

# **ALAMEDA COUNTY FOODSHED REPORT**

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## **Introduction**

The *Alameda County Foodshed Report: Assessing a County's Food System*, provides an overview of important trends in the county's food system. It also highlights and analyzes trends that describe the development of a sustainable, local food system in this region. The purpose of the report is to provide information for residents, farmers, local businesses, nonprofits, government agencies and local policymakers who are interested in the future direction of the region's food and agricultural system.

Agriculture and food systems in the United States have changed dramatically over the past 50 years and Alameda County is no exception. Smaller, family farms have declined substantially with larger, more industrial, vertically integrated operations now supplying food and other agricultural products to a global economy. Farms in regions that used to be characterized by diverse agricultural activities have now become specialized or have disappeared altogether. Most parts of the country are now dependent on imported foods with little or no locally produced foods in commercial channels.

To respond to these global food trends, a diverse array of community-based organizations as well as regional and national groups have begun to revitalize local or regional food systems through greater interactions among local farmers, ranchers, retailers, processors and consumers. These efforts are small in scope, however, and continue to occur within the context of large-scale, regionally concentrated agricultural producers and national and multinational food processors and distributors. Nevertheless, local and regional food system efforts are beginning to become more visible.

This report is an attempt to highlight the local and regional trends and local food system efforts in Alameda County. It is part of an initial set of foodshed assessments being conducted in 3 counties in California—Alameda, Placer and Stanislaus. The California work is part of a national study, “Consumers, Commodities and Communities: Local Food Systems in a Globalizing Environment (NE-185)” in which a partnership of 18 land grant universities throughout the country are collaborating to study local food production, distribution and consumption in a globalizing economy. Participating states each agreed to study regional food systems in three counties in their states—an urban county, an urbanizing county and a rural county so they could be compared and contrasted.

## **California Foodshed Studies**

The California research team, based at the UC Sustainable Agriculture Research and Education Program, made an early decision to focus on collecting as much quantitative data as possible about each county's food system through the use of *indicators*, or quantitative measures of system behavior taken over a period of time. The indicators provide information about food and agricultural system trends in nine areas—demographics, environment, agricultural resource base, food distribution network, economic productivity, food system wages and employment, food consumption, food security/food access and food/agriculture education. The indicators are supplemented through interviews of key food system stakeholders. These key informant interviews help us understand the trends and the forces affecting the food system. A separate section outlines key food and agricultural policies and initiatives that have had the most significant impact on local agriculture. This report also describes briefly a number of food and agricultural system organizations, initiatives and networks that have worked to create alternative production and marketing channels for local foods.

### **What are indicators?**

Indicators are quantitative measures or data that show changes in various aspects of a community's well being over time. For this project, we attempted to collect food system data that have the following characteristics:

1. They reflect fundamental aspects of long-term regional health or community well-being that can be related to food production, distribution, processing or consumption;
2. They are clear, understandable and acceptable;
3. The data has been consistently collected at regular intervals and is publicly available in published documents;
4. They can be interpreted locally, especially when combined with historical information specific to the area studied;
5. The data has been collected the same way for counties throughout the United States to facilitate comparisons between regions.

**How to use this report:**

This report can be used as a set of benchmarks for assessing past food system changes and suggesting future directions in critical areas. As such, the report can help community residents identify and monitor key issues and challenges to the sustainability of their food system.

This foodshed report can be used as a model for assessing the state of any other region's food system. It provides a broad set of food system data relevant for Alameda County; however, other counties may wish to add additional food system dimensions or indicators. Particular stakeholders within Alameda County may also wish to add additional indicators that enlighten the public dialogue about issues such as the future of farming in the region, farmland preservation, the food security of local residents, or the sustainability of the local economy.

We welcome your suggestions and will work with you to make this report most useful to you. For more information, please contact:

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## ALAMEDA COUNTY: AN OVERVIEW

Alameda County is located in the heart of the Bay Area, encompassing 738 square miles and is bordered by five counties. Residential Contra Costa County lies directly to the north, agricultural San Joaquin County to the east, San Mateo County and urban San Francisco County across the bay and the explosive growth area of Santa Clara County, the hub of Silicon Valley, to the south of Alameda County's border. The densely populated western bay front consists of 12 cities and two islands, with Albany and Berkeley in the most northern tip and Newark and Fremont in the southern area. Further inland along the I-580 corridor are the three rapidly growing cities of Dublin, Pleasanton and Livermore.

The topography of Alameda County varies greatly from west to east. Elevation ranges from sea level to 3,817 feet at Rose Peak in the southern part of the county. Hundreds of small creeks seasonally braid the foothills. Four reservoirs and three lakes cover 83 square miles for utility and recreational use. An extensively developed park system of nine state and regional parks and the eight mile long San Francisco Bay Wildlife Refuge make Alameda County unique for open-space preservation in the seventh most densely populated county in the state.

Forty-five percent of the land in eastern Alameda County is still largely untouched by development, although the risk of development is increasing annually. Preserving the greenbelt and large parcel ranches are some of the county's more prominent issues for the future security and preservation of farm and ranchland. Numerous alliances and civil groups are focusing efforts on creating strict urban growth boundaries and protecting the county's open spaces and vast ranchlands in order to maintain large minimum parcel sizes in rural areas. A handful of family farms still exist, many by making their way into the organic niche market, although nearly all food purchased and consumed within the county is imported from elsewhere.

**The county can be divided into two distinct economic and geographic regions.**

*Eastern Alameda County* located in the larger eastern portion of the county accounts for more than half of the county's total area. Interstate 580 leads through the rolling hills and valleys of Alameda County's interior made up of expansive rangeland and its last agricultural regions. Dublin, Pleasanton and Livermore, once quiet, rural farm towns surrounded by



thousands of acres of rangeland, orchards and tomato fields, now act as bedroom communities to the burgeoning bay front areas, San Jose and Silicon Valley. Hundreds of new housing developments with more commuting families than ever, eager to buy a family home, border Alameda County's only growing agricultural region, the wine country of Livermore Valley.

The *Bay Front Region* runs adjacent to the San Francisco Bay from north to south. All the major roads in the county, interstates 80, 680, 880, and highways 24, and 13, 238 and 84 are located in this densely populated region with over 1909 persons per square mile. (2000 Census data: SF Chronicle: March 30, 2001)

While growth in the most northern portions of the county has trudged along at a snail's pace, the southern bordering towns of Fremont, Newark and Union City have exploded with new money and faces. Some of the state's highest populations of Asian and Latino emigrants and immigrants are finding good jobs in high technology and more affordable housing along the 880 and 680 interstate corridors than in Silicon Valley. Local manufacturing industries are still thriving, but many in the southern region are making way for housing, thereby giving rise to a more diverse and colorful populace.

Although large-scale farming and animal husbandry in the western region is non-existent, most of the small-scale growers and organic farms are located near the bay front. Direct marketing through roadside stands, community supported agriculture and marketing to local restaurants and schools are new practices that are gaining attention and popularity. Even though these approaches cater to a wealthier, more conscientious populace, a locally based organization designed to promote county-grown agricultural products does not yet exist.

# DEMOGRAPHIC INDICATORS

## HIGHLIGHTS

### **Overview**

Alameda County's long term trend towards urbanization continues with the rapid growth of the cities of Dublin, Pleasanton, and Livermore. Growth in high-tech industries and the continuing attraction of the geographically and culturally diverse Bay Area fuel population growth. Alameda County remains ethnically diverse, with no single ethnic group holding a majority.

Alameda County's economic growth has resulted in increasing incomes and declining unemployment and poverty rates. However, pockets of persistent poverty endure in urban centers in the county where highly utilized local shelters and food banks indicate ongoing need for assistance.

### **Importance for the alternative/ sustainable food system**

Economic pressure to develop rural areas is very high and intensifying for the remaining high-quality agricultural land in the county, and most "local" produce available in the county actually comes from farms in neighboring counties. Yet the county's relatively high-income and ethnically diverse population, constantly growing, continues to provide an optimal market for locally produced farm products through farmers markets, subscription food services, local food markets, and restaurants. Further efforts are needed to link Alameda's consumer population to producers within the county.

## Population Growth

### The trend.

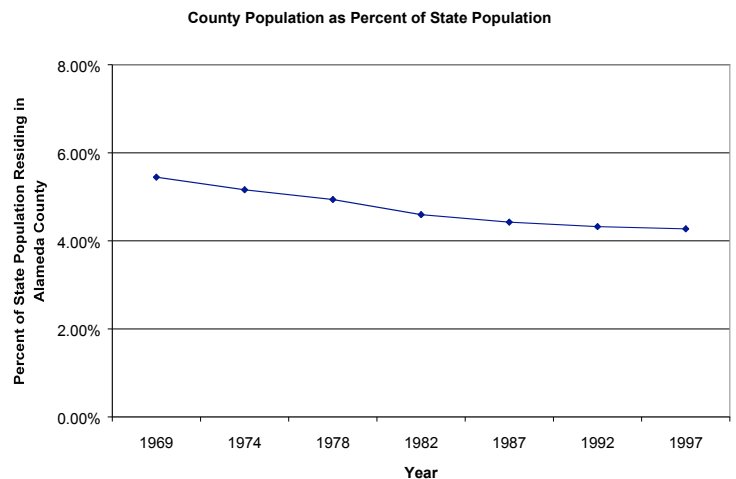
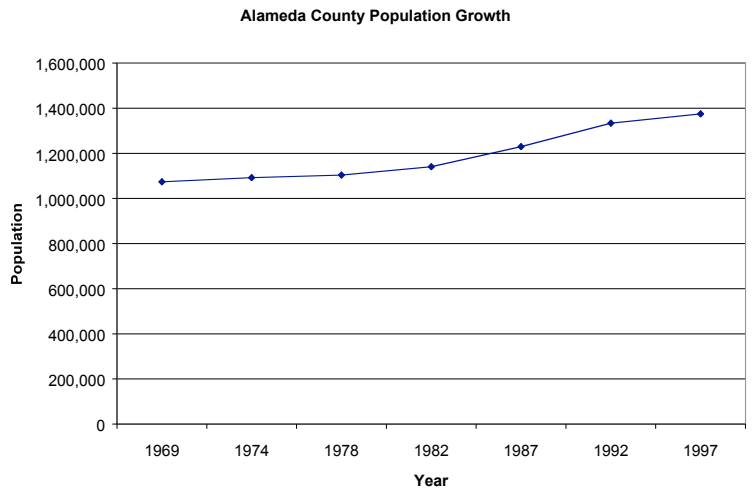
Alameda County, like California as a whole and the Bay Area specifically, is experiencing rapid population growth. The county's population has grown by 78 percent since 1970, and currently stands at nearly 1.4 million persons.

### Why is this trend occurring?

Much of this growth is being fueled by the rise of the internet and computer-related industries in the Bay Area. New residents are moving into Alameda County and the East Bay area to find lower costs of living and housing than those in neighboring San Francisco, San Jose and the Silicon Valley. Many new residents commute to work throughout the greater Bay Area from homes in Oakland, Dublin, Castro Valley, or any one of the many residential subdivisions found throughout the county.

### Why is this important?

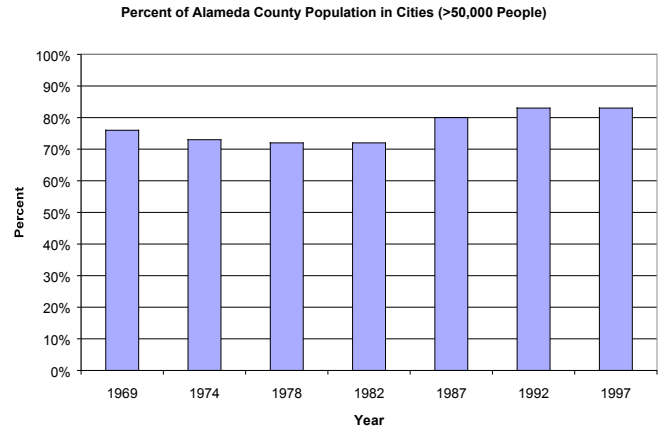
The growing demand for direct marketed, organic, and ethnic specialty produce is outpacing the supply provided by out-of-county growers, leaving ample opportunity for local growers (Henry Krusekopf, observations at farmers' markets; Feenstra and Lewis, California Agriculture 1999). This demand can be seen in increasing numbers of CSA (Community Supported Agriculture subscription food delivery services) shares purchased as well as new farmer's markets throughout the county, particularly in predominantly Hispanic and Asian communities. On the other hand, rapid growth threatens agriculture by increasing real estate values and creating other market pressures that favor development. The county could complement its existing agricultural land preservation efforts with an organized countywide program to encourage local marketing of agricultural products.



# Urban Population

## The trend.

The cities along the East Bay were once large urban centers on one end of an otherwise rural county. Today, the East Bay cities are a single contiguous large urban center surrounded by smaller urban centers. Formerly small towns such as Dublin, Pleasanton, and Livermore have recently grown tremendously. Dublin's population grew 63% between 1980 and 1990; Pleasanton's population grew 45% over the same period. At least 83% of Alameda County residents now live in cities of 50,000 or more, compared to 72% in 1970.



Population density in Alameda County now exceeds 1,900 persons per square mile.

## Why is this trend occurring?

Rapid economic growth in high-tech industries as well as the beauty and cultural diversity of the Bay Area continue to attract new people to the area. Outlying cities, such as Livermore and Castro Valley in Alameda County, serve as bedroom communities for Bay Area commuters and have grown from small towns to true cities in recent years.

## Why is this important?

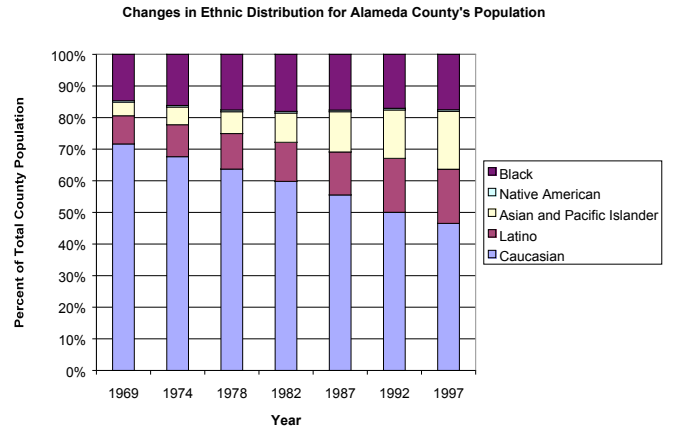
The county's urbanization trend impacts alternative and sustainable food systems in two ways. First, there is growth in the traditional urban centers of the county, primarily Oakland and Berkeley, where residents have been and continue to be exclusively consumers rather than producers of food. Ideally, high-density urban areas could become ideal locations for farmer's markets, provided they have common parks or other open spaces in which residents can gather together as a community. In poorer urban centers, such as East and West Oakland, market pricing may reflect the neighborhood economics, and it is critical that the market has a means for accepting and exchanging food coupons.

Secondly, since urban growth has reduced farmland area in the county, the trend is now towards greater food consumption and, consequently, a larger urban consumer market even in formerly rural areas. For local CSA farms and home delivery services, urban growth provides an expanding customer base willing to pay price premiums, but also increases the market value of real estate, making it more difficult to retain, lease, or purchase land for farming.

## Ethnic Distribution

### The trend.

Caucasians no longer represent a majority of California's population, but instead are now the state's largest minority ethnic group. In ethnically diverse Alameda County, the same pattern has emerged. The percentage of county residents classified as Caucasian has declined steadily since the late-1960s, and as of 1997 Caucasians made up less than 47% of the county's total population, decreasing to 40.9 percent in 2000.



Asians are the fastest growing segment of the population and are the second-largest minority group after Caucasians. Asians constituted nearly 18.5 percent of the population in 1997 and 20 percent in 2000, up from only 4.5 percent in 1970. The percentage of Latinos in the county's population has also grown significantly, from 9 percent in 1970-97, and reached 19 percent in 2000. The Latino population now exceeds the Black population by 4 percent. Blacks currently constitute 15 percent of the county's population. Total numbers of Blacks have remained largely unchanged for the past thirty years while Asian and Latino populations have continued to grow.

### Why is this trend occurring?

Although populations of all major ethnic groups in the county have grown, Latino, Asian and Pacific Islander populations have grown more rapidly than the Caucasian population leading to the observed shift in distribution. Trends in ethnic diversity result from the economic boom in the 1990's for the Asian population, specifically for people of Asian-Indian and Chinese ethnicities. Alameda county's growing high-tech industry base and close proximity to Bay Area employment centers have fueled population growth and resulting increases in demand for all forms of merchant businesses and services. As Asian and Latinos settle in Alameda County, many Blacks and Caucasians are migrating to nearby counties, such as Sacramento and Placer counties, or to other states for less expensive housing and a less hectic lifestyle. "The trend of non-Hispanic whites leaving the state ... is in line with a census Bureau 30-year population forecast showing California losing 4 million people to other states but gaining 8 million from other countries between 1995 and 2025." (SF Chronicle, "Census 2000, Who We Are" March 30, 2001)

### Why is this important?

For small and/or alternative farmers, the increase in Asian and Latino populations may represent the opening of new markets for specialty-type produce that is slowly being incorporated into nationwide or statewide conventional food production systems.

# Income and Employment

## The trend.

Income trends for Alameda County reflect the strong national and state economies. Alameda County incomes have increased faster than the county's population, resulting in higher per-capita incomes. County per capita income increased 49% between 1969 and 1997 and 30% since 1982. The average per-capita income in Alameda County was \$29,700 in 1997, the eighth highest of any county in the state. The growth rate of per capita income is now slowing. Total employment for the county nearly doubled between 1969 and 1997 with the highest rate of growth between 1982 and 1987.

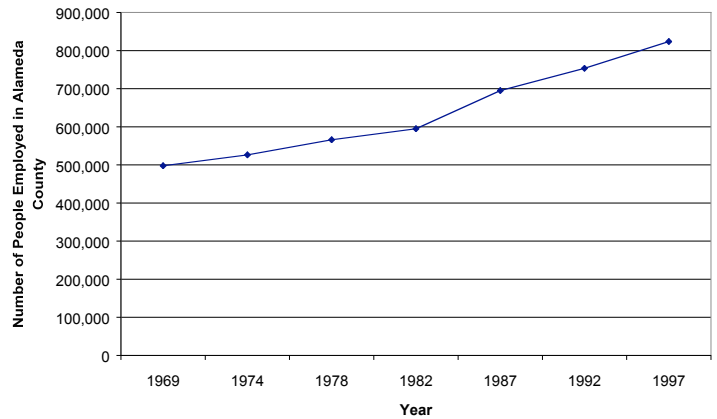
## Why is this trend occurring?

The increase in average per-capita income is due to the most favorable economic conditions seen in many decades and to the continuing growth of high-wage jobs in the high-tech sector of the Bay Area.

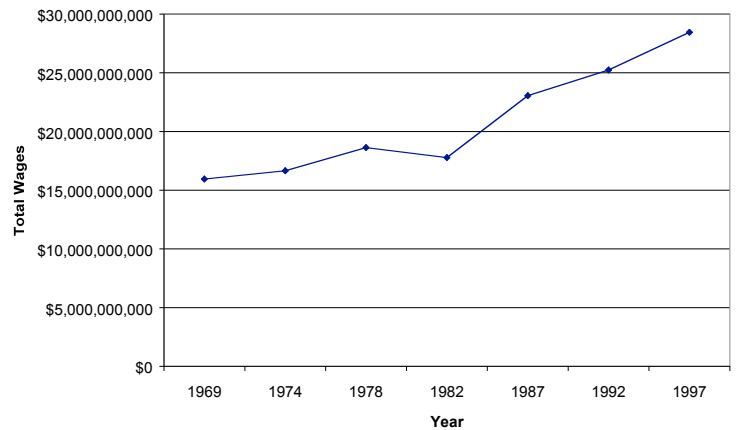
## Why is this important?

Many Alameda county residents, though employed out-of-county, bring their income home to Alameda, spending much of it on local goods and services. Larger personal and family food budgets could translate into increased purchases of more expensive local and organic food products and/or more frequent dining at restaurants. Continued growth in county per capita income may thus provide continued growth of the customer base for farmers' markets, CSA's, and other direct marketing activities.

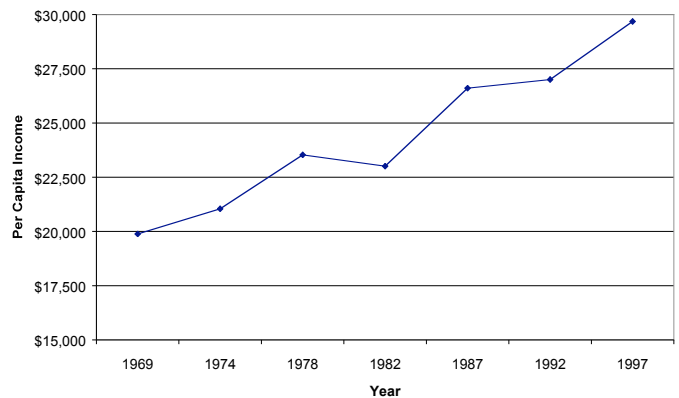
Changes in Total Employment for Alameda County



Trends in Total Earnings Earned in Alameda County (adjusted for inflation)



Changes in Alameda County Per Capita Annual Income (adjusted for inflation)



# Poverty

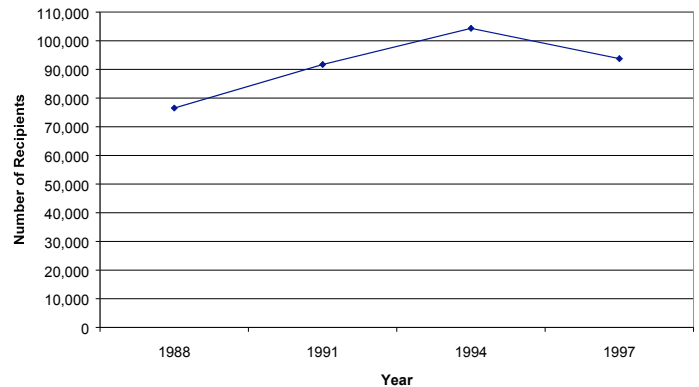
## The trend.

Percentages of the population on welfare rose in the late 1980's and early 90's but have now returned to near 1982 levels. Despite the county's overall population growth, the total number of welfare recipients in the county declined by over 10,000 people between 1992-97, after having increased the preceding six years. Numbers of families below poverty declined from 16.4% to 8.1% between 1950 and 1970 then remained fairly constant through 1990. The number of people below the poverty line declined slightly between 1970 and 1990. Civilian unemployment rate rose from a low of 4.6% in 1982 to 6.1% in 1992 then fell to 3.4% by 1999. It should be noted however, that in addition to a strong economy, poverty indicators may also be affected by national and state "welfare to work" policies enacted in recent years.

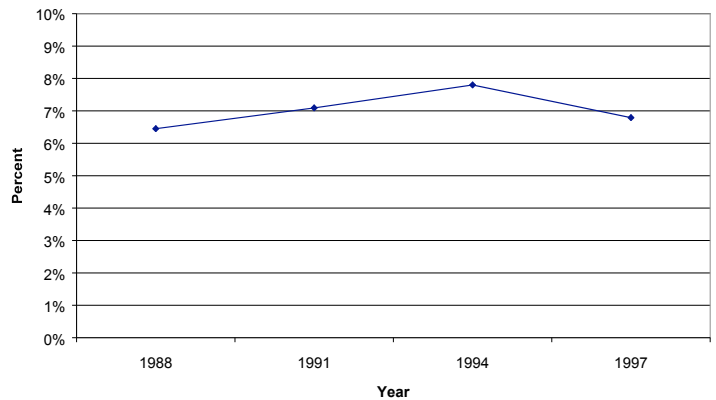
## Why is this trend occurring?

