HELP WANTED:

Wage Inflation and Worker Scarcity

U.S. Agribusinesses Experience Hiring Headaches

AUGUST 2018

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With insights from

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A two-part report exploring some of the factors influencing today's agricultural labor climate

Part of the rural labor shortage story is best told through statistics and trends. But to gain a more full picture of how labor challenges are affecting businesses, it is best to hear directly from those meeting the challenges head on.

Therefore, this report provides both. *The first section highlights the current economic situation and how concerning trends will shape the reality of of tomorrow. The second section offers perspectives from interviews with several CoBank customers, revealing their greatest labor challenges and how they are adapting to remain successful.*

Prepared by CoBank's Knowledge Exchange Division

Part I: Wage Inflation and Worker Scarcity **1**

Wages are higher and jobs are now more widely available than ever in several industries that compete for the same workers as the agricultural sector, forcing agribusinesses to find new ways to adapt.

By Ben Laine, Senior Economist, CoBank

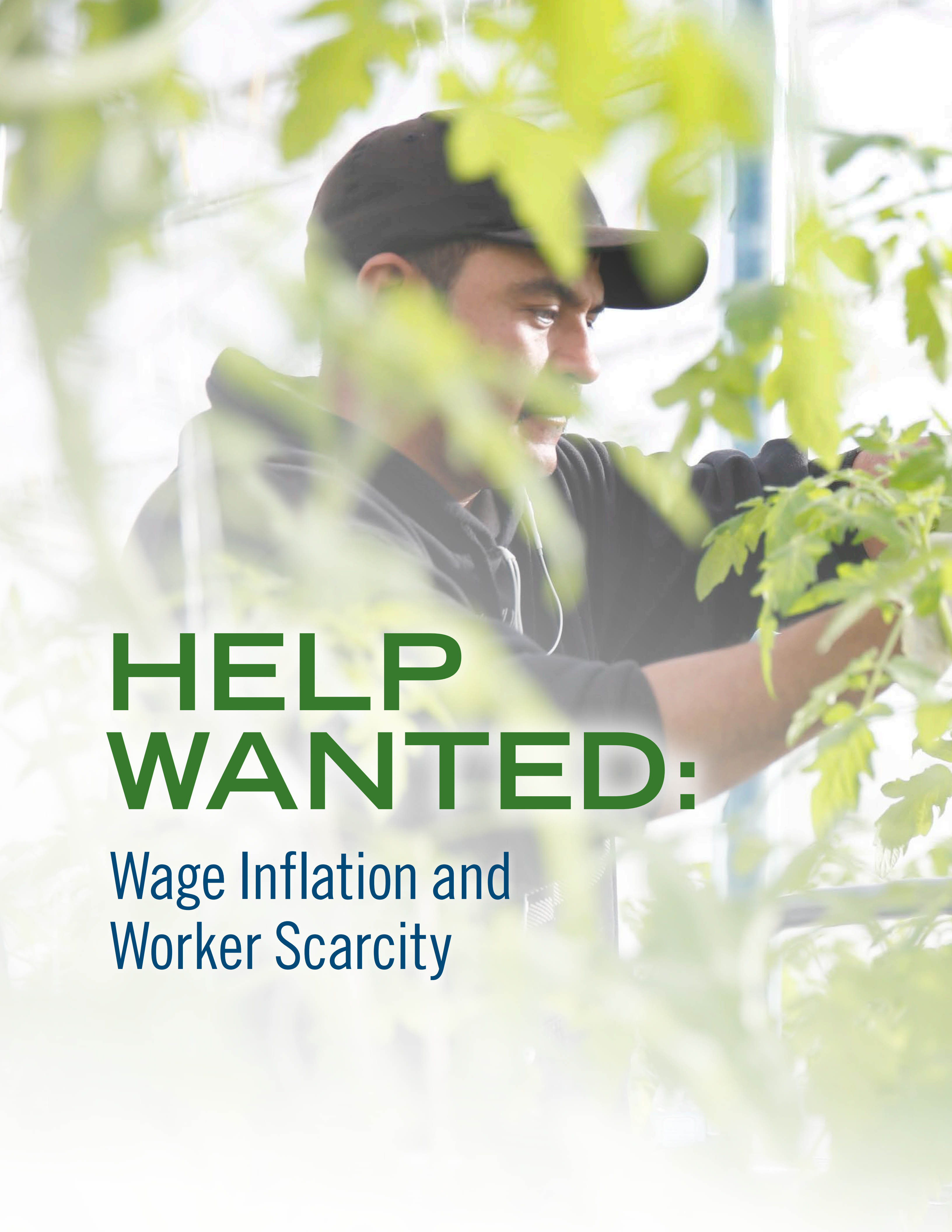
Part II: U.S. Agribusinesses Experience Hiring Headaches **7**

From North Carolina's poultry processing plants to California's strawberry farms, the Help Wanted sign is out. U.S. agribusinesses need workers – thousands of them.

By Donna Abernathy, for CoBank

About CoBank **22**

PHOTO: COBANK



HELP WANTED:

Wage Inflation and Worker Scarcity

PHOTO: COBANK

BY **BEN LAINE**

WAGES ARE HIGHER AND JOBS are now more widely available than ever in several industries that compete for the same workers as the agricultural sector. To keep up with sectors like construction, food service, and manufacturing, agricultural wages are increasing at a faster rate than most other industries.

Labor accounts for a significant share of overall operational costs for many types of farms, particularly specialty crop and dairy operations. In 2016, labor costs on all farms made up about 10 percent of gross income, while that share represented closer to 27 percent for specialty crops.[1] (*See Exhibit 1.*)

Hired workers on U.S. farms are primarily from Mexico.[2] A number of factors including demographic shifts, competing opportunities for agricultural labor within Mexico, and increased border control are now combining to tighten that labor supply and drive up costs. Higher costs associated with producing many of these labor-intensive commodities are forcing producers to find new ways to adapt, including technology and automation.

