Impact on Farmworkers of Proposed Water Transfer from Imperial County

A Memorandum to the
Latino Legislative Caucus of the
California State Senate
2003

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Prepared at the request of Assemblymember Marco Antonio Firebaugh, Assembly Floor Leader and Chair of the Latino Legislative Caucus. The research was sponsored by the California Policy Research Center under its Technical Assistance Program, the Latino Policy Institute, and the California Program on Access to Care. The views and recommendations in this memorandum are those of the author and do not necessarily represent those of CPRC, LPI, CPAC, or the Regents of the University of California.

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Executive Summary

Imperial County annually receives about 3.3 million acre-feet of Colorado River water, and water transfer negotiations anticipate transferring 200,000 to 300,000 acre-feet to San Diego County, or less than 10%. This memorandum outlines possible effects of reduced water supplies on Imperial County farmworkers. Projecting these effects is not straightforward; if farmers decide to shift from water-intensive to labor-intensive crops, for example, employment could rise rather than fall.

In order to make reasonable projections of the impacts of water transfers on farmworkers, we need to assess the following:

- How do farmers respond to less water (e.g., do they use water more efficiently on current crops and idle land, or switch crops)?

- How do these changes in cropping patterns affect farmworker employment and income?

- How quickly do displaced farmworkers and others find alternative sources of employment and income, which cannot be done without making economic adjustment assumptions?

Reducing water availability by 25% in a worst-case test scenario reduced Colusa County's personal income by a maximum of 5% and average county employment by a maximum of 1.3%, including a 3.9% reduction in farm employment, suggesting a worst-case ratio of 19 to 1 (a 19% reduction in water availability reduced total employment by 1%) and a 6 to 1 ratio for farm employment (a 6% reduction in water reduced average farm employment by 1%).

Assuming a worst-case scenario, transferring 10% of Imperial Valley water could reduce Imperial County's average total employment by up to 0.5%, or 258 jobs, from 51,600 to about 51,350. It would also reduce average farm employment by a maximum of 1.6%, or 202 jobs, from 12,600 to 12,400.

Income and employment multipliers in Imperial County are likely to be lower than these worst-case scenarios because farm employment is a smaller percentage of total employment—24% in Imperial County in 2001 versus 32% in Colusa in 1992—and government employment is larger—34% in Imperial in 2001 versus 20% in Colusa in 1992.

Because water transfers from all sources seem destined to increase, it would be useful to develop a database on cropping patterns and water usage by county, employment of regular and seasonal workers by crop and county, and likely adjustment scenarios if water prices rise or water transfers are allowed.

The most water-intensive crops are often grown in relatively remote areas where there may be few alternative jobs. Reduced farm employment may also put downward pressure on wages and

housing prices, and require training and relocation assistance for those who do not receive water sale proceeds.

In thinking about the policy implications of water transfers for farmworkers, two points should be emphasized:

- Many of the most water-intensive crops, such as hay and grasses in the Imperial Valley that use six to nine acre-feet of water a year, are low-value crops in which production and harvesting are mechanized. If the water transfer takes place, probably fewer acres of such crops will be planted, but the same number or even more acres could be planted with fruits and vegetables that require less water and more labor.

- The price of water to be transferred is $250 to $400 an acre-foot. Since transferring water affects farmworkers and communities, a 5 or 10% tax on the transfers would still leave water sellers better off and help to provide training and alternatives for displaced workers.

Agriculture, Farm Labor, and Unemployment

A proposed water transfer agreement between the Imperial Valley and urban Southern California (San Diego) calls for farmers to implement a more efficient farming technique to conserve water and to receive money in exchange for fallowing some of their land. Many Imperial Valley business leaders and farmworkers fear the plan will crush the agriculture-dependent region.

The proposed water transfer is the key element in a federal agreement known as the Quantification Settlement Agreement, a complex series of water rights clarifications and water conservation projects. The agreement is part of California's promise to six other Western states to reduce its overuse of the Colorado River.

Imperial County, incorporated in 1908, is the newest California county. It is located in the southeastern corner of California. Mexicali, the capital of Baja California, lies to the south, the Salton sea to the north, San Diego is about 120 miles to the west, and the Colorado River and Arizona are about 50 miles to the east. The Imperial Valley has been described as a 100-mile long "trench" below sea level that contains about 500,000 acres of farmland;most of this land isirrigated by 3.3 million acre-feet of water brought from the Colorado River by the 80-mile-long All-American Canal (built in 1934).[1] Since the Imperial Valley tilts south to north, Colorado River irrigation water is delivered to Imperial farmland primarily by gravity. The run-off drains into the Salton Sea.