Growth in the high-tech industry sector and commuter populations drives growth in all types of service and support businesses locally. Resulting expansion in low wage job opportunities helps reduce welfare demand and poverty problems in general. The majority of the population is witnessing a dramatic increase in economic productivity and standard of living, but county-wide averaging of poverty data conceals pockets of persistent poverty. For example, certain areas of Oakland have not only retained their level of poverty and much lower per capita income than neighboring communities, but have become increasingly food "insecure" annually. Services such as WIC and

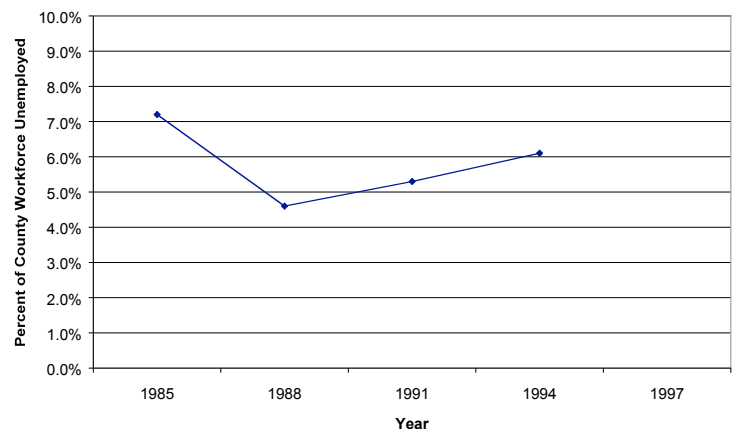
Poverty Trends: Changes in the Number of Welfare (AFDC/TANF) Recipients in Alameda County



Poverty Trends: Changes in the Percent of Alameda County's Population Receiving Welfare



Poverty Trends: Changes in Civilian Unemployment Rate in Alameda County

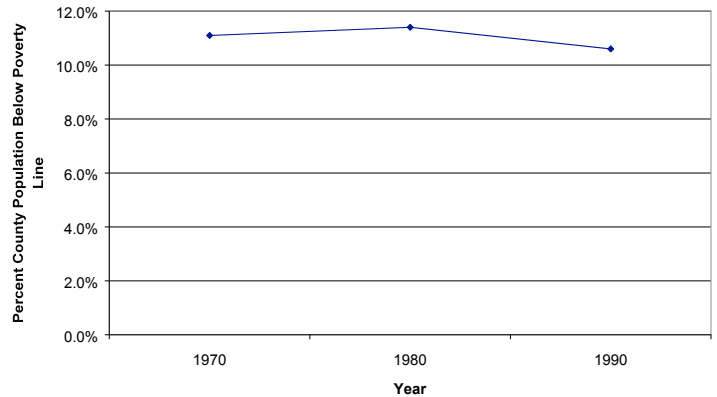


Food Stamp Programs are 60% underutilized and private or church-based charities and food banks are largely taking up the slack (Hunger Update, p.6 by California Food Policy Advocates, November 1999).

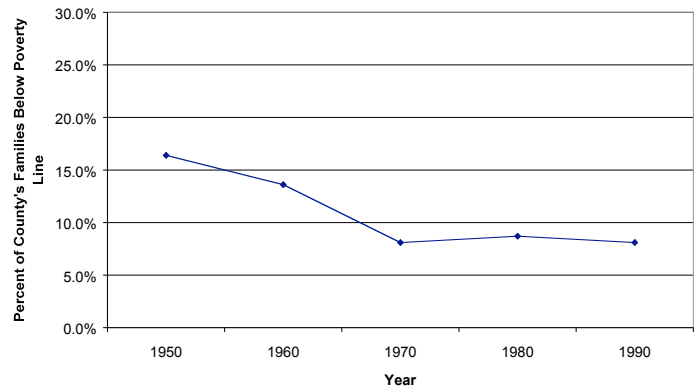
**Why is this important?**

The decline of poverty in the county may help sustain local agriculture by fueling growth of resident participation in farmer’s markets, CSA’s, and other forms of direct marketing. Persistent pockets of poverty continue to drive shifts in the balance among government support services, independent charitable support services, and low-cost food sellers. Programs to bring direct food marketing to poverty areas may be a good opportunity to both increase the quality of the diet for local residents and expand markets for local agricultural producers.

Poverty Trends: Changes in the Percent of Alameda County's Population Below the Poverty Line



Poverty Trends: Changes in the Percent of Alameda County's Families Below Poverty Line





# **AGRICULTURAL RESOURCE BASE INDICATORS**

## **HIGHLIGHTS**

### **Overview**

Alameda County's agricultural landscape has suffered a long term decline due to development that occurred before effective zoning laws and other incentives for agricultural land preservation were established. Farm numbers and acreage both declined, and much of the best farmland has already been converted to urban uses. Lack of developed water sources both protects extensive rangeland areas from conversion and works to prevent establishment of new farms in spite of the county's proximity to large and growing Bay Area markets for all types of farm products. Water use costs and legal and economic competition with municipal users lower existing farm profitability and encourage conversion. Strong zoning laws are now in place but may not be enough to prevent development once land values rise enough to make water infrastructure development affordable to developers. Organic specialty and high-value winegrape production offer promise for keeping high-quality farmland in production in the county, but even nearby Sonoma County must use public funding to purchase development rights to agricultural land to protect the county's premium winegrape growing land.

### **Importance for the alternative/sustainable food system**

Existing zoning laws and other agricultural land preservation efforts must be supplemented with more direct assistance to allow Alameda's declining local agriculture to respond to the vast marketing opportunities the Bay Area provides. Critical barriers related to start-up costs, access to clean irrigation water, and taxes must be addressed.

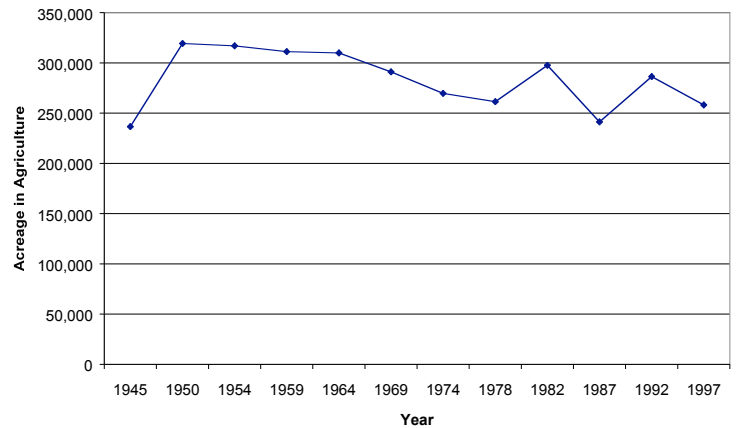
## Farm Numbers and Acreage

### The trend.

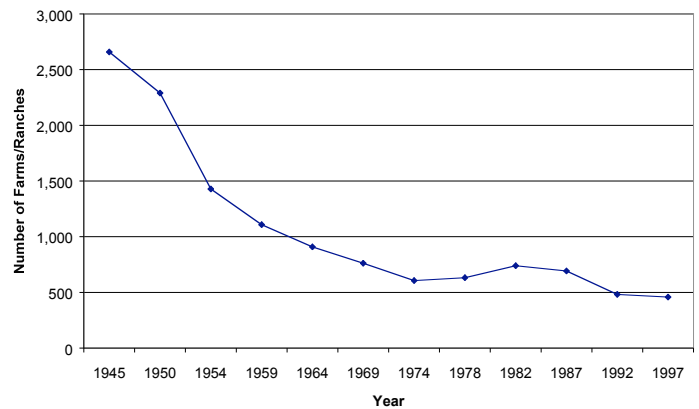
Alameda County's agricultural landscape mirrors state- and nation-wide trends towards fewer and larger farms. Since 1945 the total number of farms has declined by nearly 80% while farming acreage has decreased only about 20%. Farming acreage rose dramatically just after WWII, declined gradually from 1945 to 1974, and has fluctuated since. Acreage jumped 19% between 1987 and 1992 before declining again. Overall, farm numbers fell by two-thirds between 1945 and 1964 and by half between 1964 and 1997. Farm numbers increased between 1978 and 1982 before declining 30% between 1987 and 1992. The percentage of California's farms located in Alameda County declined by a factor of 3 between 1945 and 1997, with the steepest decline between 1987 and 1992. Average farm size in the county rose from 140 acres to 563 acres between 1945 and 1997, and increased 26.5% between 1974 and 1997 while total acres in farming remained largely unchanged.

Trends in farm numbers by size class varied significantly among the classes. The smallest farms, size 1 to 9 acres, declined the most, falling 91% from 1585 farms to 137 farms between 1945 and 1997. Over the same period, numbers of 10 to 49 acre farms declined 85%, 50 to 99 acre farms 63%, 100 to 499 acre farms 56%, and 500 to 999 acre farms 61%. In contrast, numbers of 1000 acre or larger farms fluctuated with no net change from 1945 to 1997.

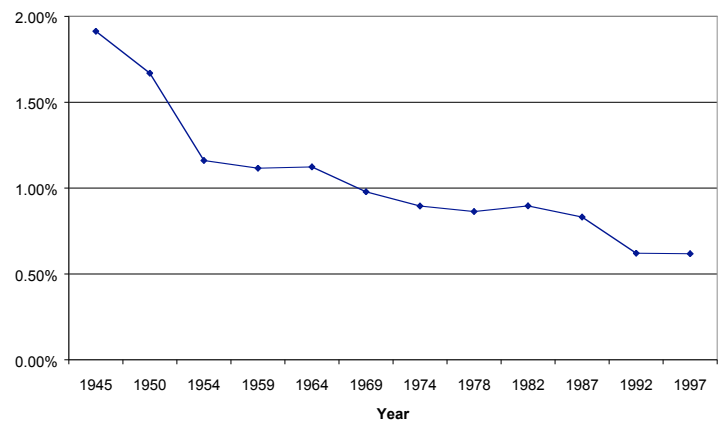
Changes in Total Acreage in Agriculture in Alameda County



Changes in the Number of Farms and Ranches in Alameda County



Percentage of California's Farms and Ranches Located in Alameda County



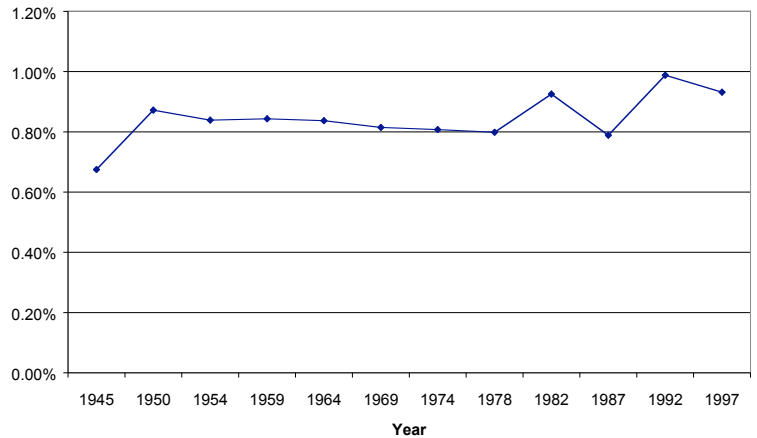
## Why is this trend occurring?

The surge in farm acreage following WWII reflects new farm establishment resulting from the GI bill loans to returning veterans fueled the surge in farm acreage between 1945 and 1954. Farmland conversion for development drove the gradual decline in acreage between 1954 and 1974. Much of the change occurred in the San Lorenzo and Alameda areas of the county which experienced rapid urban and suburban growth at that time.

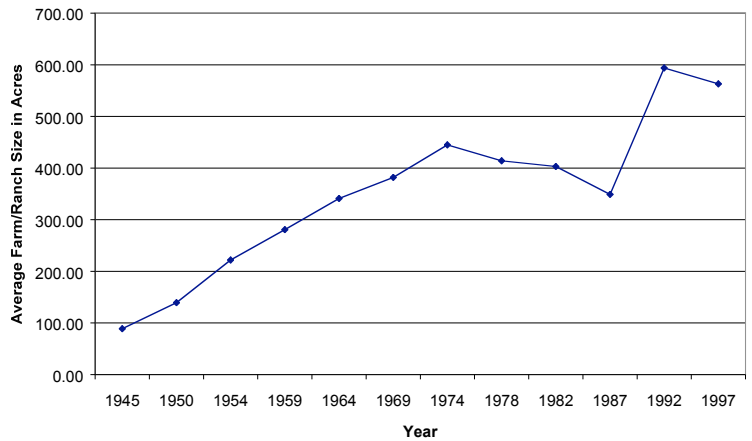
Although these areas have the best soils and the longest growing season of any place in the county, the zoning laws of that period were not strict enough to protect the land, and tax incentives for agricultural land preservation such as the Williamson Act had yet to be passed. Beginning in the early 70's, growers in some of these areas were taxed or charged for groundwater use. This factor, combined with increased costs for the electricity needed to pump groundwater from wells, reduced farm profitability and accelerated conversion to development. A boom in new vineyard establishment drove the brief increase in farming acreage between 1987 and 1992. (John Gouveia, Alameda County Agricultural Commissioner's Office, 2001).

Medium to small farms and family owned nurseries, often on high-quality agricultural land adjacent to urban areas, proved most vulnerable to development. Although land conversion accounts for some of the decline in farm numbers and most of the decline in acreage, the continuing decline in numbers

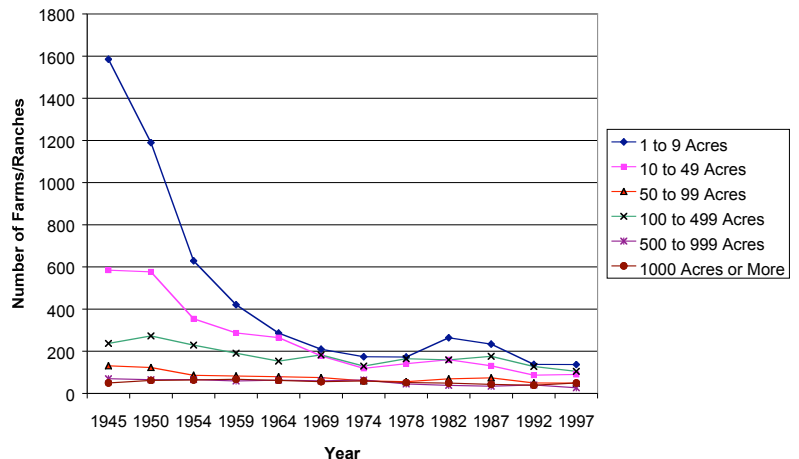
Percentage of California's Farm and Ranch Acreage Located in Alameda County



Trends in Average Farm or Ranch Size in Alameda County



Trends in Farm and Ranch Size Distribution for Alameda County



while acreage remained largely unchanged from 1974 to present suggests consolidation of smaller farms into larger ones. Each farm size class group experienced a brief increase beginning with the smallest farm size class between 1978 and 1982 and ending with the largest farm class between 1992 and 1997. This pattern suggests there may have been a wave of land transfers from smaller to larger farms. For example, in 1945, much of the county's farmland was in farms 100 to 499 acres in size, but by 1997, most of the farmland was held in farms over 1000 acres. (John Gouveia, Alameda County Agricultural Commissioner's Office, 2001).

**Why is this important?**

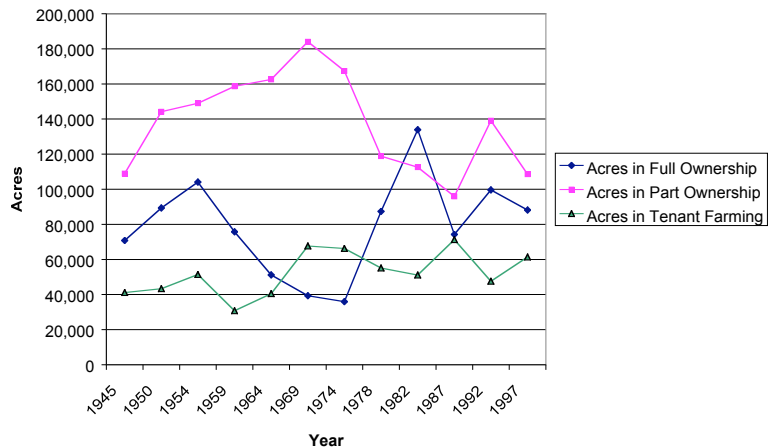
Although the Bay Area provides a vast market for all forms of agricultural products, there are few opportunities for the establishment of new farms or expansion of food crop growing acreage in Alameda County unless growers are given assistance to offset start-up costs and guaranteed access to useable water well into the future. Zoning laws and tax incentives for preserving agricultural land became effective only after much of the highest quality agricultural land in the county had been developed. Most of the remaining land suitable for orchard or field and row crop production and already equipped with a good well is adjacent to the fastest growing urban centers. Start-up costs of well establishment, water fees and pumping are very high, and groundwater use for food production may be restricted or banned as industrial contaminant levels in the water increase. Many land owners are waiting for a good offer from a developer and are not willing to offer a long-term lease to tenant farmers. (John Gouveia, Alameda County Agricultural Commissioner's Office, 2001).

**Farm ownership**

**The trends.**

The number of full owners of farms in Alameda County has declined dramatically, from 2,003 in 1945 to approximately 270 in 1997. Eighty-six percent of this decline occurred by 1964. Between 1978 and 1982, full owner numbers jumped 32%, then fell 36% over the next decade. These figures directly correspond to trends in the number of small farms (1 to 9 and 10 to 49 acres). The number of acres in full ownership increased 47% between 1925 and 1954, declined 65% from 1954 to 1974, increased 273% between 1974 and 1982, and has fluctuated around a decreasing trend since. Acres in part ownership increased 69% between 1945 and 1969 and have fluctuated around a declining trend since. Acres in tenant farming increased 25% from 1945 to 1954, declined 40% between 1954 and 1959, increased 120% between 1954 and

Trends in Farm and Ranch Ownership and Tenant Farming in Alameda County



1969, and have fluctuated since. Since WWII, there have always been more acres in part ownership than in full ownership or tenant farming, except in 1982 when acres in full ownership dominated.

**Why is these trends occurring?**

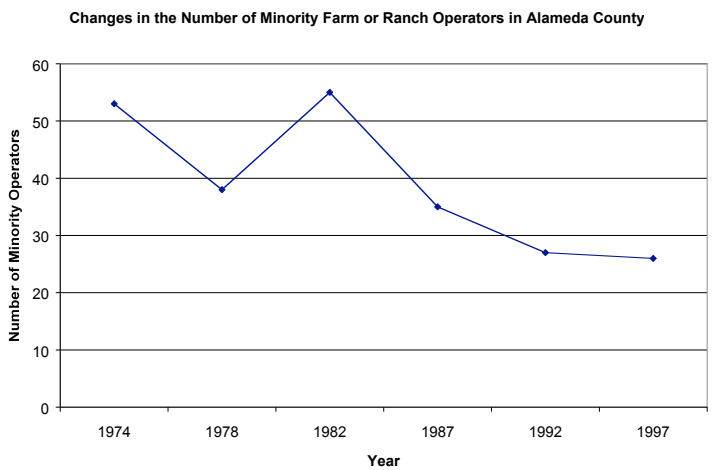
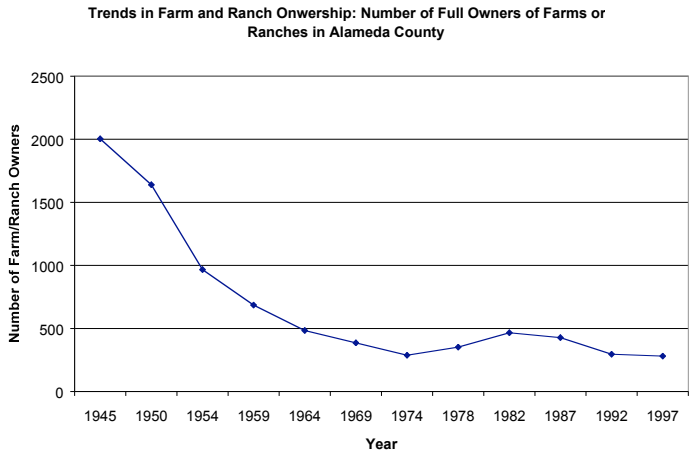
Trends in numbers of full farm owners are clearly linked with trends in small farm numbers. Both the “hobby farm” boom and the surge in vineyard establishments contributed to sudden increase of fully owned acres between 1974 and 1982.

The winegrape industry represents an exception to the general decline of agriculture in Alameda County. Increasing popularity of wine making and the affordability of land in comparison to Napa and Sonoma Valleys attract amateur vinticulturalists to Alameda County. The number of vineyards has doubled each decade since the 1970’s, increasing from two to sixteen by the late 1990’s.

Vineyard expansion has continued throughout the Livermore and Castro Valley areas. Although some smaller vineyards may lease land from more established vineyards such as Wente, most new vineyard founders purchase land in order to pursue the craft of winemaking in a rural setting. Extensive winegrape plantings in the Central Valley and in Washington State have led to overproduction of lower-quality wine grapes, but the market for premium grapes remains strong. Like growing areas in Sonoma County, the Livermore and Castro Valley areas offer growing conditions suitable for premium wine grapes. Still, development pressures around the Bay Area are so high the voters of Sonoma County found it necessary to legislate a \_ cent sales tax for purchasing development rights to protect the county’s famous vineyards (Sonoma County Grape Growers Association Vineyard Views online newsletter, [www.sonomagrapevine.org/pages/vineyardviews/vvhistory.html](http://www.sonomagrapevine.org/pages/vineyardviews/vvhistory.html)).

**Why is this important?**

Farm ownership usually translates to land security. If the number of farmers diminishes and with them the number of acres represented in rangeland and field crops, a larger portion of the county’s agricultural base is in jeopardy. The premium winegrape industry shows promise for helping to preserve some of the county’s farmland.



## Age of Farmers

### The trend

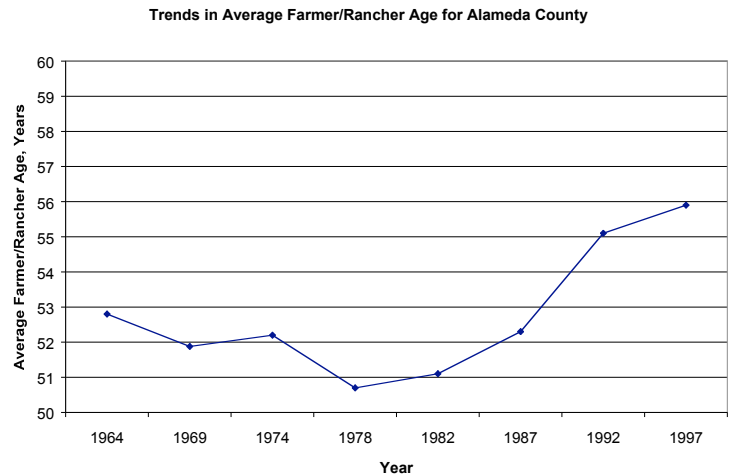
America's farmers are graying, and Alameda County is no exception. Between 1978 and 1997, the average age of the county's farmers increased from 51 years to 56 years. Although there has been an increase in organic farms usually farmed by younger people, it has not been enough to significantly slow the aging among Alameda County farmers.

### Why is this trend occurring?

Working farms are often inherited by non-farming relatives who have little interest in continuing to farm the land, and may prefer to sell it for development rather than manage it as leased farming land. In addition, if derisory planning for land transfer occurred following the death of a landowner, and the property had not been legally sheltered by a living trust, the survivors have to pay an inheritance tax of up to 45% of the property's value. The new owner may be forced to sell a portion for development to pay the tax. What is left is often insufficient to continue farming or ranching and the land is either taken out of agricultural production or converted to less intensive production such as grazing land.

### Why is this important?

An aging farmer population threatens local agricultural viability. Agricultural land conversion accelerates if retiring farmers have no one in line to take over the farm as a business. Specialty and niche-market products such as organic produce and local wines are high value and highly saleable to nearby urban consumers and hold a strong appeal to many young would-be farmers and viticulturists who may be able to split farming time with employment in Alameda County's urban centers. County agricultural support services should work to develop expertise, create incentives, and help provide resources for organic, specialty, and premium winegrape agriculture.

