CALIFORNIA AGRICULTURE:

Feeding the Future

Governor's Office of Planning and Research
California Rural Policy Task Force

2003

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Forward

The development of this project has been a process of research and commitment over a period of four years beginning with a 1999 report from the Assembly Select Committee on Agricultural Imports and Exports, *Exotic Pests and their Threat to California Jobs*."

The purpose of the initial report was to identify for urban members of the California Legislature the importance of the agricultural industry to urban economies as a means for gathering support for more funding for pest exclusion activities. The report documented the role of agriculture in California's export economy including contributions to transportation, food processing, and exportation.

This report was developed at the Vital Communities Institute (Institute) a public policy internship program sponsored by OPR. The report expands significantly on the early edition by including a fuller discussion of labor impacts and retail sales. In addition, the report served as a background document for the preparation of the Environmental Goals and Policy Report – California's 20-year master plan for growth and development in California.

The Research Associates in the Summer 2003 session of the Institute received excellent guidance and mentoring by Dr. John Cross, Cosumnes River College. The Institute, OPR and the California Rural Policy Task Force are grateful for his time and leadership on this project.

Prior to its publication, this report was submitted to the public for comments and recommendations from the 400+ members of a statewide rural stakeholders group convened by the California Rural Development Council and the California Rural Policy Task Force. I am especially thankful for all their time and effort in improving the report.

Rural California is a very special place, but it faces many challenges. It is the hope for all of us who have nurtured this project through its many phases that the document will serve as a basis for constructive dialogue on both the economic contributions of agriculture as well as the key issues facing the viability of agriculture and rural communities, including agricultural lands conversion to urban purposes, lack of infrastructure to support economic development activities, lack of access to affordable health and social services and inequitable federal trade policies which too often exchange support for other industries at the expense of agriculture.

Toni Symonds
Director, California Rural Policy Task Force

Executive Summary

The purpose of this report is to link the contributions of California's agricultural industry to the overall economic vitality of the state's economy. The report addresses farmgate, transportation, processing, retail sales and exports including labor and revenues. The report also addresses some of the environmental contributions of agriculture which have economic impacts to the economy.

California's agricultural sector is the most important in the United States, leading the nation's production in over 77 different products including dairy and a number of fruit and vegetable "specialty" crops. A large measure of the success of California's agriculture is the diversity of its land and its people: the large variety of crops thus grown allows California to be on the leading edge of agricultural markets and technology. California produces almost twice as much ($25.9 billion) as its closest competitor, Texas, and is the sole U.S. producer of crops such as almonds, artichokes, persimmons, raisins, and walnuts.

In comparison to other California industries agricultural earnings are in the top five industrial sectors. Combined with food processing, it is the second largest sector behind computers and electronics. And it does this with a very small share of USDA farm subsidies. As the sixth largest agricultural exporter in the world, California received only $586 million in 2001 in USDA subsidies, as opposed to Texas, the sixth largest exporter in the U.S., which garnered $1.7 billion in 2001.

Seven percent of employment in the state — over 25% in the Central Valley — is directly or indirectly derived from agriculture. California agriculture would not thrive without the seasonal workers to harvest crops in late summer. Estimates are that 800,000 farm laborers are employed during the harvest season.

Food processing, which provides over 190,000 jobs, is the second largest industrial sector in California. It is almost entirely dependent on California agriculture.

Most of California's agricultural bounty is shipped by truck, but a significant proportion is shipped by rail and a growing amount of high-end perishables, such as berries and flowers, are shipped by air. Food products are also the second largest category of shipments by water.

Changes in the American diet have led to a greater demand for fresh and processed fruits and vegetables, leading to greater connections between retailers and producers of farm products. Over time, the farm share of the retail value of products has declined, forcing farms to be more productive.

Agricultural exports have increased in recent years despite declines in overall California exports, so agriculture is now the fifth largest export sector. Fruits and vegetables are the most important export groups, and Canada and Japan are the most important markets.

In addition to the direct economic benefits to California and the world, agriculture provides many additional benefits including water management, wildlife habitat, scenic open space, energy products, recreation, flood protection and potential carbon offsets to counter global warming from production of carbon dioxide gases.

California Agriculture: Feeding the Future

A. Overview of Agriculture in California

California has been the nation's top agricultural producer for over 50 years. There are at least four aspects to California's agricultural economy that contributes to its success: its natural resources (land, sunny climate and water resources), its access to markets, its hard-working labor force, and the entrepreneurial nature of California's farm sector.

The state of California leads the production of more than 77 different agricultural commodities.[1] For the past nine years, California has been the nation's leading dairy producer, producing 33.8 million pounds of milk and cheese in the year 2000. In addition to a diversified agriculture with 350 crop and livestock commodities, eight of the top ten agriculture producing counties in the nation are located in California. Table 1 below depicts California's overall top ten agricultural counties.

Table 1 – California's Top 10 Agricultural Counties (Dollars in Millions)

2001 Rank	County	2001 Value	2000 Value	1999 Value	Leading Commodities
1	Tulare	$3,492	$3,067	$3,076	Milk, Oranges, Cattle and Calves
2	Fresno	$3,215	$3,421	$3,566	Cotton, Grapes, Poultry
3	Monterey	$2,746	$2,923	$2,369	Lettuce, Broccoli, Strawberries
4	Kern	$2,254	$2,212	$2,129	Grapes, Milk, Citrus
5	Merced	$1,703	$1,539	$1,534	Milk, Chickens, Cattle and Calves
6	San Joaquin	$1,390	$1,349	$1,353	Grapes, Milk, Cherries
7	Stanislaus	$1,353	$1,197	$1,208	Milk, Almonds, Chickens
8	San Diego	$1,290	$1,254	$1,223	Nursery, Flowers, Avocados
9	Riverside	$1,125	$1,049	$1,197	Milk, Nursery, Grapes
10	Ventura	$1,054	$1,047	$1,059	Lemons, Celery, Strawberries

Source: California Department of Food and Agriculture, 1999, 2001

California dominates in the production of a large number of agricultural products. California is the exclusive U.S. producer (99% plus) of 13 commodities including, but not limited to:

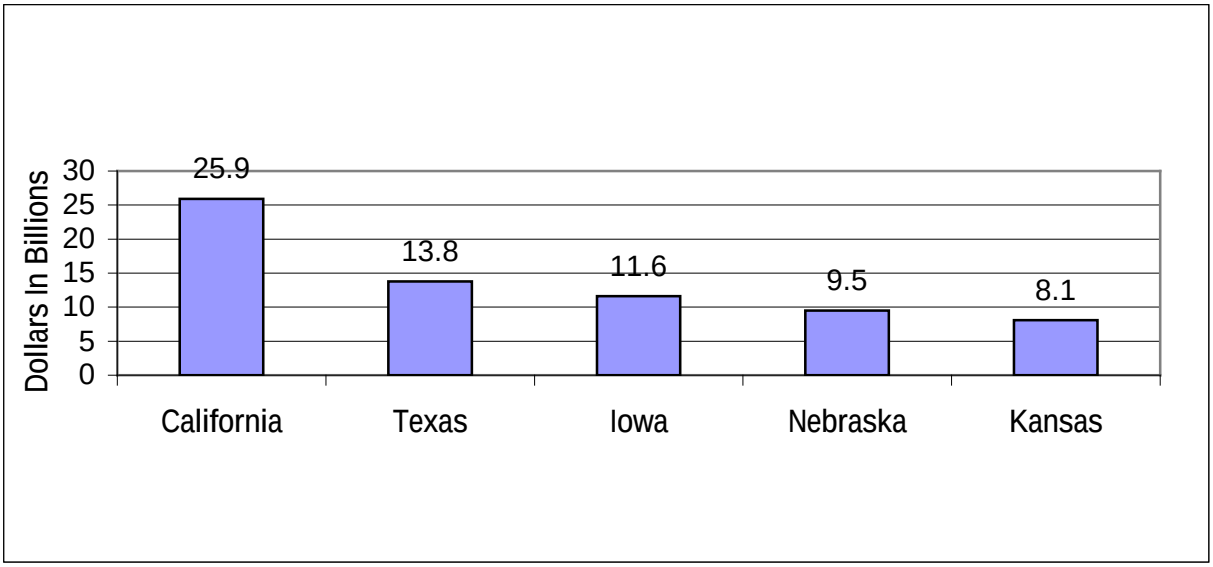
- Almonds
- Artichokes
- Dates
- Figs
- Figs
- Olives
- Persimmons
- Pistachios
- Pomegranates
- Prunes
- Raisins
- Walnuts

The state also produces between 70% and 99% of 11 other crops, including grapes.[2] These crops are known collectively as "specialty crops" in that few other states have the resources to produce them. In 1997 alone, California's production of fruits, nuts, and vegetables accounted for more than 50% of the nation's total production of these lucrative crops. In 2001, California's vital agricultural industry contributed

[1] California Farm Bureau Federation, 1999
[2] *The Measure of California's Agriculture.* UC Agricultural Issues Center, 2000. p 58.

more than $25.9 billion in farm value to the state's economy through cash farm receipts and more than $70 billion annually in related activities. As shown in Chart 1, California far surpasses the other top four agricultural producing states.[3]

Chart 1 – State Rank Total Value 2001, Dollars in Billions



* Source: Resource Directory California Agriculture: A Tradition of Innovation, 2001

California's bounty is a major source of marketing opportunities due to its size and diversity which allows California to aggressively adapt to the global economy by creating high-value goods for niche markets rather than less-profitable staple crops.[4] As a result, California is a significant agricultural asset for the United States. Table 2 compares these assets in comparison with other leading agricultural production states.

Table 2 – Comparison of Top Three Agricultural States

California	Texas	Iowa
International Trade: California leads the country in agricultural exports with a variety of specialty crops, and is the sixth largest agricultural exporter in the world. In 2002, export receipts totaled $7.1 billion in agricultural commodities, which is 13% of U.S. total.	Texas is ranked sixth among the states in the value of its agricultural exports, focusing primarily on livestock. It is estimated that in 2002 Texas exported $2.9 billion in agricultural commodities, which is 5.5% of U.S. total.	Iowa is ranked third in the nation in total agricultural exports, with a focus on grains. Agricultural exports were valued at $3.2 billion, which is 6% of U.S. total.
Farm Subsidies:* USDA subsidies for farms in California totaled less than $2.8 billion from 1996 through 2001. In 2001, USDA subsidies totaled over $586 million with over 17,000 recipients. California receives less subsidies as a proportion of its total production compared to most other states because its main crops are not eligible for subsidies.	USDA subsidies for farms in Texas totaled about $7.7 billion from 1996 through 2001. In 2001 alone, USDA subsidies totaled over $1.7 billion dollars with almost 120,000 recipients.	USDA subsidies for farms in Iowa totaled over $8.7 billion from 1996 through 2001. In 2001 alone, USDA subsidies totaled close to two billion dollars with over 120,000 recipients.

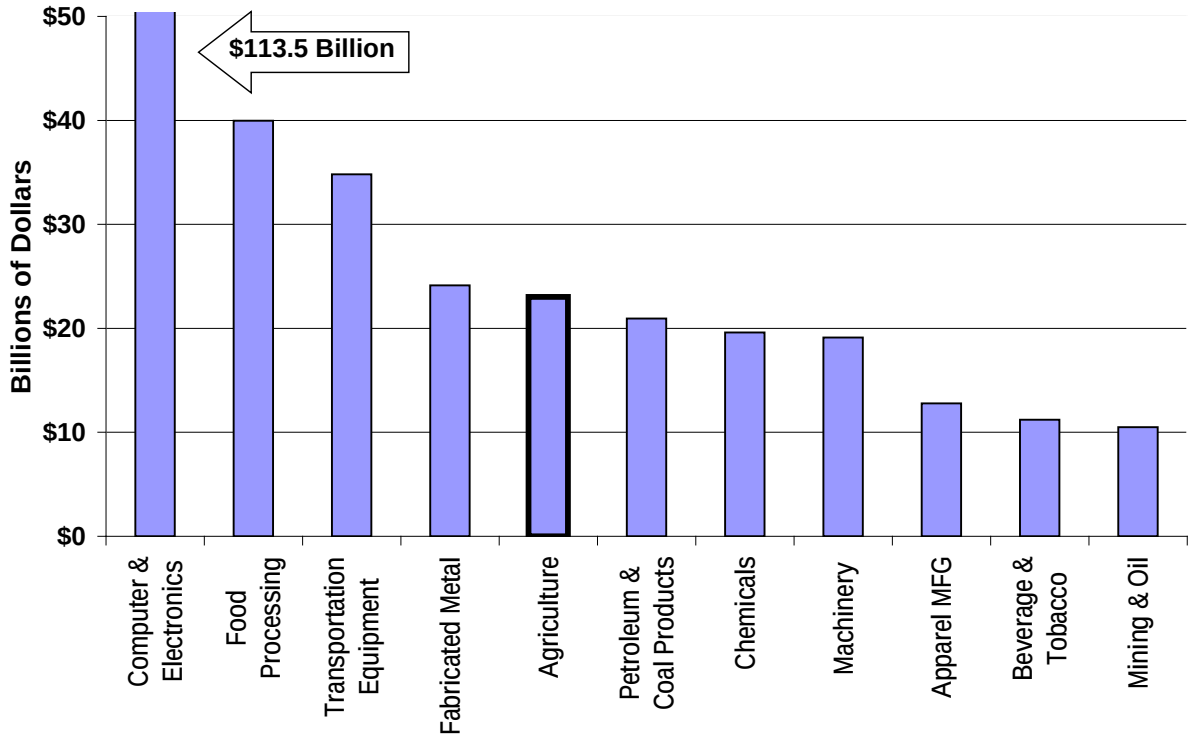
[3] California Department of Food and Agriculture , 2001
[4] *Marketing California's Agricultural Production*

Table 2 – Comparison of Top Three Agricultural States

California	Texas	Iowa
Land in Production: In 2001, California reported 88,000 farms, about 4% of the nation's total farms. The average farm size is approximately 315 acres.	In 1998, there were approximately 205,000 farms and ranches in Texas. The average farm size was approximately 400 acres.	Iowa is the number one state in its use of land for agriculture, 26 million rural crop acres. In1999, there were 97,000 farms and ranches. The average farm size was approximately 340 acres.
Source: *Agriculture Statistical Review*. USDA, California Agricultural Statistics Service. 2001. *Environmental Working Group: Farm Subsidy Database.		