Key Points:

- In a tight U.S. labor market, agriculture is struggling disproportionately compared with other industries to compete for scarce labor.
- With the U.S. economy growing and manual laborers chasing higher wages that are offered in more wage-competitive industries like transportation, construction, hospitality and mining, employers in agricultural industries are being forced to increase wages at a faster rate to compete.
- The quickening pace of wage inflation in agriculture puts significant stress on profitability at a time of depressed commodity prices.
- As the pool of migrant agricultural laborers from Mexico continues to shrink due to ongoing economic, demographic and policy shifts, agricultural employers in the U.S. face a future of further tightening in the labor market.
- To adapt to a worsening labor climate, agricultural employers in the years ahead will increasingly be pressured to raise wages and worker benefits, seek out workers via the H-2A visa program, turn to other areas like Central America's Northern Triangle or East Asia for workers, adopt new technologies in robotics and automation, or ultimately move operations abroad to regions where labor is more accessible.

Demographics

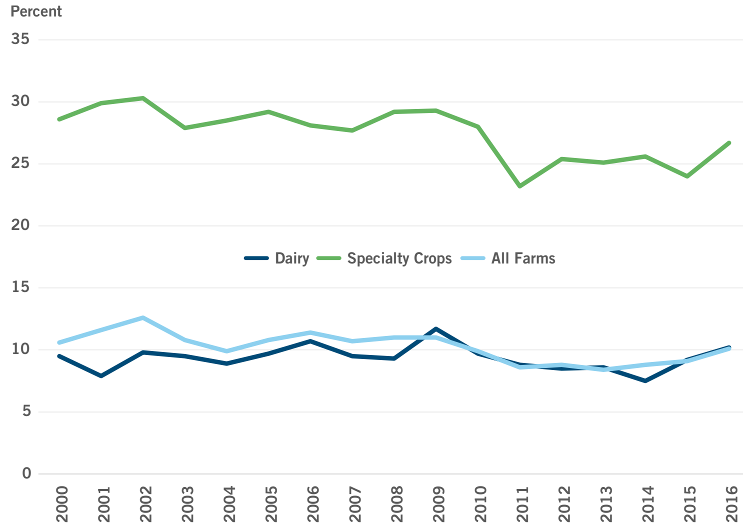
Farm labor makes up only about 1.5 percent of the U.S. workforce. (*See Exhibit 2.*) The share is much higher in Mexico (13 percent) and other Latin American countries which can reach above 30 percent. However, the share of farm labor in those countries is dropping quickly as they modernize and populations shift from scattered small rural family farms into urban centers with a stronger focus on education and jobs in the service sector.[3]

U.S. agriculture is consolidating into larger-scale efficient farms. This consolidation has been driven by two primary forces. First, rising production costs in the U.S. open opportunities for Mexico to produce commodities for export to the U.S. Second, modernization of Mexico's own food supply chain into larger grocers and retailers like Wal-Mart requires food to be sourced from larger farms.[4]

This consolidation in Mexico, similar to that which was experienced in the U.S. in previous generations, has pushed the population out of rural areas and into cities. Meanwhile, the rate of population growth is beginning to slow. (*See Exhibit 3.*) With lower birthrates meaning fewer family members to support, opportunities to work closer to home become more appealing and searching for higher-paying farm work to support large families becomes less necessary.

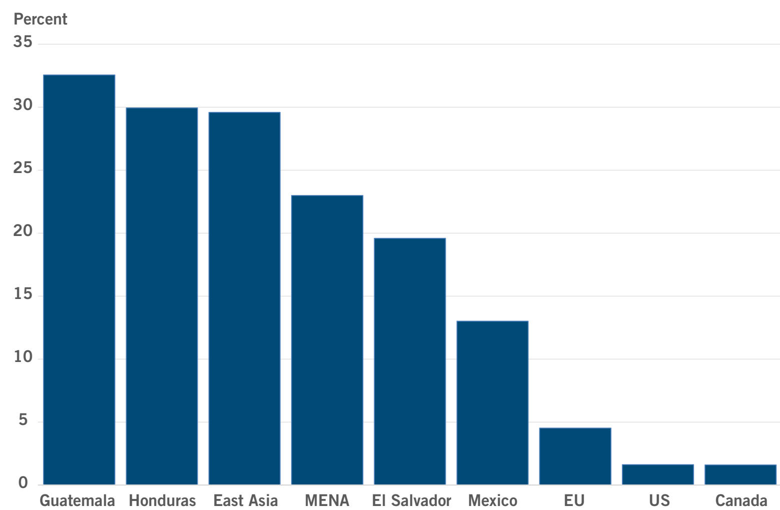
As in the U.S., a decreasing share of the population in Mexico now comes from an agricultural background, and those who do are finding new opportunities for farm work in Mexico. Mexicans looking abroad for work in the U.S., meanwhile, are increasingly from urban areas and are more attracted to the higher paying job opportunities off the farm in urban areas.

EXHIBIT 1: Labor Costs as a Percent of Gross Income



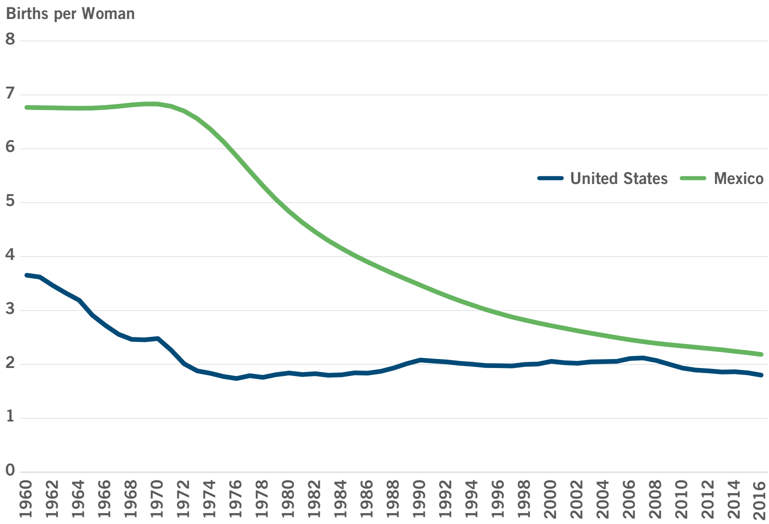
Source: USDA - ERS, NASS

EXHIBIT 2: Share of Workforce in Agriculture (Select Regions/Countries)