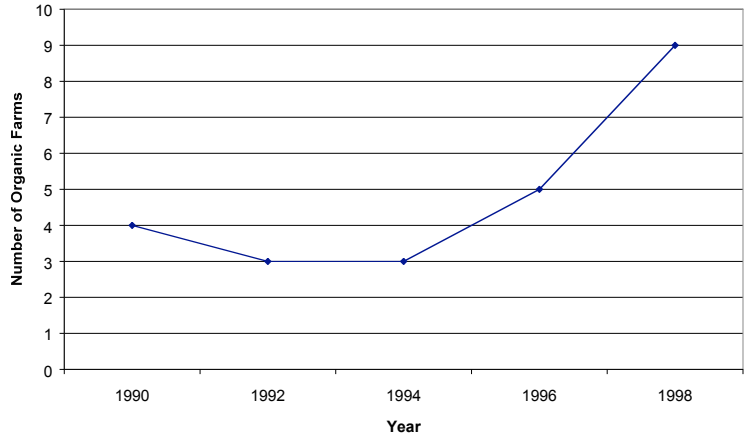


# Organic Farming

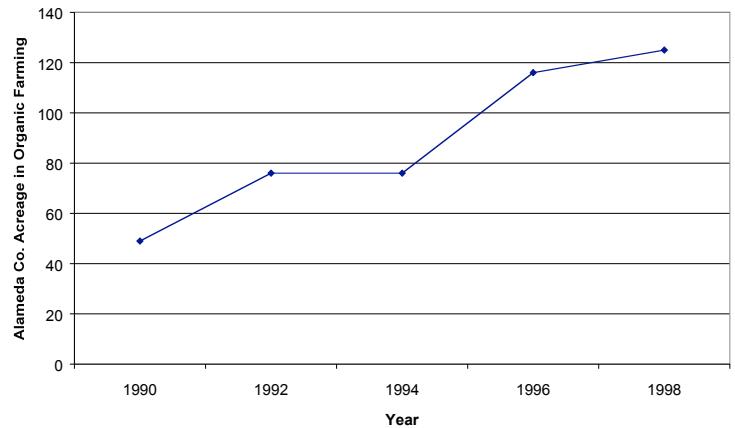
## The trend.

Since 1990, there has been more than a twofold increase in both the number of organic farms and the amount of organic farm acreage. However, the seven organic farms comprising 90 acres are but a small percentage of the total farm acreage in the county. Much of the organic produce sold in farmer's markets and stores in Berkeley, Pleasanton and in other cities throughout the county is brought in from other counties, indicating county organic growers have only a small share of the local market. Only three of the seven organic farmers grow vegetables as edible crops. One of the county's seven organic farms is a nursery selling organically grown plants to the public; one is a large greenhouse growing organic wheat grass; one is a restaurant growing its own herbs and lettuce; one is a non-organic vineyard that harvests four acres of organic olives for oil; and one is a one-acre youth farm within the city of Berkeley. The last of the seven was a 2 1/3-acre farm in Fremont that lost its lease in 2000 to development plans. The site will add the last parcel to a 10-acre housing complex. The one organic farm of sizeable acreage not threatened with development remains secure because it is leasing land from the extensive Ardenwood Historic Ranch, a state preserve.

Changes in the Number of Organic Farms in Alameda County



Trends in Organic Farm Acreage for Alameda County



## Why is this trend occurring?

Though the market for organically produced products is still growing rapidly, county growers face competition from regional producers who are based in neighboring counties with lower real estate values and land leasing costs. Many small-scale organic farmers from outside the county have already responded to the large and growing consumer base and wealth present in the Bay Area. Organic farmers wishing to establish themselves in the profitable Bay Area market economy often choose nearby areas, such as Contra Costa or Yolo counties to purchase or lease land where it is less expensive but still close enough to urban markets to keep transportation costs minimal. For example, most of the organic farms with a

shareholder base (those reliant on CSA's) in the Bay Area transport their produce from nearby Yolo, San Mateo, Marin and Mendocino counties.

**Why is this important?**

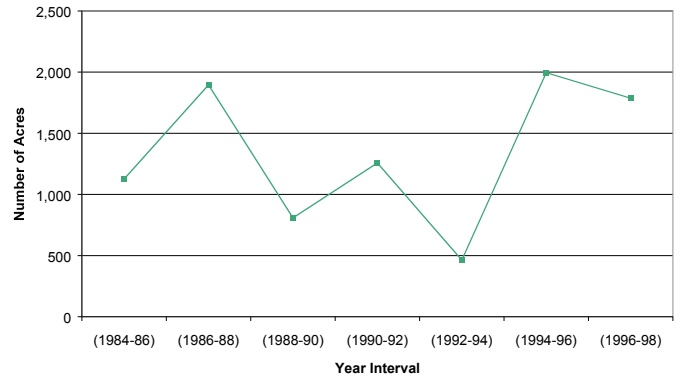
The growing market for local produce in the Bay Area cannot support Alameda County growers if development pressure and the real estate market are not further controlled. Zoning and taxation laws should be tailored to keep productive agriculture land costs competitive with neighboring counties. Growers may need special exemptions on groundwater use restrictions or subsidies to offset pumping costs to remain viable. Perhaps technical assistance with improving irrigation efficiency and creating cost-effective on-farm water purification would encourage new farm establishment. Countywide incentives for production and use of organic farm products must focus on sourcing and encouraging Alameda County organic farms, not just organic products in general, or the potentially vital linkage between urban consumers and Alameda's organic producers may be lost.

**Farmland Conservation**

**The trend**

Since 1984 more than 10,000 acres of farmland have been lost to residential and retail development. The pace of development has quickened considerably since 1994, with nearly 3,500 acres of farmland developed by 1997; an additional 7,000 acres will be converted for single housing development with a golf course by the end of 2001. The number of acres enrolled in the Williamson Act, which nominally protects farmland, has decreased 16.4% overall since 1974.

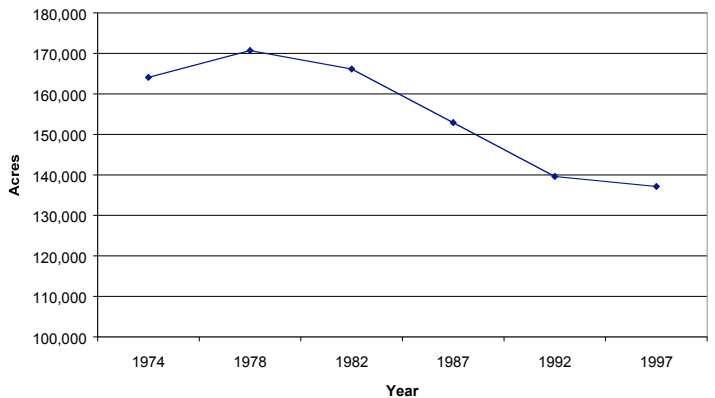
Trends in the Number of Acres of Farm and Ranchland Converted for Development in Alameda County Over 2-Year Intervals



**Why is this trend occurring?**

The booming Bay Area commuter population fuels demand for new housing around the formerly rural towns of Dublin, Pleasanton, and Livermore. These urbanizing areas are bordered to the South and East by actively managed farmland. Agricultural land conversion rates are partially controlled by farmland conservation efforts from many quarters. Organizations such as the Greenbelt Alliance, The South Livermore Valley

Trends in Agricultural Land Preservation: Number of Acres Enrolled in the Williamson Act in Alameda County





Land Trust, The Cattleman's Association, Vision 2010 and the Alameda County Farm Bureau lobby help formulate zoning laws to protect agriculture. Land that has been removed from the protection of the Williamson Act has, in many cases, been preserved by new zoning boundaries.

Vulnerable land may also be protected by the sale of easements. A developer purchases an easement on the majority of a parcel, preserving it for agricultural use in perpetuity, in exchange for the right to develop the rest. In the Livermore Valley area, the value of land between 1997 and 2000 has exceeded the highest profit of any agricultural product including the revenue from high-value winegrapes and olives cultivated there. Local city planning groups require areas prepared for development in the prime farmland area of the Livermore Valley to be matched acre for acre with preservation. For every 100 acres developed, 100 acres will go into agricultural productivity, namely, winegrapes and olives. This planning has established strict urban growth boundaries and left miles of protected vineyards and olive orchards encompassing the southern portion of the city (John Norwood, South Livermore Valley Land Trust, 2001).

Much of the county's remaining undeveloped farmland is rangeland characterized by poor soil, steep slopes, and no developed water supply. The lack of water remains the primary barrier to development (John Gouveia, Alameda Agricultural Commissioners Office, 2001). Costs of providing water to a development in these areas is currently prohibitive, but the market value of potential development sights may soon rise to the point where developers will be able to afford to build the water supply infrastructure for the development.

### **Why is this important?**

Population density in Alameda County is expected to double by 2020. Planning for land conservation, particularly prime farmland preservation a decade or two in advance, is of the utmost importance to maintain a viable local agricultural community. Any Alameda County real estate not sufficiently protected from market pressures will be permanently developed in the near future.

# **ENVIRONMENTAL INDICATORS**

## **HIGHLIGHTS**

### **Overview**

There is little available trend data for environmental impacts associated with Alameda County's food system. Since Alameda is a primarily urban county, most human impact on water and air quality results from industry and urban consumer activity, not food production, consumption, and distribution. For example, the most abundant and numerous contaminants found in county well water samples are industry- not agriculture-related pollutants. Nitrate pollution in groundwater is worsening on average for the county at a rate faster than population growth but the causes are not understood. Irrigation use by agriculture continues to decline while pesticide use is slowly increasing.

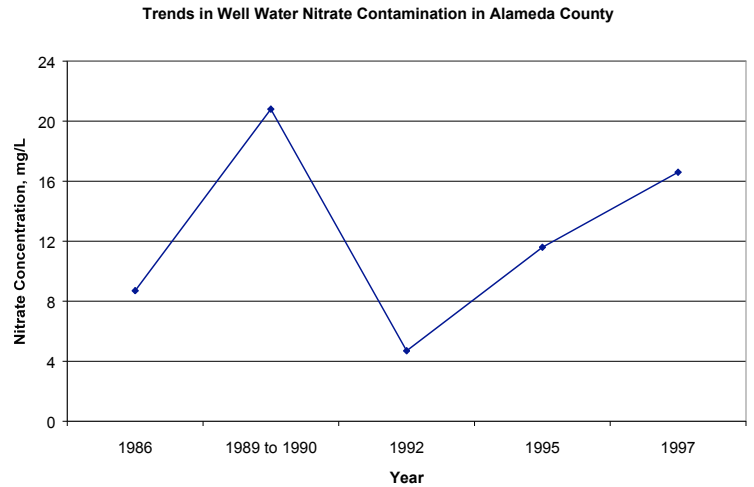
### **Importance for the alternative/sustainable food system**

Increases of industrial pollutants in ground water may eventually necessitate reducing the use of groundwater for irrigation on farms bordering urban areas in the county. Growers, industry, and urban consumers will compete for available water resources with increasing intensity as Alameda County's population grows. These factors among others may reduce the viability of existing farms and work to prevent establishment of new ones.

# Groundwater Pollution

## The trend.

Average levels of nitrate ( $\text{NO}_3$ ) in county wells more than doubled from 8.7 mg/L to 16.6 mg/L between 1978 and 1997, with an average increase of 10% per year. The rate of increase appears to be significantly greater than increases in county population levels or population density over the same period. However, extreme variation in data over the trend period underscores problems with use of county-wide averages to interpret changes in groundwater quality. It may not be valid to use a countywide average computed with data from all sampled wells throughout the diverse environments of the county.



## Why is this trend occurring?

Surface contaminants take between 30 years and 100 years or more to reach groundwater aquifers. In the past two centuries, most of the increases of contaminants have been due to human activity, including fertilizer use, waste from livestock, and human waste. The general scientific consensus is that observed gradual increases in well water nitrate levels result from the delayed arrival of contaminants that were initially released at the surface decades ago. Current trends thus reflect historical activity. Since human impacts have continued to increase to date, we can expect groundwater contamination to trend upward even if current activities are stopped. (Graham Fogg, UC Davis Hydrology Program, September 2001). Since input-intensive agriculture occupies such a small area of Alameda County, industry and urban residential activity are likely to be the primary sources of groundwater pollution. The types and quantities of contaminants listed in well water samples are indicative of industrial activity and differ significantly from well water contaminant lists from nearby less-developed Placer and Stanislaus counties.

## Why is this important?

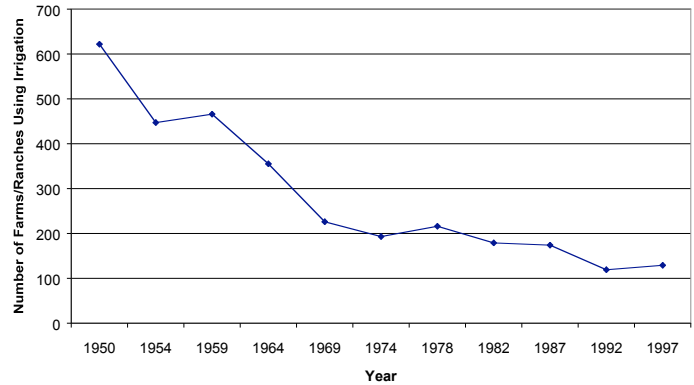
Groundwater based drinking and irrigation water quality is declining at a rate greater than population growth in the county. Additional or improved efforts to control groundwater pollution will be needed to prevent worsening water quality.

## Total Supplemental Water Use by Agriculture

### The trends.

The number of Alameda County farms using irrigation fell from 622 in 1950 to 129 in 1997; 69% of the decline occurred by 1974. Five times as many farms used irrigation in 1950 as do today. The number of irrigated acres increased 19% between 1950 to 1959, then declined more than 50% by 1974, and has declined gradually since. There were twice as many irrigated acres in 1950 as there are today. The number of irrigated farms as a percent of the total number of farms has remained largely unchanged since 1950.

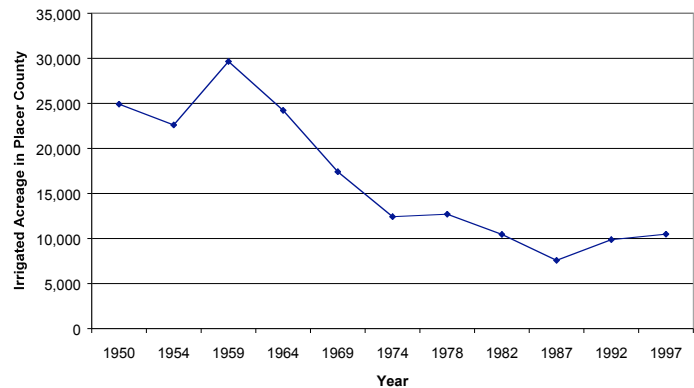
Irrigation Use in Agriculture: Changes in the Number of Farms and Ranches Using Irrigation in Alameda County



### Why are these trends occurring?

Total water supplied annually by precipitation has fluctuated since 1950 (Fritts and Gordon, 1980) and does not correlate well with irrigation use. About 35% of the county's cropland is concentrated in the extreme northeast corner of the county. Observed trends may be largely driven by activity in this one farming area. Commodity records show that the county's acreage planted to highly irrigated crops declined in parallel with irrigation use. Between 1963 and 1974, combined acres of vegetable crops and melons, alfalfa, tomatoes, and lettuce declined by half. Irrigation costs, competition with other counties producing these crops, or competition with the Bay Area for water may have driven declines of irrigation use and irrigated crops.

Irrigation Use in Agriculture: Changes in the Total Number of Irrigated Acres in Alameda County



### Why is this important?

With the exception of wine grapes, agriculture in the county has shifted from input and labor intensive commodities to less intensive ones, reducing agricultural water demand relative to demand for municipal water uses. However, State Water Project water deliveries for municipal use have grown 8 times faster than population since 1970, indicating water competition between farms and municipalities may continue to increase even as agricultural water use declines (Water Deliveries Section, State Water Project Analysis Office, January 2000). High-efficiency irrigation technology and expertise will be vital to the future viability of irrigated farming operations in the county.

# Synthetic Input Use and Dependence

## The trends.

Total pounds of pesticide\* applied annually in Alameda County has fluctuated historically but shows a mild upward trend in spite of the mild decline of agricultural acreage over the same period. Twice as much pesticide was used in 1992 than was used in 1987 or 1997. Input use dependence measured as the percent of total production costs expended on inputs nearly quadrupled between 1974 and 1978, declined 30% between 1978 and 1987, then declined slightly from 1992 to 1997.

## Why are these trends occurring?

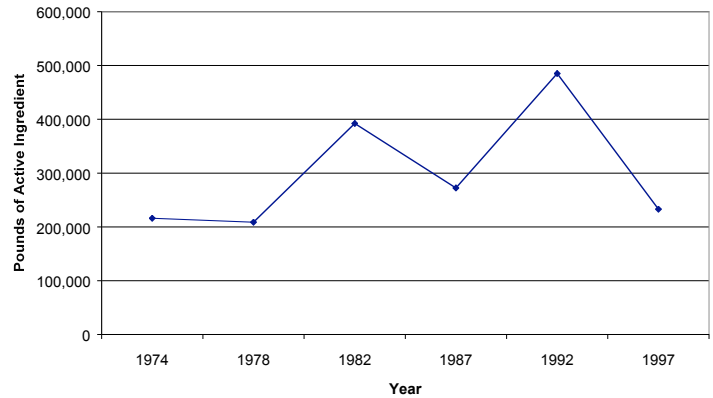
Although detailed information was not available for all years, California Department of Pesticide Regulation pesticide use reporting records for 1992 and 1997 show that a single pesticide, methyl bromide, accounts for the sudden surge in pesticide use in 1992. Methyl bromide is commonly used as a pre-planting fumigant when a new high value crop such as winegrapes is being established or when a severe fungal disease problem develops in a field or orchard. Methyl bromide is also used during establishment of nurseries. Commodity records show winegrape acreage expanded 63% between 1987 and 1997 while nurseries declined over the same period. Methyl bromide use in vineyard establishment drives trends in pesticide use.

\* Excludes sulfur, inert ingredients and organically acceptable materials. Sulfur is typically applied at rates of many pounds per acre. Small changes in sulfur use obscure large changes in use of more toxic and persistent pesticides, such as organophosphates, if sulfur is included in totals for pesticide use rates.

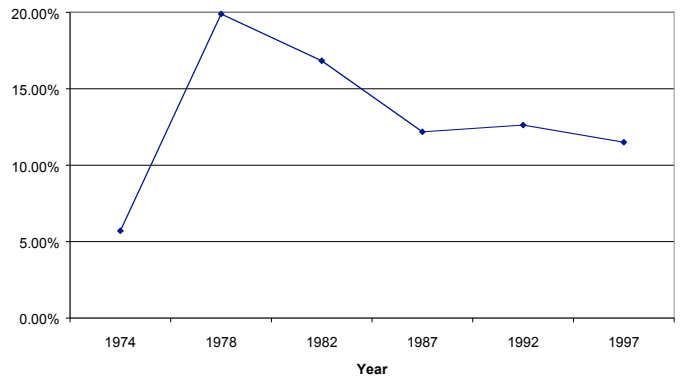
## Why is this important?

Alameda county agriculture's trend towards extensive rather than intensive commodities drives declines in input use, potentially reducing future friction between growers and urban populations over water and pesticide use. Winegrape growing operations with their intensive pesticide use during establishment and close proximity to expanding urban areas in the county may be vulnerable to pressure to reduce pesticide use. Since agriculture needs the political support of urban populations to survive in Alameda county, growers might be

Trends in Total Pounds of Pesticide Active Ingredients Applied in Alameda County



Input Dependence: Changes in the Percent of Total Specified Farm Expenditures Spent on Fuels, Fertilizers, and Pesticides in Alameda County



proactive in reducing input use rather than relying on right-to-farm laws to mediate conflicts with urban and suburban neighbors.

# FOOD DISTRIBUTION NETWORK INDICATORS

## HIGHLIGHTS

### **Overview**

Tracking the number of businesses involved in food distribution provides an indication of food distribution activity within the food system. Most of the packing sheds and other businesses wholesaling farm products left the county during the two decades of urbanization-driven farm decline between 1950 and 1970. The number of grocery wholesalers doubled over the last twenty years. The number of grocers declined 21% over the last decade due largely to the influx of large chain grocers. The restaurant business has boomed with the number of restaurants doubling since 1972. There were 19 certified farmers' markets in the county in 1999.

### **Importance for the alternative/ sustainable food system**

While the rapid urbanization of the greater Bay Area region generates extensive and rapidly growing market opportunities for all sectors of the food distribution economy, it also erodes the land base needed for agricultural production and the basic industries that are "syneconomic" with farming. Efforts to support or expand local agricultural production must include restoration of local packing and wholesaling facilities for changes to be sustained.

## Number of Farm Product Raw Material Wholesalers, Food Manufacturers, Food Retailers, and Food Servers

### The trends.

The number of farm product raw material wholesalers (packers and merchants selling unprocessed farm products wholesale) fluctuated from 1972 to 1997.

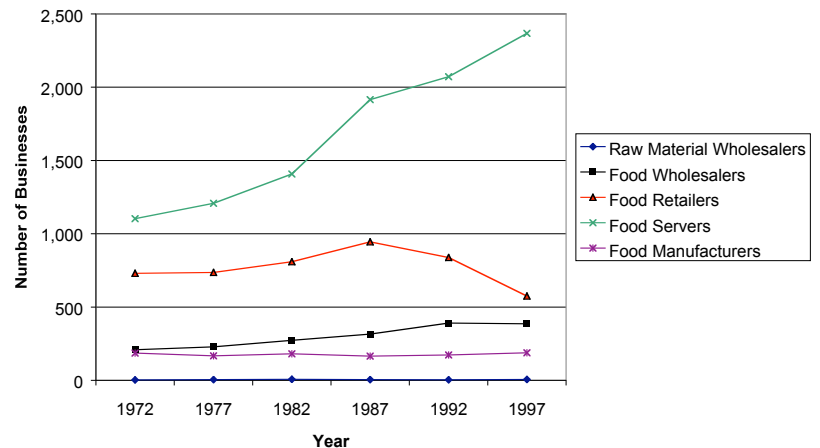
### Why are these trends occurring?

Fifty years ago, Alameda County was an area known for premium agricultural products such as cherries, tomatoes, cauliflower and lettuce. A large pig farm and a number of slaughter houses butchered animals from farms inside and outside the county. Over the last fifty years, urban development has replaced farmland and the county is now left with only a small handful of manufacturers of raw materials entering California's agricultural markets. Food manufacturing is still a viable industry, because Alameda County is one of the State's hubs for imports and exports for agricultural and other manufactured goods, but very little farm product from county farms is used in local processing and manufacturing businesses (Steve del Masso, OPA, 2000). Two small lettuce growers pack and process their own products, a honey manufacturer processes honey from the regional area and wine growers to the East pick and crush their grapes in the field prior to bottling their product for local and national distribution (John Gouveia, Alameda County Agricultural Commissioner's Office 2001). Field crops such as grain and alfalfa are cut and baled in the field, and what is not marketed to neighbors is then trucked to the Central or San Joaquin valleys for retail (Cattleman's Association 2001). A number of food wholesalers in the Oakland port's produce market have processing kitchens where fresh vegetables are cut and pre-packaged (Bay City Produce 2001). Demand for a centralized wholesale market offering numerous products, such as salsa, mixed diced vegetables and prepared fruit salads has greatly widened the scope of what wholesalers now provide to restaurant and industrial kitchen customers.

### Why is this important?

The persistence of a small but prosperous food manufacturing and raw material wholesaling industry could provide wholesale and processing opportunities for local agricultural producers. There is room for expansion of local producer participation in these Bay Area industries.