While California has a number of growing industrial sectors, agriculture still places within the top five industrial sectors in terms of direct sales, and if food processing were counted as a part of the agricultural sector, it would be ranked second only to the computer and electronics sector in terms of its direct contribution to the Californian economy. Chart 2 shows data from the 1997 economic census, but it is anticipated that the 2002 census will show an even greater role of agriculture, since sales and exports have grown despite the recent national recession that has negatively affected other industrial sectors.

Chart 2 – California Agricultural Sales Compared to Top Industrial Sectors, 1997



Source: US Census Bureau & USDA.

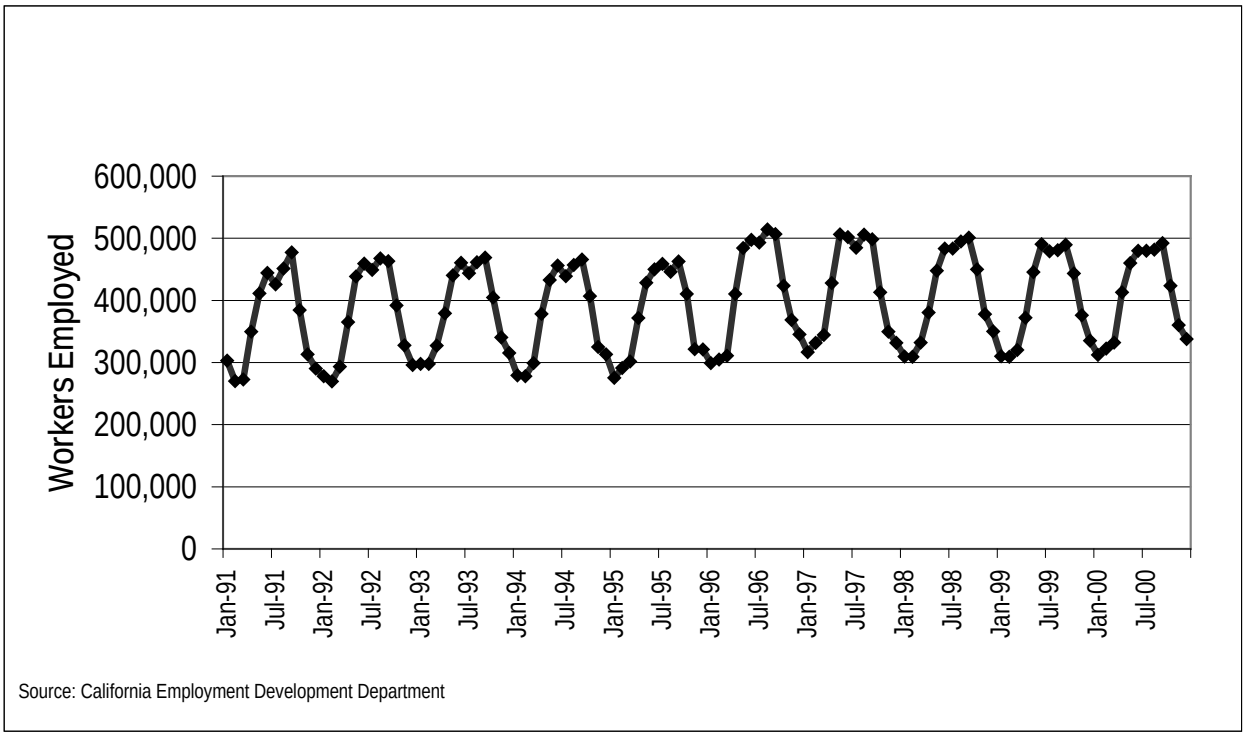
B. Labor

Including both direct and indirect sources of employment, agriculture accounts for over 7% of employment in the state and 25% of employment in the Central Valley.[5] Though the number of workers may fluctuate due to seasonal employment California's agriculture is, in fact, an important and growing source of work, partly because of California's emphasis on labor intensive products such as vegetables and other specialty crops.[6]

Agriculture contributes to the creation of value-added (need definition) products, jobs and services, including manufacturing, transportation, health care, printing, education, and construction. As California's agricultural industry adapts to a global economy, opportunity for a more highly skilled workforce exists. Jobs relating to agricultural exports are in high demand with every $1 billion in exports creating 27,000 jobs.

Many employees are permanent residents who work only on farms and ranches in the areas surrounding their homes. Others are seasonal workers who travel throughout California and the United States following the harvest. While official figures, such as those in Chart 3, tend to undercount agricultural workers due to its seasonal nature and because some workers are undocumented, they accurately reflect annual fluctuations in the agricultural labor market. It is estimated that nearly 800,000 farm laborers are employed at the peak of the late summer harvest,[7] and a recent report by the California Employment Development Department shows that the number of workers who earn at least some income from agriculture over the course of the year is 1.1 million.[8]

Chart 3 – Annual Fluctuation in Registered Agricultural Employment, 1991-2000



Source: California Employment Development Department

[5] University of California Agricultural Issues Center, 2000,
[6] "Farmworkers in California." California Research Bureau, California State Library. 1998.
[7] California Department of Food and Agriculture, 2001
[8] Khan, Martin & Hardiman, 2003.

Farm workers tend to have a lower income than other workers, and in California it is often a stepping stone for immigrant groups. People from China, Japan, the Philippines, Italy, Mexico, and many other countries have helped expand the value of the fields of California to their present level of productivity, with their children often moving into better paying jobs in the economy. This continues today, as many farmworkers are recent immigrants from Latin America: 78% of farmworkers are of Latino/Hispanic origin, and 68% are non-citizens.[9]

In the United States as a whole, a U.S. Department of Labor survey found that average hourly wages for crop workers was $6.18 compared to $12.78 in the private non-farm sector.[10] In addition, fringe benefits are usually minimal or non-existent for temporary and migratory workers. In California, median annual earnings for farmworkers were only $9,828 in 1997 and for families it was $17,700. In many cases, this included income earned from other sources during periods of agricultural unemployment. Thirty-eight percent of farmworkers are below the poverty line. An additional problem facing agricultural workers is the difficulty getting to work, since many lack automobiles and undocumented immigrants until recently had been unable to obtain drivers licenses since 1994 which often forced them to drive without insurance and with little incentive to learn the rules of the road.[11] The recent passage of SB 60 restored this ability.

