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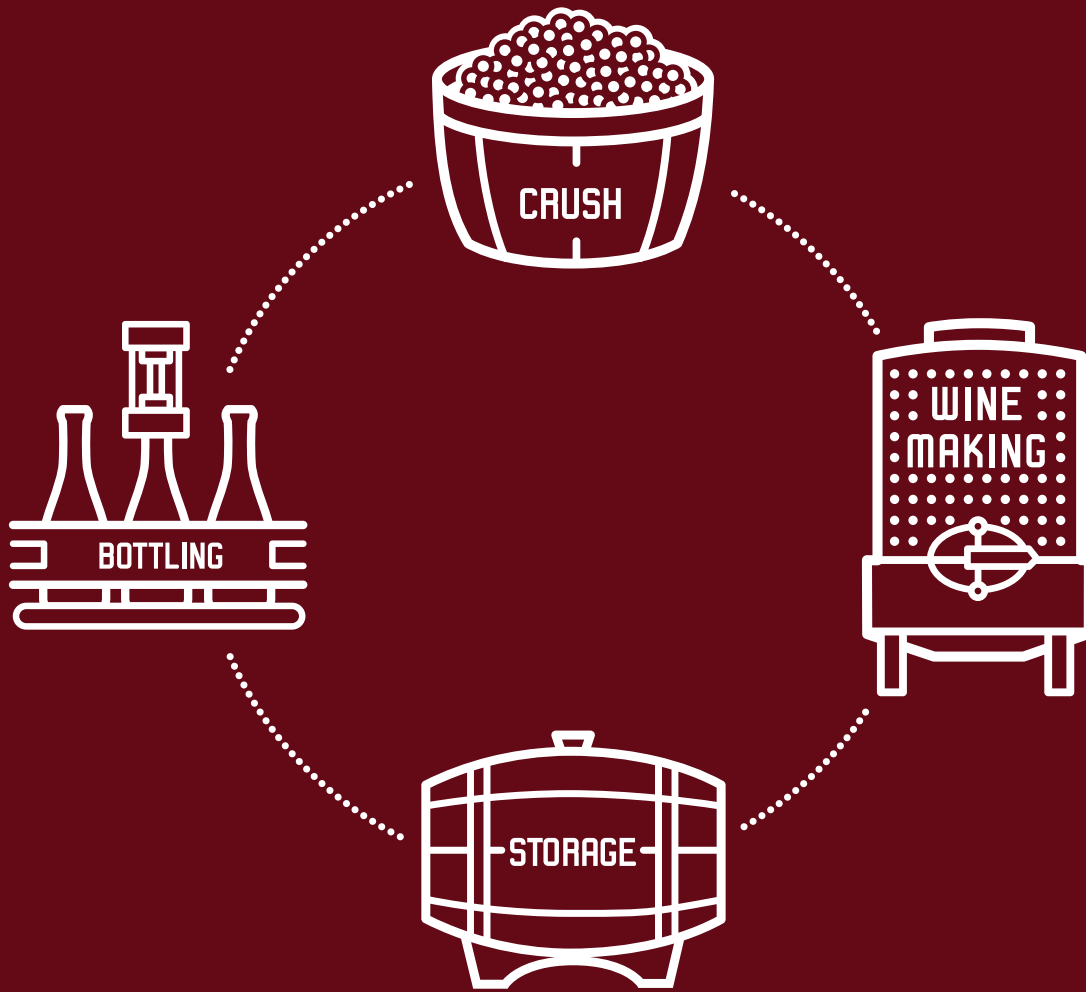
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YEAR IN REVIEW

Notable News, Deals
and People Moves

ALSO

The Role of Trials in Improving Wine Quality
Lessons from the Napa Earthquake
The Looming Labor Shortage



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December 2014

2014 in Review, and Onward

AS THIS ISSUE OF *WBM* heads out to subscribers, the grapes are in, the fermentations are bubbling along, and the year is winding to a close. As they catch their breath, winemakers here on the West Coast are talking about one of the earliest and largest harvests on record, and about the outstanding quality. They really mean it, too.

As we often do at this time in *Wine Business Monthly*, we've paused to reflect on the year's milestones while looking ahead to the future. Inside you'll find a recap of the years' key wine business headlines with key people moves, along with a review of significant transactions and macro-trends shaping the tightening agricultural labor market.