Trends in the Number of Businesses in Each Sector of the Food Distribution System in Alameda County





## **Number of Food Wholesalers**

### **The trend.**

The number of food wholesalers (grocery and restaurant suppliers) in Alameda County has nearly doubled over the past 20 years, from 229 in 1977 to 386 in 1997. Fifteen produce wholesalers make up the Oakland Produce Association (OPA) whose members are largely responsible for supplying raw, pre-cut and pre-packaged food to all the schools, hospitals, cafeterias and restaurants in the East Bay Area. Produce is picked up and trucked to regions as far away as the Central Valley and up to the mountains of Northern California (Steve del Masso, OPA, 2000)

### **Why is this trend occurring?**

Due to its location, the county has always been home to a major shipping port for export and import of food and other products. The increase in the number of wholesalers is due in part to growth in port and shipping activities. The port of Oakland is also home to the oldest wholesale produce market in California. As the population increases, a wider range of customers broadens demands on wholesalers. Another factor in the growth of the food wholesaling business in Alameda County is the increase in restaurant demand for wholesale produce. The OPA is expanding the volume of organic, locally and regionally grown produce to meet the needs of buyers such as restaurants who must pickup all of the wide variety of produce they buy in one trip to the wholesale market. As a greater consumer base requests fresher produce, the wholesaler's market must meet their demands.

### **Why is this important?**

Although the county's wholesalers serve both national and international markets, there may be an opening of new markets for local food producers. A local grower can have immediate access to a wide range of buyers if he or she is willing to go through a wholesaler instead of marketing directly. In a series of seven interviews in March of 2000 with members of the Produce Association, each one expressed interest in buying from local growers, and three said they would pay more for organic specialty products if they could meet the demand of current or future buyers. The OPA has been working on a bid with the City of Oakland to relocate to a 19-acre site, nearly five times the acreage upon which they currently reside. The outcome is still unclear, but if the move transpires, the expansion of the market could include at least three to four more new produce wholesalers, greatly increase warehouse and preparation space, thereby improving businesses and offering a wider and larger selection to buyers.

## **Number of Food Retailers**

### **The trend.**

Between 1992-1997, the number of food retailers (grocery stores, bakeries, etc.) in Alameda County dropped more than 21%, from 838 outlets to 575 outlets. This trend towards fewer and larger grocery stores may be offset (somewhat to the benefit of local producers) by an increase in the number of stores specializing in organic foods, but here, too, the trend is towards larger stores supplied by globalized food distribution networks.

### **Why is this trend occurring?**

Commercial retail development patterns drive retail food store consolidation. “Shopping centers” are founded with large chain “anchor” stores, usually grocery stores but also drug or department stores, which can quickly undermine consumer support of smaller, local enterprises. Local food stores often end up being bought out by a chain store’s parent company or simply going out of business (Stacy Mitchell, Institute for Local Self Reliance 2000). Even as recently as a decade ago, smaller, more independent grocery stores and mini-chains were seen in Alameda County’s low income areas, as well as throughout the more financially progressive ones. With the consolidation of grocery businesses to state and national chains, “super stores” have had far more decision making power in determining where and whom their business would serve. In neighborhoods where per capita income is \$17,000 or less, grocery stores are virtually nonexistent. Surviving small markets and liquor stores provide mostly snack and processed foods that supplement most family’s diets. In these neighborhoods, there is often pessimism toward organic foods because specialty produce is rarely found in markets in these areas and is considered accessible only to the wealthy, although many West Oakland residents were interested in growing their own food in gardens. (Shauna Cozad, conversations with West Oakland Residents 2001).

### **Why is this important?**

The consolidation of the grocery business into a small number of state and national chain stores does not portend well for small producers. Large chain stores generally make purchases in lots too large to be filled by small growers. When chain stores displace small, local grocers in low income areas, many residents who cannot afford public transportation to more distant, larger stores lack access to fresh produce and other healthy foods, purchasing boxed or canned food from local convenience or liquor stores instead. Organizations such as the Oakland Food Security Council are taking measures to address these issues, such as developing plans to bring farmers’ markets into low-income neighborhoods where residents can use food stamps to purchase produce. An electronic debit system for purchasing farmers’ market produce from a debit card will be finalized by 2002. Trial markets occur every couple of months, but are not yet constant in low-income communities. Also, growers’ profits may remain lower at farmers’ markets in low income areas compared with markets in higher income neighborhoods (Henry Krusekopf, observations from working Alameda County farmer’s markets). Possible solutions include organizing the farmers’ market buying power of community groups such as churches, low-income housing developments and local

food security councils and strengthening consumer demand to replace mini-marts with small grocers in impoverished areas.

In contrast to the consolidation trend in the mainstream grocery industry, individually owned ethnic markets are becoming more successful as the county population diversifies ethnically. In smaller, more specialized ethnic markets and markets specializing in fresh organic produce, local agriculture may find a niche. A few small chain grocery stores such as Whole Oats, Berkeley Bowl, Whole Foods, and Monterey Market specialize in organic produce, purchase directly from local farmers, and post signs naming the farms in the produce section.

## **Number of Food Servers**

### **The trend.**

Since 1972, the number of food servers (restaurants) in Alameda County has more than doubled. The rate of growth in server numbers was highest between 1982 and 1987, and there do not appear to be any declines over the past two decades.

### **Why is this trend occurring?**

Bay Area culture includes a large and growing consumer population that patronizes restaurants openly supporting local farmers by offering organic or locally grown produce on their menus. In certain areas of Alameda County, ethnic and “healthy choice” restaurants are more prevalent than fast food chain restaurants. Forty-three vegetarian restaurants, an organic burrito truck, two juice stands, four grocery store delis and eight restaurants cognizant of their connection to local agriculture have made Alameda County a nationally recognized niche for fresh, local fruits and vegetables. These businesses would not have succeeded without a conscientious restaurant-going public who have broadened consumer awareness and, as consumers, sustained the demand by frequenting establishments that serve specialty produce.

### **Why is this important?**

Alameda County’s food server industry is ripe with opportunities for local growers if direct marketing connections can be made. Links forged among consumers, restaurants and farmers may support the economic and political survival of local growers. The growth in locally-owned, specialty, organic, and ethnic restaurants may provide expanding markets for local growers. With a fair price paid for the produce, the security of a direct marketing approach from farm to kitchen may be crucial to local small farm viability. The intensive labor involved in growing on a small scale results in higher priced produce than that which is conventionally grown, and thus restaurants serving foods prepared with organic ingredients must do so at a higher price than food based on conventionally-grown ingredients would require. Issues still frequently arise regarding the discrepancy between who can and who cannot afford to eat at the restaurants that serve organic food. Formal restaurants often list a premium price for organic menu items while letting the consumer know of the location of the

farm from which the produce came. Informal restaurants and delis may ask a dollar or so more for organic prepared items, but their menu items are often right in line with standard non-fast food prices. These restaurants, formal and informal, are most often found in the main city centers throughout Alameda County, but are not yet established in low-income areas or strip mall sections of outlying areas subject to sprawl.

## **Number of Farmer's Markets, CSAs and Roadside Stands**

### **The trend.**

Nineteen farmer's markets were certified in Alameda County in 1999 (Feenstra and Lewis, California Agriculture 1999). These markets provide outlets for locally grown produce and organic produce grown elsewhere by small farmers. Farmer's markets, 12 subscription food baskets (CSAs; community supported agriculture), four organic distribution services, and four roadside stands give consumers alternatives to conventional grocery store chains (Shauna Cozad 2001). Because these alternative food markets rely on produce grown locally, they are subject to seasonal variations in supply. Although these alternative food markets may be the best and most consistent outlets for locally grown and organic products, overall prospects for the future may be limited by the realities of today's food-on-demand urban population who may not choose to support the alternative food markets.

### **Why is this trend occurring?**

In general, Bay Area culture nurtures direct marketing by providing growing demand for direct-marketed food. Consumer awareness of social and environmental issues related to food system globalization is higher among Bay Area residents than in many other parts of the state.

### **Why is this important?**

Consumers benefit from the availability of direct marketing-based services that offer a wide, rich, healthy and cheap selection of farm-fresh produce and home-made goods. Farmer's markets build an urban-rural link that both farmers and consumers need and enjoy. Urban farmer's markets are weekly bazaars for small vegetable growers and producers of farm products such as honey, cheese, bread and olive oil. Between stints on a tractor, growers travel to town to set their wares in front of a sympathetic, yet discerning public with an appreciation of quality and the ability to pay for it. Money is exchanged for fresh produce, jokes and politic; praise and criticism as well as a steady stream of questions and answers clutter the running dialogue between vendor and customer. Regulars become friends. The four roadside stands in the southern part of the county provide farmers with supplemental income and also strengthen business and community relations between farmers and customers. In many cases, school field trips to farmer's markets and the few farms with roadside stands provide urban children's only connection to how food is grown.

CSAs, community-supported agriculture's weekly subscription food baskets, build the same urban-rural links. Subscribers pay a weekly or monthly rate of \$12-20 per week for a box or basket of fresh, seasonal produce. Baskets are left and picked up at central drop-off locations - usually a school, office or member's garage - making it easier for the farmer to schedule CSA deliveries with trips to fill wholesale orders. Farmers also earn an income in advance rather than having to wait for their crops to sell, which allows them to pay cash instead of credit for seed and supply purchases in preparation for the next planting. Subscribers, or shareholders, not only receive a weekly assortment of the freshest in-season produce, they also get a personal connection to the farm where their food is being grown. Each basket contains a weekly letter with news from the farm and recipes for the week's produce selection. Farm-to-buyer connections are often strengthened with annual farm days and picnics.

Lengthening the distance between producers and consumers of food weakens rural-urban connections. In places like Alameda County, these connections are already strained under the heavy load of a densely packed, growing population and its attached suburban sprawl support system. New residents are rushing to fill new houses in new subdivisions on the edges of old towns. These new Alameda County residents rarely know the history of the lost farmland and crops that they have supplanted. Even CSAs, which are built around the concept of farmer-subscriber interaction, work better if shareholders are not deterred from visiting farms by driving distances that require large commitments of time and effort.

Alameda County consumers benefit regardless of where the farmers and homemakers call home. The county, however, is not enriched when most of the nearly \$9.5 million generated in farmer's market sales leave the county at the close of market as the vendors return to their farms 1-3 hours distant (Henry Krusekopf, estimates from interviews with market farmers). The seven organic growers in Alameda County are too few to fill their own local markets with produce, and their combined 90 acres of farmland contribute little open space in the county's increasingly crowded suburban settings.

There are two ways of looking at this perplexing dilemma of increased consumer demand and lack of local farms. First, CSAs may be ripe for exploitation by marketing forces. The organic/alternative agricultural community in the county is so small that it can hardly make its presence, much less its importance, felt to the local buying public. The market for CSAs is currently strong and future prospects are promising. As some small farmers orient up to 50% of their financial and production operations towards fulfilling CSA basket obligations, they are able to supply increasing numbers of weekly subscribers. Many farms are already filling 100-200 baskets weekly, and almost all CSA farms have waiting lists of potential shareholders. Urban demand for CSAs will grow at the rate of urban expansion in Alameda County, but it is unclear if the combined agricultural outputs of small, family-oriented, alternative farms from within and outside the county can meet the demand. Into such a market (in a market-driven economy), comes the CSA-type food baskets filled with produce bought wholesale from numerous farms, large and small, located in a variety of places. It is conceivable that, bowing to consumer demand, the baskets could be filled with non-local and even out-of-season items such as bananas and winter tomatoes. The food might be organic, but the connection the consumer would have to an individual farm or farmer would be lost.

The four organic delivery services that currently cater to residents of Alameda County still make attempts to include personalized messages and receipts from the farmers to connect with their customers two steps removed. This growing customer base still want to support organic farmers, eat organic produce and get the farm fresh taste of the season, but do not have the time or intent on driving long distances to stores that carry these products, CSA drop-off points, roadside stands or farms. In the long run however, CSAs, as both concept and reality, can only truly exist if a direct link between grower and buyer is maintained, and the surest way to maintain that link is keeping the farms that feed the people visible and accessible to the people they feed. Local farms selling locally provide easiest local access.

# ECONOMIC PRODUCTIVITY INDICATORS

## HIGHLIGHTS

### **Overview**

Nursery crop production, beef cattle, and wine grape operations are Alameda County's top-earning agricultural activities. With the exception of winegrape vineyard establishment and organic farm start-ups, agriculture in the county continues to shift towards less labor- and input- intensive crops and lower overall annual agricultural earnings. Although farmers' markets provide extensive direct marketing opportunities in the county, most of the benefits go to out-of-county growers who truck produce to Alameda's markets. Despite the diversity of organizations supporting alternative agriculture that are active in the county, Alameda County as a whole lacks a cohesive effort to recognize and support local farm product marketing.

Grocery wholesalers generate the bulk of the overall earnings of the county's food system, showing a three-fold increase in gross sales since 1974 while food server (restaurant) earnings doubled over the same period.

### **Importance for the alternative/ sustainable food system**

Grocery wholesalers and restaurants in the county could offer enormous market potential for county growers if the growers could cross the service gap left behind by the decline of local packers and farm product wholesale brokers. Community organizations might aid local growers by providing brokerage or other collective marketing tactics to connect local producers with local processors and restaurant supply markets.

## **Top Ten Agricultural Products by Gross Sales**

### **The trend.**

Nursery and flower cultivation has been the top grossing agricultural commodity group since 1963. Beef cattle and calves rose in dominance through the sixties and seventies and remained in second place from 1982 to 1992. Grapes rose from eighth place in 1967 to second place in 1997. Miscellaneous vegetables and melons were second place earners until the late seventies then dropped to fourth place by 1997. Poultry and eggs dropped from second place in 1967 to fifth place by 1977, took fourth place in 1992, then disappeared from the top ten by 1997. Alfalfa first appeared in the ranking in 1973 in seventh place and rose to six place in the 1990's. Wild grain and hay's ranking has fluctuated around a rising trend since 1978. Milk and dairy products ranked fifth in 1963 and have not appeared in the top ten since then.

Intensively cultivated row crop and orchard systems have been replaced by less-intensive agriculture and livestock grazing throughout the county. For example, lettuce, tomatoes and walnuts were significant agricultural products in the county as late as the mid-1970s but subsequently declined relative to hay, alfalfa and irrigated pastureland. Pasture-raised beef cattle and sheep are now the dominant livestock, whereas in previous years higher-maintenance poultry and dairy cattle operations were common.

### **Why is this trend occurring?**

The number of farmers in Alameda County has decreased much more rapidly than has the amount of agricultural acreage, resulting in fewer farmers holding larger tracts of land. Yet, unlike in other parts of California where mechanization has enabled fewer farmers to continue to grow many of the same crops on a larger scale, in Alameda County the trend has been towards complete changes in crop selection. Lettuce, tomatoes and other vegetable crops in California, for example, were historically labor intensive and generally farmed on small plots. In the 1960s, mechanization of these industries decreased on-farm labor needs and permitted larger-scale production, and state and federal water projects provided ample, low-cost irrigation water to many areas in the state. Farm size increased to take advantage of the changes. Federal and state projects do not provide water to Alameda County farms, so all irrigation water must be pumped from the ground at the grower's expense. In the early 1970's the Alameda County Water District began charging fees for groundwater pumping in some parts of the county, contributing to the decline of irrigated row crop farming. Also, the size and distribution of agricultural land parcels in the county made it difficult to increase farm size to compete with fully mechanized vegetable growers elsewhere in the state. Thus in Alameda County, vegetable crops have been largely supplanted by low-intensity livestock grazing and field crops such as wheat and alfalfa. Extensive ranch operations in the county provide a stable local market for these feed crops which have much lower irrigation and labor costs than vegetable crops. The pattern may also reflect long-term financial planning on the part of land owners who are waiting for real estate values to exceed the cost of water development and developers to make a large enough offer for the land. Grazing land and land used for agronomic crops such as wheat require relatively few inputs and little



maintenance, making these systems attractive to landowners who intend to eventually develop their property. (John Gouveia, Alameda County Agricultural Commissioner's Office, 2001). However, many ranches in the county remain viable family-owned businesses, combining family-owned land passed between generations with long term leases and access rights to Water District and other public and private lands (Cattleman's Association 2001).

Vineyards have been an important component of Alameda County agriculture for decades, especially in the Livermore area. In recent years the ranking of grapes as an agricultural commodity in the county has risen for three major reasons (Mike Wanless, Wente Winery Agricultural Specialist, 2001). First, gross sales of other crops have declined, largely because of declines in production, leaving the long-term production systems of established vineyards with a larger share of the county's gross agricultural productivity. Secondly, new viticulturists are turning to Alameda County instead of Sonoma and Napa Counties because vineyard-suitable land is more affordable and consumer demand for wine continues to increase. Finally, the Livermore Valley vineyards and the wines they produce have begun appearing in the premium wine market, resulting in higher product prices and/or increased sales.

Vineyards may also benefit from cooperative agreements with developers mitigated by a land trust. The developer purchases an easement on most of an agricultural parcel in exchange for the right to develop the rest. This protects the agricultural land from further development and provides capital at \$10,000-12,000 dollars per acre for vineyard establishment costs (John Norwood, South Livermore Land Trust).

Nurseries have declined as family-owned businesses succumbed to sprawl (John Gouveia, Alameda County Agricultural Commissioner's Office, 2001), but high profit margins per acre for surviving nurseries keep nursery products top earners for the county.

### **Why is this important?**

The general shift from high-input, high-value commodities to low-input, low-value commodities suggests even large-scale agricultural systems in the county are becoming less competitive relative to other regions in the state. Land owners may be switching to lower intensity systems to keep the land in agriculture for its own sake, while minimizing financial risk, or holding land at a lower tax rate until market values peak and the land can be sold for maximum profit. Rapid growth in small-scale organic farms and in vineyards holds promise for keeping prime farmland in economically sustainable production if the county can actively encourage expansion of such intensive systems. Zoning and taxation laws remain vital tools for preserving agricultural lands in the county.

# Gross Agricultural Productivity

## The trend.

Inflation adjusted gross agricultural production for Alameda County rose 55% between 1950 and 1969, dropped by a third between 1969 and 1974, fluctuated between 1974 and 1987, then declined 33% by 1997. Since 1982, the dollar value of agricultural goods produced in the county has decreased by nearly \$25 million despite a steady upward trend in the value of agricultural goods produced by the state as a whole. Alameda County's contribution to California's total agricultural productivity has declined from a peak of 2.27% in 1954 to a low of 0.18% in 1997.

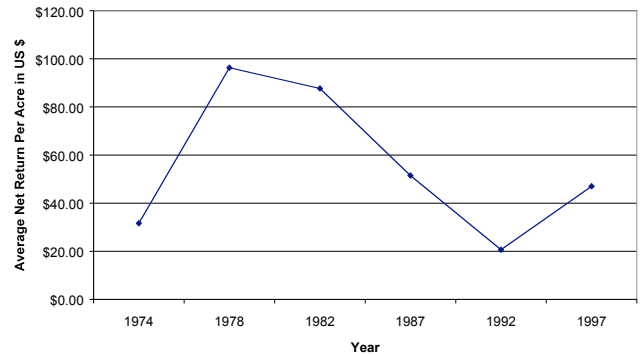
## Why is this trend occurring?

Both conversion of agricultural land to other uses and the substitution of low-value crops for high-value crops have combined to create the trend.

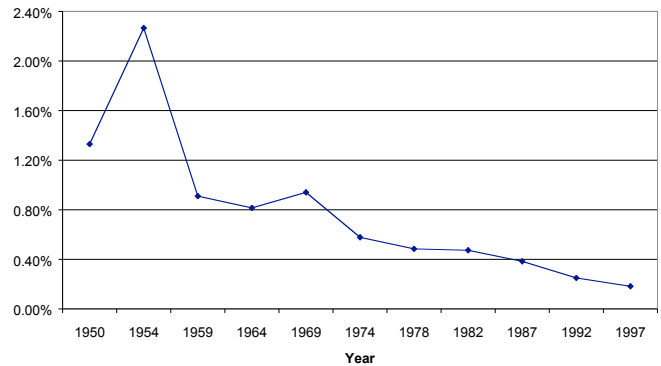
## Why is this important?

Agriculture as an Alameda County industry is being displaced by urbanization. The county's few remaining areas of prime farmland will be developed unless municipalities provide continuous, comprehensive zoning protection. Gross agricultural production will continue to decline but may eventually stabilize with the rise of organic and winegrape growing operations and the ongoing growth of the retail nursery industry.

Trends in Estimated Average Net Agricultural Earnings Per Acre in Alameda County (adjusted for inflation)



Changes in Alameda County Gross Agricultural Production as a Percent of State Total Agricultural Production

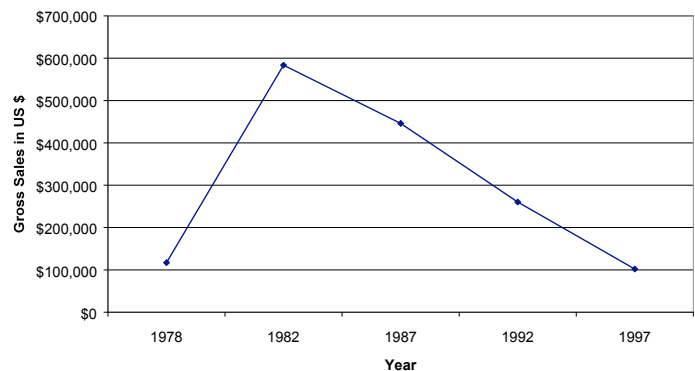


# Direct Marketing

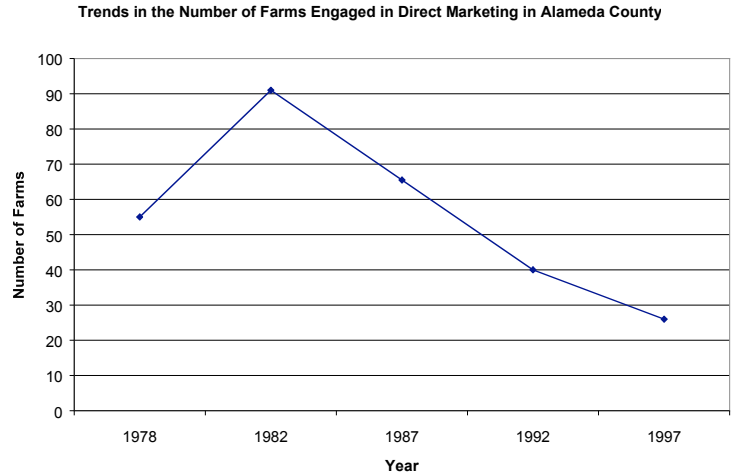
## The trend

For Alameda County, direct marketing gross receipts reported in the Census of Agriculture peaked at \$583,521 in 1982 then declined 80% to only \$102,000 by 1997. Numbers of farms participating also peaked at 91 in 1982 then declined 71% to 26 by 1997. Farmers' markets' gross

Trends in Gross Receipts from Direct Marketing, All Types, All Farms, in Alameda County (adjusted for inflation, 1987 estimated as average of surrounding values)



sales were \$9,344,566 in 1997. Since the Census of Agriculture records direct marketing activity for farms located within the county only, while the farmers' market data includes growers from other counties who sell in Alameda County markets, it is clear that the vast majority (over 98%) of direct marketing economic activity with a point of sale inside the county benefits out-of-county growers.



Although farmer's markets, CSAs and roadside stands have opened new sales avenues for many small growers, overall direct marketing trends for Alameda County are downward due to increases in orders at wholesale distributors and sales at conventional retail outlets. Farmer's markets had sales of nearly \$9.5 million in 1999, but most of the goods sold through these markets were from out of the county.

### **Why is this trend occurring?**

Although farmer's markets, CSAs and roadside stands have opened new sales avenues for many small growers, overall direct marketing trends for Alameda County are downward. The declining number of small farmers and acreage being farmed are contributing factors to diminished direct marketing.

There are less than 100 farmers left in Alameda County, excluding ranchers. Seventy-five percent of these farmers grow field crops for livestock and market to neighbors or use the feed for their own cattle enterprises. It is unclear if this type of direct marketing is recorded by the Census of Agriculture. Small coalitions such as the Berkeley Food Policy Council have been working closely and strengthening alliances with regional organic producers in nearby agricultural counties, but have not been focusing efforts on direct marketing from the eastern portion of Alameda County itself because most farms there produce livestock feed rather than food crops. Additionally, the decline in direct marketing trends also seems to be affected by the small number of organic growers in the county. Efforts to integrate local agriculture into new markets such as the school districts' lunch programs and specialty restaurants are discussed with enthusiasm, but efforts are limited to Fremont and Berkeley. One community garden in Hayward produces enough to sell at the farmer's market in Hayward only. In the southern part of the county, growers with acreage ranging between \_ acre and 3 acres remain as local as possible by networking with local restaurants and selling at roadside stands and farmer's markets both in and outside of the county.