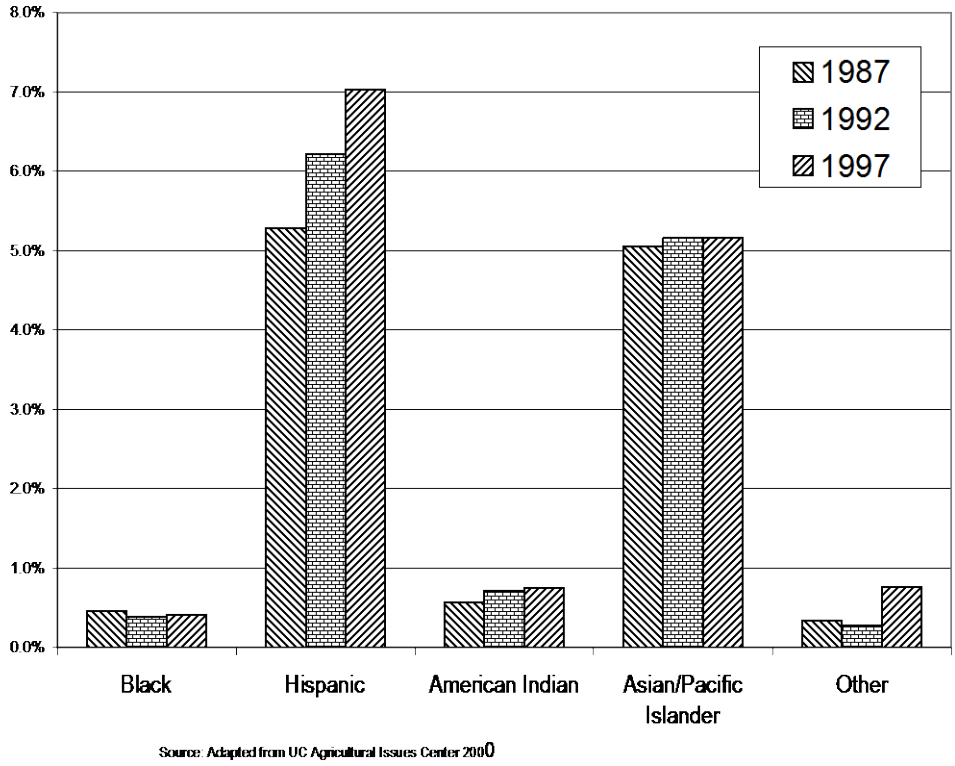
C. California's Agricultural Diversity: Land and People

One of the fundamental strengths of California's agriculture is its product diversity, based on the diversity of the farms and farmers themselves. Roughly 27 to 28 million acres of land are used for some kind of agriculture in California, but only 4-5 million acres are considered "prime farmland".[12] While this is only 3% of the nation's agricultural land, it produces 13% of the nation's farm receipts and exports. A large part of this success is due to the climate, access to water, and the wide variety of soils in California that allow the production of almost any crop.

But it is also the variety of farmers themselves that make a difference. The number of female farm operators is higher in California than in the U.S. as a whole, and has increased from 7.6% to 13.6% between 1978 and 1997. The ethnic makeup of the farm owners is also more diverse than the U.S. as a whole; of those reporting their ethnicity on census forms, only 4.1% identified themselves as minorities in the U.S. as a whole, while 14.1% of California farmers were minorities. The main difference lies in the large number of Asian/Pacific Islander and Hispanic farm owners in California, largely a product of the historical importance of these two groups to farming in California. Indeed, the number of Hispanic farmers increased from 5% of the total to 7% between 1987 and 1997. See Chart 4.

[9] Bulgarin and Lopez 1998.
[10] U.S. Department of Labor 2000.
[11] California DOT, 2003.
[12] California Farmland Mapping and Monitoring Program

Chart 4 – Ethnic Minority Farm Owners as a Percentage of California Farmers Reporting Ethnicity



Source: Adapted from UC Agricultural Issues Center 2000

There is also a broad diversity of farm sizes in California, with a large number of small farms servicing niche markets and local areas, but with most of the production value produced on large farms. Average farm size has dropped from a peak of about 500 in the early 1970s to 315 today.[13] In terms of farm income, in 1997 most farms earned less than $20,000, and together these farms are responsible for less than 1% of the total production value. On the other hand, the 7% of farms with the largest incomes produce almost 85% of the total farm income, a large increase over 1987 at the expense of both low and medium income farms.

Table 3 compares farm size and production rates for the states of California, Iowa, and Texas in the years 1997 and 1987. In both years, Texas had the most value of production for small farms as a whole, while in Iowa the medium-income sector actually produces the highest total income.

[13] California Farm Bureau Association

Table 3 – Farm Income for California, Iowa and Texas by Income Level, 1987-1997

	Farm Income	# of Farms 1987	# of Farms 1997	% of Farms 1987	% of Farms 1997	% Total Income 1987	% Total Income 1997
California	Low <$20K	48,595	39,016	58.4	52.7	1.5	0.8
	Medium $20-500K	28,981	27,206	34.9	36.6	24.3	14.9
	Large >$500K	5,641	7,904	6.8	10.7	74.1	84.3
Iowa	Low <$20K	34,976	31,029	33.3	34.2	3.0	1.5
	Medium $20-500K	68,574	55,830	65.2	61.5	78.6	62.4
	Large >$500K	1,630	3,933	1.6	4.3	18.4	36.2
Texas	Low <$20K	142,698	151,391	75.5	77.9	6.7	5.1
	Medium $20-500K	43,948	39,106	23.3	20.2	40.4	29.9
	Large >$500K	2,142	3,804	1.1	2.0	52.8	65.0

Source: California Agricultural Statistics Service

One of the challenges facing California agriculture is the encroachment by urban land use onto prime agricultural land. Between 1990 and 2000, over 200,000 acres were lost to urbanization in the top 10 agricultural counties alone — about 4% of the amount of prime farmland in the state. While increases in agricultural productivity have made up for these losses so far, increasing urbanization will eventually erode the earning power of the agricultural sector.

D. Environmental Benefits of Agriculture and Challenges in Identifying Fair Value

California's rural landscape also provides many other public and environmental benefits including water management, wildlife habitat, scenic open space, energy products, carbon offsets, recreation and flood protection. The difficulty of quantifying the tangential economic values of agriculture has led to one of the greatest challenges to maintaining California's agricultural economy — how to keep California's agricultural economy viable so farmers will not sell their land.

California is home to many rare and disappearing species of plants and animals. The list of threatened, rare or endangered animals has increased by 160% since 1987, and listed endangered plants have increased 338%. Agricultural land — though intensively worked — provides a range of habitat for raptors, egrets, stilts, migrating ducks and birds, and mammals in fields, field hedgerows, ponds, and maintained riparian corridors. In addition, agricultural lands can provide other beneficial protections listed below.

- Water Management: Agricultural water can be temporarily transferred to meet environmental needs while providing flexibility for water management in California.

- Flood protection and groundwater recharge: Agricultural lands absorb rainfall and temporarily retain surface runoff, reducing peak storm flow and minimizing flood potential. As some agricultural

lands absorb surface water they recharge aquifers that rely on the infiltration of rainwater and snowmelt.

- Scenic Open Space: Local governments rely on surrounding agricultural land for the provision and conservation of open space for its aesthetics, increased urban property values, green relief from the urban setting, and as an urban separator.

- Renewable Energy: Agricultural land can support energy diversity, sustainability, employment and greater energy self-sufficiency through generation of biofuels from an array of agriculture products, providing growers added income to keep their lands in production.

- Climate change: Conserving agricultural lands can potentially reduce harmful carbon dioxide that contributes to Global climate change because plants absorb excess carbon dioxide and deposit it into the soil as organic matter.

- Recreation: Agricultural lands provide hunting and recreational opportunities for urban residents and alternative income for growers engaged in agri-tourism while restoring habitat, educating urbanites about agriculture, and improving the viability of farming and ranching.

E. Food Processing

The California Food processing industry, which relies almost exclusively on California agriculture, is the second largest employer within the California manufacturing sector, as can be seen in Table 4. Indeed, while other industrial sectors have declined over the last decade, food processing has retained its employment levels.