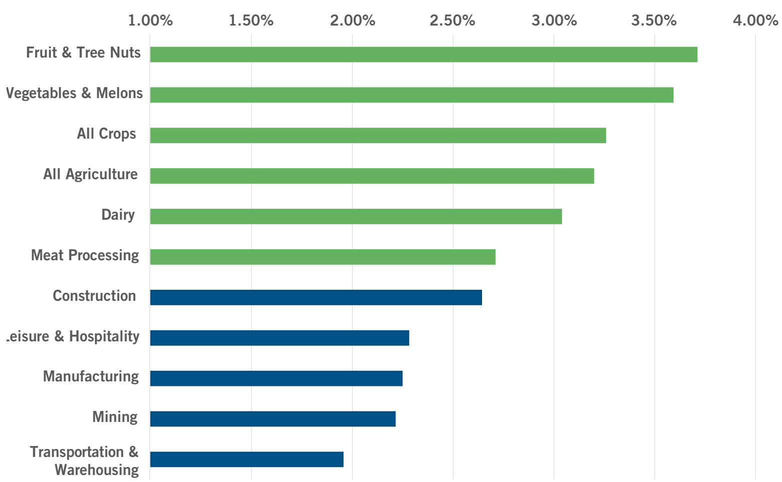
Source: World Bank

EXHIBIT 3: Fertility Rates in the U.S. and Mexico



Source: The World Bank

EXHIBIT 4: Compound Annual Growth Rate in Wages, 2007-2017



Source: Bureau of Labor Statistics - Quarterly Census of Employment and Wages

Competition and Rising Wages

The unemployment rate in the U.S. has fallen dramatically since the most recent recession. Tightness in the labor market has broadly driven up wages, and increased job openings in industries that compete with agriculture for labor are forcing agricultural wages up even faster. (*See Exhibit 4.*)

Some of the industries that are competing with agriculture for workers are construction, transportation and warehousing, and hospitality. Transportation has been a particular challenge lately as an extreme need for truck drivers in the energy industry has been enticing drivers which could otherwise be hauling milk or grains. (*See Exhibit 5.*)

Wages have long been higher in these other industries when compared to most farm labor. The difference now is that these jobs are much more widely available, and are more in line with the background of workers coming from Mexico. As a result, in order to compete for and retain workers, employers in agricultural industries are being forced to increase wages at a faster rate. But, with labor being such a large share of the cost for these industries, increasing wages put significant stress on profitability.

Immigration Controls

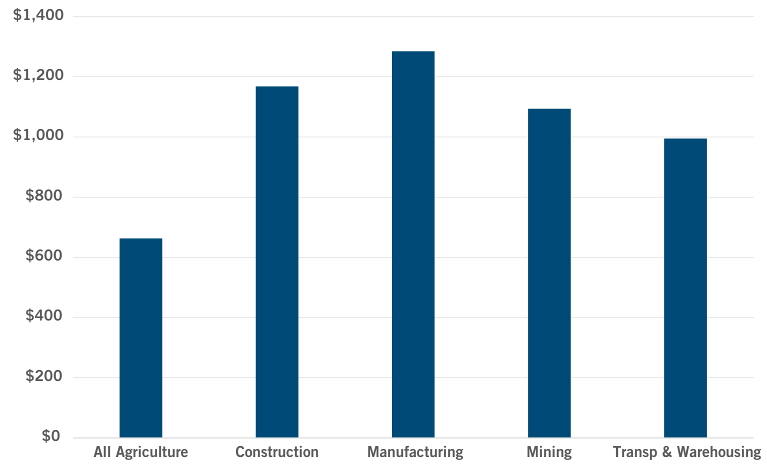
Approximately half of agricultural workers in the U.S. are not legally authorized to work in the U.S.[5] In an environment of tightening border controls and increased immigration enforcement, employing farm workers and finding qualified, authorized employees is challenging and stressful.

The primary type of visa for agricultural labor is the H-2A visa, which is for temporary work in agriculture. H-2B visas are for temporary non-agricultural work, but often involve labor for work in processing agricultural goods. Employers seeking to bring workers in to the U.S. must, among other things, demonstrate that the need for this labor is only temporary, that it could not be filled by a U.S. citizen, and that it will not negatively impact the working conditions or wages of U.S. citizens employed in similar industries. Temporary workers holding these visas are not able to apply for permanent resident status or citizenship.

To find labor, many agricultural operations will enlist the help of an agency that will provide a consistent stream of workers and manage the paperwork. These agencies, however, typically have a continuous need for workers and are generally not eligible to hire workers on H-2 visas. Similarly, as opposed to seasonal crops which require extra labor for harvest, dairy farms require year-round workers and are also not able to take advantage of H-2A workers.

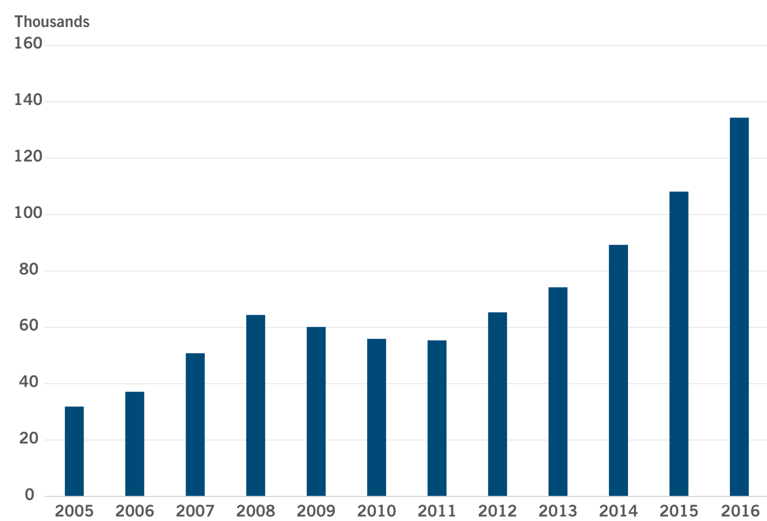
Obtaining H-2A status for an immigrant worker is also less than ideal in many cases. First, it is the employer who applies for H-2A status in order to bring a worker into the United States, not the other way around. Someone in Mexico, for example, cannot apply for an H-2A visa in the hopes of finding work in the U.S. The employers then often work with agencies abroad who provide workers, though they often charge the workers a fee which they repay through their work in the U.S. Second, the visa is only valid while being employed by the specific employer who applied for the visa. If the arrangement does not work out upon arrival, the worker is not able to seek work elsewhere. These setbacks are what drive many immigrant laborers to find ways around the system, but the program continues to experience growth. (*See Exhibit 6.*)

