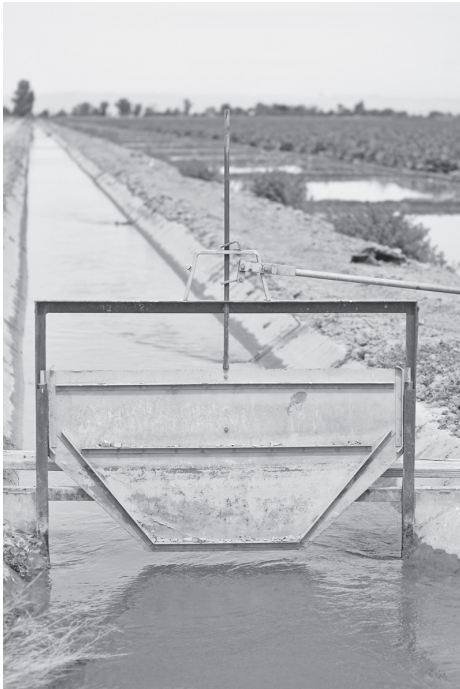


Labor, Water, and California Agriculture in 2014

Rachael Goodhue and Philip Martin

Labor and water are critical inputs for California agriculture, and both were in the news in 2014. Over half of the hired workers on California farms are unauthorized, and a recent slowdown in unauthorized Mexico-U.S. migration has pushed up farm wages and left farmers unsure if they will have sufficient seasonal workers. California is in its third consecutive year of drought, prompting reduced allocations of water for San Joaquin Valley farmers and others, and renewed discussions of mechanisms to store and move more water from north to south.



Some water experts predict reduced imports of northern California water via the delta and less groundwater will lead to the falling of 20–40% of the San Joaquin Valley’s five million acres of crop land by 2050.

The major farm labor issue has been unchanged for the past two decades, viz, at least half of the workers employed on U.S. crop farms are unauthorized. Two-thirds of foreign-born crop workers are unauthorized. Since almost all California farm workers are foreign-born, two-thirds of the state’s farm workers are unauthorized, versus about 40% in the rest of the United States where the share of foreign-born workers almost 60% (Figure 1).

California farm employment has been expanding despite the uncertainties associated with unauthorized workers and, in recent years, uncertain water supplies. As illustrated in Figure 2 (page 6), average employment in California agriculture rose 30,000 or 8% between 2004 and 2013. Almost half of the state’s agricultural employment is in the San Joaquin Valley, followed by a sixth each in the Central Coast (Monterey) and South Coast (Ventura) regions. Employment rose in each of

these three regions, which together account for almost 85% of the state’s farm employment over the past decade.

The three major features of California’s farm labor market over the past half century include seasonality, intermediaries, and exits. Unlike agriculture in most other states, crops dominate California farm sales. In 2012 crops were 73% of California’s \$45 billion in farm sales, while crops were 55% of U.S. farm sales of \$375 billion. Most of California’s crop sales are fruit, vegetable, and horticultural (FVH) commodities; these include fruits and nuts, vegetables and melons, and horticultural specialties such as nursery and greenhouse products. Labor’s share of production costs in FVH commodities are 20–30%, while labor costs are a very small share of production costs in corn, soybeans, and grains.

FVH commodities have a seasonal demand for labor. The peak-trough ratio in California, average agricultural employment in the peak

Figure 1. California and U.S. Crop Workers, Shares Foreign-born and Unauthorized, 2007–2009