Table 4 – Employment Statistics

Ranking in 2002	Industry	California Jobs		
		1992	1997	2002
1	Computers & Electronic Equipment	404,400	425,600	361,200
2	Food & Beverage Processing	193,500	190,600	190,500
3	Transportation Equipment	228,900	161,200	138,100
4	Apparel	120,800	134,000	96,000
5	Machinery Mfg.	91,500	104,800	93,000

Source: Employment Development Department 2002 www.calmis.ca.gov/file/indhist/cal$haw.xls

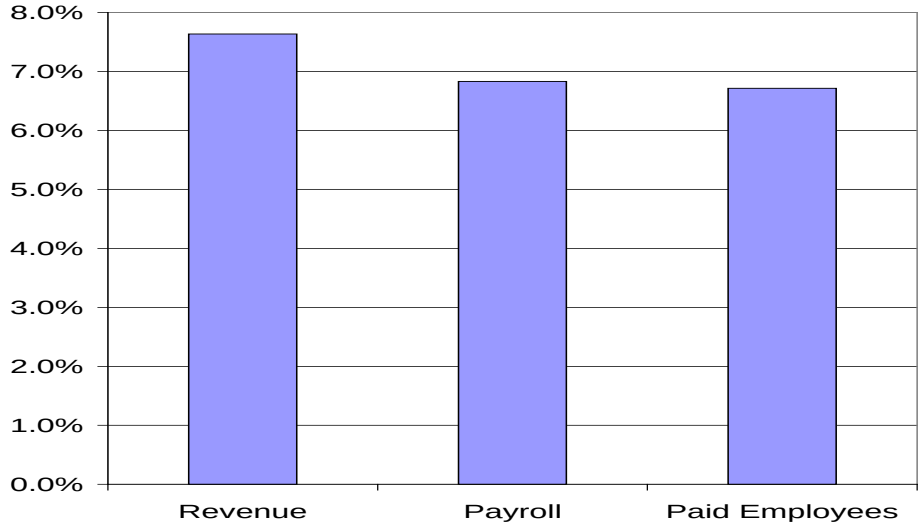
From preparing food for animals to manufacturing food and beverages for human consumption, the food processing industry builds on the agricultural products grown in the state, adding value to both domestic consumption and export products. The most important activity is preserved fruits and vegetables, including dehydration, canning and freezing. Although some crops and commodities from the Central Valley are processed in the area, the majority of processing businesses are located outside rural agriculture areas. Only 12% of the businesses, 27% of the employees, and 6% of the sales are in the Central Valley.[2] However, since most agricultural products are best processed while fresh, most of the processing still takes place within the state.

F. Transportation

Trucking

Because California's agriculture emphasizes highly perishable vegetables rather than durable staples, the majority of agricultural products in California reach their markets on truck — 91.85% of agricultural goods shipped within California and almost 93% of those shipped outside of California. The California trucking industry, not including warehousing and storage, employed a total of 103,675 paid employees with a direct annual payroll of $3.1 billion in 1997. Approximately 7% of this was dedicated exclusively to agriculture, but the actual contribution of agriculture is about double this number since other trucks are used during key periods and for processed foods. Chart 5 depicts the agriculture dedicated trucking as percentage of total California trucking in 1997.

Chart 5 – Agriculture Dedicated Trucking as a Percentage of Total California Trucking, 1997



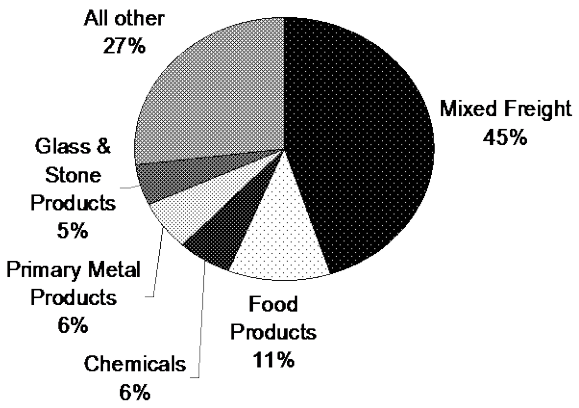
Source: U.S. Census Bureau, 1997 Economic Census.

Rail

California has 32 freight railroads with 7,600 miles of track. Rail is ideal for products that are less time-sensitive, and for longer trips it may be more cost-efficient than trucks. The types of grains that are best suited for rail travel are not a large proportion of California's agriculture.

Rail can also be used for processed foods, and in 2001 about 11% of rail freight originating in California consisted of food products, making it the second largest category of shipments. There are 9,560 freight rail employees in California with a total freight payroll of $573 million. See Chart 6.

Chart 6 – Commodities Transported by Rail Originating in California, 2001

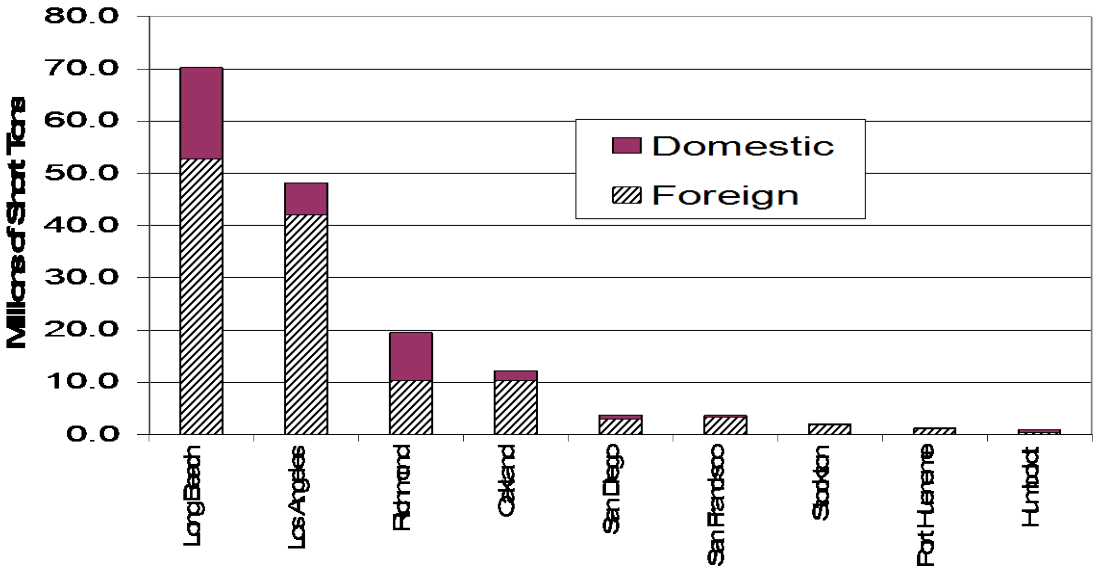


Source: American Association of Railroads

Water Freight and Ports

Shipping of agricultural products is a vital part of California's export sector. California's location on the Pacific Coast has made the state a major center for handling foreign trade. According to the Valley International Trade Association (VITA), California's three custom districts (Los Angeles, San Francisco, and San Diego) totaled $392 billion in 2000, 19.6% of total U.S. trade. The San Pedro Bay ports (Los Angeles and Long Beach) comprise the largest port complex in the U.S. and the third largest in the world. They support more than $170 billion in two-way trade annually, and directly or indirectly support more than 500,000 jobs. Nine California ports are among the top 150 U.S. ports, with a combined total of 161 million short tons of merchandise, mostly exports. Chart 7 illustrates these foreign and domestic shipments by Port in the year 2000.