The year saw a huge earthquake hit the Napa/Sonoma area, and this issue includes an article reviewing some of the lessons learned, lessons that really just need to be re-learned, or at least lessons that bear repeating.

This issue also includes a look at this trend that's going on with winemakers using concrete fermenters, and an article about bench-top labelers—the kind that smaller wineries, i.e., most wineries, can afford. Winemakers like the results they're getting from those concrete fermenters, even if they aren't quite sure why.

Winemaking is about the pursuit of quality and one way winemakers improve quality is by experimenting and trying new things. Doing this in a systematic way is called a trial. One article in this issue reflects on how winemaking trials are an embodiment of the pursuit of quality and includes tips for making winemaking trials more meaningful.

California experienced a third year of one of its worst droughts in the past century. It was a watershed year, the year that the state passed a sweeping law addressing groundwater regulation. As this issue heads off to subscribers, voters are poised to decide the fate of a proposed \$7.5 billion California water bond. An article in this issue summarizing findings of our 2014 Vineyard



Survey shows that 65 percent of vineyards get their water via wells. Most growers still aren't using flow meters to monitor water use in their vineyards, but their use is growing and should continue to with the impending new groundwater regulations.

As 2014 comes to a close, the industry seems to be in an interesting position in terms of supply. One might think a third record-sized harvest in a row would create a state of "oversupply" but many are hedging their bets. The supply of grapes and bulk wine out there seems to be relatively balanced, in part because of a perception that the 2015 harvest could come up short if the California drought continues unabated.

Here's to improving wine quality, embracing the future and to more rain!

— Cyril Penn, editor

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Insight & Opinion:

Adjusting to an Era of Farm Labor Scarcity

J. Edward Taylor and Diane E. Charlton

J. Edward Taylor is a professor of Agricultural and Resource Economics at the University of California, Davis. His specialties are international development, farm labor and immigration.

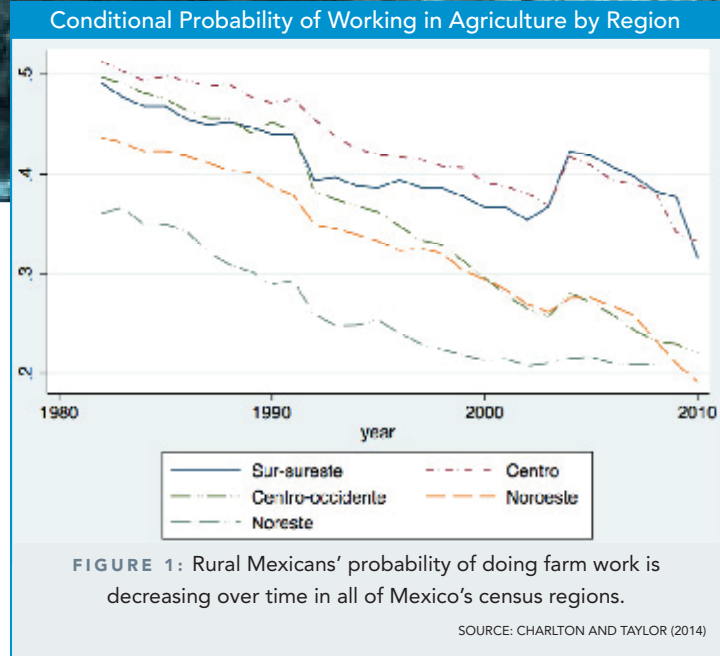
Diane E. Charlton is a doctoral candidate in Agricultural and Resource Economics at the University of California, Davis. Her thesis is on international migration and farm labor.

Rural Mexicans, particularly young people, are leaving farm work, just as U.S. workers did in the last century. The end of farm labor abundance means long-term changes for wine producers. Increasingly, being competitive in the wine industry will require mechanizing the most labor-intensive tasks and taking steps to secure access to a smaller, more loyal and more skilled workforce.

