

Research Department
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Superfly

Controversy rocked the nation's largest state this week, as everyone in California argued about the best way to deal with the dreaded Medfly (Mediterranean fruit fly). The state's \$15-billion agricultural industry, with the weight of expert opinion behind it, finally pushed through an aerial-spraying program to curb the farm pest. Yet the episode illustrated not just the perennially fragile balance between nature and man—but also the fragile balance between rural producers and urban consumers, and between national and state political leaders. It also illustrated the great interdependence of California's agribusiness sector and consumers throughout the nation and the world.

Cornucopia

California's 33½ million acres of cultivated land account for only about three percent of the nation's farmland. But the state produces about 10 percent of the nation's total farm receipts, and thus it easily outpaces Iowa, Texas and other leading farm states in value of output. The state produces more than 250 different crop and livestock products, although twenty production categories account for more than four-fifths of all farm receipts.

California leads the nation in the production of 48 of those products. This cornucopia produces one-half of the nation's output of carrots and asparagus; roughly two-thirds of its spinach, peaches, celery and melons; three-fourths of its lettuce, lemons and strawberries; and all or virtually all of its olives, plums, prunes, almonds, figs, dates, apricots, broccoli, grapes, and processing tomatoes.

In recent years, California has accounted for almost one-tenth of the nation's sharply expanding export trade, being outranked only by the grain-and-soybean exporting states of Illinois and Iowa. This

year, it may export almost \$4 billion of cotton and foodstuffs. Much of this represents a "coals to Newcastle" type of trade, with rice going to South Korea, wine to Western Europe, and dates to Saudi Arabia. Moreover, wars and revolutions in Afghanistan and Iran have recently caused a boom in California exports of almonds and pistachio nuts.

Flight of the Medfly

The discovery of the Medfly in California's Santa Clara Valley has now darkened this picture of prosperity. In view of the insect's hearty appetite for more than 250 varieties of fruits and vegetables, the state could be threatened by a loss of up to \$2 billion of its \$15-billion in farm sales—that is, if all affected crops were totally lost.

The Medfly originated in tropical West Africa, and by about a century ago, had spread to both sides of the Mediterranean and into the Middle East. In this century, it has spread into Australia, South and Central America, Hawaii, and in the last several decades, into the Southern United States. Florida suffered several infestations—especially in 1956—but overcame them largely through aerial-spraying procedures. Other infestations occurred in Texas in 1966 and in Los Angeles in 1975.

The present outbreak began in June 1980, when workers discovered two Medflies in a detection trap in Santa Clara County, and another in a spot 400 miles further south in Los Angeles County. Entomologists eradicated the small Southern California infestation by the end of last year, through such procedures as stripping fruit from trees, spraying malathion bait from the ground, and releasing millions of sterile flies. The much broader (440 square mile) Santa Clara infestation could not be conquered by those methods, however. By one estimate, it would take 24,000 people

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working night and day for a full week to strip all the fruit in only the 44-square-mile core area of the infestation. Thus, this week, the helicopters had to be called in to begin aerial spraying. And at that point, the Federal government withdrew its threat of a nationwide quarantine on California products.

The outbreak probably would have been handled earlier and more routinely if it had occurred in a more rural location—such as the San Joaquin Valley, the source of half of California's agricultural wealth. Instead, the outbreak occurred in what was once a thinly populated rural area, but what is now a heavily populated area that produces silicon wafers and electronic games, and somewhat distrusts agricultural operations. The Medfly crisis thus stands out as a classic case of the rural-urban conflict that has characterized California history for the past century or more.

Urban sprawl

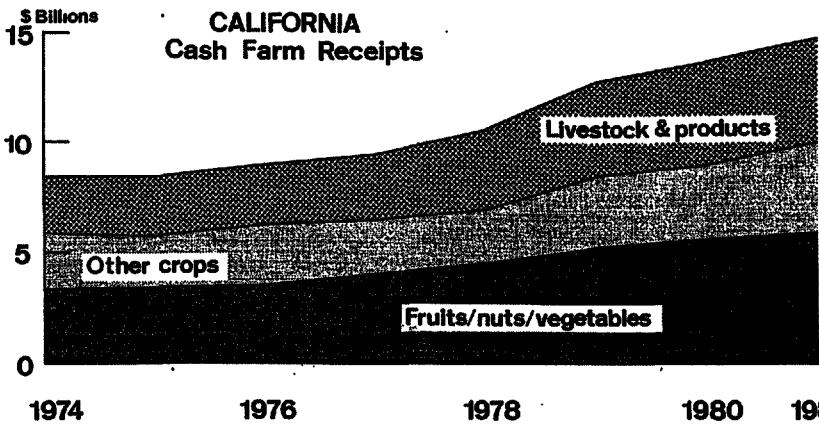
Paradoxically, California is one of the most heavily urbanized states as well as the nation's dominant agricultural state. A series of population booms have created a number of large metropolitan complexes, which in the process have impinged on prime farm land through the typical California phenomenon of urban sprawl. That phenomenon has been characterized by Californians' preference for single-family housing—perhaps because of nostalgia for their Middle Western beginnings—and also for space-wasting single-story construction. Sprawl has also been characterized by the typical California factory—"clean," research-oriented, with rambling facilities, lawns and parking lots.

The automobile made all this possible, by permitting city dwellers to work in large city centers yet go far afield in search of living space. The auto thus contributed to a scattered, although economically rational, distribution of population over the California landscape. This meant radial expansion along major traffic arteries, with a consequent encirclement or bypassing of farm properties. The process has continued as long as cheap farmland has been available for transformation into "higher use" categories.

