



Ag industry transformation on horizon to meet labor challenges

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To deal with labor shortages, the ag industry must transform.

As part of our annual Agricultural Symposium, we dove into the real-world application of the research to be presented through stories like this. [Learn more about the Symposium.](#)

By Su Bacon

Roger Cryan gazed into his crystal ball and saw the future unfolding for agriculture.

“American agriculture has every resource to grow and prosper and contribute to global food security -- except for labor,” he said.

Cryan is chief economist for the American Farm Bureau Federation. His crystal ball is a computer screen displaying the federation’s economic analysis, market and policy insights as well as historical comparisons.

Although he can’t predict what will happen, Cryan imagines two different futures related to the labor shortage. Each depends on the availability of workers to fill positions along the agricultural supply chain.

One future is filled with fresh strawberries, the other, with bologna sandwiches.

“With a short-term and a long-term labor solution, America can feed the world everything,” Cryan said.

If U.S. producers have the workers they need, they will grow row crops and specialty crops and raise dairy and beef cattle.

Mechanization on the farm will continue and ag wages will rise.

The other future asks, “How much can we do without a labor solution?” In this scenario, “mechanized and low-maintenance agriculture dominates,” Cryan said.

Without enough workers, the U.S. still will produce grain, oilseeds and beef but may not be able to grow the more labor-intensive fruits, vegetables and nuts. For example, winter fruit and vegetables grown in Florida would be replaced with

imports.

Because processing food requires less labor than handling fresh produce, there will be more frozen pizza and fewer blueberries. In this future, producers will rely on and be limited by labor-saving technology.

Transforming the more optimistic future into a reality will require a patchwork of solutions to the labor shortage, Cryan said. Solutions include reforming the H-2A worker visa program, providing undocumented workers a way to become legal, using automation to increase worker productivity and funding agriculture research at universities.

Educating the industry

“Agriculture is the No. 1 industry in Arkansas and as a land-grant university, we are educating the workforce for the ag sector,” said Deacue Fields, dean of the University of Arkansas’ Dale Bumpers College of Agricultural, Food and Life Sciences and Division of Agriculture.

A new program will offer university students full-time internships on a farm plot of up to 4,000 acres to prepare them to be farm managers. And while learning technical skills is important, students also need classroom time devoted to critical thinking and soft skills.

“They’ll still need to know how to write an email,” Fields said.

One way to predict agriculture’s future agriculture is to “let the data speak for itself,” said Jim Heneghan, senior vice president of Gro Intelligence in New York. Gro Intelligence provides information and data, such as a global drought index that can be used to decide what to plant, when to plant, and even if to plant, anywhere in the world.

When Heneghan looks at the data, the future he sees has “fewer small farms and more consolidation.” If trends prevail, the average farm will be larger, and more farms will be corporate-owned with fewer farms family-owned.

Heneghan, however, sees promising future career opportunities in agriculture with preparation starting as early as high school in such organizations as FFA and 4-H Clubs. Later, students will need to study engineering, programming/coding and be trained on more advanced equipment and systems.

He also sees the influence of analytics on future careers in agriculture: meaning more analysts and fewer salespeople.

Rise of the machines

A bit further into the future is a day when machines make all the decisions.

“We are shifting from automation of processes to autonomy,” said Kurt Coffey, vice president of Case IH.

Machines are making the kinds of adjustments previously made by an operator.

During harvest, for example, a farmer climbs into a combine and pushes the “corn” button. The machine then sets controls for the sieve and speed of the fan and it continuously monitors field conditions to make adjustments as terrain or other conditions change.

“Every second, more than a dozen sensors are looking at fan speed,” Coffey said.

Automation is arriving in stages. Full autonomy for all implements isn’t here yet but assisted autonomy is available now, he said. During harvest, for example, an autonomous grain cart follows a combine and collects corn cobs. As the operator unloads, the cart comes to the combine.

Automation makes harvesting easier, and the results are having a worldwide effect.

“America has made feeding the world look easy,” Cryan said. “With an export value of \$133 billion in 2020, the U.S. is a global ag powerhouse.”

To continue the growth in agricultural production and productivity, he added, “a common-sense, immigration-based solution must be found to solve the labor shortage.”

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Media

**Deacue Fields, Bumpers College at the
University of Arkansas**

<https://youtu.be/X2g1aZLmzGI>

**On Automation: Kurt Coffey, Cash IH North
America**

https://youtu.be/s_PLEVSm9DE