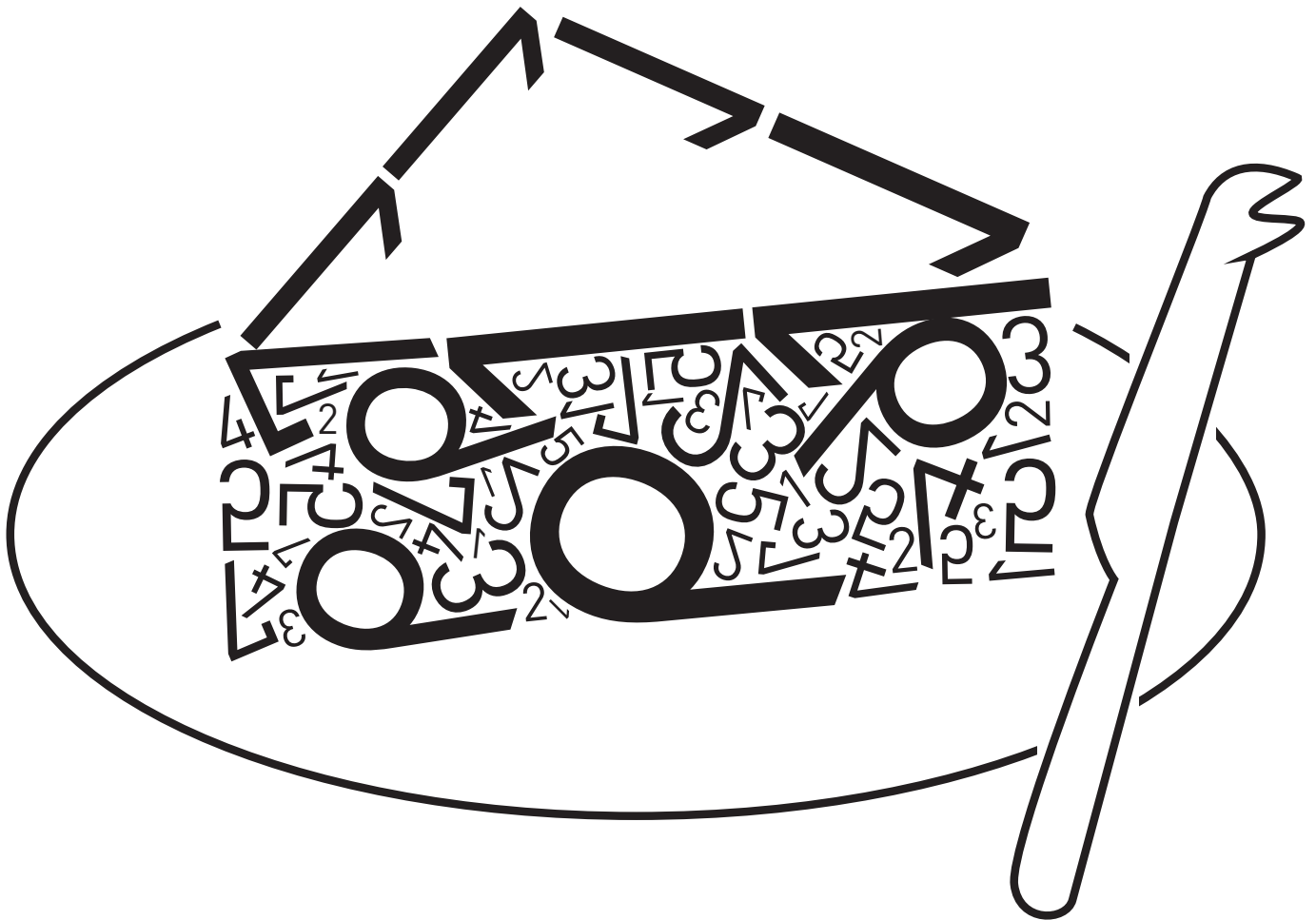
OVERWHELMINGLY, THE HIRED WORKERS on United States farms come from rural Mexico. Around 70 percent of the U.S. hired farm workforce is Mexico-born, according to the **National Agricultural Worker Survey** (NAWS). Fruit, vegetable and horticultural farms in the U.S. have enjoyed an extended period of farm labor abundance, with stable or decreasing real wages. Access to workers from rural Mexico has been a comparative advantage for labor-intensive agriculture in the U.S., including winegrape producers.

This era of farm labor abundance is coming to an end. Rural Mexicans—especially from the younger generation—are moving out of farm work. Today, non-farm wages are the single most important source of income for rural Mexico's households.