## Why is this important?

Unlike Placer and Sonoma Counties, Alameda lacks a cohesive effort to recognize and support local farm product marketing. Collaborations formed for strategizing direct marketing techniques are highly regionalized and individualized in Alameda County. Each area of the county or commodity group works largely in isolation while opportunities for effective collaboration are overlooked. Consumer and advocacy efforts to change institutional and commercial food server buying practices are also focused on products rather than source location, i.e. organic or pesticide-free produce rather than produce grown locally. County growers must compete with producers from neighboring counties for a share of the market opportunity created by alternative food product activism and consumer demand within Alameda County.

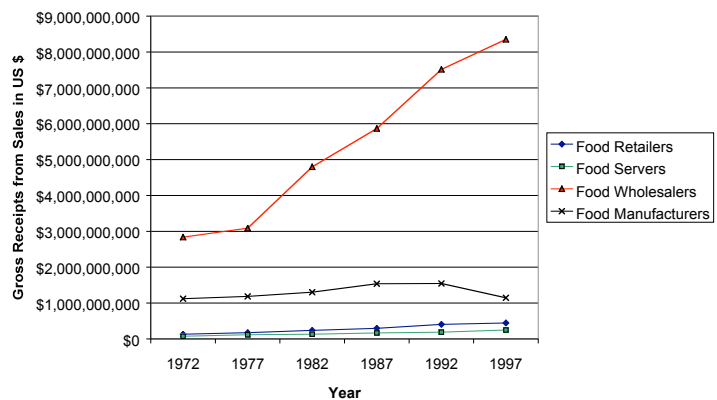
However, in spite of limited direct marketing earnings for the county and the need for more county-wide cooperation, the degree of interest in direct marketing suggests a wide range of agriculturists recognize its importance. Livermore Valley (East county) collaborations between farmers, ranchers and the Farm Bureau were formed to support cooperation on land conservation issues and water rights but now include dialog about direct marketing strategies (Livermore Valley Planning Association 2001). Field crops grown for feed are marketed locally or to feed lots in the Central or San Joaquin Valley. The Cattleman's Association provides a marketing niche for beef grown in the county, although none is marketed as locally raised free-range, grass-fed beef, a popular label for specialty meats (Cattleman's Association, 2001). The Livermore Valley Winegrower's Association is a close-knit alliance of new and veteran winegrowers; the oldest and largest of all 16 vineyards has been in operation since 1883. (Livermore Valley Winegrower's Association 2001). Nearly all nurseries in the county have been in business for many years if not for generations. (Shauna Cozad, phone interviews, 2001). Two new nurseries in the county have had to increase direct marketing strategies such as mailer coupons and door-to-door flyer marketing in order to remain viable (Debbie Tardiff, Our Garden Nursery, 2001.)

## Food Distribution System Productivity

### The trends.

Alameda County's food manufacturers' (processors) net value added to products has fluctuated for the last 20 years. Gross receipts data for farm product wholesalers (packers and merchants selling unprocessed farm products wholesale) have not been published in the Economic Census since 1974. Food wholesaler gross receipts have undergone a smooth three-fold increase from 2.84 billion in 1974 to 8.35 billion

Trends in Gross Sales Receipts for Sectors of the Food Distribution System in Alameda County (adjusted for inflation)



dollars in 1997. Food wholesalers dominate food distribution system productivity, contributing to 64% of the Alameda County's food distribution system gross product in 1997. Food retailer gross receipts grew 52% over the last twenty years and reached 2.35 billion dollars in 1997. Food server gross receipts doubled from 664 million to 1.25 billion dollars between 1974 and 1987, declined slightly by 1992, then recovered by 1997.

### **Why are these trends occurring?**

As sources for agricultural products moved eastward, processing plants began to favor incoming products from the port, and purchased less and less county-grown produce. For this reason, processed goods have largely replaced fruit and vegetable packing operations (John Gouveia, Alameda County Agricultural Commissioner's Office, 2001). Established businesses producing food products such as bakery goods, meat and confection products have existed over many decades and continue to grow in response to heightened consumer demand for processed, manufactured and ready-made foods. Although Oakland is one of the three major deep water ports that serve California, the food manufacturing industry productivity has not grown along with Alameda's population over the last 20 years, suggesting these manufacturers may be losing market share to regional competition. Though food retailer gross receipts have increased over the last two decades, numbers of businesses have fallen, suggesting consolidation and buy-out of smaller grocers by larger chain stores are filling the increasing demands of Alameda's growing population (Stacy Mitchell, Institute for Local Self Reliance 2000). Food server gross receipts have grown much faster than the county's population suggesting increased per-capita expenditures on "eating out," perhaps a reflection of the increase in affluence and cosmopolitan lifestyle-living on the part of county residents.

### **Why are these trends important?**

A county with a strong economic base in food manufacturing ensures stable employment opportunities. "One job in Alameda County food processing supports 7 \_ additional jobs throughout the region: e.g. manufacturing, distribution, warehousing, testing, services." (Economic Development Alliance for Businesses, EDAB website). The multi-ethnic workforce driving the food distribution system has given rise to a proliferation of new ethnic food establishments along the industrial corridors. Though specialty restaurants and the Bay Area's growing subculture devoted to alternative and local foods provide many marketing opportunities for Alameda County agriculture, the greatest market advantage may be gained through marketing with the county's food wholesalers, but only if commodity groups can organize and cooperate to become competitive with imported food sources reaching the county through the port of Oakland.

# FOOD SYSTEM WAGES AND EMPLOYMENT INDICATORS

## HIGHLIGHTS

### **Overview**

Alameda County agricultural wage and employment levels are now one-quarter of what they were in 1950. Average farm worker wages have declined and total worker earnings now comprise only 0.03% of total county workforce wages. Average farm labor income continues to decline.

Employment provided by food manufacturers (processors), food (grocery) wholesalers, grocers, and restaurants have all grown, but restaurants lead the group, employing as many workers as all the other components of the food system combined. Grocery wholesalers have replaced processors as the food system's largest provider of worker wages, tripling wage output since 1974.

### **Importance for the alternative/ sustainable food system**

Globalization of the food system, particularly in the food processor and retail grocer sectors, has led to a decline in average wages even as total employment has increased in these sectors. Alameda County lacks packer and brokerage businesses to bridge grower product to the larger distribution system, leaving farm worker employment and wage levels to their continuing decline. The local food system might benefit most from a new type of farm product brokerage based on a county ("Alameda-Grown") label and focused first on supplying restaurants, then on supplying processors who can provide packaged product in quantity to grocery wholesalers.

## Employment as Farmers

### The trends.

The number of farm operators (people employed as farmers) fell 65% from 1726 to 606 between 1950 and 1974, rose to 739 by 1982, then fell 38% to 458 in 1997. This trend parallels changes in the number of the smallest farms (1-9 acres) in Alameda County over the same period. There were almost four times as many Alameda County farm operators in 1950 as there were in 1997. The percentage of California's farm owners in Alameda County fell from 1.25% in 1950 to 0.52% by 1997, less pronounced than the 78% decline in numbers of full owners of farms in Alameda over the same period.

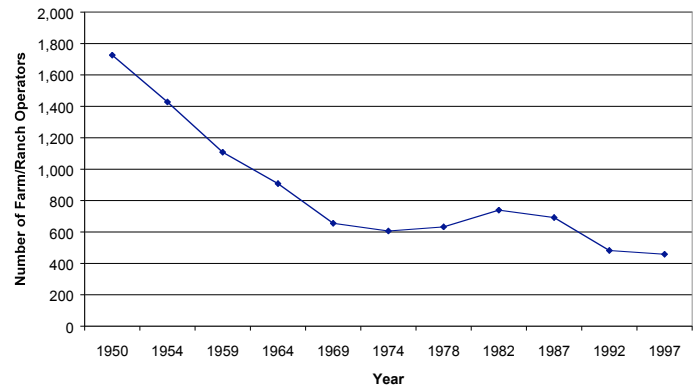
### Why are these trends occurring?

Most of the decline results from conversion of farmland to urban and suburban developments. Small farms have been most vulnerable to conversion. Conflicts with municipalities over available groundwater resources also contributed to the decline in the early 70's. "Hobby farming" starting in the late 70's and vineyard establishment in the late 80's provided temporary increases in farmer numbers. In the case of some undeveloped agricultural land, owners who want the option to sell land when the market is ripe may be allowing tenant farmer or rancher leases to expire or no longer offering long-term leases. (John Gouveia, Alameda County Agricultural Commissioner's Office, 2001). In this way, farm operators reliant on leases are vulnerable to real estate market forces prior to actual sale and conversion of the land itself.

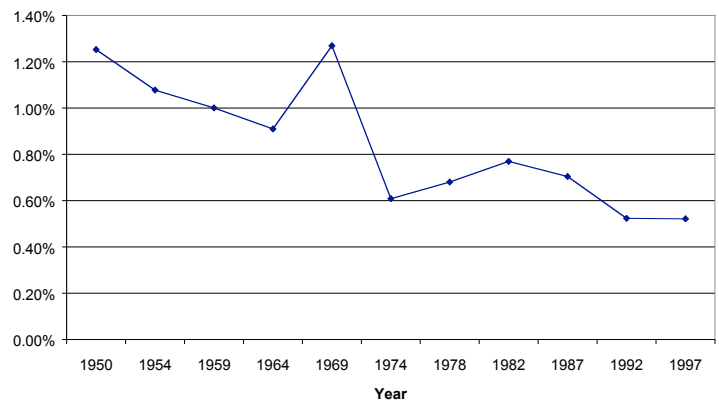
### Why is this important?

As Alameda County's population of farmers declines, so will the number of farming advocates, local experts, and mentors for future farmers, all of whom are needed to keep farming vital in the county. By supporting small farm viability, policy makers and activists may be able to slow or reverse the decline.

Employment as Farmers: Changes in the Number of Farm/Ranch Operators in Alameda County



Employment as Farmers: Trends in the Percent of the State's Full Farm or Ranch Owners from Alameda County

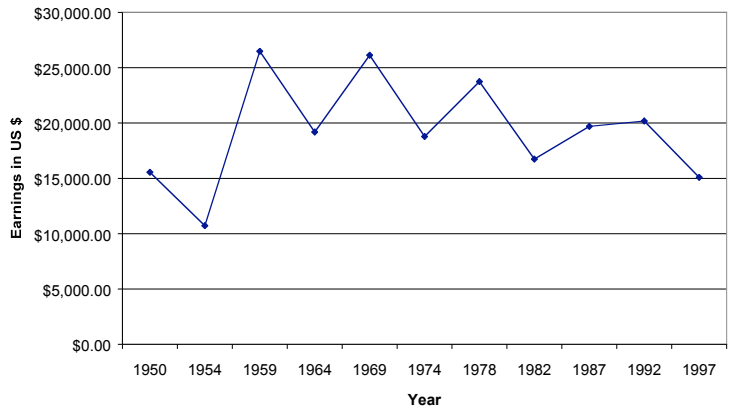


# Farm Labor Wages and Employment

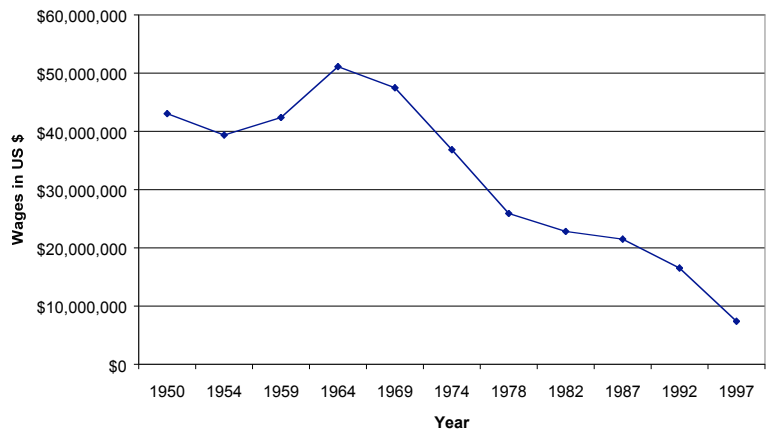
## The trends

Total farm labor wages paid in 1997 were \$7.4 million, down from \$14.4 million in 1992 and the lowest total since the early 1960s. Total farm worker wages have dropped 83% total since 1950. Average annual incomes for farm workers employed 150 days or more per year dropped from \$20,000 to \$15,000 per year between the same reporting periods, despite a 40 percent decrease in the number of farm laborers. Thus, not only were there considerably fewer farm workers in Alameda County in 1997 than there were just five years earlier, but the average incomes of those workers were significantly smaller. Farm laborer wages in 1997 fell to an insignificant 0.03% of total county wages, or less than one-half of one-tenth of one percent of all wages paid in the county. In contrast, the absolute number of farm workers has increased statewide in the past few decades despite the introduction of labor-saving machinery and tools; there are, in fact, more farm workers today in California's agricultural heartland than there were 40 years ago prior to the existence or widespread use of tomato harvesters, chemical pesticides, and 10-bed cultivators. For most of the rest of the state, demand for farm labor and, to a lesser extent, wages paid to labor, have risen even as farms (and farmers) have become fewer in number, grown larger in size, and begun to resemble industrial corporations.

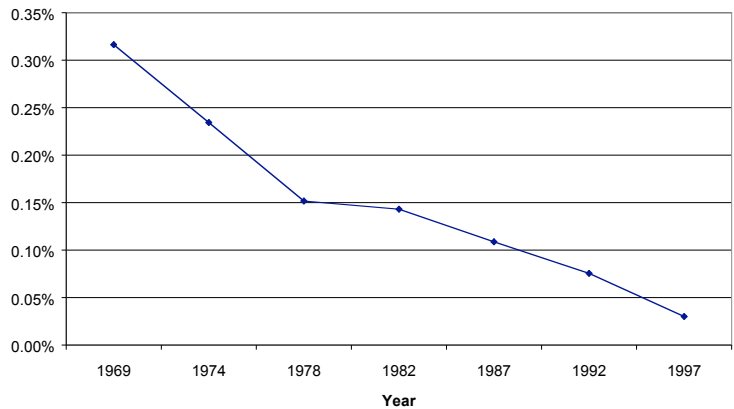
Trends in Estimated Average Annual Earnings for a Farm or Ranch Worker Working 150 Days/Year or More in Alameda County (adjusted for inflation)



Trends in Total Wages Paid to Farm and Ranch Workers Working 150 Days per Year or More in Alameda County (adjusted for inflation)



Changes in Farm and Ranch Labor Wages (for workers working 150 days per year or more) as a Percent of Alameda County Total Wages





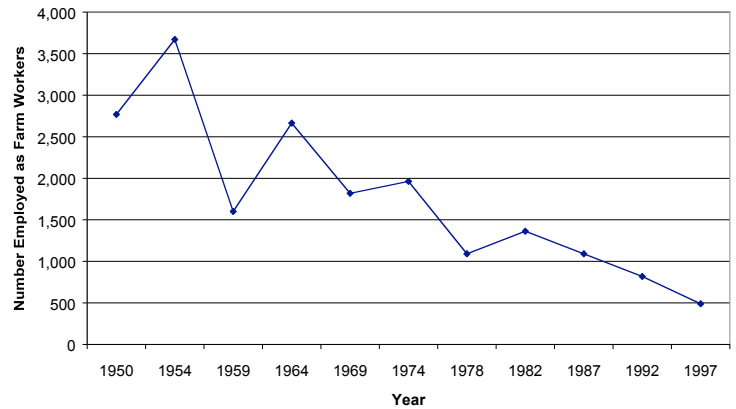
## Why are these trends occurring?

Farm wages, although not commiserate with farm profits, are generally higher than minimum wage. The decreased number of farm laborers, for example, may be a result of converting labor-intensive row cropping or dairy systems into pasture and range land for livestock, rather than a decrease in the total number of farms. A 100-acre farm where a variety of vegetables are planted, cultivated and harvested requires significantly more labor than a livestock operation where cattle roam 1,000 acres. Since many acres of agricultural land are earmarked for future development, landowners keep expenditures on labor and other inputs to a minimum in order to ensure greater profits when the property is sold or developed. Ranch land is easier and cheaper to maintain than farm land, and requires fewer “skilled,” better paid laborers. Landowners biding their time for development are also less likely to earn the major share of their incomes from agricultural pursuits, and therefore are less pressured to make the land profitable through agriculture. Thus, not only are there fewer total farm labor job opportunities in the county, but even fewer opportunities for farm jobs that pay well.

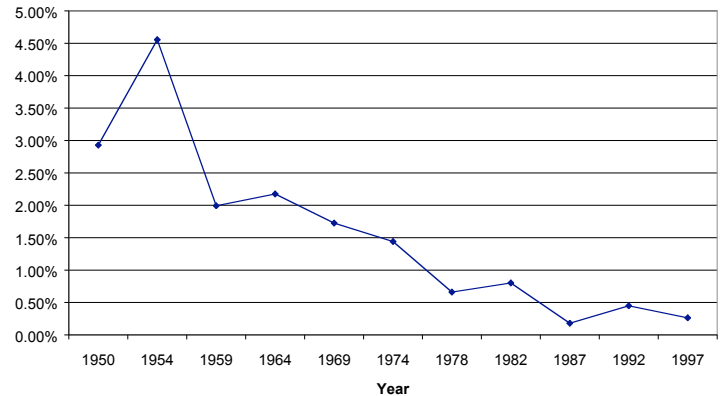
## Why is this important?

Farm managers have difficulty finding and keeping skilled machine operators, irrigators and mechanics for an increasingly technical industry that is still labor-intensive due to its sheer size. The declines in farm labor employment and wages reflect the diminishing role of agriculture in Alameda County’s economy rather than changes in the agricultural economy as is seen elsewhere in California. The Bay Area’s high living costs and declining farm work opportunities will lead to a continuing exodus of skilled farm labor from the county.

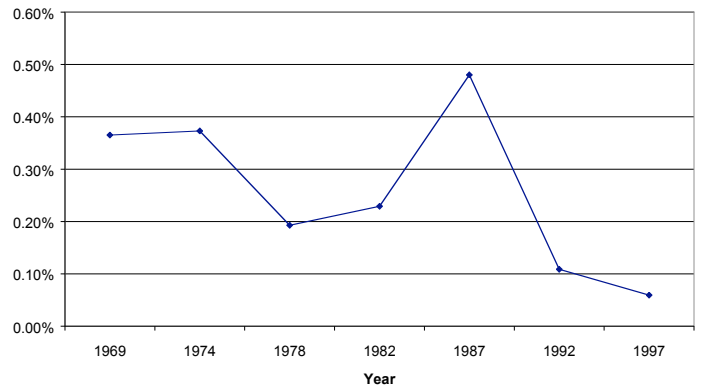
Trends in Employment of Farm and Ranch Workers Working 150 Days or More per Year on Farms in Alameda County



Trends in Farm and Ranch Labor Employment in Alameda County as a Percent of Total State Farm Labor Employment



Trends in Farm and Ranch Labor Employment as a Percent of Alameda County Total Employment



# Food Distribution System Wages and Employment

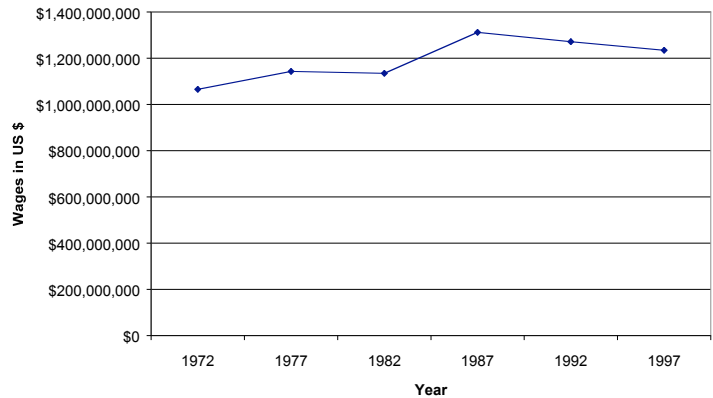
## The trends.

### Wages

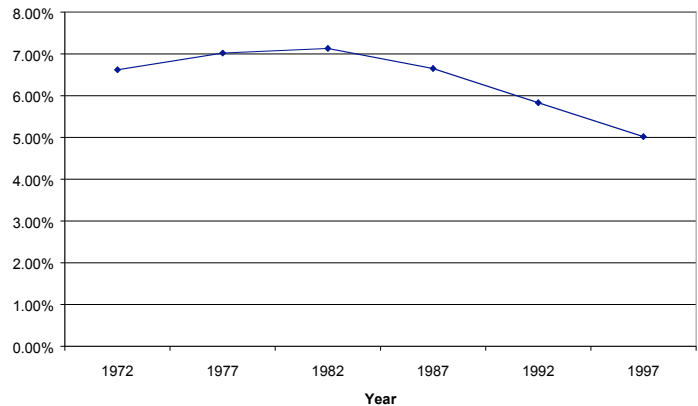
Inflation-adjusted total food distribution system wages grew 23% from \$1.07 billion in 1974 to \$1.31 billion in 1987, then declined 5.9% by 1997. Food distribution system wages as a percent of county total wages peaked at 7.13% in 1982 then declined to 5.02% by 1997. Estimated inflation-adjusted average annual wages for food distribution system employees declined 33% from \$29,928.66 in 1974 to \$19,287.85 in 1997, with the steepest decline between 1977 and 1982.

Farm product raw material wholesaler (packers and merchants selling unprocessed farm products wholesale) wages were reported in the Economic Census of 1974 at \$61,000 but not for subsequent census years. Inflation-adjusted food manufacturers (processors) wages paid grew from \$475 million in 1974 to \$524 million in 1978 then declined 40% to \$311.5 million in 1997. Inflation-adjusted food wholesaler wages paid grew 207% from \$176 million in 1974 to \$365 million in 1997 with a mild decline in 1978 and maximum growth between 1987 and 1992. Inflation-adjusted food retailer gross wages paid peaked at \$296 million in 1987 then declined to 1974 levels of \$222 million by 1997. Inflation-adjusted food servers gross wages paid grew 175% from \$192 million in 1974 to \$335 million in 1997 with the highest rate of growth between 1982 and 1987.

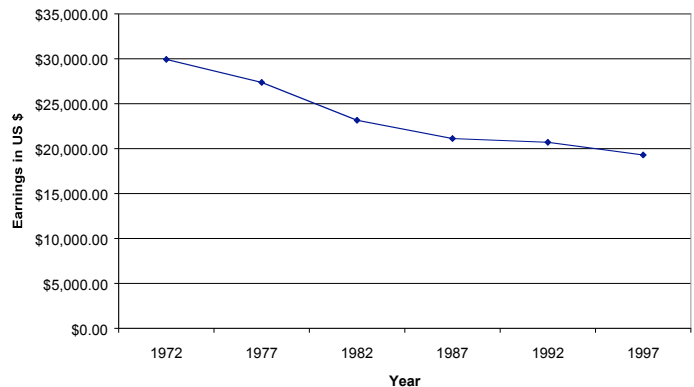
Trends in Total Wages for all Components of the Food Distribution System in Alameda County (adjusted for inflation)



Trends in Food System Wages as a Percent of Alameda County Total Wages



Trends in Estimated Average Annual Earnings for a Food Distribution System Worker in Alameda County (adjusted for inflation)



## Employment

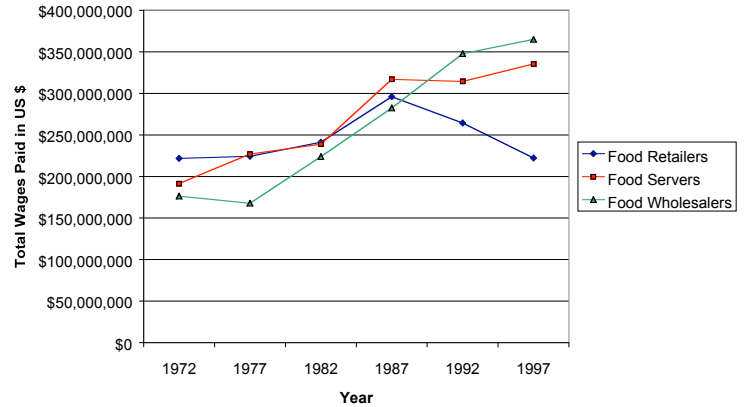
Total food distribution system employment grew 204% from 691,801 in 1974 to 1,407,936 in 1997. Alameda County food distribution system employment as a percentage of California total food system employment declined slightly from 5.14% to 4.54% from 1974 to 1997. Overall, the food distribution system's contribution to total county employment grew slightly from 7.04% in 1974 to 7.77% in 1997.