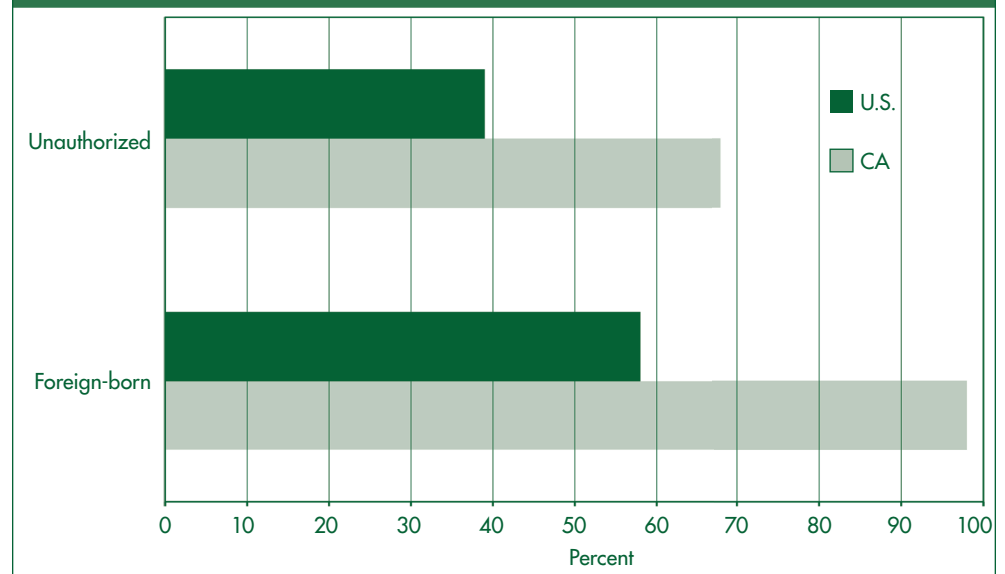
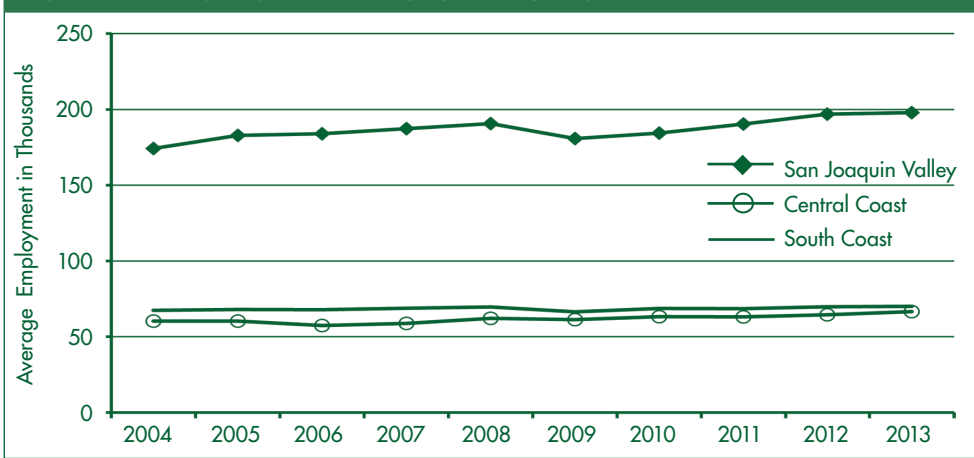


Figure 2. Average Agricultural Employment by Region, 2004–2013



month divided by the trough month, is 1.5—significantly higher than the 1.3 ratio for the United States. The peak-trough ratio is higher in California’s various farming regions, and much higher on individual farms.

Seasonality means that employers want workers to be available when they are needed. Since almost all California’s hired workers are immigrants, most of whom speak Spanish rather than English, intermediary labor contractors, custom harvesters, and other non-farmer employers typically assemble workers into crews and move them from farm to farm. Intermediary contractors should be a win-win mechanism for employers and workers, but the business model of some relies on taking advantage of immigrants not familiar with the U.S. labor market or not paying all taxes that are due. Commissions or overheads charged by some contractors do not cover mandatory payroll taxes, suggesting that they are cheating the government or charging fees to workers for rides to work, housing, or other services.

The third farm labor market feature is exits. Workers dissatisfied with their jobs have two major options: exit or quit to find a better job, or voice concerns to the employer to make changes that improve wages and working conditions and lead to a longer period of employment. Workers with

few employer-specific skills tend to exit, as with fast foods, while those with skills that make them more valuable to their current employer than to other employers tend to speak up, often via unions. Farm work has typically been an exit industry, explaining why farm employers have a keen interest in immigration policy, since most new farm workers come from abroad.