Data from the **Mexico National Rural Household Survey** (Spanish acronym: ENHRUM) permit us to track a nationally representative sample of rural Mexicans into and out of farm jobs more than three decades—a total of more than 125,000 person-years of data. [Note: A person-year of data is information on one person for one year. For example, if we had data on where each of two people worked in 2009 and 2010, that would be four (2 people x 2 years) person-years of employment data.] The data shows a significant decrease in rural Mexicans' probability of working in agricultural jobs over



time. This includes agricultural work in the workers' home villages, in other parts of Mexico or in the U.S. The downward trend in the farm labor supply is pervasive across Mexico's five census regions (see **FIGURE 1**). Overall, we estimate that the supply of agricultural labor from rural Mexico is falling at a rate of about 0.13 percent, or 11,200 workers per year.



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Mexico Is Not Alone

When it comes to workers moving off the farm, Mexico is no different from other countries. Worldwide, as per-capita incomes rise, people move out of farm work and into non-farm jobs. In the U.S., this process has pretty much run its course: agriculture employs less than 2 percent of the U.S. workforce, and most hired workers on U.S. farms are immigrants from Mexico. Mexico's per-capita income (adjusted for the cost of living) now exceeds \$15,000. Mexico is entering the later stages of its farm labor transition.

Why is This Happening?

For farmers, the billion dollar question is: "Why?" The answer to this question may tell us whether the farm workers will come back or whether they are gone for good. There are several possible reasons why Mexicans are moving off the farm, and we are using our data to test which ones are the most important.

The single largest factor appears to be job growth in Mexico's non-farm economy. It faltered during the 2007 recession but has been recovering (with ups and downs) since then. We estimate that employment in manufacturing and services pulled more than a quarter of a million rural Mexicans out of farm work between 1995 and 2010.

Not everyone can leave the farm to work in a new **Honda** plant in Guajuato. In Mexico's dynamic non-farm economy, workers are younger and better educated than on the farm. A second significant factor in the shift to non-farm work has been the expansion of schools in rural Mexico. There are simply fewer low-skilled people in rural Mexico than there used to be. The data shows that the average schooling level is 4.9 years for rural Mexicans aged 50 or older but 9.7 years for people in their twenties. In Mexico, like everywhere else, nothing pulls a kid out of farm work more quickly than a little education.

All this is against a backdrop of a crashing birthrate. The average Mexican woman now has 2.05 children over her lifetime—almost the same as U.S. women. Mexico's birthrate has been falling for some time. Because of this, the growth of Mexico's working-age population is slowing down.

Slowing labor-force growth, rural education and more non-farm jobs, taken together, make it almost certain that we will not see Mexico-to-U.S. migration at levels anywhere near what they were at the turn of the millennium, and the decline in the farm labor supply will continue. Already, Mexico is both an "importer" and "exporter" of farm workers. While sending farm workers to the U.S., it brings workers in from Guatemala to work on farms in southern Mexico. The experience of the European Union shows that wages between countries do not have to reach parity in order for international migration to fall or even reverse. A four- or five-to-one wage differential can be sufficient to deter migration as long as people believe that conditions at home are getting better. In short, Mexico has passed "peak emigration."

The Role of Immigration Policy

Where does this leave immigration policy? A revised H-2A program could buy some time by making it easier for U.S. farmers to compete with Mexican farmers for the dwindling supply of agricultural workers. Immigration policy, however, will not change the dynamic of Mexicans moving out of

farm work. Border enforcement, drug-related violence and economic conditions in the U.S. influence where Mexicans work more than whether or not they do farm work. Our data shows that intensified border enforcement increased the farm labor supply in Mexico slightly, by keeping some people from migrating to the U.S. Most immigrant workers from rural Mexico work in non-farm jobs, like construction, manufacturing, yard work or domestic care. Some who would have done non-farm work in the U.S. but could not because of increased border enforcement stayed or returned to Mexico to do farm work there. The effect of border enforcement on the farm labor supply is small compared with the pull of non-farm jobs in Mexico, the expansion of rural education and the decreasing birthrate, however.

