Highlights
Farm sales increased by almost 50 percent between 2005 and 2015, a decade that saw a doubling of sales of labor-intensive berries, while sales of peaches, apricots, and asparagus declined. Workers pick pounds and tons of produce, and the volume of berries and table grapes rose about 50 percent over the past decade, which more than offset declining volumes of apples, peaches and pears to explain why the employment of farm workers increased.

An average 425,000 hired workers are employed on California’s farms, but 850,000 unique workers are reported by farm employers each year. Most of these hired workers, 83 percent, were primary farm workers with more 2015 earnings from agriculture than nonfarm jobs; the largest group, over 40 percent, were employed by FLCs. Farm workers are aging (average 38), settled with families that often include US-born children, and mostly unauthorized (55 percent).

Only 1-2 percent of farm workers are unauthorized newcomers in the US for less than a year, down from a quarter in 2000; follow-the-crop migrancy has almost disappeared. Farm employers are responding to fewer unauthorized newcomers and less mobility with 4-S strategies, viz, satisfy, stretch, substitute and supplement. Employers try to satisfy current workers to retain them longer and stretch them with mechanical aids that increase productivity and make farm work easier. The third strategy is substitution, replacing workers with machines, or switching crops. The fourth is to supplement with H-2A guest workers; the “fresh blood” in the farm workforce is mostly legal H-2A workers in the US an average of six months.

Employment
The average employment of hired workers in California agriculture (NAICS 11) has been rising. In 2015, some 16,400 California agricultural establishments reported hiring an average 425,000 workers and paying them $12.8 billion, an average $30,300 for full-time equivalent work (2,080 hours). Employment is seasonal, peaking at over 475,000 in August and reaching a low of 350,000 in December, a peak-trough ratio of 1.4.

Most workers do not work full time; the total number of workers employed on California farms sometime in 2015 is double average employment, 848,000. There were 705,000 primary farm workers with maximum earnings from an agricultural establishment, and they earned an average $17,500, 58 percent of FTE pay. Some 402,000 or 57 percent of primary workers were brought to farms by nonfarm crop support services, and their average annual pay was $13,500, 50 percent of FTE pay for crop support services. The 293,200 workers brought to farms by FLCs had average annual pay of $10,000, equivalent to $10 an hour for 1,000 hours and 44 percent of FTE pay for FLC employees.

The NAWS finds that most California crop workers were born in Mexico (90 percent), not authorized to work in the US (55 percent), aging (average 38), and earning $15,000 to $17,500 a year for 200 days of farm work a year, less than $100 a day. California workers report lower wages, $10.10 an hour in 2013-14, than all US hired farm workers,
$10.20. Over 90 percent of the California crop workers were employed in fruits and vegetables, but only 25 percent were doing harvesting jobs when interviewed. A third were employed by support services such as FLCs, while two-thirds were hired directly.

4-S Responses to Fewer Newcomers
Unauthorized Mexico-US migration has almost stopped, so that less than two percent of crop workers have been in the US less than a year, down from a quarter in 2000 (excluding H-2A workers). The short-term employer responses to fewer newcomers include satisfying current workers, stretching them with mechanical aids and other changes, and supplementing the workforce with H-2A guest workers. The longer-term responses include more mechanization and increased imports.

Most farmers believe that the supply of labor inside US borders is fixed or inelastic, so that higher wages will not attract or retain more farm workers. Instead, some are offering benefits and bonuses to satisfy current workers, such as low-cost health care to employees and their families or bonuses that can add 10 percent or more to earnings. Some employers are training of first-level supervisors to reduce favoritism and harassment.

Most fruits and vegetables are over 90 percent water, and hand harvesters spend much of their time carrying harvested produce down ladders to bins or to the end of rows to receive credit for their work. Smaller trees mean fewer ladders and faster picking, and hydraulic platforms reduce the need to fill 50 to 60 pound bags of apples and oranges from ladders. Slow-moving conveyor belts that travel ahead of workers harvesting berries, broccoli, and other vegetables reduce the need to carry produce, stretching workers by making them more productive.