Farm product raw material wholesaler employment was not reported in the economic census after 1974, which listed only 5 employees for the county. Employment provided by food manufacturers peaked in 1978 at 13,400 then declined 23% to 10,322 in 1997. Employment provided by food wholesalers grew 133% from a minimum of 3,972 in 1978 to a peak of 9,273 in 1997, with most of the increase occurring by 1992. Employment provided by food retailers grew 76% from 7,518 in 1974 to a peak of 13,246 in 1987, then declined 13% to 11,517 by 1997. Employment provided by food servers grew 301% from 10,906 in 1974 to 32,873 in 1997; most of the growth occurred by 1987, and there was a nearly 50% increase between 1982 and 1987. Food servers now employ about as many workers as the other parts of the food distribution system combined.

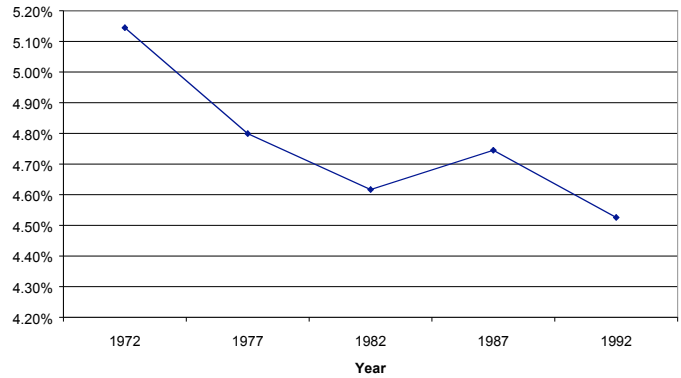
### Why are these trends occurring?

Oakland is a major port that serves an ever-growing Bay Area and Northern California population and provides steady supply lines and an operational base for food manufacturers, wholesalers and retailers, supporting their growth. However, regional distribution brings with it regional competition, and food manufactures may be lowering wages and/or mechanizing to retain market share. This factor

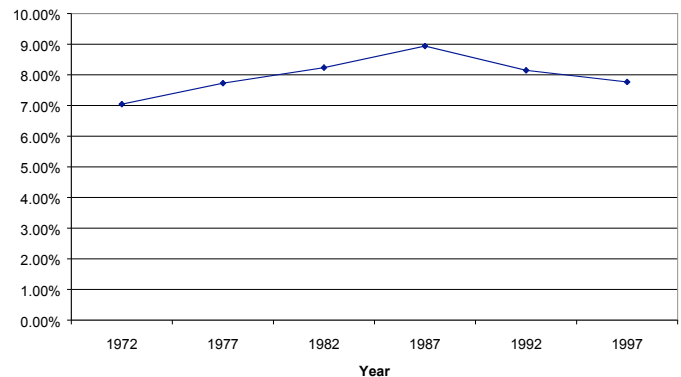
Trends in Total Wages Paid by Businesses Within Food Distribution System Categories in Alameda County (adjusted for inflation)



Trends in Total Alameda County Food Distribution Employment as a Percent of Total State Food Distribution Employment

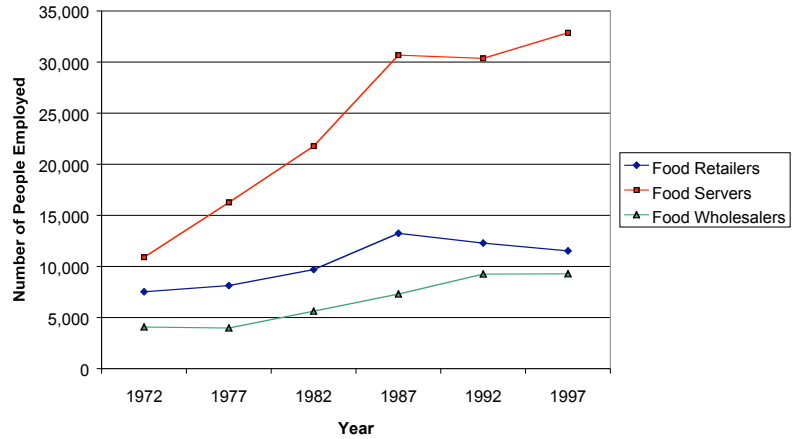


Trends in Alameda County Food Distribution System Employment as a Percent of Total County Employment



may explain why food manufacturers' employment and wage outputs declined in spite of a 3-fold increase in earnings. Packers and farm product wholesalers moved operations to other regions or closed down as development replaced local agriculture and local food production declined below the level needed to sustain the packing industry (John Gouveia, Alameda County Agricultural Commissioner's Office, 2001). Declines in food retailer wages and employment are probably due to the increasing dominance of chain stores and their tendency to reduce the retail sectors' employment and wage output in the community (Stacy Mitchell, Institute for Local Self Reliance 2000). Growth in food server wages and employment follows the boom in "dining out" and increased interest in ethnic and specialty dining among consumers.

Changes in the Number of People in Alameda County Employed in Each Sector of the Food Distribution System



### Why is this important?

While agriculture declines in the county, the food distribution remains a significant employer, and food servers in particular continue to provide increasing employment and income for workers. With the exception of packers and farm product wholesalers, Alameda's robust food distribution economy could benefit local agriculture if more marketing links were forged between them.

# FOOD CONSUMPTION INDICATORS

## HIGHLIGHTS

### **Overview**

There is very little information available on food purchasing and consumption habits in Alameda County as a whole. From 1972 to 1997, total per capita food expenditures estimated from the Economic Census for the county increased 3.6% while expenditures estimated from national averages rose 10.7%. Expenditures for food consumed at home grew more slowly than inflation while expenditures on dining out grew more quickly than inflation. An increasingly wealthy Alameda County population has more disposable income for food than ever before, but is accustomed to low prices in comparison with consumers in San Francisco, Marin, and San Jose (Shauna Cozad, phone interviews 2001). Alameda county residents eat out more often each year, mirroring national trends.

### **Importance for the alternative/ sustainable food system**

Alameda County's growing and increasingly wealthy population provides an expanding opportunity for high-margin direct and niche marketing of agricultural products to keep local agriculture profitable. However, consumer purchasing is still focused in the low-cost, high-convenience environments of large supermarkets whose wholesale supply lines and purchasing activities limit or prohibit the incorporation of local products. Marketing may be required to raise consumer demand for local produce to the point where larger supermarkets respond with allocations of shelf space. Since restaurants often act as trendsetters for high-income consumers and may have the flexibility to purchase directly from growers, it may be prudent to focus marketing efforts in local restaurants.

# Total Food Expenditures

*Comment on our data set:*

Detailed data on food consumption expenditures on the county level is essentially unavailable. In this section, we have used two estimates of expenditures: taking gross food retailer and server sales from the Economic Census as measures of food Expenditures home and away from home, and multiplying county population data by national averages for food expenditures reported by the USDA. All data has been inflation-adjusted to 1997 dollars.

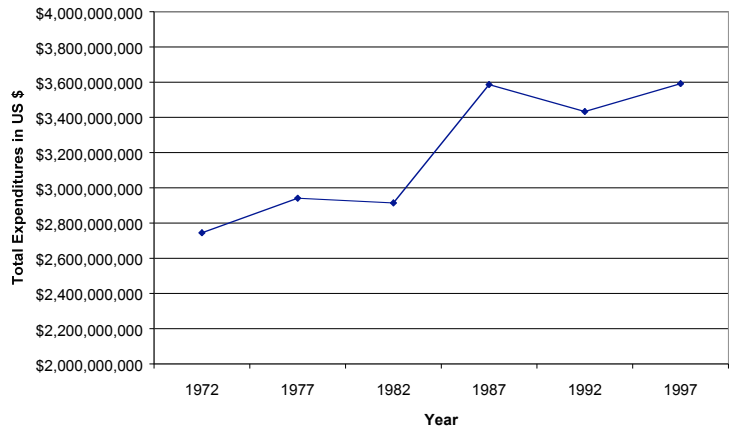
## The trend.

Total food expenditures, as estimated from the Economic Census, grew 31% between 1972 and 1987, with the largest increase between 1982 and 1987, then remained stable through 1997. Expenditures estimated from national averages grew 40% over the same period with a minor decline between 1977 and 1982. Estimated expenditures as a percentage of total county earnings peaked in 1982 at 15.3% then declined to 12.03% by 1997, suggesting income growth may not result in an equivalent increase in food spending.

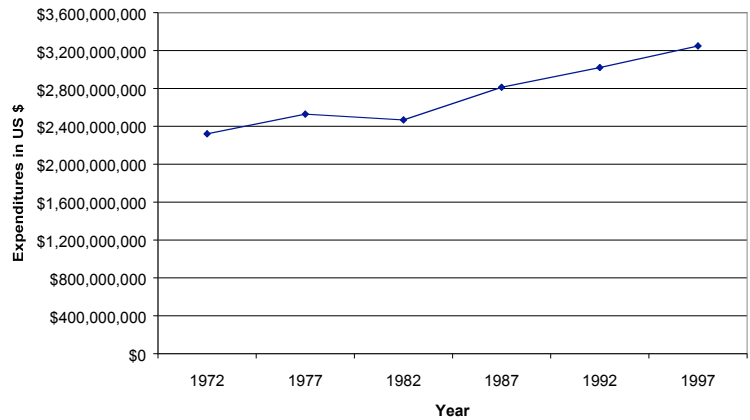
## Why is this trend occurring?

Total food expenditure trends match both population growth and per capita income trends in rate and magnitude of change, suggesting these two factors determine total food expenditure patterns. The decline in expenditures relative to county earnings may be the

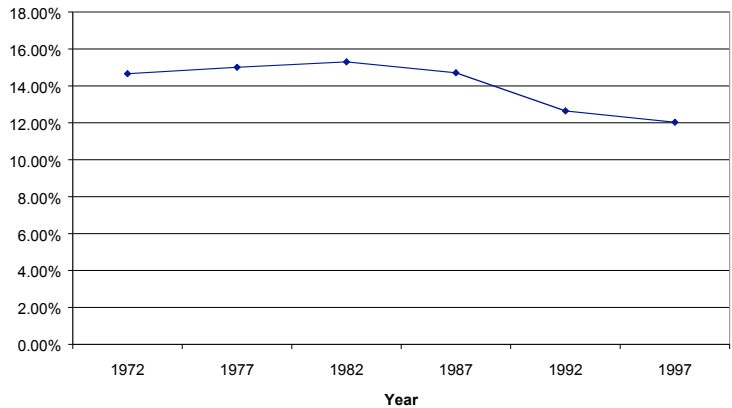
Trends in Total Food Expenditures in Alameda County (adjusted for inflation)



Trends in Total Food Expenditures in Alameda County, Data Derived From National Averages (adjusted for inflation)



Total Food Expenditures in Alameda County as a Percent of County Total Wages (adjusted for inflation)



result of declines in inflation-adjusted food prices.

### Why is this important?

Expenditures by local agriculture's ultimate customer base, the population of consumers, will continue to increase. An increasingly wealthy Alameda County population has more disposable income for food than ever before, but is accustomed to low prices in comparison with consumers in San Francisco, Marin, and San Jose (Shauna Cozad, phone interviews 2001). Ultimate market opportunities for local production exist and will continue to expand.

## Per Capita Food Expenditures

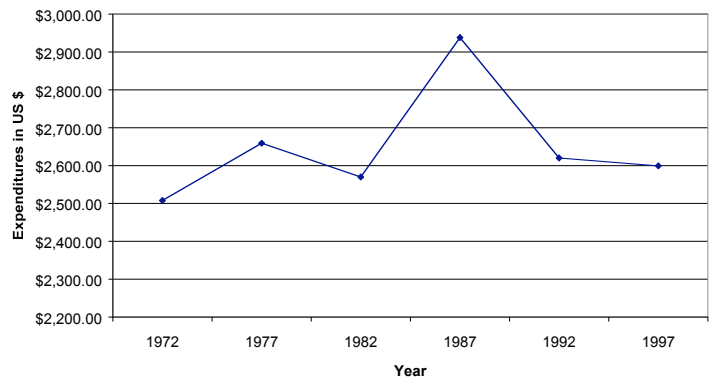
### The trend.

From 1972 to 1997, total per capita food expenditures estimated from the Economic Census increased 3.6% while expenditures estimated from national averages rose 10.7%. For both estimates, the maximum period of growth occurred between 1982 and 1987. County per capita food expenditures as a percent of per capita income declined slightly over the period of 1972 to 1997.

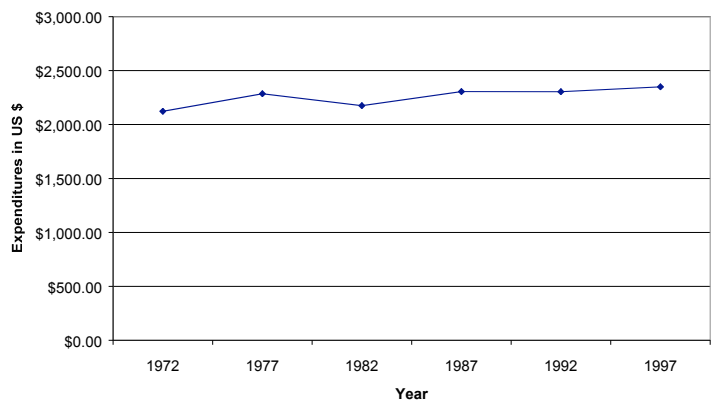
### Why is this trend occurring?

Although increases in average per capita income in Alameda County have resulted in increases in per capita food expenditures, income growth has outpaced food expenditure growth. The pattern results from a combination of low food costs and growth in high wage employment. In general, American consumers shop for the lowest price as the first criterion of choice in food purchases, and are accustomed to average prices much lower than those paid by European consumers, for example.

Trends in Per Capita Food Expenditures in Alameda County, Derived from Economic Census Data on Food Retailers and Food Servers Gross Receipts (adjusted for inflation)



Trends in Per Capita Food Expenditures, National Average (adjusted for inflation)



## Why is this important?

Despite significant growth in disposable income among county residents, food spending habits have not led to an equivalent growth in food sales.

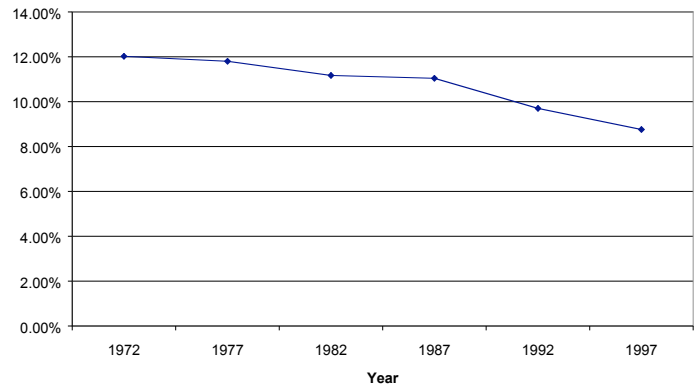
Farmer's markets, CSAs, roadside stands and organic produce retail stores provide opportunities for small and/or local growers to sell their products for higher per-unit profit. Yet the reach of these outlets into the marketplace is limited.

## Dollars Spent on Food, Home vs. Away

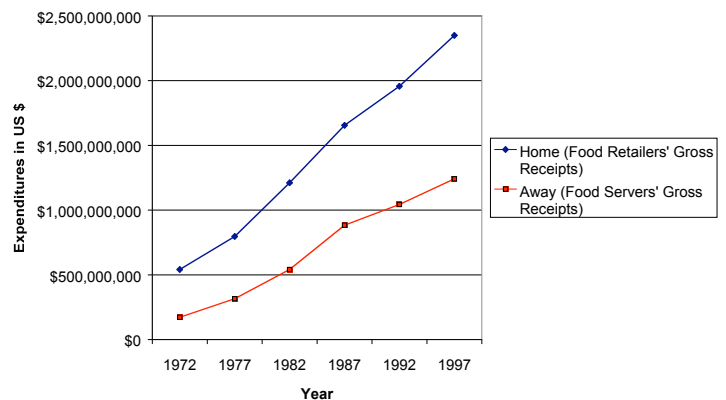
### The trends.

Between 1972 and 1997, estimates for food expenditures away from home grew about 5 times faster than similar estimates for food expenditures at home, regardless of whether estimates were made from national averages or from county-specific Economic Census data. Both types of expenditures grew faster than the county population, but expenditures at home grew more slowly than inflation while expenditures away from home grew more quickly than inflation. Expenditures away from home, estimated from Economic Census data, experienced 39% growth between 1982 and 1987, and relative stasis after 1987. The ratio of expenditures on food for the home to expenditures on dining out declined almost 40% between 1972 and 1997 for both national average and Economic Census estimates, indicating restaurants have nearly doubled their share of total food budgets in the county.

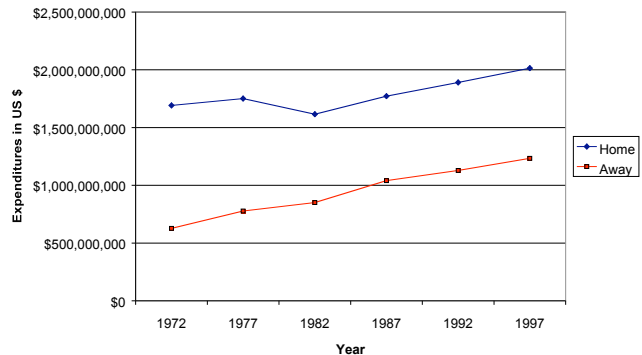
Trends in Alameda County Per Capita Food Expenditures as a Percent of Per Capita Income (adjusted for inflation)



Trends in Food Expenditures in Alameda County, Home Vs. Away, from Economic Census Data Sets (adjusted for inflation)



Trends in Food Expenditures in Alameda County, Home Vs. Away, as Derived from National Averages (adjusted for inflation)



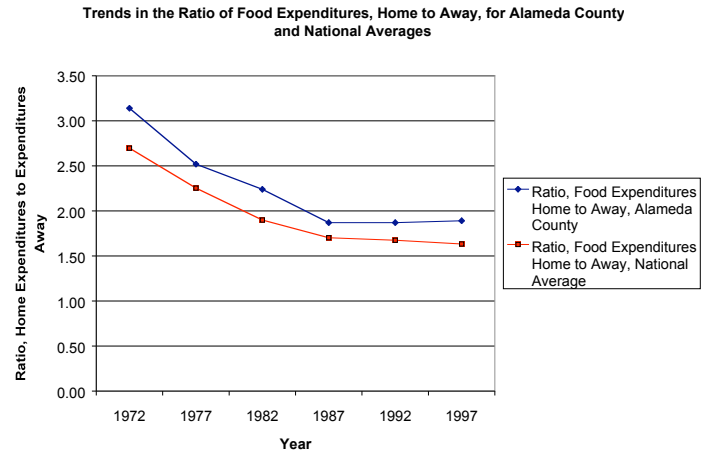


### Why are these trends occurring?

Alameda County's food consumption pattern follows the national trend of eating less at home. This factor could explain why growth in food expenditures for the home consistently lag behind both population and income growth for the county. 1987 may be the year growth in the restaurant industry saturated Alameda County, stalling growth in sales.

### Why is this important?

Restaurants, especially independent specialty-food and ethnic food establishments that directly purchase fresh produce, could provide direct marketing opportunities to local farmers. Basic (unprepared) food marketing opportunities are declining at the source, namely the consumer, because of the overall social trend towards dining out rather than preparing ones own food. Producers could combine their farmer's market sales runs with deliveries to restaurants near the market to take advantage of the trend.



# COMMUNITY FOOD SECURITY AND ACCESS INDICATORS

## HIGHLIGHTS

### **Overview**

Although participation in government food assistance programs declined through the 1990's, need for assistance continues to increase. Examples of successful grass-roots efforts include the Fruitvale Street Vendors Association community kitchen and the Alameda County Community Food Bank. In many cases, such efforts reach more of the needy than state or federal relief programs, are more responsive to sudden changes in local need, and can make extensive use of local surplus food that would otherwise be wasted. Alameda County is home to a wide variety of very active NGO's working to alleviate hunger, but some opportunities for broad-based cooperation remain untapped. Frank Buck of the California nutrition Network (2001) describes three approaches to food security – emergency food providers, “self-serve” organizations such as food coops and community gardens, and political activist and advocacy individuals and groups working for social and economic change. He says that although all three approaches are well represented in Alameda County, there is little cooperation among them.

### **Importance for the alternative/sustainable food system**

In addition to established and highly effective food redistribution and community kitchen organizations in Alameda County, community gardens may serve an important role in improving nutrition for the food insecure, including school children. Community gardens also provide the shortest path from production to consumption for urban consumers and offer them the opportunity to experience a personal connection to food production, serving to educate and inspire consumers about the importance of locally produced food. Connecting local producers with school food services represents a win-win opportunity, helping monies for school meals stay within the local agricultural economy while simultaneously improving school meal variety and quality. Farmers' markets in low-income areas could improve food security for the needy while helping local agriculture remain viable. Efforts to streamline the use of foodstamps for farmers' market food purchases should encourage the needy to include more fresh, raw, and whole-food products in their diets.

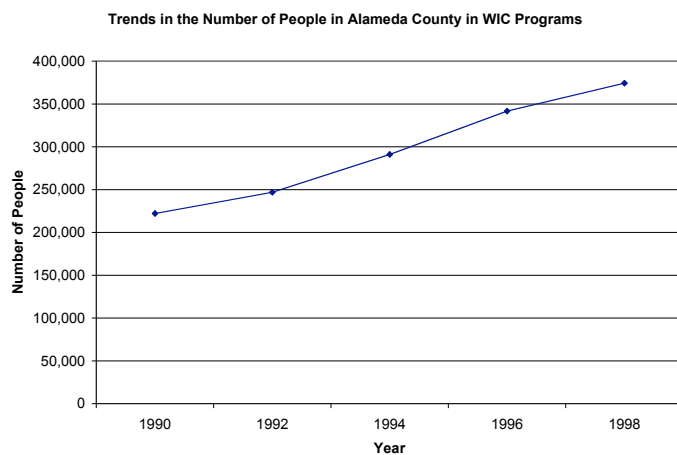
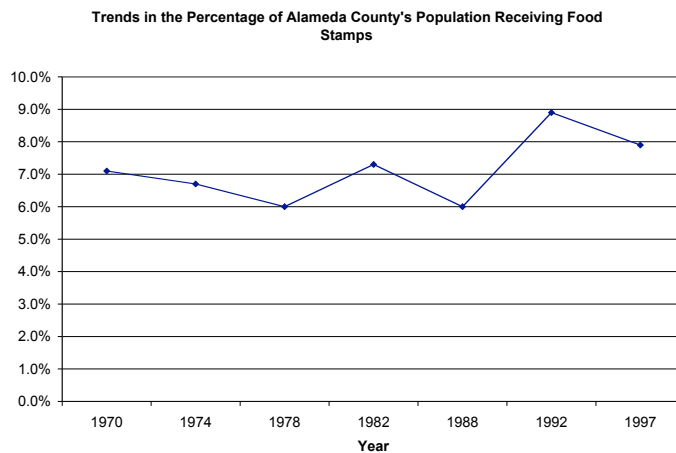
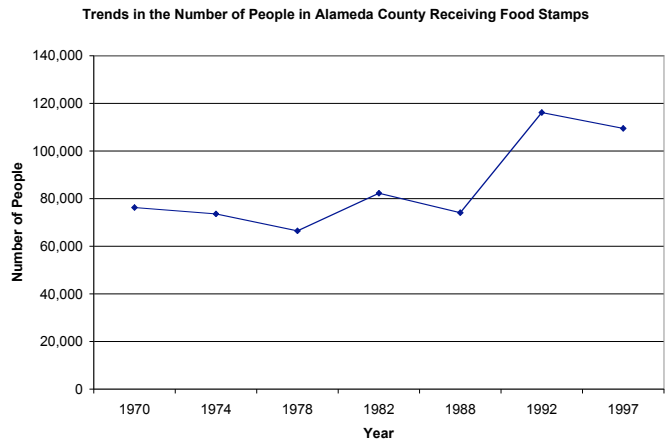
# Government Food Program Participation

## The trend

The number of people receiving food stamps in Alameda County wavered between 6-9 percent of the county's population from 1970-97, with a large increase in recipients between 1988-92 followed by a decrease from 1992-97. Registrants in the WIC (Women, Infants and Children) and nutritional program, meanwhile, have increased steadily to 27 percent of county's population. In the 1999-2000 year, the Food Stamp Nutrition and Education Program (FSNEP) reached 739 adults directly through nutritional outreach programs and an estimated 43,000 by direct mail education providing recipients with food safety and nutrition information. 506 families graduated from the Expanded Food and Nutrition Education Program (EFNEP) that serves low-income, high-risk and hard to access families by networking 62 community agencies to provide training and in-home services as enhancements to direct food aid programs such as food stamps. The number of children enrolled in free or reduced-price meal programs declined slightly from 1996 to 1998 after increasing for the previous eight years.