Could we find low-skilled farmworkers somewhere else? Not in the U.S. It is well known that not even the children of farmworkers go into hired farm work. In Central America, perhaps? Guatemala is by far the largest of the Central American countries, but it is still far too small to take Mexico's place. Besides, agriculture's share of the labor force is falling more rapidly in Guatemala, Honduras and El Salvador than in Mexico. Costa Rica imports much of its farm labor from neighboring Nicaragua. The cost (not to mention political infeasibility) of importing large numbers of low-skilled workers increases progressively as one looks farther afield, say, to Asia.

Bidding for Farmworkers

Competing with Mexico's farms for labor is not getting any easier. After the North American Free Trade Agreement (NAFTA) took effect, Mexican farmers began investing in labor-saving capital and technologies that sharply reduced farm employment and increased farmworker productivity. This may have freed up some workers for U.S. farms. However, Mexico's labor-intensive agriculture is expanding, as evident in the produce sections of our grocery stores (particularly in winter months), and its demand for farm labor is on the rise again. When it comes to getting farm workers, it is not as simple as "we" versus "them:" More and more Mexican farms are integrated with U.S. grower-shippers. **Driscoll's** procures berries from U.S. and Mexican farms, synchronizing its supplies across the border and across seasons. As Mexican farmers' labor demands increase and farmworker productivity in Mexico rises, so do the wages U.S. farmers have to pay in order to induce workers to migrate northward.

Saving Labor, Winning Hearts

The demand for wine—like fresh fruits and vegetables—will continue to grow even if farm wages rise. The unique environments that create our high-quality wines ensure that U.S. wine production will expand, not contract, in the future. Winegrape producers, like other farmers, will have to produce more output with fewer workers. Winegrapes have an advantage over some other fruit, vegetable and horticultural crops because the harvest technology is relatively well developed and available—at a price, of course. Mechanization can dramatically reduce the seasonal labor demand as well as harvest risks. Hopefully over time new research and development will lower mechanization costs, aided by inevitable breakthroughs in information technology and robotics. The farmers who resist change should be aware that the challenges of hand-harvesting almost certainly will intensify in the future.

The same movement of workers off the farm that happened in the U.S. is now well underway in Mexico. U.S. farmers find themselves competing with Mexican farmers for a diminishing supply of farm workers.

In a new environment of labor scarcity, mechanizing the grape harvest is not likely to be enough. The best-positioned farmers will be those who have taken steps to secure a reliable and loyal workforce. This means offering wages, job stability and other inducements necessary to attract workers. Such measures entail costs; however, new technologies that raise worker productivity make it possible and profitable to pay higher wages. Some farmers argue that getting to know workers and their families and becoming more involved in the communities in which they live is one key to having a loyal workforce.

Winegrape growers who already have mechanized their harvests are ahead of the game. So are those who have figured out how to attract and keep a dependable workforce.

The farm workforce gradually will change. A more capital-intensive agriculture requires teched-up workers. When farms mechanize, they usually replace large numbers of low-skilled workers with a small number of skilled workers with high school diplomas and sometimes some college. Schools need to prepare young people for the agricultural jobs of the future. If we do not, Mexico could once again come to the rescue, this time by sending us agricultural engineers instead of low-skilled farmworkers. Mexico graduates 113,000 engineers each year, more than twice the rate per capita of the U.S.

The Take-away Message

U.S. workers moved out of hired farm work in the mid-1900s. Mexico saved the day because it had more than enough farm workers to meet the U.S. demand. Data tells us, unequivocally, that the same movement of workers off the farm that happened in the U.S. is now well underway in Mexico. U.S. farmers find themselves competing with Mexican farmers for a diminishing supply of farm workers.

Farmers tell us they find it increasingly difficult to recruit workers and that it feels like something has changed. A recent survey conducted by the **California Farm Bureau Federation** found that farmers expect labor shortages and are paying higher wages. The NAWS reveals that the U.S. farm workforce is aging and the share of recent immigrants among farm workers has declined sharply. Some farmers blame **Congress** for its failure to pass comprehensive immigration reform. Our data tell a different story.

In an era of fewer farm workers, wages rise (we already see this happening). Investments in new technologies make farm workers more productive, justifying higher wages. New labor management practices provide more stable employment to a smaller farm workforce. Farmers who look to Congress for a solution instead of adapting to new farm labor market realities will have a tough time succeeding in this new environment. Even if the two sides of the aisle got together and passed a new immigration bill, it would not change the fact that rural Mexicans are leaving the farm. **WBM**

Additional Reading:

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