuildings and other facilities sometimes spread across hundreds of acres. But farmers and farm workers cannot be everywhere at once. Remotely monitoring key locations is essential to ensuring operational safety, promoting stability and reducing loss. Preventing damage to investments like farm equipment and facilities is critical to maintaining continuity and avoiding major losses. Wireless remote monitoring includes both video cameras and remote sensors (to detect noise, movement and vibration) working together to secure a campus.

Mobile monitoring can prevent or discourage trespassing, vandalism or destruction of property, as well as theft of livestock and equipment. It allows farmers to set custom security measures and control access to certain areas or functions.

Mobile monitoring catches:

- Trespassing
- Theft
- Vandalism
- Predators
- Unusual behavior
- Missing poultry, fish, livestock or resources
- Hazards on the property
- Damaged enclosures
- Birthing

Additionally, maintaining the health and wellness of livestock and poultry requires preventative care, not reactive fixes. Livestock and poultry farmers can use mobile monitoring to detect illness or unusual behavior among their herds or flocks, approaching predators, damaged enclosures, foreign objects (such as fallen trees or litter) on the property and lost or escaped animals. Hazards like these can compromise the safety and stability of a herd or flock, often with devastating consequences, such as stampedes. Advanced security features such as facial recognition can send text/email alerts, or restrict or enable access to certain areas.

The Smart Farm Office

The offices of a farm are just as vital as the farm itself, no matter the type or size of the operation. Smart technology helps farmers monitor, automate and optimize the office to run more efficiently, both as part of the greater farm ecosystem and as its own unit.

- **Control temperature with smart thermostats**
Heating or cooling areas only as necessary saves energy and money
- **Set up smart smoke and carbon monoxide detectors**
Remote alerts allow employees to leave the office unattended
- **Enable smart lighting**
Customizable, energy-efficient lighting saves on electricity costs
- **Install security features like motion detectors, cameras, and glass breakage detectors**
Remote, automated security systems give peace of mind 24/7

Finding Your Solution

The right smart farming solution is customizable, easy to use and scalable with the size of the operation. Each function, from tank monitoring to security systems to farm office operations, should be seamlessly integrated and accessible by authorized users. Simple web dashboards, accessible from laptop, desktop or mobile devices, centralize smart devices and allow users to administer the smart technology within a system.

A smart farming dashboard allows farmers to:

- View all systems and data
- Set alerts and methods of notification
- Make changes remotely
- Add or change users

The right solution can accommodate future add-ons like livestock monitoring, grain/feed bin sensors, and soil management devices. Additionally, the right provider will help you design and implement the right systems for your farm, including training and support. A modular approach allows you to incorporate automated services as your needs grow (and as your budget allows).

U.S. Cellular® offers a broad suite of smart farming solutions—all backed by the network with a strong signal in the Middle of Anywhere. For more information, call **1-866-616-5587** or visit [uscellular.com/business](https://www.uscellular.com/business).

Source:

1. Scientific American, 2017. Available at <https://www.scientificamerican.com/article/precision-farming/>