The Farms of the Future Hinge on High-Speed Internet

BY: [Jed Pressgrove](#) | September 17, 2020

Farms could contribute billions more dollars to the U.S. economy with the help of precision agriculture technology, but this can't happen without more broadband, said experts during a National Telecommunications and Information Administration webinar yesterday.

Titled "Smart Agriculture: Driving Innovation in Rural America," the webinar featured, among other speakers, Megan Nelson, an economic analyst with the American Farm Bureau Federation. She shared [research](#) showing that U.S. farms could generate $18 billion to $23 billion annually if they had high-speed connectivity and adopted the latest technologies.

"We need broadband access," Nelson said during the webinar. "We need accurate broadband maps … We can't have spotty service because there's a rainy day."

Both Nelson and Dennis Buckmaster, agricultural and biological engineering professor at Purdue University, outlined numerous ways technology can boost American farms.

Buckmaster, for instance, covered a wide range of farming tech that can do everything from tracking weather conditions, which can be [tied](#) to massive crop losses, to combining data sets for improved decision-making. He emphasized the potential impact of artificial intelligence, which can lead to automated processes and allow less-experienced farmers to tap into the knowledge and expertise of other individuals.

Nelson said tech could help farmers better connect to markets and get "people aware of what they're growing."

Such great potential, though, won't come about without reliable high-speed Internet. In 2019, the United Soybean Board released a [report](#) indicating that almost two-thirds of surveyed farmers don't have "adequate internet connectivity to run their businesses."

In a recent [editorial](#), Jahmy Hindman, chief technology officer of John Deere, said the pressure on farmers to provide food for a projected 9.7 billion people worldwide needs to be offset by superior connectivity.

"There are already disruptions to the meat supply that are persistent as a consequence of the pandemic," Hindman wrote. "Dairy farmers are also being challenged, as 50 percent of demand from restaurants, school cafeterias, and other food services is cut off. Contending with these added pressures makes it even more important to look for solutions to make other aspects of a farmer's job more seamless — and rural broadband is key to that."

Local stories confirm farmers' struggles with connectivity. Two Maine farmers [reported](#) that their sales are all online, but their Internet service is so slow that they frequently must wait until night, when fewer people are using the Internet, to actually do business. In [Nebraska](#), farmers who live just a few miles outside of a city like Lincoln may experience difficulty uploading files to the cloud.

In regard to connecting farms, the answer may not be as simple as identifying a last-mile solution. During the webinar, Chad Rupe, administrator of the Rural Utility Service for USDA, said that you can't get to the last mile without sufficient middle-mile infrastructure.

Rupe said he's been working with electric cooperatives to help provide middle-mile fiber. He pointed out that most farms [lacked electricity](#) until co-ops were able to help, with the implication being that co-ops may have to play a large role in bringing high-speed Internet to farms.

Rupe also talked about a new USDA rule that allows up to 10 percent of a grant or loan from a Rural Development program to be used for broadband infrastructure. This change could give states and local areas more flexibility in how they may fund rural broadband.

"Through this regulation, RD enables limited integration of broadband deployment with other rural investments funded through its broad suite of programs," the USDA rule states. "It does so without adding the burden of seeking funding through separate program areas."

Buckmaster mentioned a unique solution to the farm broadband problem in Indiana. Wabash Heartland Innovation Network, a regional group that covers 10 Indiana counties, has a plan for an aerostat, a kind of blimp, to provide "broadband for tens of miles," Buckmaster said.

Buckmaster added that the results of the aerostat project will be shared through a Global City Teams Challenge SuperCluster that he co-chairs.

Outside of broadband, another significant issue with precision agriculture tech is interoperability, Buckmaster said. For example, a livestock feeding system should be able to communicate with a weather tracking system so that the feeding system can know the temperatures that cows have experienced. A roadblock to interoperability is lack of cooperation between companies due to competition.

"They ought to work together and be interoperable," Buckmaster said.

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