EXHIBIT 5: Weekly Wages in Select Industries, 2017



Source: Bureau of Labor Statistics - Quarterly Census of Employment and Wages

EXHIBIT 6: H-2A Temporary Agricultural Worker Visas Issued



Source: U.S. Department of Labor

Conclusion and Outlook

Labor markets in the U.S. are changing, and the supply of workers from Mexico, the primary source of U.S. farm labor, is dwindling. As the Mexican economy evolves and modernizes, birthrates are falling and populations are moving toward urban population centers and away from rural areas. This reduces the number of people with an agricultural background who would be most interested in U.S. farm work.

This supply dynamic, exacerbated by tightening border controls along the southern border of the U.S. will lead to continued challenges in the years ahead. There are multiple potential outcomes based on these trends.

First, there is the potential that farm labor will be increasingly sourced from other areas like Central America's Northern Triangle or from areas in East Asia.

Second, for some commodities, robotics and other technology will lead to efficiencies which will alleviate some of the need for labor. Though the high cost of some of these technologies has been prohibitive in the past, as the technology improves and the cost of labor continues to rise, the benefits begin to outweigh the costs for more producers.

Ultimately, the risk to the agricultural sector or any domestic industry is that wages will increase to the point where it becomes more cost effective for the U.S. to import the commodities rather than import the labor to produce them domestically.

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4 Martin, Philip, and J. Edward Taylor. 2013. Ripe with Change: Evolving Farm Labor Markets in the United States, Mexico, and Central America. Migration Policy Institute.

5 Hernandez, Gabbard, and Carroll.

HELP WANTED:

U.S. Agribusinesses Experience Hiring Headaches

The Florida blueberry harvest is made possible by the H2-A program.

PHOTO: STATEWIDE HARVESTING AND HAULING

BY **DONNA ABERNATHY**

FROM NORTH CAROLINA'S POULTRY PROCESSING PLANTS to California's strawberry farms, the Help Wanted sign is out. U.S. agribusinesses need workers – thousands of them.

Businesses from coast to coast are now hiring. They need employees to milk cows, pack onions, feed cattle, pick oranges and perform similar jobs that help keep the farm-to-table food pipeline filled. They're offering competitive wages and good benefits.

Still, many of these jobs go unfilled. U.S. workers aren't willing, or are unable, to perform year-round or seasonal farm work. They won't sign up for physically demanding – and oftentimes dirty – work at any price.

Securing willing workers has long been a struggle for agribusinesses of all descriptions, but it's especially difficult these days. An uptick in the national economy has created a perfect storm of heightened food demand during a period of low U.S. unemployment rates. At the same time, historically restrictive federal immigration policies are putting the squeeze on some traditional labor pools.

The consequence: Finding reliable, hardworking employees has become an unending headache for many farmers, ranchers and growers, as well as for those who package and process what they produce. Recruiting and retaining agricultural workers has never been more difficult or more costly.

A processor's problem

U.S. chicken consumption per capita has increased every year since the 1960s. This year, the industry is expecting to hit a new high, with the National Chicken Council estimating that Americans will consume nearly 110 pounds of chicken and turkey per person.[1]

The news is bittersweet for poultry processing executive Mike Popowycz, vice chairman and chief financial officer for Troutman, North Carolina-headquartered Case Farms. He's struggling to fill the orders he has now.

A lack of dependable labor makes it difficult for Case to process 3.3 million birds weekly to supply its customers. The company needs 3,200 employees to fully staff its four slaughter plants, a prepared foods

PHOTO: CASE FARMS

The greatest labor challenge for Case Farms is hiring qualified truck drivers.

plant, three feed mills and four hatcheries at locations in North Carolina and Ohio.

Though Case has a core group of employees that comprise about 65 percent of its workforce, 35 percent of its hourly workers are in constant flux, said Popowycz. Last year, Case experienced a 100 percent turnover in hourly employees. Industry wide, the rate hovers around 80 percent.[2]

"We're leaving profits on the table because we don't have adequate labor," said Popowycz. "And we can't expand because we don't have anyone willing to work."

In North Carolina, where poultry is the leading agricultural industry and accounts for more than 100,000 jobs, poultry processors are competing with each other for workers. Other industries, such as construction, hospitality and food service, are also labor competitors in areas where Case operates.

Case highlights three hiring roadblocks that are common in the industry:

- **Competing with assistance programs** – Many Case employees receive federal need-based financial assistance. Fearing a healthier paycheck will jeopardize that income stream, they won't report for work some days or refuse overtime hours.

- **Immigration restrictions** – The company previously had as many as 140 EB-3 visa employees on its payroll. EB-3 is one of the myriad U.S. visa programs that allow hiring immigrants when qualified U.S. workers are not available. Last year, only one of the 200 visa applicants Case agreed to sponsor was approved.

  Case has also previously employed political refugees from places like Burma and Nepal. That labor pool was severely limited after the number of refugees allowed in the U.S. dropped from 150,000 to 45,000 last year. Though admissions have restarted with most countries, the national cap is the lowest since Congress created the program in 1980.[3]

- **Drug testing failure** – Some weeks, as many as 15-20 percent of applicants fail the mandatory drug test.

"We're leaving profits on the table because we don't have adequate labor. And we can't expand because we don't have anyone willing to work."