Three recent changes may modify the farm labor market and change farm worker characteristics. First, the sharp slowdown in new entrants from Mexico has led to rising farm earnings. The reduced supply of new farm workers amid continued exits of experienced farm workers may encourage mechanization and efforts to reduce seasonality so that farm employers are assured of sufficient workers. Second, the prospect of obtaining new workers as legal guest workers may encourage more farmers to form or join labor cooperatives and associations that bring guest workers into the United States and shift them from one farm to another. In this way, farm work can be done with fewer workers.

The third potential change in the farm labor market may come from the buyers of farm commodities. Larger grower-shippers of commodities often make contracts with retailers that require farmers to abide by food safety and other regulations

that are often more stringent than federal and state laws. Retailers may exert similar supply-chain pressure on farm employers to abide by labor standards and pay wages that exceed legal requirements. In the past, such pressures for higher wages and standards usually arose in a bottom-up fashion from unions; in the future, they may come in a top-down fashion from buyers of fruits and vegetables.

California has been at farm labor crossroads several times, worrying that an end to the supply of Chinese workers in the 1880s would force structural changes such as family farms that rely on family members rather than large farms that employ hired workers. The most recent labor crossroads was in the mid-1960s, when the end of the Bracero program set the stage for sharp wage increases, labor-saving mechanization and union activity, including a 40% wage increase in table grape contracts signed in 1966. More recently, the Immigration Reform and Control Act of 1986 was (wrongly) expected to give agriculture a legal and more expensive farm work force as farmers either raised wages to retain newly legalized farm workers or built housing in order to employ H-2A guest workers.

Immigration is the major factor affecting the number and cost of farm workers. While the immigration reform debate continues, farmers have learned to live with over half of their workers unauthorized, often by hiring workers via intermediaries who act as risk absorbers in the event of enforcement activities.

However, as the supply of new workers has dwindled, average hourly earnings have risen, prompting the use of mechanical aids that make existing workers more productive by reducing the lifting and carrying that often drives women and older workers out of farm work, as with conveyor belts in strawberry, lettuce, and melon fields. Earlier

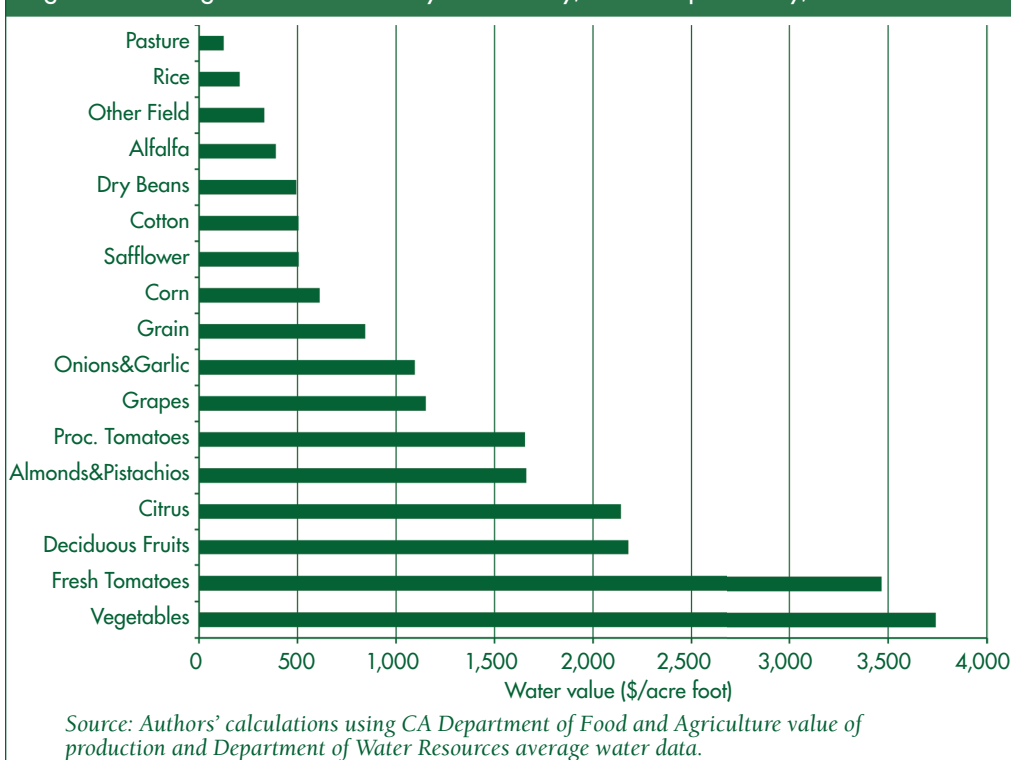
ripening raisin grapes whose canes can be cut so that grapes dry into raisins on the vine, and new and retrofitted vineyards designed for mechanical harvesting, have reduced the peak raisin harvest work force from 50,000 to 25,000 over the past quarter century. The farm labor market could move toward either end of the spectrum. At one end would be continued wage increases that spur the adoption of mechanical aids and labor-saving mechanization and lead to larger and more specialized farms. At the other end would be more reliance on foreign workers, perhaps through new programs that allow farm guest workers to stay in the United States three years or longer and thus justify the cost of bringing them from further afield than Mexico.