Chart 7 – Total Foreign and Domestic Shipments by Port, 2000



Source: U.S. Army Corp of Engineers, 2001

Centralized, large, deepwater port complexes are required for economies of scale. California's port and harbor system include large deepwater port complexes on the San Francisco Bay and the Los Angeles/Long Beach Harbor, which contain massive terminals for the latest generations of post-Panamax container ships and large bulk carriers. Below, Table 5 describes agricultural exports by major ports in 2002.

Table 5 – Agricultural Exports by Major Ports, 2002

Ports	Total of All Exports	Agricultural Exports	% Ag	Top Agricultural Commodities
Sacramento	$78,518,110	$42,955,772	55%	Cereals, Vegetables, Fruits and Animals
Los Angeles	$15,703,823,127	$28,631,152	0.01%	Meats, Vegetables and Fruits
Stockton	$117,639,407	$92,213,560	78%	Cereals, Vegetables, Fruits and Animal Feed
Long Beach	$14,777,372,692	$3,504,625,793	24%	Meat, Vegetables, Fruits and Animals Feed
Port Hueneme	$104,651,643	$49,598,644	47%	Vegetables and Fruits
San Diego	$137,743,499	$118,957	0.01%	Meats Vegetables, fruits and Dairy Products
Oakland	$10,639,771,355	$3,294,047	0.01%	Meat, Vegetables, Fruits and Animals Feed

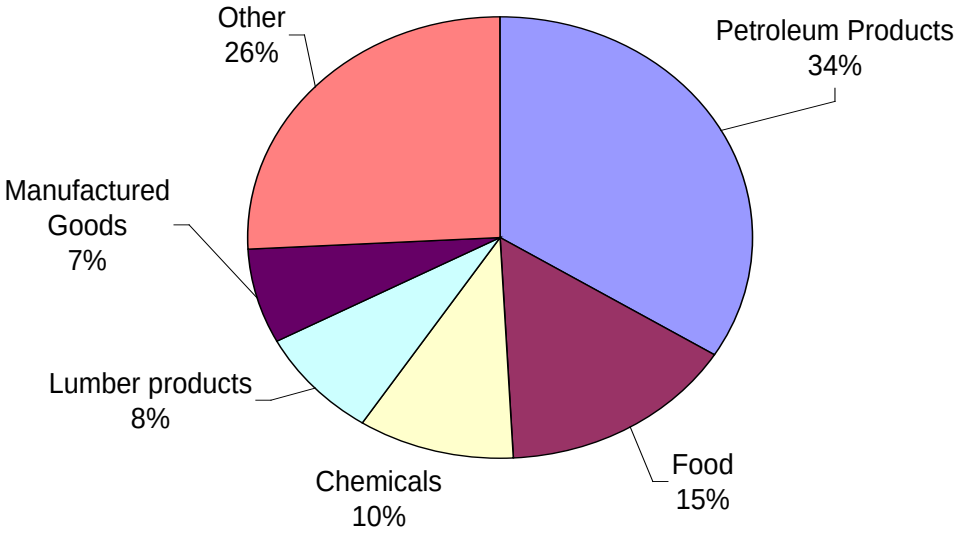
Source: Massachusetts Institute of Economic and Social Research

Decentralized, small deepwater ports are required for collection and distribution of agricultural cargo. California's port and harbor system includes seven small and medium-sized deep draft harbors on the state's coast, rivers, and bays, from which significant exports originate. Harbor commissions of smaller ports are exploring water-based methods of transporting larger quantities of products to major

containerized ports by using barges. Some believe that this would diminish costs to growers, increase the amount of products transported, and remove a percentage of trucks from the state's crowded motorways.

By weight, food products are the second largest group of products shipped through these ports, including both raw agricultural products and processed food. As shown below in Chart 8, only petroleum products account for a larger volume of waterborne shipments originating in California in 2001.

Chart 8 – Foreign and Domestic Waterborne Shipments Originating in California by Commodity, 2001



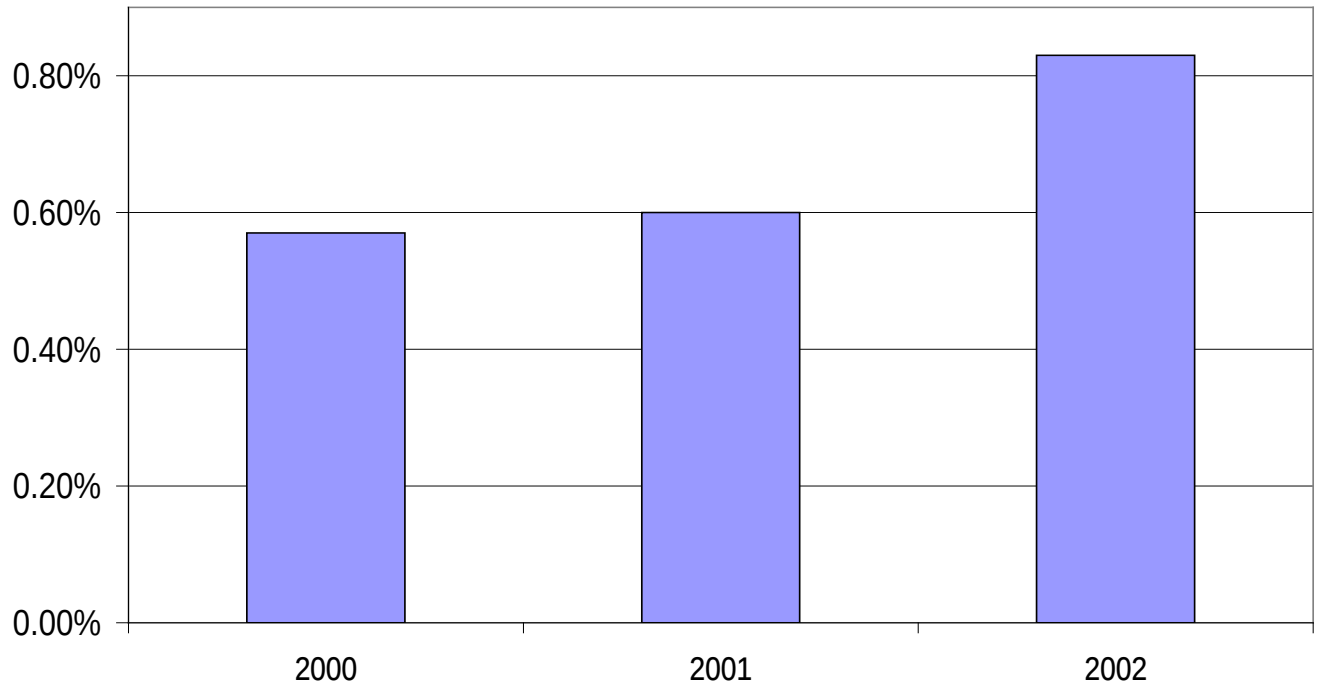
Source: Bureau of Transportation Statistics

Air Freight

Goods that have high value-to-weight ratios and that are particularly time-sensitive are best shipped by air. In fact, the amount of air freight exports has increased 170% to $88 billion between 1990 and 2000, making up 59.3% of the total value of California exports in that latter year.[14] The main air-shipped commodities are electronics and machine parts, but many of California's high-value specialty crops are also being shipped by air, such as strawberries, of which 12% are air-shipped,[15] and cut flowers, of which about 1/3 are sent by air.[16] To date, this still accounts for less than 1% of total exports by air, but the percentage has been growing as California agriculture has been less affected by the slowdown in the national economy than other sectors. This is an important source of growth for the future of California's agriculture as it adapts its specialized crops for niche markets in other states and countries. See Chart 9.