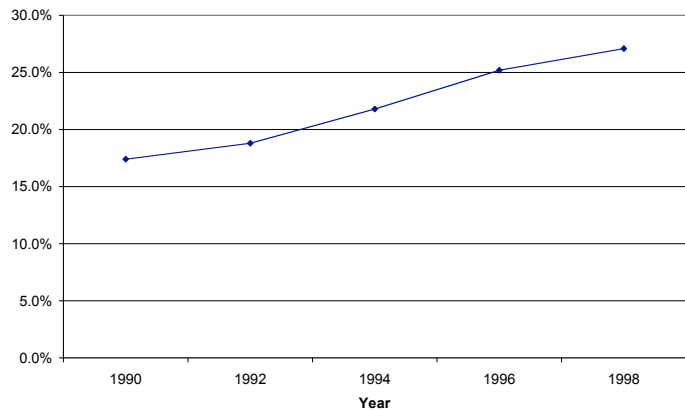
### Why is this trend occurring?

Political factors such as “welfare-to-work” programs are likely influences on the most recent declines in the number of food stamp recipients. The USDA estimates that only 19% of the decrease in caseloads nationwide since 1994 results from improved economic



conditions and thus a decline in real need (Nutrition Week Update 4/1/02 Vol. 2, No. 6). The broadening of eligibility standards for WIC may have contributed to increases in the number of its participants. Growth in WIC participation may also be due to improved outreach strategies to multi-ethnic communities, a high population of young parents (especially single mothers in need of assistance), and a successful advertising campaign.

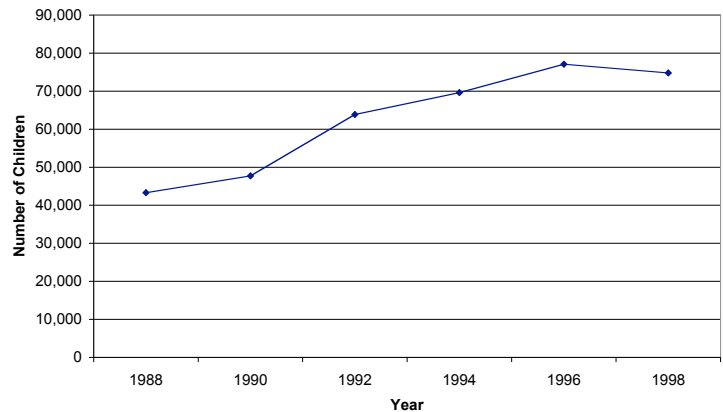
Trends in the Percentage of Alameda County's Population in WIC Programs



**Why is this important?**

Problems of poverty and access to healthy food for both children and adults have not subsided, and thus social service programs are still essential to needy families. Efforts to reach “food insecure” segments of Alameda’s populations should be a priority.

Trends in the Number of Children in Alameda County Enrolled in Free or Reduced Price Meal Programs



Social service organizations are responsible for making the process of attaining food aid less complicated for the needy. The often-convoluted bureaucracy associated with obtaining services turns an estimated 60% of eligible recipients away (California Food Policy Advocates, 1999). Long and complex application paperwork acts as a barrier to needy individuals, especially those with limited English language skills. For example, “...a food stamp application with an average benefit level in California of around 67 cents a meal, or \$71 a month per person, is eleven pages long.” ( Deborah Leff, CEO of America’s Second Harvest. Quote from Hunger Update by California Food Policy Advocates, Nov. 1999). Low-income residents are not only hesitant to go through the extensive process of acquiring food stamps, but may distrust the program because it is being constantly reconfigured.

In addition, simply owning a vehicle may disqualify some needy applicants. In California, the food stamp program cannot work independently because it is linked to the California Work Opportunity and Responsibility to kids (CalWORKS) program. Both the state and assembly included AB (Assembly Bill) 144 into their budget in 2001, a bill which would allow a food stamp applicant to exempt one vehicle automatically and a second could be exempt if used for employment, education or training. “Other vehicles would be exempt only if their fair market value was under \$10,000.” (AB 144 Assembly Bill; <www.leginfo.ca.gov>) Residents commuting to suburbs for low-skill jobs, central city

residents commuting to outlying suburbs, and rural residents residing in areas with poor public transportation are all dependent on reliable vehicles for employment. Also, "...recent research has found that whether a family has a reliable car is an important factor in determining the success of its efforts to make the transition from welfare to work." (Center on Budget and Policy Priorities: New State options to improve the Food Stamp vehicle Rule: <http://www.cbpp.org>). AB 144 passed but was subsequently vetoed by Governor Davis.

One new program offers hope of assisting local agricultural producers while improving food access and nutrition for the needy. In the Farmer's Market Nutrition Program (FMNP), WIC participants are given \$20 vouchers to buy food for themselves and their children at the 19 accessible farmers markets countywide. Electronic Debit cards will be used in the near future at these markets instead of Food Stamps for eligible recipients. Alameda County is the pilot program for the entire state in this venture.

## **Community Kitchens**

### **The trend.**

Currently, the Fruitvale Street Vendors Association (FSVA) operates the only community kitchen in Alameda County. Originally a group of individual street vendors, the FSVA founded the kitchen with the help of the City of Oakland, the Community Health Academy, and the efforts of Emilia Ortero, a dedicated community organizer. FSVA currently includes twenty-five vendors in all and city ordinance permits 30 vendors within the Fruitvale city limits. Of the twenty-five vendors in FSVA, twelve share the existing organized community kitchen, while a second kitchen is in the works. The other thirteen vendors prepare food at local restaurants until the new kitchen facility is completed sometime in 2002. Within the next couple of years, FSVA intends to move into a jointly owned space large enough for all 25 vendors to prepare their food communally. (Emilia Ortero, interview, February 2001).

### **Why is this trend occurring?**

To create a viable community kitchen, the FSVA had to overcome many obstacles including lack of start-up funds and technical assistance, disrespect from the community and local businesses for not following health and safety codes, harassment from the police and the city health department, and an initial lack of support from the City of Oakland. Following a \$15,000 grant from the California Nutrition Network and proper training for all vendors on health and safety codes, the vendors have prospered. Initial supporters estimated that it would take 5 to 7 years to create a community kitchen, but the first was established within three years. The plan to add a second facility reflects growth in community demand for the services that the first kitchen provides.

### **Why is this important?**

The FSVA kitchen benefits community members by providing locally made, safe, fresh, inexpensive food while creating and maintaining employment for community members.

Healthy alternatives to conventional “fast foods” are few but vitally important. For example, the FSVA kitchen helps provide Fruitvale’s Latino majority easy access to traditional, cultural foods. Fresh, homemade tamales, sliced fresh fruits and vegetables and traditional Latino deserts are sold throughout the community to commuters on their way to and from work, church patrons, and many children who might purchase a bag of seasoned mangos and cucumber instead of a bag of potato chips. Vendors are open to the possibility of incorporating locally grown fruits and vegetables into their cart menus and thus may provide a market outlet to local producers. In an area where the climate permits year-round growing, this might be a possible venue for a school or community marketing RFP project focusing on local agriculture.

## **Food Banks and Gleaning Programs**

### **The trend.**

The Alameda County Community Food Bank (ACCFB), under the National umbrella organization Second Harvest, acts as the main food drop off and redistribution center for the county. Through the organization and coordination efforts of the ACCFB, milk, produce and non-perishable items are distributed to a network of 300 agencies and over 97,000 meals are served per month totaling 1,164,000 meals per year. Food gleaning, broadly categorized as food recovery by collecting or gathering wholesome food for distribution to the poor and hungry is broken down into four categories: field gleaning, perishable produce rescue or salvage, perishable and prepared food rescue, and nonperishable (processed) food collection. Since Alameda County agricultural food production is limited, little or no food is gleaned from local farms. However, food recovered from restaurants, grocery stores and distribution centers, farmers markets and to a smaller extent from school and community gardens is diverted to shelters, soup kitchens and food pantries. (Alameda County Community Food Bank website, [www.accfb.org](http://www.accfb.org), 3/1/02)

We were unable to obtain data on the number of volunteers who are active in gleaning programs, the number gleaning programs active in the county, or the number of pounds of food gleaned, but we have partial data on a few major gleaning efforts. The fifteen year old organization Oakland Potluck includes farmer’s and wholesale market pick-ups, a neighborhood fruit tree gleaning program with 20 to 25 volunteers called “Backyard Bounty,” an elementary and a middle school garden, and is the only organization in the county that gleans prepared food (unserved portions) from schools, hospitals, and other institutions. Oakland Potluck alone receives and distributes 645,000 pound of food a year and serves 7000 meals to people per week in the cities of Oakland, San Leandro and Berkeley, and works with 40 different agencies including battered women’s shelters, brown bag programs, and Salvation Army (Jeremy Pearson, Oakland Potluck, 2001). Daily Bread picks up and delivers day-old bakery bread (Julianne Morris, Daily Bread, 2001). Food not Bombs and the New Light Senior Center pick-up food regularly at a variety of food outlets and deliver to over 300 agencies, many of which are associated with the Food Bank as well. The Alameda County Food Bank is in the process of beginning a program called “Plant a Row for

the Hungry” to encourage county residents to grow extra food in their backyard gardens to distribute to the hungry.

### **Why is this trend occurring?**

Because federal and state hunger relief services are generalized and bureaucratic by nature, they are unable to meet the needs of all of the hungry locally or to take advantage of local opportunities in the form of distribution facilities, volunteer labor, and excess or wasted food. Many eligible and needy individuals choose not to participate in food stamp programs because of the convoluted application process or the stigma associated with public welfare. Changes in the state or federal political climate can lead to changes in policy that may create an apparent drop in food stamp demand by simply redefining eligibility to exclude existing participants who are truly needy.

Both individual activists and organizations with traditions of charity and community service, including religious organizations, have initiated and maintained hunger relief efforts in response to local needs and local opportunities for gleaning otherwise wasted food.

### **Why is this important?**

Together, the Alameda County Food Bank and the county’s gleaning programs support the most basic food of many children, elderly and needy families who are food insecure, or blatantly hungry, at times when other social services might not suffice. Since an estimated one-quarter of America’s food goes to waste, (USDA Economic Research Service 1995), food gleaning and recovery may have the potential of eradicating poor nutrition and hunger if properly instituted in Alameda County. Public funding support and additional organization efforts may be needed to overcome problems of efficient gathering and distribution. Alameda County has few traditional fields or orchards to glean food from, thus food comes from various distribution services as well as from commercial kitchens, markets, schools and restaurants. To be safe to eat, prepared food and produce must be picked up and redelivered to drop-off centers and consumed within a 72-hour period from the time it was prepared. The organizational and technical challenges of consistently operating in such a narrow window of opportunity are daunting. The Oakland Produce Association, Web-van and many other services offer thousands of pounds of edible food for redistribution. Resources are not in place, however, for more food to be efficiently distributed for consumption.

## **Community Gardens**

### **The trend.**

Overall, numbers of community gardens in Alameda County have been increasing to the current estimate of 27 gardens countywide. Oakland and Berkeley lead the county in numbers of community gardens, with ten community gardens each, while Fremont and Hayward offer the most individual plots serving up to 100 people at one site. Emeryville hosts at least one community garden. In total, over 400 gardeners cultivate crops in Alameda County community gardens. (Shauna Cozad, UCCE Alameda County, Fall 2001).

### **Why is this trend occurring?**

Consumer concerns about food costs and quality, a heightened knowledge of the benefits of organic produce, and interest in gardening as an enjoyable experience have all given rise to increasing numbers of urban gardeners, many of whom lack access to gardening space. The resulting demand for gardening land drives the trends in community garden activity. The dedication of a garden leader and the involvement of the gardeners often determine the rise and fall of gardens on donated or salvaged city spaces.

### **Why is this important?**

Community gardens are located in the most densely populated urban areas in the county. For a working populace with little time to spend on the growing food, neighborhood community gardens provide the opportunity to focus efforts on a small, manageable plot. Citizens who become gardeners get to enjoy fresh foods and a connection to food production missed by consumers who are solely dependent on supermarkets for produce. Community gardens are often utilized as spaces for open-air workshops, organic gardening and composting, special harvest festivals, destinations for student fieldtrips, and sanctuaries to escape the fast pace of city life. Many community gardens are adjacent to schools or in nearby areas and are utilized for both youth education and summer programs. Thus community gardens may nurture the growth of urban political support for rural farms.



# **FOOD AND AGRICULTURAL EDUCATION AND ADVOCACY**

## **HIGHLIGHTS**

### **Overview**

Numerous community groups and individual activists have succeeded in promoting school garden and “farm to school” programs that provide fresh produce in K-12 school lunches and agricultural education opportunities. Though some local colleges and the University of California at Berkeley offer courses in economics or horticulture with an agricultural bend, none offer courses with an emphasis on local or sustainable agriculture or food systems. In general, there is no trend data available for the indicators chosen for this section of the report.

### **Importance for the alternative/ sustainable food system**

Agriculture’s presence in the public and higher education system is vital for nurturing consumer interest, involvement, and understanding of food and agriculture-related issues. In Alameda County, great strides have been made in bringing agriculture and food awareness to K-12 students, but the void in agricultural education offered at colleges and universities remains to be filled.

## **K-12 Schools with Agricultural or Food Education Curricula or School Gardens.**

### **The trend.**

Since the mid 1990's some teachers have ventured beyond the lines of structured classroom education and initiated garden programs linking science, nutrition, literature, math and social studies to outside gardening activities. Since the trend caught on, ten to fifty schools per year have been successfully adding garden components into their lesson plans (Shauna Cozad, UCCE Alameda County, Fall 2001). At least 185 (46.4%) of the county's 399 schools and child care centers have gardens on site. (Garden Survey 2000 Alameda County Schools, UCCE Alameda County).

### **Why is this trend occurring?**

"A Garden in Every School" initiative passed by California's superintendent of schools Delaine Easton in 1999 provided a vision and support materials for the establishment of school gardens. Teachers are often too busy to develop class curriculums and materials for their students and may not have any experience starting and maintaining a garden. The California Foundation for Agriculture in the Classroom has created and published curricula with detailed lesson plans and guidance for teachers. These curricula meet state standards and incorporate many topics, including mathematics and natural sciences, into prepared coursework ready for teachers' use (1999 Teacher Resource Guide, California Foundation for Agriculture in the Classroom).

The Farm to School program (1999-2001), funded by the California Nutrition Network and implemented by the Berkeley Food Systems Project was modeled after the successful Santa Monica Farm to School project in the Los Angeles area. Both programs link schools with farmers who provide fresh produce to be presented in the form of salad bars as an alternative to the children's typical hot-food lunch. The children benefit from eating and learning to like fresh produce and the farmer benefits from having a regular, fair-paying customer, the school district. (Shauna Cozad, UCCE Alameda County, Fall 2001).

### **Why is this important?**

School gardening with an agriculture/nutrition component teaches children the value of food and the link between long-term health and growing and eating fresh fruits and vegetables. Gardens in Alameda county are being incorporated into the tactile activities of pre-schoolers and kindergartners as very early introductions to fruits, vegetables and the growing experience. When such early introductions are successful, children will almost always try or eat fresh produce when offered the choice. (Surveys of Alameda County teachers by Shauna Cozad, UCCE Alameda County, and Sheri Zidenburg-Chur, UC Davis Dept. of Nutrition 2001)

School garden curricula provide many opportunities for making potentially abstract lessons more tangible to students. For example, predominantly Chinese and Native American

schools use the vegetables they grow as cultural links to the food and agriculture of their heritage. Schools with diverse student populations often have multiple theme gardens such as beneficial insect gardens, butterfly gardens, and African or South American gardens. Many teachers link children's gardening experiences to stories of the human life in other cultures or other eras for lessons in history, geography, or anthropology. Math teachers may have children measure and quantify produce weights and numbers and garden perimeter and growing area. Creative writing and art are commonly linked to gardening activities.

Lasting lessons from school gardens may also help efforts to keep agriculture local as informed school children mature into working, consuming, and voting adults.

## **Higher Education with Sustainable Agriculture Education.**

### **The trend.**

There are two major universities in Alameda County, the University of California at Berkeley and California State University Hayward, as well as three private colleges, Heald, Patten and Mills. UC Berkeley has a graduate group in range management and offers courses in the basic biological history of agriculture and in chemistry and economics as applied to agriculture. None of the courses are focused specifically on issues of agricultural sustainability. CSU Hayward does not currently offer courses related to agriculture.

Seven Junior colleges, Chabot, Vista, Alameda College, Peralta, Merritt, Laney, Ohlone and Los Positas Colleges stretch throughout the county offering educational advancement opportunities from Berkeley and Oakland to Fremont and Livermore. None currently offer courses in agriculture, but Merritt is well known for its horticulture department.

### **Why is this trend occurring?**

Alameda County's higher education system has urbanized along with the county in general, leaving agricultural education to institutions in other, still rural and agricultural counties.

### **Why is this important?**

Historically, farming operations passed from one generation to the next within a family, and knowledge of farming techniques were transferred along with land and other assets. Today, rapid changes in farm ownership and commodity markets disrupt the transfer of knowledge, and thus Universities have become important for preserving and disseminating expertise. An on-campus agricultural presence also helps expose students on a variety of career paths to the importance of agriculture. Alameda County agriculture would benefit if it was better supported by sustainable agriculture and food systems research and education in local colleges and universities. A rise in student demand for coursework in agriculture may be needed to affect change.

## **Agricultural Tourism**

### **The trend.**

Agricultural tourism in Alameda county is largely confined to Livermore Valley's wine country and school and community gardens. Four vegetable growers are willing to give tours, and often offer them to school groups, but they do not advertise the opportunity. Agricultural tourists are more often foreign visitors than county residents. The Department of Parks and Recreation arranges tours of the Ardenwood Regional Preserve and Historic Farm in Fremont. Vineyards offer wine tasting and may host tours arranged by the county's Master Gardener Program or by gardening clubs. School and community gardens are also seeing an influx in visitors. "Open Garden Days" arranged by the Center for Ecoliteracy each year attract county residents as well as visitors from neighboring counties who come to gather ideas on how to create gardens of their own, learn from veterans, and network with other growers.

### **Why is this trend occurring?**

To date, most agricultural tourism activity in the county has resulted from the efforts of inspired individuals and small groups rather than large-scale efforts by government, NGO's, or businesses. Agencies that promote tourism rarely support small growers and ranchers because most farming and ranching operations are not visible from a major freeway and few have developed facilities and programs to welcome visitors. One exception to the trend is the Livermore Valley Wine Grower's Association, consisting of 16 vineyards. This well-organized group does its own advertising along the I-580 corridor and has an accessible website including maps and times for public wine tasting. As the population increases in the Livermore Valley area (the fastest growing area in the county), the number of visitors will be likely to increase because wines are popular luxury items and zoning laws safeguard vineyard areas from future development.

### **Why is this important?**

In addition to helping boost product marketability, marketing associations such as the Livermore Valley Wine Grower's Association help motivate growers to organize, facilitating cooperation on non-market related issues that may impact all producers in a community but could not be effectively addressed by producers working in isolation. Marketing associations also provide growers with an organizational entity that can work to implement policy initiatives for marketing and tourism. For example in the year 2000 county elections, voters approved Measure D, which amended the county general plan to place strict urban growth boundaries around Pleasanton, Dublin and Livermore. The measure also spurred the creation of a new Agricultural Panel to assist the board of supervisors in managing agriculture related issues. The panel has acted to remove the ban on billboard advertising for farmers, help identify niche markets and find working solutions for agricultural run-off and other environmental impact issues.

## **Organizations/Non-Profits - Sustainable Agriculture and Community Food Security.**

### **The trend.**

Many organizations in Alameda County work to improve community food security and promote the support of sustainable and local agriculture. The list includes the local and organic produce-based Chez Pannise restaurant, founded by Alice Waters, who also funds the Edible Schoolyard garden and cooking program at King Middle School. This program features a garden almost an acre in size, supports three full time staff members and several Americore volunteers. In the city of Berkeley, all school children are introduced to organic foods in their snacks, lunches, and in some cases, breakfasts (Erica Pang, Berkeley Unified School District 2001).

### **Why is this trend occurring?**

Berkeley's cultural tradition of activism and experimentation in progressive causes, including sustainable and organic foods and agriculture, helps nurture organizations who's efforts for change impact the entire county. Key figures such as Alice Waters serve as catalysts to drive change.

### **Why is this important?**

Non-government organizations (NGO's) test innovative approaches to community problem solving, fill gaps in the public support system, and may be more efficient than public agencies at harnessing local resources and opportunities. Sustainable agriculture advocacy organizations rebuild the bridges between consumers and producers that are lost through urbanization. Such organizations are vital for shaping policy, improving community health, and establishing lasting political and consumer support for local, organic, and/or sustainable food systems.

# Data Sources

## Classifying Data by Availability

Our research team found it useful to divide data sources into four categories based on data quality, availability, and consistency geographically and over time:

1. Collected at the national level for each county and state at regular intervals over extended time periods and publicly available. The Economic Census, the Census of Agriculture, the Population Census, Statistical Services Bureau data, and the Regional Economic Information System all qualify.
2. Collected consistently by State or County agencies over extended time periods and publicly available, data sets may not be compatible among states. State and County tax, finance, employment, and welfare related agencies are examples of sources, which may qualify.
3. Measured by someone, over short periods or somewhat inconsistently, may or may not have been published and difficult to obtain. May exist as single year estimates provided by people directly involved, casual or formal surveys conducted once or twice, etc. Data not likely to be quantitatively comparable among counties or states. Most data available on alternative agriculture, community kitchens, food banks, gleaning programs, community gardens, agricultural education, agricultural education, etc. fall into this category.
4. Not yet quantified by anyone; no useful data available unless collected by NE-185 researchers. Unfortunately, data on food product flow within the food system falls into this category.

The U.S. Population Census, the Economic Census, and the Agricultural Census all contain data collected and compiled by county and by state nationwide for regular intervals beginning more than fifty years ago and continuing today. These category one sources provide most of the quantitative data presented in this report. 1950 was chosen as a cut-off date for most trends, since federal data sources are less complete and consistent for dates prior to WWII. A fifty-year time line encompasses significant societal changes, not just short-term trends. The Economic Census did not provide enough detail for most components of the food system before 1972. State government data sources (category two) were used for some indicators not adequately covered by federal sources or for indicators primarily impacted by state law. Most state governments probably gather similar data. Category three data sources were used to provide some information on important indicators not regularly quantified by federal, state, or local governments.