Water

Governor Jerry Brown declared a drought emergency in January 2014, citing lack of rain and snow that lowered water levels in dams for the third consecutive year. Many farmers said that they would not plant annual crops in order to save scarce water for orchards and vineyards. Since 1987, there have been 13 drought emergency proclamations, most for part of the state.

The State Water Project (SWP) announced zero allocations for its 29 public agency customers, and the federal Central Valley Project (CVP) assigned zero allocations for agricultural contractors and offered municipal contractors, wildlife refuges, and others 40–55% of their usual allocations or their historical usage—depending on the water source and other criteria. Water users north of the Sacramento-San Joaquin river delta with senior water rights pre-dating the federal project, are slated for 40% of their usual allocation from the CVP and 50% from the SWP, plus limited 2013 carryover.

Figure 3. Average Value of Water by Commodity, San Joaquin Valley, 2012



Recent rains may lead to upward adjustments in allocations; however, growers have already made many 2014 production decisions so timing may limit the value of these increases. On the other hand, districts that receive additional water that their members will not use may be able to sell it, reducing the impacts of the drought elsewhere.

The drought operation plan released by the California Department of Water Resources and the U.S. Bureau of Reclamation in April 2014 loosens water quality regulations so that the CVP and SWP can retain as much water as possible in their reservoirs in case of continued drought. The CVP's Shasta Lake was at 50% of its 4.5 million acre-foot capacity in April 2014, while the SWP's Lake Oroville was at 50% of its 3.5 million acre-foot capacity. Many water contractors have additional water supplies, including groundwater.

Will three years of drought change water storage and management? Many California farmers and residents rely on water and snow that falls during the winter months in the Sierra Nevada

mountains and melts to fill 50 reservoirs in northern California. Some water is used in the Sacramento River basin for agricultural, industrial, urban and environmental uses, but much of northern California's water is moved south via the Sacramento-San Joaquin river delta and the 1,200 miles of canals of the CVP and SWP.

About two-thirds of the 15 million acre-feet of water used in the San Joaquin Valley comes from local sources: four million acre-feet arrive via the delta from northern California, and another one million acre-feet are currently obtained by overdrafting groundwater.

The bedrock principle of water law in the arid west is "first in time, first in right," meaning that the first person to put river water to a beneficial use has senior rights to that water, regardless of the value of the products produced with the water. Pre-1914 "riparian" water rights are senior to post-1914 "junior" water rights.

Selling, rather than putting water to "beneficial use," can be difficult. Many water users belong to water districts,

and users who object can block district water sales. Even when water districts agree to sell water, it may be hard to find ways to convey the water to willing buyers. Proposed water transfers are subject to regulations that evaluate their possible environmental impacts.