Urban dwellers have put down roots primarily in the state's best agricultural lands—in the central and southern coastal regions, and in the two halves of the great Central Valley (the Sacramento and San Joaquin Valleys). "This is logical because many of the state's towns and cities originated as service centers for farm communities," according to Howard Gregor in a 1957 issue of *Land Economics*. And he adds, "Ease of building and central location, as well as just plain psychological tendencies toward settling in the most level areas (e.g., Middle Western backgrounds), further contributed to these initial absorptions of prime rural land."

Rural losses

Three-fourths or more of the area in the large urban centers is now built on the best (Class I and Class II) soils—the type of soil found in only one-tenth of the state's original cropland. Writing in *The Nation* (1967), Richard Lillard listed a lengthy catalog of consequent losses: citrus orchards in Los Angeles county, apricot orchards in Hemet Valley, chicken farms in Arcadia, hop fields near Sacramento, spinach and onions on the Santa Maria plain, lima beans in Oxnard, olive groves in the San Fernando Valley, date gardens in Indio, avocado orchards in Fallbrook, pear orchards south of Clear Lake, and the grapevines of Cucamonga. "And the slopes between Stanford University (once lovingly called 'The Farm') and San Jose,



which in 1940 were a modern Eden of orchards and truck gardens, got roofed over into a routine patchwork suburbia."

The process still goes on, a decade and a half later. Each year, California loses about 150,000 acres to urbanization, including 50,000 acres of prime land. The urban encroachment on prime farm land has become increasingly evident in the Central Valley, whose population increased 25 percent in the last decade—half again as large as the increase elsewhere.

Many urban dwellers moved to Central Valley cities, towns and farms during the 1970's, in pursuit of more relaxed surroundings and a less expensive style of living. At the same time, many businesses opened new facilities in these surroundings, in pursuit of cheaper facilities for themselves and cheaper housing for their employees—and in pursuit of a workforce with a farm-bred dedication to productivity. But ironically, as urbanization spreads over these rural areas, the stage could be set for a repetition of today's Medfly episode, with the newcomers complaining about chemical spraying and other unwelcome aspects of agricultural operations.

Withal, the state has continued to break all records in the size and diversity of its agricultural produce, with cash receipts tripling in the decade of the 1970's. Increased yields, due to better management techniques and technological advances, have far offset the reduction in land inputs, and thereby have permitted low-cost California products to dominate national and international markets.

Land and the future

The shift in inputs has been accompanied by a sharp rise in the value of California farm land. In 1980, California farmland and buildings increased an average of 22 percent in value, compared with 10 percent for the nation. The increase should

be somewhat smaller this year—reflecting a slowdown in inflation, tight and expensive credit, a continued cost-price squeeze, and of course the effects of the Medfly infestation. Yet prime farmland will remain quite expensive and much sought-after. Over the past decade, the value of irrigated truck and vegetable property increased from \$1,165 to \$3,545 an acre in the San Joaquin Valley, and from \$2,080 to \$4,900 an acre in Central Coast counties. This rise in land prices has forced changes in the state's crop mix, with greater emphasis on crops that exploit California's comparative advantages in production and marketing.

In the 1980's, the California cornucopia will continue to play a dominant role in the national and worldwide markets. But productivity gains may be harder to achieve than in the past. Labor for California's "factories in the fields" has become increasingly expensive; the hourly wage rate last year (\$4.35) was one-fourth higher than the national rate. Water for these operations has become increasingly scarce; the farm community annually uses 2.5 million acre-feet of ground water in excess of what nature replenishes, and the overdraft could double over the next decade. (Moreover, California in 1985 will lose more than 600,000 acre-feet of annual water entitlements from the Colorado River.) And as we have seen, the urban encroachment on prime farmland will continue, forcing farmers to shift to less desirable land, and creating more Medfly episodes out of the clash of urban and rural values.

William Burke

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BANKING DATA—TWELFTH FEDERAL RESERVE DISTRICT

(Dollar amounts in millions)

Selected Assets and Liabilities Large Commercial Banks	Amount Outstanding 7/1/81	Change from 6/24/81	Change from year ago	
			Dollar	Percent
Loans (gross, adjusted) and investments*	151,569	1,301	13,969	10.2
Loans (gross, adjusted) — total#	130,151	1,602	14,049	12.1
Commercial and industrial	39,566	1,168	5,771	17.1
Real estate	52,931	218	6,086	13.0
Loans to individuals	23,052	44	— 898	— 3.7
Securities loans	1,721	77	729	73.5
U.S. Treasury securities*	6,176	— 164	— 98	— 1.6
Other securities*	15,242	— 137	22	0.1
Demand deposits — total#	44,164	4,434	— 918	— 2.0
Demand deposits — adjusted	29,667	1,632	— 1,543	— 4.9
Savings deposits — total	30,445	567	2,069	7.3
Time deposits — total#	81,146	— 10	18,213	28.9
Individuals, part. & corp.	72,530	307	18,164	33.4
(Large negotiable CD's)	32,034	5	9,443	41.8
Weekly Averages of Daily Figures	Week ended 7/1/81	Week ended 6/24/81	Comparable year-ago period	
Member Bank Reserve Position				
Excess Reserves (+)/Deficiency (-)	n.a.	n.a.	— 35	
Borrowings	171	389	11	
Net free reserves (+)/Net borrowed(—)	n.a.	n.a.	— 46	

* Excludes trading account securities.

Includes items not shown separately.

Editorial comments may be addressed to the editor (William Burke) or to the author Free copies of this and other Federal Reserve publications can be obtained by calling or writing the Public Information Section, Federal Reserve Bank of San Francisco, P.O. Box 7702, San Francisco 94120. Phone (415) 544-2184.