[14] "Business without Borders" Howard Shatz
[15] California Strawberry Commission (www.calstrawberry.com)
[16] California Cut Flower Commission (http://ccfc.org/editorsroom/newsstories/factsheet.html)

Chart 9 – California Food and Agricultural Exports by Air as a Percentage of Total Air Exports, 2000-2002



Source: Economic Census Transportation

G. Retail Markets for California Agricultural Goods

Because of its amazing diversity and large output, California is in a unique position of power in its sale of products. California holds a virtual monopoly on crops such as almonds, lemons, olives, lettuce, prunes, processing tomatoes, and walnuts, and with a wide variety of other crops California products can be easily packaged together for sale to retailers.

Consumption

Whether it is due to heightened health consciousness or simply due to the wider variety of agricultural products in our supermarkets, the per capita consumption of fruits and vegetables in both fresh and processed form has increased 17% since 1975, reaching 688 pounds in 1995. Vegetable consumption grew faster than fruit, partly due to the growth of the fast food industry with the usage of processed tomatoes, primarily for pizza, and processed potatoes used for French fries.[17]

In April of 2000, per capita fruit consumption reached a record 298 pounds, including 120 pounds of citrus. However, much of the fruit was consumed as juice. In general, only 24 pounds of the citrus consumed was fresh. Bananas were the most popular fresh fruit – 29 pounds were consumed in 2000, followed by fresh

[17] Cook et al 1997, p. 129

apples – 18%; fresh oranges – 12 pounds; fresh peaches – 7 pounds; fresh grapes – 6 pounds; and fresh strawberries – 3 pounds. Americans consumed an average 2.5 pounds of dried fruit, including 1.6 pounds of raisins.[18]

How Produce Reaches its Consumer

Both processed and fresh products reach consumers through the same final types of marketing outlets. The three primary sales outlets to consumers are: (1) retail food stores; (2) food service establishments, hotels restaurants, and institutions (schools, the military, hospitals, nursing homes, shelters, and prisons); and (3) direct farmer to consumer sales via you-pick operations, farmers' markets, and roadside stands.[19]

Breakdown of the Retail Food Dollar

Table 6 examines the breakdown of the retail food dollar by major marketing function for lettuce, fresh oranges, and frozen orange juice. The table illustrates the importance of retailing as a cost in the food chain. For example, over half of lettuce costs are due to retailing. Although produce commodities are generally bulky and perishable, and hence, expensive to transport, the table shows that inter-city transportation costs account for a relatively small percentage of the food dollar in comparison to retail costs.[20]

Table 6 – Percentage Share of Retail Value by Market Function for Selected California Commodities, 1991

Commodity	Farm	Processing	Inter-city Transport	Wholesale	Retail
Lettuce	14.2	11.9	9.5	0.8	56.6
Fresh Oranges	37.7	8.1	6.7	14.8	32.7
Orange Juice	38.5	18.6	3.0	14.4	25.5

Source: Cook et al 1997

Table 7 displays the decline of farm value of the consumer basket from 1980 to 1994. In 1980 farm income accounted for more than 50% of the retail value for animal products such as meat, dairy, poultry, and eggs. However, from 1980 to 1994, those shares fell to 36%.

The farm share for fruits and vegetables tends to be much lower than those of animal products and does not differ much between fresh and processed fruits and vegetables,[21] but in all cases there was a substantial decline. This means that farms have to produce more to acquire the same amount of income, or shift to more lucrative crops. California's agriculture does both by emphasizing dairy, fruits, and vegetables rather than cereal crops, which have the lowest farm shares.

[18] "California's Fruits and Vegetables". Rural Migration News; April 2000; Volume 6, Number 2.
[19] Cook et al 1997, p. 138
[20] Cook et al 1997, p. 128
[21] Food Cost Review, 1995, Agricultural Economic Report No. 729, U.S. Department of Agriculture, Economic Research Service, April 1996

Table 7 – Farm Share of Retail Value for Major Agricultural Commodities 1980-1994

Product	1980	1990	1994
Meat Products	51	46	36
Dairy Products	52	39	34
Poultry	54	44	43
Eggs	64	56	47
Cereal and Bakery Products	14	8	8
Fresh Fruit	26	23	18
Fresh Vegetables	27	28	23
Processed Fruit & Vegetables	23	26	20

Source: Cook et al 1997

Role of Important Buyers

There are integrated wholesaler-retailer operations that are in control of large volume, centralized buying operations. These wholesale-retailers make it more efficient to buy directly from the growers, bypassing the wholesaler and avoiding middlemen and handling costs.

The integrated wholesaler-retailers can afford to demand more services from their suppliers than they did before. Some of the new services demanded are: (1) information on product attributes, recipes, and merchandising; (2) ripening and other special handling and packaging; and (3) year-round availability of a wide line of consistent quality fruits and vegetables. Growers and shippers have responded with improved communication programs and by servicing multiple regions and commodities.[22]

In certain industries one can find a dominant marketing cooperative that controls 50% or more of the California market volume. Some examples include Sunkist (citrus), Sunsweet (prunes), Sunmaid (raisins), Blue Diamond (almonds), and Diamond of California (walnuts). Sunkist is the largest of California's marketing cooperatives and generates a billion dollars or more in gross revenue annually. Blue Diamond oversees nearly 4,000 growers and markets their products to all 50 states and over 90 foreign countries.[23]

According to UC Davis' Center for Cooperatives, there are 186 agricultural and fishery cooperatives in California, with a membership of 50,000 and revenues of almost $8 billion in 1997. These cooperatives "help producers assure markets and supplies, achieve economies of scale, and gain market power through jointly marketing, bargaining, processing, and purchasing supplies and services."[24]

In addition, State marketing boards and commissions, many of which are working together in the "California Grown" initiative, help create name-brand identification, often identified with California, such as the "California Raisins" ads and the current "Happy Cows" series by the Milk Advisory Board.

[22] Cook p. 123
[23] Blue Diamond Growers. www.bluediamondgrowers.com August 8, 2003.
[24] UC Davis Center for Cooperatives. http://ucdavis.coop/index.html.

H. Agriculture and Exports

California has been the nation's largest exporting state for many years, accounting for 16.6% of total U.S. exports in 2000.[25] In that year, total exports exceeded $120 billion in merchandise goods, supporting 420,000 new jobs. Unfortunately in 2002 California exports fell to only $92 billion, breaking a six year run of over $100 billion of total exports. Even though the export industry as a whole has declined, however, agricultural exports have been steadily increasing, particularly for high-value products.[26] See Table 8.