Projections of how many farm jobs may be lost due to reduced water supplies are made by estimating how much farm revenue is likely to fall and how many farm jobs are associated with each \$1 million in reduced farm revenue. When there is less water, farmers normally switch available water from lower- to higher-value crops, as from hay and pasture to perennial trees, vines, and vegetables. These higher-value crops tend to be more labor intensive, which tends to preserve farm jobs. The crops grown on land that is fallowed tend to be less labor-intensive.

Figure 3 shows the average value of water applied to various commodities in the San Joaquin Valley, defined as the average revenue per acre for the commodity divided by the average amount of water applied. Water is far more valuable, in terms of farm revenue generated, when applied to fruits, vegetables, and nuts than when applied to grains and hay. If the cost of water rises, farmers would likely shift water from lower-value commodities to higher-value fruits and nuts and vegetables.

Each \$1 million reduction in farm revenue reduces farm employment by about 20 jobs. Reduced crop revenues in 2014 are expected to raise unemployment rates in areas that already have high jobless rates. For example, the unemployment rate in Mendota, the self-proclaimed Cantaloupe Center of the World, ranged from a low of 31% in September 2013 to a high of 41% in January 2013. Mendota is on the eastern edge of the Westlands Water District, which will receive a zero allocation.

The prospects of more unstable weather and less water mean longer-term changes, perhaps including

reduced diversions of water from northern California via the Sacramento-San Joaquin river delta and abandoning farming on some of the islands in the river delta. Fresh river water must flow through the delta in order to prevent salt water intrusion.

San Joaquin Valley farmers want more water sent south during the winter months and stored in the San Luis Reservoir, which can hold two million acre feet of water, and other south-of-delta reservoirs. However, environmental groups and delta farmers insist that fresh water must flow through the delta year-round to preserve fish and keep out salt water. The 9th U.S. Circuit Court of Appeals in March 2014 reaffirmed the authority of the U.S. Fish and Wildlife Service to recommend restrictions on pumping water through the delta to protect fish.

Some water experts expect reduced imports of northern California water via the delta and less groundwater will lead to the fallowing of 20–40% of the San Joaquin Valley's five million acres of crop land by 2050. They predict reduced acreage of water-intensive and lower-value crops, such as cotton, hay and pasture, as farmers use more costly water on higher-value orchard and vineyard crops.

What's Next

Labor and water are two of the major challenges facing California agriculture in 2014; farmers worry that there are not enough workers or sufficient water for crops, while worker advocates want higher wages for farm workers and environmentalists more water for fish. Both labor and water are complex and controversial issues in which the legacies of past policies make sudden changes difficult.

Even when the agricultural community reaches a consensus, as on a preferred immigration reform and more water storage, it can be hard to translate that consensus into public

policy because immigration and water policies affect the larger community that may not agree. The agricultural consensus to combine legalization of unauthorized farm workers with a new employer-friendly guest worker program, and to replumb the Sacramento-San Joaquin river delta so that more water can be moved and stored in the San Joaquin valley, has proven difficult to enact into public policy.

The interactions of researchers, farmers, and policy makers can assess the data and evidence, understand the needs of farmers, and explore the opportunities and constraints facing policy makers. The mutual learning that occurs can lay the basis for the development and implementation of evidence-based policies in the complex and controversial issues of farm labor and water.

Suggested Citation:

Goodhue, R.E., and P.L. Martin. 2014. "Labor, Water, and California Agriculture in 2014." *ARE Update* 17(4):5-8. University of California Giannini Foundation of Agricultural Economics.

Rachael Goodhue and Philip Martin are both professors in the ARE department at UC Davis.. They can be contacted by email at goodhue@primal.ucdavis.edu and martin@primal.ucdavis.edu., respectively.

For additional information, the author recommends:

Migration News. <http://migration.ucdavis.edu>

Martin, P.L., and L. Calvin. 2011. "Labor Trajectories in California's Produce Industry." *ARE Update* 14(4):1-4.

Martin, P.L. 2013. "Immigration Reform 2013: Implications for California Agriculture." *ARE Update* 16(5):5-8.