The Imperial Irrigation District pays about $15 an acre-foot for Colorado River water, and has been negotiating to sell 200,000 acre-feet to San Diego for $260 to $400 an acre-foot. Selling 200,000 acre-feet—about 6% of its allocation—at $300 an acre-foot would yield $60 million a year to water rights' owners. Under the proposed water transfer, 20,000 to 40,000 acres of Imperial Valley land, or about 10%, would have been fallowed.[2]

Reducing the amount of water by 5–10% and fallowing some farmland would be expected to change the use of water on existing crops and/or change the mix of crops grown. Among the heavy water use in the Imperial Valley are field crops such as alfalfa and grasses, which use six to nine acre-feet of water per acre. These crops are shipped out of the area to dairies in southern California and the San Joaquin Valley or exported, and sometimes used as winter pasture for lambs. Wheat and cotton are also grown in the Imperial Valley.

Imperial Valley farmland sells for $2,000 to $5,000 an acre. At an average price of $3,000 an acre, Imperial Valley cropland worth $1.8 billion generates total farm sales of $1 billion a year. There are three major agricultural sectors:

[1] As early as 1915 there were 300,000 acres of cropland in the Imperial Valley, irrigated by Colorado River water. The Imperial Valley gets about three inches of rain a year.

[2] In recent years, about 460,000 acres of Imperial County land has been irrigated and, with double cropping, there are about 560,000 irrigated acres. Note the difference between physical land—500k—and land farmed—560k because of double cropping.

- Field crops—over half of the irrigated Imperial Valley cropland is used to grow field crops such as alfalfa and grasses, wheat, and cotton.

- Livestock.

- Vegetables and melons—some 100,000 to 125,000 acres, with the most valuable crops being lettuce and carrots.

There are also important seed crop and nursery industries in the Imperial Valley. Several facts about Imperial Valley agriculture and farmworkers seem important for discussing adjustments to less water:

- The acreage of many vegetable crops is shrinking due to low prices, disease, and other factors; some vegetable growers have shifted winter vegetable production from the Imperial Valley to Yuma, Arizona.

- Most of the 15,000 to 18,000 seasonal farmworkers employed during the peak harvest season in January-February live in Mexicali, Mexico, and commute daily to Imperial Valley farm jobs. Farm labor contractors recruit these legal immigrant and border-commuter workers at the Calexico port of entry each day, and take workers to the fields in buses between 5 and 6 AM.

- Most harvest workers are paid hourly wages that are close to the California minimum wage—$5.75 an hour in 2000, $6.25 an hour in 2001, and $6.75 an hour since 2002. Some farm employers pay $0.50 to $1 an hour more than the minimum, especially for more difficult jobs, such as harvesting cauliflower. Very few Imperial County farmworkers are employed under union contracts; one exception is Bud of California (Teamsters 890).

- Most equipment operators, irrigators, and other regular or year-round workers employed on Imperial Valley farms live in the United States. Most of these workers earn more than the minimum wage, and many own homes in the area.

Population, Labor, and Welfare

Imperial County had 142,361 residents in the 2000 Census, 60% of whom resided in three cities—El Centro (38,000), Calexico (26,000), and Brawley (22,000). The county's population was 75,000 in 1970, 93,000 in 1980, and 111,000 in 1990. It rose 30% in the 1990s, versus 14% in California, and is projected to be 300,000 in 2020. Imperial County has the highest percentage of Hispanics of any California county—72% in 2000—while 20% of the population was non-Hispanic white. In Imperial County schools, 82% of students were Hispanic in 1998 and 13% were non-Hispanic white.

Imperial County often has the state's highest unemployment rate: between 1983 and 1999 it averaged 27%, nearly four times that of the state's 7% rate. The gap was narrowest in 1988, and

widest in the mid-1980s.[3] Three major factors help to explain the high unemployment in the Imperial Valley:

- The farmworkers employed in Imperial County who live in Mexicali add to Imperial County employment when they are working (they are included in employer-reported payroll data), and some add to Imperial County unemployment when they are jobless, since they can draw Unemployment Insurance (UI) benefits if they are available for work. [4] Many jobless workers allegedly use local addresses and draw UI benefits under one Social Security number while working for cash wages under another.

- Farmworker wages in Imperial County have fallen. In 1979, when the minimum wage was $2.90, the UFW called a strike in support of a demand for a 40% increase in the general laborer or entry-level farmworker wage, from $3.70 to $5.25 an hour. Most large-scale vegetable farmers eventually agreed to raise wages to $5.25–$5.75 an hour in fall 1979, but some of those who agreed to higher wages went out of business, and the growers who replaced them tended to pay the minimum wage. In 1999, the general laborer wage was at the state's minimum, $5.75 an hour.