Table 8 – Top Five California Export Industries in Billions of Dollars

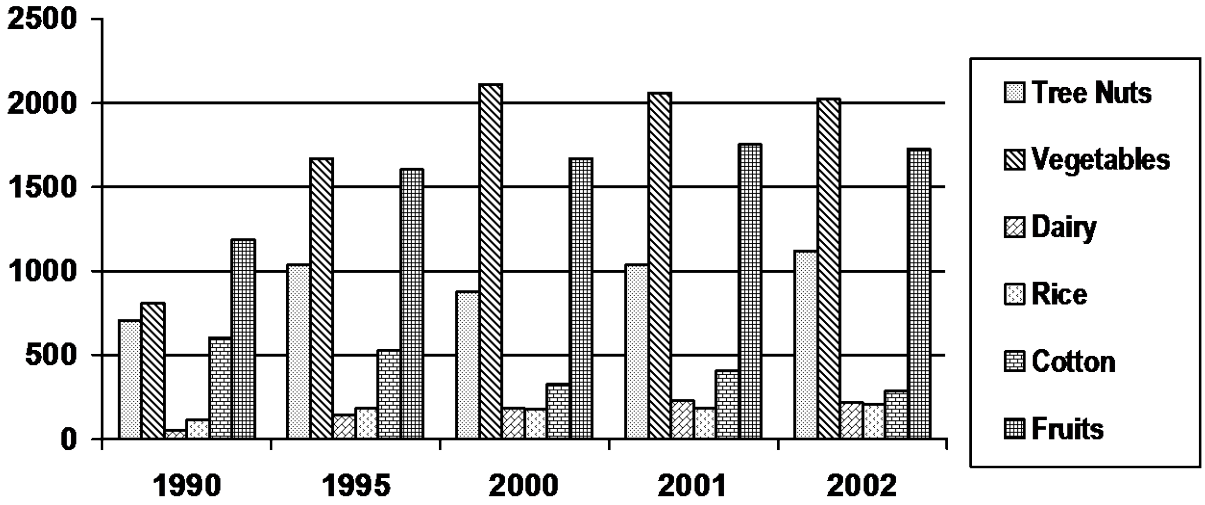
Industry	2000	2001	2002
Electrical Products	61.4	50.3	39.6
Machinery, non electrical	13.7	10.6	9.5
Transportation Equipment	8.1	8.4	7.1
Chemicals	4.1	5.1	5.4
Agricultural Crops	3.60	3.90	3.99

Source: Valley International Trade Association

During the past 6 years, 16% to 19% of California's agricultural products were exported. Chart 10 displays the top five agricultural export commodity groups. As can be seen, vegetables are the most prominent products exported. On the following page, Chart 11 depicts the top specific commodities, with almonds as the lead export commodity in California.

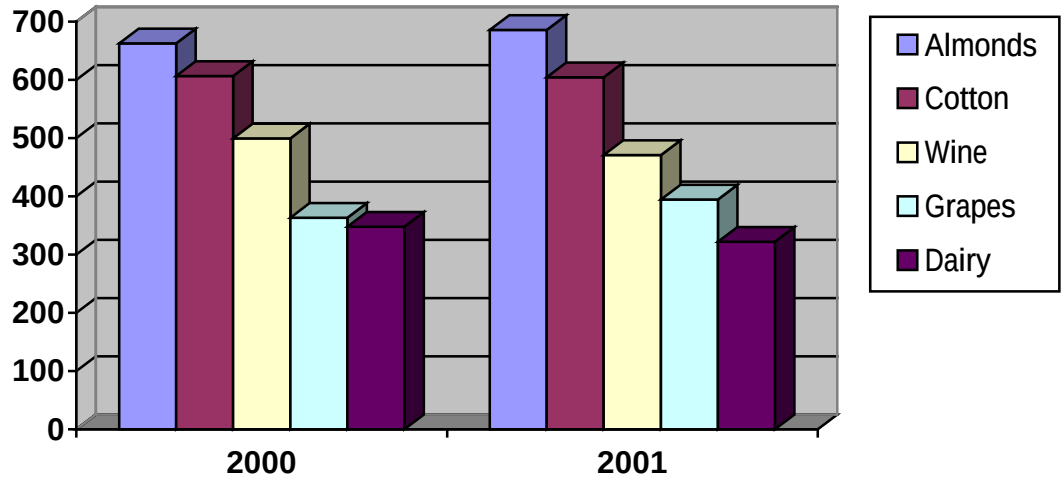
[25] California Technology Trade and Commerce Agency.
[26] U.S. Department of Transportation, 1999.

Chart 10 – Top Six Export Commodity Groups (in millions)



Source: USDA Economic Research Service

Chart 11 – Top Five Export Commodities

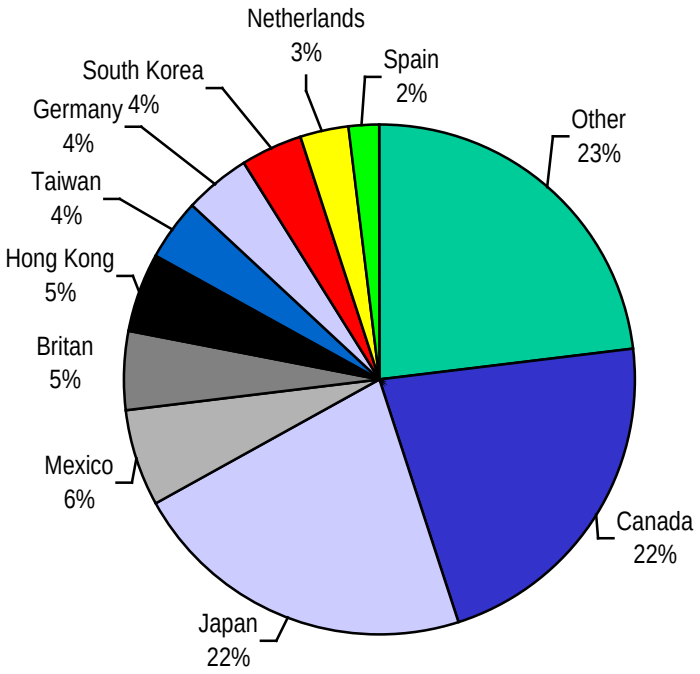


Source: USDA Economic Research Service

In 1999, Canada and Japan were the top two export destinations for California, each importing over $1 billion total and at least $2 million in each of 30 different commodities.[27] Together, they account for almost half of the total export value of California's agricultural products. Canada is the major export destination for California's vegetables, accounting in 1999 for over 70% of exports in each of the following: lettuce, fresh tomatoes, carrots, onions, melons and artichokes. European Union countries received about $960 million of agricultural exports from California. Chart 12 displays the top ten destinations for California exports in 1999.

[27] Agricultural Issues Center (AIC) Issues Brief on California's 1999 International Agricultural Exports, November 2000

Chart 12 – Agricultural Exports to the Top 10 Destinations by Value, 1999



Source: AIC Issues Brief: No.13, 2000 California's 1999 International Exports

Conclusion

California's diverse farming industry is a great asset to the nation's agriculture and economy. According to the University of California's AIC project, its economic impact provides 7.37% of the total jobs in the state either directly or indirectly, and in some areas, such as the San Joaquin Valley, up to 36.9% of the jobs are related to farming.

This impact starts on the farm, but then travels through the trucking and transportation industry to food processing, wholesale and retail sectors. California's agriculture keeps the state and the nation self-sufficient in food, and also provides a healthy source of export income.

California's agricultural bounty depends partly on its soil and climate, and partly on its prime location with access to export markets in Asia. But it is primarily dependent on the hard work and ingenuity of its people, from all parts of the globe, who have nurtured and adapted their particular cultural skills and tastes and combined them with those of others, so that California's agriculture is constantly innovating into new products and areas: always on the cusp of the future.

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