The third strategy is substitution or replacing workers with machines. Many fresh fruits and vegetables are fragile, and human hands are far gentler than mechanical fingers on grapes or peaches. Machines are fixed costs and workers are variable costs, meaning that farmers must pay for a $200,000 harvesting machine whether there are apples to pick or not, but they do not pay wages to workers if storms or disease destroy the apple crop. Some farmers are switching away from labor-intensive crops, as from raisin grapes to almonds.

The fourth adjustment is to supplement the current workforce with young H-2A guest workers. The H-2A program is expanding across the US, doubling over the past decade to over 165,700 farm jobs certified by DOL to be filled by guest workers in FY16 on about 8,300 US farms. Certifications for FY17 are up 16 percent from the same period in FY16; the US may certify almost 200,000 farm jobs to be filled with H-2A workers in FY17. The H-2A program has expanded fourfold in California, from 2,600 jobs certified in FY06 to 11,000 in FY16.

California Laws: Minimum Wage, Overtime, ALRB
California laws signal rising farm labor costs. SB 3 will raise the state's $10 an hour minimum wage to $15 by 2022 for large employers and by 2023 for employers with 25 or fewer workers, after which the minimum wage will rise with inflation. Over five million of the state's 15 million employed workers are expected to be affected directly, half are Latinos, and up to 500,000 are employed in agriculture.
AB 2757 requires overtime pay after eight hours a day and 40 hours a week by January 1, 2022, with smaller employers having until 2025 to comply. Three types of workers are most affected by 8/40 overtime: livestock (dairy) workers, irrigators, and equipment operators. Some workers may work eight hours on one farm and four hours on another, maintaining long work days but not earning overtime pay as they “swap” employers.

The ALRB enforces the ALRA, which granted organizing and bargaining rights to California farm workers in 1975. There are far fewer farm worker union members, less than 10,000 today in a total workforce of 850,000 versus perhaps 100,000 in the mid-1970s when the total workforce was 500,000, and far fewer contracts, perhaps 25 today versus over 200.

Questions
Most of the workers employed in California agriculture have less than a high-school education and do not speak English well. During the 1960s, the Bracero program ended, unionization pushed up wages and spurred mechanization, and economists and engineers predicted there would be few low-skilled farm workers after 1975 (www.abebooks.com/book-search/author/cargill-b-f-and-g-e-rossmiller-editors/).

There are similar concerns about rising wages and fewer foreign-born workers today, prompting predictions of more mechanization and rising imports unless government makes it easier to import foreign farm workers. This suggests three priorities for education and research:

1. How are farmers responding to fewer newcomers, what is the status of 4-S responses in particular commodities and areas? Which response is optimal in a particular commodity given labor and non-labor trends, including technology, labor, trade, and consumer demand factors?

2. What are the challenges and opportunities involved in helping experienced farm workers to become farmers, that is, could aging farmers finance the sale of some or all of their farms to trusted farm workers, or will farm land be bought by nonfarm financial firms that rely on managers to operate their holdings? What training and supportive services would be required for successful transitions from worker to farmer? Are there lessons from producers contracting with marketers in strawberries? Will nonfarm financial firms prove vulnerable to boycotts organized by worker organizations?

3. BLS projects average US agricultural employment to fall from 2.1 million in 2014 to two million in 2024, down 77,000 hired workers to an average 1.3 million full-time equivalents and down 34,000 farmers to an average 720,000 FTE. BLS projects rising employment in the nonfarm input and output components of the food system, including a jump of 660,000 in food services to 11.4 million (www.bls.gov/opub/mlr/2015/article/industry-employment-and-output-projections-to-2024.htm). What is the appropriate balance between training professionals for production agriculture, where there can be high turnover of non-family members, and training professionals for jobs in the nonfarm components of the food system?