- There is a great deal of seasonality in nonfarm businesses in the Imperial Valley—tourist-related and commodity packing and processing jobs are seasonal, and many nonfarm employers are quick to layoff workers when work slows. They assume that jobless workers will rely on UI benefits during layoffs and are ready to return to work when needed, since there are few alternative local jobs to draw them away permanently.

The two major employers in Imperial County are agriculture and government, augmented by other seasonal industries, such as "snowbird tourism," the movement into the area of residents of cold weather states, many of whom arrive and live in mobile homes.[5] In 1999, unemployment peaked in July–September at 27%, reached a low of 19–21% between December and March, and was 21–22% in May–June. The three cities for which unemployment rates are calculated (Brawley, Calexico, and El Centro) had an unemployment rate of 42% in September 2000.
Within agriculture, employment fluctuates more from month to month for farm service employers than for farm producers. Peak-trough ratios, comparing the highest to the lowest level of employment, are typically larger for farm service firms than for farm production employers.

[3] Imperial County is unusual because industry or payroll employment reported by employers is larger than civilian employment based on the Current Population Survey of U.S. households. In September 2000, industry employment was 53,000, even though civilian employment based on the household survey was only 43,500, reflecting the fact that some workers employed in Imperial County live in Mexicali. Workers living in Mexicali are included in employer reports, but not in the household survey. Imperial County employment in September 2000 included 15,000 wage and salary workers employed in agriculture, 13,000 in state and local government, and 8,000 in retail trade.
[4] Mexicali has grown rapidly, from 25,000 residents in 1955 to 438,000 in 1990 (Mexican Census), with some estimates of the city and surrounding area population reaching one million in 2000. The population of Mexico was 94 million in 1995, including 2.5 million in Baja California, and 1.2 million in Tijuana, 760,000 in Mexicali, and 357,000 in Ensenada.
[5] The Employment Development Department (EDD) reports the number of employers (reporting units) by their number of employees for the third quarter of the year. In 1999, Imperial County had 4,100 reporting units; two had 1,000 or more employees, six had 500 to 999, and 14 had 250 to 499 employees. The eight largest Imperial County employers had 8,335 employees.

January farm services employment is 1.5 to 2.5 times August farm services employment, while the ratio for farm production employment is 1.3 to 1.8.

The Employment Development Department (EDD) projected employment by industry and occupation in the mid-1990s. Imperial County is expected to add an average 600 jobs a year between 1977 and 2004, with the highest number of additions coming among retail salespersons, cashiers, teacher aides, and jailers. The county's economic development strategy aims to create more higher-wage and value-added jobs linked to agriculture—such as a packaged-salad plant or a cattle-slaughtering facility—and more government jobs in prisons and related facilities.

In 2000, almost 23% of Imperial County residents had incomes below the poverty line, versus 14% of all California residents. In fact, both per capita and median household income were lower in Imperial County than for California as a whole: $13,233 versus $22,711 and $31,870 versus $47,493. Higher poverty rates translate into higher welfare dependency rates—an average of 13% of Imperial County residents received cash assistance in 1998. As in California as a whole, the peak levels of welfare dependency were reached in 1995. Imperial County also has the same "hump" pattern of welfare dependency as seen elsewhere: after a 91% rise between 1988 and 1996, a 14% decline beginning in the mid-1990s

Adjustment Scenarios

Economic theory predicts that, if farmers adjusted to having less water by shifting from water-intensive, they would shift from lower-value and water-intensive crops to higher-value and perhaps less water-intensive crops. However, there have been few water transfers to assess such adjustments. In one of the few cases studied, farmers in Colusa County's 15,000-acre Westside Water District sharply reduced their acreage of rice, beans, and sugar beets between the late 1980s and 1991–92, when water supplies were reduced, and increased their plantings of less thirsty wheat and corn, and fallowed some land.[6] This shift from higher-value to lower-value crops reduced farm income, which reduced farm employment.

However, this Colusa County case may be unique because the Westside Water District was brought into production with surplus Central Valley Project (CVP) water in 1980, and then water allocations were reduced sharply during the 1991–92 drought. To assess the economic impacts of less water in Colusa County, Lee, Sumner, and Howitt used multipliers that assumed a $1 decrease in farm sales led to a reduction of $1.20 to $2.50 in county income.[7] They also estimated the employment effects of reduced farm incomes by using multipliers that associated $1 million in farm sales with a certain number of jobs (e.g., $1 million in feed grains, hay, or rice is associated with 6 to 8 jobs, while $1 million of fruits and nuts or vegetables is associated with 11 to 24 jobs).