But Popowycz's greatest hiring headache lies outside processing plants. He's more concerned about securing qualified truck drivers to transport feed, move birds and deliver processed poultry.

"There's already a driver shortage in the U.S., and it's just going to get worse. Nationwide, we're short about 60,000 drivers. That's projected to go up to 175,000 in five years," he said, quoting statistics released in April by the American Trucking Associations.[4]

Filling farm jobs

Though they aren't as strapped for employees as processors, meat producers also find themselves constantly working to fill openings for labor-intensive jobs.

Keeping entry-level employees is a challenge for Sleepy Eye, Minnesota-based Schwartz Farms, Inc. The pork producer employs about 350 fulltime employees at facilities in Minnesota, Iowa, South Dakota and Nebraska.[5]

Schwartz Farms has an annual employee turnover of 29 percent, putting it below the industry standard of 35 percent. The company goal, however, is no more than 15 percent, which is difficult in Minnesota where employee wages and benefits are very competitive.

About 50 percent of Schwartz Farms' employees are from "diverse cultural backgrounds" but have permanent residency status or U.S. citizenship, said CEO John Schwartz. Fewer than 10 are working under a visa program.

Schwartz Farms has doubled its sales in the last decade, but labor shortages are limiting business expansion. Growth is essential to retain quality employees, said Schwartz.

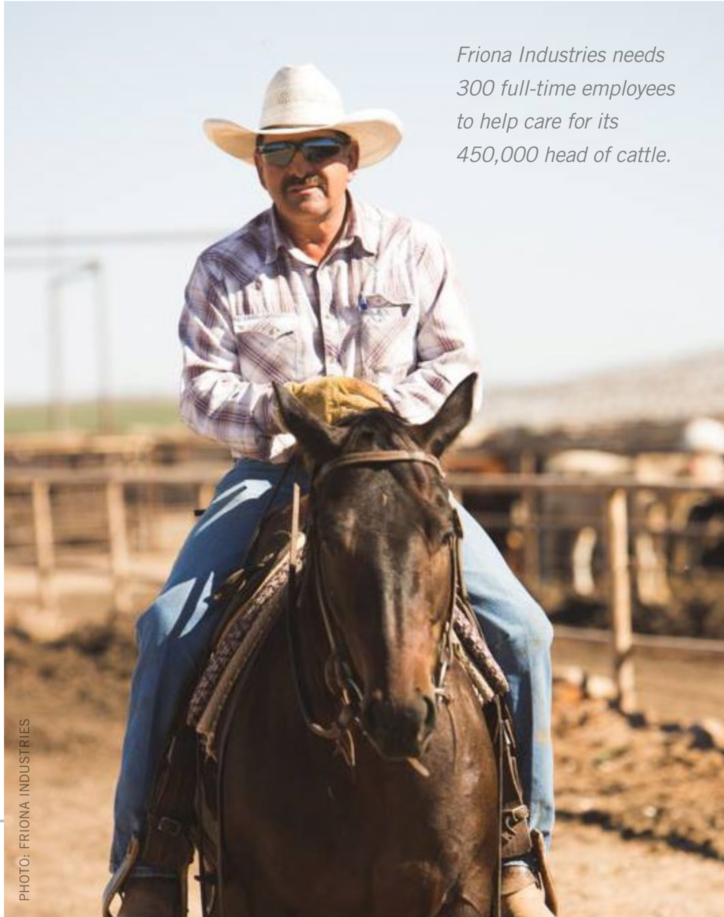
"We want to grow because we want our employees to see opportunities to grow with their company," he said. "We want them to know this is a place where they can work their way up."

Beyond his own facilities, Schwartz is concerned about employee shortages at pork processing plants.

"This has become a major issue because, if they don't get enough workers to run at capacity, it impacts us in terms of price and market," he said.

Cowboys wanted

A healthier economy is good for beef producers. This year, there are 800,000 more cattle on U.S. feed lots as compared to 2017.[6]



Friona Industries needs 300 full-time employees to help care for its 450,000 head of cattle.

PHOTO: FRIONA INDUSTRIES

Bridging the Gap

In addition to offering competitive pay and attractive benefits packages, some protein producers are trying more creative approaches to recruit and retain employees. The results of these efforts range from poor to good, but no one approach has proven to move the employment needle significantly. Some of the strategies and their outcomes include:

- **Thinking younger** – Both Friona Industries and Schwartz Farms are visiting area high schools in search of future employees. Friona employees spend time in agricultural education classrooms to help familiarize students with career opportunities in the feedlot industry. The company is also helping students buy horses and tack, so they are ready to come to work after graduation.

- **Seeking out pockets of high unemployment** – After Hurricane Maria devastated Puerto Rico last year, many islanders were left jobless. Seeing opportunity, Case Farms opened a recruitment office there. The company recently helped 50 people relocate to North Carolina to work at one of its plants.

- **More frequent pay raises** – At Schwartz Farms, new employees are promised pay increases after three, six and 12 months on the job. After the first year, raises are given annually.

- **Incentive pay** – At one of its plants, Case Farms adds an additional $1 per hour to paychecks of employees who report for all of their scheduled shifts each week. The incentive has done little to improve attendance. Paying more competitive wages, rather than offering bonuses or incentives, is working better at Schwartz Farms.

- **Encouraging employee feedback** – "We're doing a better job of listening to our people," said Schwartz about the Schwartz Farms company culture that encourages employees to speak up when they see a problem or have an idea.

  There is a similar mindset at Case Farms where employee groups meet weekly to offer their ideas for workplace improvements and productivity enhancements.

- **Improved training** – Many are investing more in employee training. "We want to challenge, lead and coach our employees to be their best," said Sheila Schmid, who oversees human resources at Schwartz Farms. Before they can care for pigs on their own, the company's barn employees are required to spend several weeks job shadowing a veteran employee and must complete 20 hours of computer-based training in subjects such as animal care, animal behavior and biosecurity. The company has hired a bilingual trainer to ensure new employees fully understand what they are taught.

- **Promoting rural lifestyle** – "We've taught our kids to think that success means getting a college degree and moving to a large city. But quality of life counts for a lot, and we rural employers need to exploit that," said Schwartz. He points out the lower cost of housing as one factor that makes rural areas preferable to urban locales.

PHOTO: CACTUS FEEDERS

Armando Vargas, who has been employed at Cactus Feeders for 29 years, started at the bottom and worked his way up to being feed manager at the company's Wranger Feedyard.

Much of that growth is centered in the Texas Panhandle. The area is home to the largest concentration of cattle feedyards – more than 35 of them – in the nation. Lot operators like Cactus Feeders and Friona Industries, both based in Amarillo, compete with each other, food processors and the oil industry for the personnel needed to wrangle the millions of cattle that pass through the yards each year.

Friona Industries, the world's third-largest commercial cattle feeding company operator, needs 300 fulltime employees – including genuine cowboys who work from horseback – to help care for the 450,000 head of cattle always on feed at its six yards.[7]

The situation is similar at Cactus Feeders, the world's largest privately owned cattle feeding operation. They need 500 workers to care for and market the 1 million head of cattle that pass through the company's 10 feedyards annually. Another 300 employees work at the company's pork production farms.[8]

The majority of those on the payroll at the two operations are nearly identical: Hispanic men with permanent residency or citizenship working low- to semi-skilled jobs.

Many employees have been with Friona for 20-plus years, but another "20 to 30 percent are a revolving door," said Chairman and CEO Don Gales. Though the operator pays a fair wage, it can't compete with what neighboring oil companies offer.

"They [employees] can drive a feed truck for us or go to the oil fields and get $10 more an hour to also drive a truck," Gales said.

Cactus Feeders boasts a lower-than-average employee turnover. Kevin Hazelwood, senior vice president and chief of staff, attributes this to the company's commitment to "taking care of a man's family" with "a good living wage, affordable health benefits and retirement benefits."

Cactus stands out as unusual because it is 100 percent employee-owned. "Employee ownership creates a good [work] environment," Hazelwood said.

The company launched an employee stock ownership plan (ESOP) in 1990 to buy out the original owners of Cactus Feeders. Now, every employee, age 18 or older and working a minimum of 1,000 hours annually, receives shares of stock equivalent to about 8.5 percent of his yearly earnings. Shares are hand-delivered to employees during annual business meetings held at each facility.

"We have hourly guys with 15 to 20 years of service who retire with more than $250,000 in stock at no cost to them," Hazelwood said, underscoring the ESOP's long-term appeal.

An aging workforce in the feeder industry troubles Gales. Many of Friona's employees are due to retire at about the same time, which will leave a significant void in both employee numbers and experience. Most work 55 to 60 hours weekly.

"I see a challenge in finding people willing to work those kinds of hours. It will take more employees to work those same hours, and we already can't get enough," said Gales.

Guest workers welcome

Adam Pate knows where to find plenty of men willing to pick thousands of acres of citrus and fresh fruits growing in Florida. The hard part is conquering the miles of government red tape involved in getting much-needed guest workers via the federal H-2A program.

A worker monitors a crop in California.

PHOTO: COBANK

PHOTO: STATEWIDE HARVESTING AND HAULING

The Florida strawberry harvest in full swing.

The H-2A program allows agricultural employers to hire workers from other countries – most from Mexico – on temporary permits for agricultural jobs that last 10 months or less. Though it does provide a worker pipeline, the H-2A program is "extremely complicated, difficult to navigate and lined with bureaucratic delays," reminds a message on the website[9] of Statewide Harvesting and Hauling, a custom harvesting company out of Dundee, Florida.

> *"It's a false narrative that we are taking jobs from Americans."*

"The H-2A is not a farmer- or harvester-friendly program," bluntly summarized Pate, Statewide's president.

Grower-owned Statewide has participated in the visa program since 2010. For the harvest season just completed, the company's payroll included 392 guest workers and only one domestic worker. Domestic workers must receive first preference in hiring, but there were no other applicants.[10]

"We had two or three others inquire, but once they found out how hard the work is, they weren't interested," Pate said.

It's a story familiar to agribusiness employers across the nation. Labor Department figures indicate the H-2A visa program has been steadily growing in recent years. During the first three months of 2017, the department approved applications to fill more than 69,000 U.S. farm jobs with H-2A visa holders. That's up from nearly 51,000 in 2016, an increase of 36 percent.[11]

Most of the program's growth can be attributed to U.S. farmers experiencing increasing difficulty in recruiting American workers.

"It's a false narrative that we are taking jobs from Americans," said Brad Johnston. He's an attorney whose client, Peri & Sons Farms, uses the H-2A program to secure about 1,500 seasonal workers to plant, harvest and pack onions, broccoli, cauliflower, spinach and lettuce in rural Nevada.[12]

The company, like other H-2A employers, is required to make expensive, exhaustive – and largely futile – efforts to hire local workers before they are allowed to employ foreign-born help. Then they must follow a detailed flow chart and timeline to ensure that the needed workers arrive in sync with planting and harvesting needs. The application process involves numerous stops with state and federal agencies, creating a lengthy, complicated paperwork trail.

PHOTO: PERI & SONS

Peri & Sons Farms secures about 1,500 seasonal workers each year.

Hiring help through the H-2A program comes at a hefty price tag. Guest workers are well compensated, said Johnston. In addition to receiving free housing and transportation, they are paid according to a federally set rate that exceeds the minimum wage.

Another hiring headache is the visa application process, which can begin no more than 75 days before workers are needed. "It's a very tight schedule, and you can get very nervous about whether your guys are going to get here on time," Johnston said.

> *"The 75-day visa application window is not realistic for the growing season. We have to do paperwork long before we know how big the crop will be."*

The 75-day window presents a different problem for Pate. "It's not realistic for the growing season. We have to do [visa] paperwork long before we know how big the crop will be," he said.

Housing for harvesters

Securing adequate housing, which employers are required to provide for all H-2A visa workers, presents the biggest labor-related headache for Pate. Leasing enough units in tourism-centric Central Florida is both complicated and costly. Statewide is meeting its housing needs by buying small apartment complexes. Even this isn't enough, however.