[6] Lee, Sumner, and Howitt (1999) pp. 42–43. It might be noted that the district grew dryland crops before Central Valley Project water became available in 1980, and that some land was fallow even during non-drought years.
[7] Ibid., p. 46. A decrease in rice output accounted for 60 to 90% of the $31 or $46 million in reduced farm income resulting from a 25% reduction in surface water allotment.

The application of this model of adjustments to reduced water allocation in Colusa County yields a comparative worst-case adjustment scenario for Imperial County. Colusa is a small county; it had only 17,000 residents in the early 1990s. Farm employment accounted for 32% of its average employment in 1992, and unemployment averaged 22%.[8] The County's farm sales were $172 million in 1992, according to the Census of Agriculture (COA), and rice typically accounts for 40–60% of its farm sales. Government employment is 20% of total employment, and most government employees are in local government. Retail trade accounts for 16% of total employment.

According to the authors' calculations, reducing water supplies by 25% reduced employment in Colusa County by only 53 to 82 jobs. In 1992, Colusa County employment averaged 6,450, including 2,090 in farming, so that a reduction of 82 jobs represents a 1.3% reduction in total employment or a 3.9% reduction in farm employment. This means there is a 19 to 1 ratio for water and total employment—a 19% reduction in water availability reduces total employment by 1%—or a 6 to 1 ratio for farm employment.

Taking the Colusa County experience as a worst-case scenario, reducing water by 10% in Imperial County would, using Colusa multipliers, reduce average total employment by a maximum of less than 1% (0.5%), or 258 jobs, from 51,600 to about 51,350. This 10% water reduction would also reduce average farm employment by a maximum 1.6%, or 202 jobs, from 12, 600 to about 12,400.

Imperial County may not experience this worst case because its farm employment is a smaller share of total employment—24% of average employment in 2001—and government employment is larger—34% of total employment—and includes significant federal and state employment.[9] Imperial County farm sales were $850 million in the 1997 COA, and were more diversified than Colusa's sales: they included $300 million worth of vegetables and melons, $260 million for livestock, and $165 million for hay.

Conclusions

Agriculture uses about 85% of California's developed water. As more of the state's limited water is devoted to urban uses, there are likely to be reductions in farm income and employment in farming areas. Available studies suggest relatively small effects of water cutbacks, largely because farmers tend to adjust away from water-intensive crops, which are usually not labor-intensive, and to use the remaining water on higher-value crops, which tend to be more labor-intensive. In the worst-case scenario, based on the Colusa County experience, a heavily farm-dependent county that fallowed land, there was a 19:1 ratio between reduced water availability and lost average county employment (a 19% reduction in water availability led to a 1% reduction in average county employment) and a 6 to 1 ratio for farm employment.

[8] Three farm-related employers are among the county's largest employers: Adams Trucking, Jose M Sandoval-Farm Labor, and Sunsweet Dryers River Bend.
[9] Two farm-related employers are among Imperial County's largest employers: E-Z Labor and Holly Sugar.

Transfers of water from agricultural to urban users may generate payments of $250 to $400 an acre-foot to water rights' holders. Since some of the crops that use six to nine acre-feet of water per acre are low-value, crops generating a net $150 to $250 per acre to the farmer may yield $1,500 to $2,250 in revenue from water sales. A 5 or 10% tax on revenue from water sales would leave water sellers better off and generate funds to provide training and alternatives for displaced workers. If Imperial County farmers sold 200,000 acre-feet of water at $300 an acre-foot, the revenue from water sales would be $60 million a year, so that a 5% tax would generate $3 million a year, and a 10% tax $6 million a year.

Source

Lee, Hyunok, Daniel A. Sumner, and Richard E. Howitt. 1999. Economic Impacts of Irrigation Water Cuts in the Sacramento Valley. http://aic.ucdavis.edu/.

This study examines the effects of a 25% reduction in irrigation water to eight Sacramento Valley counties—Tehema, Glenn, Butte, Colusa, Yolo, Yuba, Sacramento, and Sutter—and finds that the crop most affected is rice, which relies on large volumes of surface water. The report outlines two adjustment scenarios to 25% reductions in water: 1) farmers grow the same crops, but in more water-efficient ways, or 2) farmers change crops and/or reduce acreage. As a result of 25% less water, county income falls by 5.4% (1992 base) in the most farm- and rice-dependent county, Colusa, and employment falls 53%, based on the assumption that $1 million in rice sales is associated with 9 jobs.