"Our customers would like additional harvesters, but we can't accommodate them due to not having more housing available," Pate said.

Worker housing is also an issue in California's Monterey County, known as the "Salad Bowl of the World" because of the number of fruit and vegetable growers in the area. As of 2016, the Monterey-Santa Cruz area reported about 91,500 people employed as seasonal agricultural workers. Twenty percent of those are H-2A visa holders needing housing.[13]

Mark Scaroni, lending manager for American AgCredit, has seen an increase in financing inquiries from those wanting to buy or build worker housing developments in the area. Recently constructed facilities typically house 600 to 800 workers, with eight people sharing a furnished unit. In California,

PHOTO: AMERICAN AGCREDIT


PHOTO: CACTUS FEEDERS

Many of the workers that harvest fruits and vegetables in California rely on employer-provided housing.

the cost to construct a 75-unit complex has averaged $10–$12 million. An additional $2.5-$4 million is needed to buy the land.[14]

"These units address a problem in our rural communities where there is already a housing shortage, so city and county officials welcome these development projects," Scaroni said.

Among the several approaches to meet worker housing needs, a new model – or variations of it – is emerging, Scaroni said. He is seeing growers and labor contractors joining forces on projects.

"The grower and contractor may enter into a joint venture, maybe form an LLC, and apply for financing to build or purchase housing units. Then, the LLC leases the units to the labor contractor, who is responsible for taking care of the housing for the workers," he said.

Dairy's dilemma

Despite the challenges fruit and vegetable growers have encountered, many U.S. dairymen would like the opportunity to participate in a program like H-2A. They want a visa program that allows immigrants to legally work on farms year-round, milking and providing care to many of the nation's nearly 9.4 million dairy cows.[15] Dairy producers aren't able to use the current H-2A program because it restricts visas to only temporary and seasonal work.

Half of all workers on U.S. dairy farms are immigrants, according to a 2015 nationwide survey[16] of dairy farms commissioned by the National Milk Producers Federation (NMPF). NMPF represents most of the nation's milk marketing cooperatives and state dairy associations. The survey found that one-third of all U.S. dairy farms employ foreign-born workers, and those farms produce nearly 80 percent of the nation's milk.

The survey results did not distinguish between documented and undocumented foreign-born workers, but 71 percent of responding dairy farmers said they had either a low or medium level of confidence in the employment documents of their immigrant workers.

Today, dairy operators find themselves on shaky ground as U.S. Immigration and Customs Enforcement (ICE) officials ramp up the arrest, detention and deportation of undocumented farm workers. In New York state, where dairy farms are a frequent target, ICE activity climbed 27 percent in 2017.[17]

> *"The H-2C visa would help advance our efforts to assure a stable, dependable and legal workforce for America's dairy farmers, now and in the future."*

New York Agriculture Commissioner Richard Ball estimated in May that half of the state's farm labor force is undocumented.[18] Ball, Gov. Andrew Cuomo and some of the state's congressional delegates are defending farmers and calling for immediate immigration reform.

"We need to stop kicking the ball down the field and deal with it," Ball said.

Ball's call for action comes as NMPF and other ag organizations are making a hard push for Congress to create a new, year-round agriculture guest worker visa program. The program, dubbed the H-2C visa, "helps advance our efforts to assure a stable, dependable and legal workforce for America's dairy farmers, now and in the future," said Jim Mulhern, president and CEO of NMPF.[19]

An immigration reform bill introduced by House Judiciary Committee Chairman Bob Goodlatte proposed the H-2C visa among a laundry list of reforms.[20] The bill was rejected by the House on June 21. A second immigration bill, which also included the guest worker visa, failed the following week.

One-third of all U.S. dairy farms employ foreign-born workers, and those farms produce nearly 80 percent of the nation's milk.

PHOTO: COBANK

Mulhern is hopeful Congress will re-visit the immigration issue later this summer. "We know there are many [House] members in both parties who are eager to forge solutions to these complicated issues, and we are hopeful that this is not the end of the process. Dairy cannot wait any longer," he said.[21]

Hungry for help

Dairymen like Peter Braun have no choice but to wait and see if the H-2C visa will ever become a reality. In the meantime, however, there are cows to be milked with whatever help he can find.

He and fellow members of AgriMark dairy cooperative want to keep milk flowing into cheese vats in pace with U.S. consumer demand. The average American ate more than 36 pounds of cheese last year, setting another consumption record, reports USDA's Economic Research Service.[22]

Braun and his father-in-law/partner Robert Cruikshank operate Woodcrest Dairy, an operation milking about 3,000 cows and cultivating 5,000 acres of forages.[23] The Upstate New York farm is headquartered in Lisbon, a town where the dairy cows outnumber the people.

It takes 36 employees to staff the dairy's four milking parlors. They work in three shifts to accommodate a three-times-daily milking schedule.

PHOTO: COBANK

Absenteeism and employee turnover are significant problems for U.S. dairies.

Woodcrest also employs another 30 workers who feed, care for calves and assist with crop planting and harvesting.

"Milkers and cow handlers are the biggest chunk of our labor," said Braun. "That's the area where we are always needing more help."

Absenteeism is a constant worry. Braun schedules an extra worker per shift at every milking facility, just in case someone doesn't report for work.

"Cows with full udders don't care that somebody called in sick or just didn't show up. And that happens here – a lot," the dairyman said.

Employee turnover is also a problem. Last year, Braun issued 150 W-2 forms (Internal Revenue Service wage and tax statements), indicating he employed an average 2.3 workers for each paid position on the farm.

Most of Woodcrest's current milkers are Puerto Rican. About two-thirds of them are permanently settled in St. Lawrence County where Woodcrest is located. But another third represent an ever-changing cast as workers float between their island home and New York.

Three of Woodcrest's milking parlors are situated less than two miles from the Canadian border – a fact that altered the farm's worker demographics about a decade ago. Braun and his partner chose to stop employing workers from Mexico after two of their farms were raided by U.S. Border Patrol agents. Though the farm had the required documentation for each employee, more than a dozen workers – including two placed there by the New York State Department of Labor – were removed, leaving the farm severely shorthanded in its milking parlors.

A desperate Braun was "hiring guys off the street" just to get his cows milked. "We lost a ton of production when all that happened," he recalled.

To avoid a repeat, Braun and Cruikshank began sourcing employees from Puerto Rico. Islanders are not required to secure a visa since they reside in a U.S. territory.

The farm's payroll also includes a few members of the county's Amish community. Though extremely reliable, these workers have many limitations due to their religious beliefs. The Amish can't use mechanized equipment, so they won't work in the milking parlor, drive a truck or operate feed or harvesting equipment. They won't work at night or on Sundays, either.

Woodcrest pays milkers $12 an hour, which is about $2 above New York's minimum wage. Truck drivers command a higher wage. The math isn't working, said Braun.

"We can't keep this up while we're getting just $14 [per hundredweight] for our milk," he said.

Relying on robots

On the other side of the country, Washington state dairyman Leroy Plagerman isn't waiting for a congressional fix to his labor problems. Instead, he's relying on technology.[24]

Plagerman and his family milk about 1,000 cows on two farms in dairy-heavy Whatcom County, which shares a border with Canada's British Columbia province. Collectively, Whatcom producers lead Washington in the production of milk, a $1.1 billion industry that ranks 10th in the nation.[25]

Last fall, the dairyman upgraded one farm's existing free-stall barn and manure handling system to an automated operation. The farm's eight robotic milkers, a feeding system and waste management are now controlled by computer.

Difficulty finding milkers motivated Plagerman's switch to automation. He was forced to scale back from three to two milkings daily when he couldn't find reliable help to work the night shift. Both milk production and overall cow performance dropped. That's when the Darigold co-op member began looking for a better option.

Now, he has a dairy that operates with minimal human help. Plagerman's daughter, Jana, handles calf care and other jobs with the help of just one additional employee.

"Our labor is one-third of what it was before," said Plagerman. "Plus, what we are saving in labor costs is covering two-thirds of the monthly robot payment."

The math is working in other ways, too. The herd's milk production has climbed 12 percent and reproduction rates have also increased.

"With robotics, we went away from managing people to managing cows," Plagerman said, explaining that data collected by the robots contributes to better herd health.

He expects his $2 million automation investment to pay off in about four years, despite the current dairy price environment. "I think a four-year return is awesome," he said.

Only two months into the automated operation, Plagerman was convinced that his investment was well worth it. He plans to convert his other dairy as soon as it's financially feasible.

Man versus machine

Since dairy farmers like Plagerman are reporting success with enhanced automation, can technology provide substitutes for human laborers in other agricultural enterprises? In most cases, the answer is no – or at least not yet.

> *"Automation has to be our future. It's not going to be viable forever to bring labor from other countries."*

Some of the work performed in Case Farms plants is already automated, but technology has not yet provided viable substitutes for all tasks involved in preparing chicken for grocery stores and restaurants.

"Machines need uniformity to work well, and birds don't come in just one size," said Popowycz.

Where robotics can be used, one machine can replace more than 30 Case line workers. More technologically advanced processing equipment is in the research and development stage. When it becomes available, Popowycz plans to be one of the first buyers.

PHOTO: STATEWIDE HARVESTING AND HAULING

Cactus Feeders' trucks are equipped with computers that show how much feed has been delivered to each pen in the yard.

Though mechanized harvesting exists for a few crops, most fruit and vegetables must still be harvested by hand. That will have to change, said Pate.

"Automation has to be our future," he said. "It's not going to be viable forever to bring labor from other countries."

In the near future, he hopes automation can at least fill the gap between available workers and the demand for harvesting.

Robots can't replace the human touch and eyes required to provide quality animal care, reminded both Schwartz and Gales. Still, Gales sees automation opportunities. Driverless feed trucks, which could replace the five or six drivers required at each Friona feedlot, are one such possibility.

"We already have computerized equipment to ensure the right feed goes in the right bunk, so it's not much of a stretch to think we could have robotic trucks doing this work," he said.

Cactus Feeders is applying technology wherever possible to gain operational efficiencies. Feed mills are run mostly by computers, high-tech tools are identifying maintenance issues before they result in downtime and drones are replacing some of the work being done by cowboys, such as taking inventory.

There's a limit to the applications for automation, though, said Hazelwood. It will never be a viable substitute for animal handling and care – the work of a cowboy.

"We're not going to automate this man [cowboy] out of a job," he said. "What he does is the essence of caretaking. We can't automate that."

Conclusion

Brad Johnston, the Peri & Sons representative, provides this succinct assessment of the U.S. farm labor situation: "There are only two choices: You either import your ag labor or you import your food."

These hard choices come at a time when the United Nations puts the world's population at 7.6 billion people – with a projected 9.8 billion by 2050.[26] Growth and rising incomes in developing countries (which cause dietary changes such as eating more protein and meat) are driving up global food demand. Demand is expected to increase anywhere between 59–98 percent by 2050.[27]

For U.S. farmers to continue playing a role in putting food on the table, they're going to need a hand – help they won't find locally. Machines may, in time, reduce the number of hands needed to grow and harvest food, but they aren't likely to completely replace them. Meanwhile, foreign-born workers are ready to fill the nation's farm labor gap, if complicated visa programs and slow-changing immigration reform don't prevent farmers from legally getting the help they desperately need.

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About CoBank

CoBank is a cooperative bank with more than $130 billion in assets serving vital industries across rural America. The bank provides loans, leases, export financing and other financial services to agribusinesses and rural power, water and communications providers in all 50 states. The bank also provides wholesale loans and other financial services to affiliated Farm Credit associations serving more than 70,000 farmers, ranchers and other rural borrowers in 23 states around the country.

CoBank is a member of the Farm Credit System, a nationwide network of banks and retail lending associations chartered to support the borrowing needs of U.S. agriculture, rural infrastructure and rural communities.

Headquartered outside Denver, Colorado, CoBank serves customers from regional banking centers across the U.S. and also maintains an international representative office in Singapore.

For more information about CoBank, visit the bank's website at www.cobank.com.

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