## A Hidden Story: The Genesis of Change

One of the goals of the NE-185 project is to provide information and analysis that will help individuals and organizations enhance local food production, distribution, and consumption. Although distribution and consumption of locally produced food does occur through existing,

conventional commodity chains, “alternative” distribution systems, such as farmers markets, farm stands, community supported agriculture (CSA) services, u-picks, direct sales to markets or restaurants, etc., account for much of the volume and most of the growth in local food system activity. Unfortunately, basic data on public participation, sales, or volume of goods moving through such systems is not collected as part of any census, nor by most state and county agencies. In some cases, research efforts by individuals or organizations have produced data for certain areas collected for a specific year, or several years, but not consistently collected data for periods long enough to establish trends. Often, only single year estimates are available.

For this study, we relied on interviews and, in some cases, our own case studies to provide missing information on specifically local food system activity. As a result of our efforts, we have compiled a list of the types of currently unavailable data we feel are important to understanding food systems in the local dimension. There is a great need for public agencies to begin documenting local components of food systems.

### **Missing Data: A Working List**

Alternative Agriculture – acreage, number of farms, ownership, gross and net product, products and lbs./bushels/bundles produced for Organic, LISA, BIOS, Biodynamic, Ag Tourism, U-Pick, CSA, Ecolabel.

Alternative Distribution and Marketing - number of markets, sales and product volumes, number of participating growers, number of customers/subscribers for roadside stands, farmers’ markets, organic and/or local produce wholesalers and distributors, packers and processors handling certified produce, direct sale arrangements with institutions.

*Agricultural Education/Advocacy – number of organizations and programs, membership and participation rates, budgets, number of gardens/acreage for school garden programs, college and university programs, alternative-focused research and advocacy organizations.*

Community Food Security – number of organizations and programs, membership and participation rates, budgets, types of food products and volume for nutritional and anti-hunger organizations and initiatives.

Environmental Impact – locally compiled data on erosion rates, surface and groundwater pollution, pesticide application rates, acres, and compounds, fossil fuel and electricity consumption by producers and processors, delivery vehicle mileage for distributors.

Food Flow – source to destination pathways and the volume and value of food products they contain. In our already largely globalized economy, paths of a single product cross many political boundaries and fork many times, making tracing the production to consumption path essentially impossible. If, however, the data suggested in the Alternative Agriculture and Alternative Distribution and Marketing sections, above, were collected consistently and

accurately, food flows for *local* product could be clearly defined and quantified as long as “local” was carefully defined for data collection.



## DEMOGRAPHIC INDICATORS

Indicator	Years	Measure/Graph	Source
<b>Population</b>			
State Population	69, 74, 78, 82, 87, 92, 97	Number of people in state vs. time.	California Department of Finance Demographic Research Unit
County Population	69, 74, 78, 82, 87, 92, 97	Number of people in county vs. time.	Bureau of Economic Analysis Regional Economic Analysis CD ROM.
County Population as Percent of State Population	69, 74, 78, 82, 87, 92, 97	Percent of state population resident in county vs. time.	Bureau of Economic Analysis Regional Economic Analysis CD ROM.
Population Density, Persons per sq. Mile	69, 74, 78, 82, 87, 92, 97	Number of persons per sq. mile average for county vs. time.	California Department of Finance Demographic Research Unit.
<b>Urban Growth</b>			
Percent of County Population in Cities over 50K	69, 74, 78, 82, 87, 92, 97	Percent of county population in cities over 50,000 vs. time.	California Department of Finance Demographic Research Unit.
<b>Ethnic Distribution</b>			
Asian and Pacific Islander Black Caucasian Latino Native American	69, 74, 78, 82, 87, 92, 97	Percentage of county population that classify themselves in each of the following groups: Asian and Pacific Islander, Black, Caucasian, Latino, Native American.	California Department of Finance Demographic Research Unit.
<b>Income</b>			
Inflation Adjustment	69, 74, 78, 82, 87, 92, 97	Factor used as multiplier to convert dollar values for a given year to 1997 equivalent.	Consumer Price Index data compiled by Robert Sahr, Political Science Department, Oregon State University, Corvallis, Oregon.
Total Employment for the County	69, 74, 78, 82, 87, 92, 97	Number of people employed vs. time for census years.	Bureau of Economic Analysis Regional Economic Analysis CD ROM.
Total Earnings for the County	69, 74, 78, 82, 87, 92, 97	Total earnings vs. time for census years.	Bureau of Economic Analysis Regional Economic Analysis CD ROM.
County Per Capita Annual Income	69, 74, 78, 82, 87, 92, 97	County per capita annual income vs. time.	Bureau of Economic Analysis Regional Economic Analysis CD ROM.
County's Rank in the State for Per Capita Income	69, 74, 78, 82, 87, 92, 97	Rank of county per capita income in state vs. time.	Bureau of Economic Analysis Regional Economic Analysis CD ROM .
<b>Poverty</b>			
Number of Welfare Recipients (AFDC/TANF)	88, 91, 94, 97	Number of people receiving AFDC/TANF assistance in the county vs. time.	AFDC Caseload Movement and Expenditures Reports, Statistical Services Bureau, Dept. of Social Services; Compiled by RAND Co.
Percent of County's Population Receiving Welfare	88, 91, 94, 97	Percentage of county population receiving AFDC/TANF assistance in the county vs. time.	Calculated from sources on this page.
Civilian Unemployment Rate, Percent	85, 88, 91, 94, 97	Percent of county labor force unemployed vs. time.	Employment Development Department, Compiled by RAND Co.
Percent of County's Population Below Poverty Line	70, 80, 90	Percent of county's population below poverty level vs. time.	Calculated from County and City Data Book published by The Census Bureau and population data, this pg.
Percent of County's Families below poverty	50, 60, 70, 80, 90	Percent of total number of families in county below poverty level vs. time.	County and City Data Book published by The Census Bureau.

## AGRICULTURAL RESOURCE BASE INDICATORS

Indicator	Years	Measure/Graph	Source
<b>Farm Numbers and Acreage</b>			
Number of Farms in State	50, 54, 59, 64, 69, 74, 78, 82, 87, 92, 97	No graph – used for comparison calculations only.	U.S. Census of Agriculture, Geographic (Area) Series.
Acres in Farming, State Total	50, 54, 59, 64, 69, 74, 78, 82, 87, 92, 97	No graph – used for comparison calculations only.	U.S. Census of Agriculture, Geographic (Area) Series.
Number of Farms in Placer County	50, 54, 59, 64, 69, 74, 78, 82, 87, 92, 97	Total number of farms in the county vs. time for ag. census years.	U.S. Census of Agriculture, Geographic (Area) Series.
Acres in Farming in Placer County	50, 54, 59, 64, 69, 74, 78, 82, 87, 92, 97	Acres in farming for county vs. time for ag. census years.	U.S. Census of Agriculture, Geographic (Area) Series.
Percent of California's Farms in Placer County	50, 54, 59, 64, 69, 74, 78, 82, 87, 92, 97	Number farms in county as percent of state total vs. time for ag. census years.	U.S. Census of Agriculture, Geographic (Area) Series.
Percent of California's Farm Acreage in Placer County	50, 54, 59, 64, 69, 74, 78, 82, 87, 92, 97	Acreage in farming for county as percent of state total vs. time for ag. census years.	U.S. Census of Agriculture, Geographic (Area) Series.
Average Farm Size, Acres	50, 54, 59, 64, 69, 74, 78, 82, 87, 92, 97	Total acres in farming in county divided by total number of farms in the county vs. time for ag. census years.	U.S. Census of Agriculture, Geographic (Area) Series.
Number Farms by Acreage Size Class	50, 54, 59, 64, 69, 74, 78, 82, 87, 92, 97	As a bar graph with each bar containing one year's distributions for 1-9, 10-49, 50-179, 180-499, 500-999, and 1000 + acre categories for ag. census years.	U.S. Census of Agriculture, Geographic (Area) Series.
<b>Farm Ownership</b>			
Acres in Full Ownership Acres in Part Ownership Acres in Tenant Farming	50, 54, 59, 64, 69, 74, 78, 82, 87, 92, 97	Acres under full owner, part owner, and tenant owner (3 lines on a single graph) in county vs. time for ag. census years.	U.S. Census of Agriculture, Geographic (Area) Series.
Number Full Owners in County	50, 54, 59, 64, 69, 74, 78, 82, 87, 92, 97	Number of full owners of farms in Placer County vs. time for ag. census years	U.S. Census of Agriculture, Geographic (Area) Series.
Minority Farm Operators, Number of Farms	74, 78, 82, 87, 92, 97	Number minority-operated farms in county vs. time, ag. census years.	U.S. Census of Agriculture, Geographic (Area) Series.
<b>Age of Farmers</b>			
Average Farmer Age	59, 64, 69, 74, 78, 82, 87, 92, 97	Average farmer age in county vs. time, ag. census years.	U.S. Census of Agriculture, Geographic (Area) Series.
<b>Organic Farming</b>			
Number of Organic Farms	92, 94, 96, 98	Number of organic farms in the county vs. time, ag. census years.	County Agricultural Commissioner Crop Reports.
Acreage in Organic Farming	92, 94, 96, 98	Acreage in organic farming in the county vs. time, ag. census years.	County Agricultural Commissioner Crop Reports.
<b>Land Conservation</b>			
Acres of Farmland Converted for Development	86, 88, 90, 92, 94, 96, 98	Acreage converted to urban or suburban development in county vs. time, ag. census years.	California State Department of Conservation Farmland Mapping Program.
Acres enrolled in the Williamson act	74, 78, 82, 87, 92, 97	Acres enrolled in the Williamson act in the county vs. time for ag. census years.	California State Department of Conservation Division of Land Resource Protection

## ENVIRONMENTAL INDICATORS

Indicator	Years	Measure/Graph	Source
<b>Groundwater Pollution</b>			
Well Water Pollution, Average Nitrate (NO3)	89, 92, 95, 97	Concentration of nitrate in well samples averaged countywide vs. time.	California Department of Health Services.
<b>Total Supplemental Water Use by Agriculture</b>			
Use of State and Federal Subsidized Water by Agriculture	82, 87, 92, 97	Acre feet of water supplied by federal and state water projects to county for agriculture vs. time for ag. census years.	California Department of Water Resources.
Number of Farms Using Irrigation	50, 54, 59, 64, 69, 74, 78, 82, 87, 92, 97	Number of farms in county using irrigation vs. time for ag. census years.	U.S. Census of Agriculture, Geographic (Area) Series.
Total Number of Irrigated Acres in the County	50, 54, 59, 64, 69, 74, 78, 82, 87, 92, 97	Total county irrigated acreage vs. time for ag. census years.	U.S. Census of Agriculture, Geographic (Area) Series.
<b>Synthetic Input Use and Dependence</b>			
Pesticide Use, Total Pounds A. I. Applied	74, 78, 82, 87, 92, 97	Total pounds of active ingredient* applied in the county vs. time for ag. census years.	Department of Pesticide Regulation Pesticide Use Reporting Data compiled by Environmental Toxicology Dept. researchers at UCD.
Expenditures on Fuel, Fertilizer, and Pesticides	74, 78, 82, 87, 92, 97	Sum of expenditures on fuel, fertilizer, and pesticides reported under specified farm expenditures, ag. census years . Not graphed.	U.S. Census of Agriculture, Geographic (Area) Series.
Total Specified Farm Expenditures	74, 78, 82, 87, 92, 97	Total specified farm expenditures, ag. census years. Not graphed.	U.S. Census of Agriculture, Geographic (Area) Series.
Cost of Inputs as Percent Total Farm Costs	74, 78, 82, 87, 92, 97	Percent total specified expenditures spent on synthetic chemicals and fuels for all farms in county vs. time for ag. census years.**	U.S. Census of Agriculture, Geographic (Area) Series.

\* Excludes sulfur, inert ingredients, and organically acceptable materials.

\*\* Calculated using total specified farm expenditures and summed expenditures on fertilizer, fuel, and pesticides.

**FOOD DISTRIBUTION NETWORK INDICATORS**  
**(U.S. Economic Census categories)**

<b>Indicator</b>	<b>Years</b>	<b>Measure/Graph</b>	<b>Source</b>
Number of Farm Product Raw Material Wholesalers (Packers, Shippers)	72, 77, 82, 87, 92, 97	Number establishments in the county vs. time for economic census years.	U.S. Economic Census, Geographic Area Series.
Number of Food Manufacturers	72, 77, 82, 87, 92, 97	Number establishments in the county vs. time for economic census years.	U.S. Economic Census, Geographic Area Series.
Number of Food Wholesalers	72, 77, 82, 87, 92, 97	Number establishments in the county vs. time for economic census years.	U.S. Economic Census, Geographic Area Series.
Number of Food Retailers	72, 77, 82, 87, 92, 97	Number establishments in the county vs. time for economic census years.	U.S. Economic Census, Geographic Area Series.
Number Food Servers (incl. Restaurants)	72, 77, 82, 87, 92, 97	Number establishments in the county vs. time for economic census years.	U.S. Economic Census, Geographic Area Series.
Number Farmer's Markets	1999	Number of farmers' markets in the county.	Sustainable Agriculture Research and Education Program, UC Davis.
Number CSA's	2001		Shauna Cozad, UCCE Alameda County, interviews
Number Roadside Stands	2001		Shauna Cozad, UCCE Alameda County, interviews

## ECONOMIC PRODUCTIVITY INDICATORS

Indicator	Years	Measure/Graph	Source
<b>Top Ten Agricultural Products</b>			
Top Ten Agricultural Products by Gross Sales	63, 67, 73, 77, 82, 86, 92, 97	List of products produced in county ranked by gross sales, ag. census years since 1963.	County Agricultural Commissioners, compiled by California Farmer magazine.
<b>Gross Agricultural Productivity</b>			
Inflation Adjustment, Agricultural Producers	50, 54, 59, 64, 69, 74, 78, 82, 87, 92, 97	Factor used as multiplier to convert dollar values for a given year to 1997 equivalent.	Bureau of Labor Statistics Producer Price Index data, non-seasonally adjusted annual average, farm products group.
State Gross Agricultural Production	50, 54, 59, 64, 69, 74, 78, 82, 87, 92, 97	State gross agricultural production, all agricultural products. Not graphed.	U.S. Census of Agriculture, Geographic (Area) Series.
Gross Agricultural Productivity, County	50, 54, 59, 64, 69, 74, 78, 82, 87, 92, 97	Gross earnings from sale of all ag. products in the county vs. time for ag. census years.	U.S. Census of Agriculture, Geographic (Area) Series; County Annual Crop Reports.
County Gross Production as Percentage of State Total	50, 54, 59, 64, 69, 74, 78, 82, 87, 92, 97	Gross earnings from sale of all ag. products in the county vs. time for ag. census years presented as percent of state total calculated from census data.	U.S. Census of Agriculture, Geographic (Area) Series; County Annual Crop Reports.
<b>Direct Marketing</b>			
Gross Receipts From Direct Marketing, all Types, all Farms	78, 82, 87 extr., 92, 97	Gross receipts for direct marketing, all types, for county vs. time, ag. census years (1987 no data published, extrapolated).	U.S. Census of Agriculture, Geographic (Area) Series.
Number of Farms Engaged in Direct Marketing, all Types	78, 82, 87 extr., 92, 97	Number of farms participating in direct marketing, all types, for county vs. time, ag. census years (1987 no data published, extrapolated).	U.S. Census of Agriculture, Geographic (Area) Series.
Estimated Dollar Value, Farmer's Market Sales	1999	Estimated total sales from all farmer's markets in the county. Single year.	Sustainable Agriculture Research and Education Program, UC Davis
Estimated Dollar Value, CSA Sales	?	Estimated total sales from all community supported sustainable agriculture (CSA) programs in the county. Single year.	None yet found
Estimated Dollar Value, Roadside Stand Sales	?	Estimated total sales from roadside stands in the county. Single year.	None yet found

<b>Food Distribution System</b>			
Inflation Adjustment, Food Manufacturers	72, 77, 82, 87, 92, 97	Factor used as multiplier to convert dollar values for a given year to 1997 equivalent.	Bureau of Labor Statistics Producer Price Index data, non-seasonally adjusted annual average, processed foods and feeds group.
Inflation Adjustment, Farm Product Wholesalers	72, 77, 82, 87, 92, 97	Factor used as multiplier to convert dollar values for a given year to 1997 equivalent.	Bureau of Labor Statistics Producer Price Index data, non-seasonally adjusted annual average, crude foodstuffs and feedstuffs group.
Inflation Adjustment, Food Wholesalers and Retailers	72, 77, 82, 87, 92, 97	Factor used as multiplier to convert dollar values for a given year to 1997 equivalent.	Bureau of Labor Statistics Producer Price Index data, non-seasonally adjusted annual average, finished consumer foods group.
Inflation Adjustment, Food Servers	72, 77, 82, 87, 92, 97	Factor used as multiplier to convert dollar values for a given year to 1997 equivalent.	Consumer Price Index data compiled by Robert Sahr, Political Science Department, Oregon State University, Corvallis, Oregon.
Food Manufacturers Net Value Added to Products	72, 77, 82, 87, 92, 97	Total earnings for the county vs. time, economic census years.	U.S. Economic Census, Geographic Area Series.
Farm Product Wholesalers Gross Receipts	72, 77, 82, 87, 92, 97	Total earnings for the county vs. time, economic census years.	U.S. Economic Census, Geographic Area Series.
Food Wholesalers Gross Receipts	72, 77, 82, 87, 92, 97	Total earnings for the county vs. time, economic census years.	U.S. Economic Census, Geographic Area Series.
Food Retailers Gross Receipts	72, 77, 82, 87, 92, 97	Total earnings for the county vs. time, economic census years.	U.S. Economic Census, Geographic Area Series.
Food Servers Gross Receipts	72, 77, 82, 87, 92, 97	Total earnings for the county vs. time, economic census years.	U.S. Economic Census, Geographic Area Series.

## FOOD SYSTEM WAGES AND EMPLOYMENT INDICATORS

Indicator	Years	Measure/Graph	Source
<b>Agricultural Production</b>			
<i>Employment as Farmers</i>			
Number Full Owners of Farms in the State	50, 54, 59, 64, 69, 74, 78, 82, 87, 92, 97	Number of full owners of farms in state vs. time for ag. census years.	U.S. Census of Agriculture, Geographic (Area) Series.
Number Full Owners of Farms in the County	50, 54, 59, 64, 69, 74, 78, 82, 87, 92, 97	Number of full owners of farms in county vs. time for ag. census years.	U.S. Census of Agriculture, Geographic (Area) Series.
Percent of State Full Farm Owners from County	50, 54, 59, 64, 69, 74, 78, 82, 87, 92, 97	Number of full owners of farms in county as percent of total number full farm owners in state vs. time for ag. census years.	Calculate using U.S. Census of Agriculture, Geographic (Area) Series data.
<i>Farm Labor Wages</i>			
Inflation Adjustment	50, 54, 59, 64, 69, 74, 78, 82, 87, 92, 97	Factor used as multiplier to convert dollar values for a given year to 1997 equivalent.	Consumer Price Index data compiled by Robert Sahr, Political Science Department, Oregon State University, Corvallis, Oregon.
County Total Wages	69, 74, 78, 82, 87, 92, 97	Total wages earned by the labor force in the county, all occupations, vs. time for ag. census years.	Bureau of Economic Analysis Regional Economic Analysis CD ROM.
Farm Labor Wages	50, 54, 59, 64, 69, 74, 78, 82, 87, 92, 97	Wages paid to all farm workers working 150 days/year or more in county vs. time, ag. census years.	U.S. Census of Agriculture, Geographic (Area) Series, specified farm expenditures data.
Farming Labor Wages as Percent County Total Wages	50, 54, 59, 64, 69, 74, 78, 82, 87, 92, 97	Wages paid to all farm workers in county as % of total wages in county vs. time for ag. census years.	Calculated from the two preceding data sets.
Average Annual Earnings for a Farm Laborer (adjusted for inflation)	50, 54, 59, 64, 69, 74, 78, 82, 87, 92, 97	Total county farm labor wages for the county divided by total county farm labor employment times inflation adjustment vs. time for ag. census years.	Calculated using total farm labor wage data and total farm labor employment data from this section, adjusted with inflation adjustment factor from this section.
<i>Farm Labor Employment</i>			
County Total Employment	69, 74, 78, 82, 87 extr., 92, 97	Total number of people employed in the county, all occupations, for time vs. ag. census years. (1987 not reported, extrapolated). Not graphed.	Bureau of Economic Analysis Regional Economic Analysis CD ROM.
State Farm Labor Employment	50, 54, 59, 64, 69, 74, 78, 82, 87 extr., 92, 97	Number people employed on farms in state for 150 days/year or more vs. time, ag. census year. (1987 not reported, extrapolated). Not graphed.	U.S. Census of Agriculture, Geographic (Area) Series.
County Farm Labor Employment	50, 54, 59, 64, 69, 74, 78, 82, 87 extr., 92, 97	Number of farm workers working 150 days/year or more in county vs. time, ag. census years. (1987 not reported, extrapolated).	U.S. Census of Agriculture, Geographic (Area) Series.
County Farm Labor Employment as Percent of State Total	50, 54, 59, 64, 69, 74, 78, 82, 87 extr., 92, 97	Number hired farm workers in county as percent state total vs. time, ag census years. (1987 not reported, extrapolated).	Calculated from the two preceding data sets.
Farm Labor Employment as Percentage of County Total Employment	69, 74, 78, 82, 87 extr., 92, 97	Number workers employed in farming as % of total county work force vs. time for ag. census years. (1987 not reported, extrapolated).	Calculated using county total employment and county farm labor employment data sets.

<b>Food Distribution System</b>			
<i>Food Distribution System Wages</i>			
Inflation Adjustment	72, 77, 82, 87, 92, 97	Factor used as multiplier to convert dollar values for a given year to 1997 equivalent.	Consumer Price Index data compiled by Robert Sahr, Political Science Department, Oregon State University, Corvallis, Oregon.
Total Food Distribution System Wages for the County	72, 77, 82, 87, 92, 97	Wages paid to all food distribution system workers in county vs. time for economic census years.	Summed from U.S. Economic Census, Geographic Area Series data in this section.
Food Distribution Wages as Percent of County Total Wages	72, 77, 82, 87, 92, 97	Wages paid to all food distribution system workers in county as percent of total wages in county vs. time for economic census years.	Calculated using total county wages from demographic section and sum of all food system wages from this section.
Average Annual Earnings for a Food Distribution System Employee (adjusted for inflation)	72, 77, 82, 87, 92, 97	Total food distribution system wages for the county divided by total food distribution system employment times inflation adjustment vs. time for economic census years.	Calculated using sum of all food distribution system employment and sum of all wages from this section, adjusted with inflation adjustment factor from this section.
Farm Product Raw Material Wholesaler Wages Paid, County	72, 77, 82, 87, 92, 97	One graph with a line for each measure in dollars vs. time, economic census years.	U.S. Census of Agriculture, Geographic (Area) Series.
Food Manufacturers Wages Paid, County			
Food Wholesalers Wages Paid, County			
Food Retailers Wages Paid, County			
Food Servers Wages Paid, County			
<i>Food Distribution System Employment</i>			
Total Food Distribution System Employment for the State	72, 77, 82, 87, 92	Number workers employed in food system in state, sum of state totals for each food system category from economic census. Not graphed.	Summed from U.S. Economic Census, Geographic Area Series data in this section.
Total Food Distribution System Employment for the County	72, 77, 82, 87, 92, 97	Number workers employed in food distribution system in the county vs. time, economic census years.	Summed from U.S. Economic Census, Geographic Area Series data in this section.
Total County Food Distribution System Employment as Percent State Total	72, 77, 82, 87, 92	Total number workers employed in the county for all parts of food distribution system as percent of state total food system employment vs. time for economic census years.	Calculate summing food system data in this section.
Food Distribution System Employment as Percent County Total Employment	72, 77, 82, 87, 92, 97	Number workers employed in food distribution system as percent of total county work force vs. time for economic census years.	Calculate using total county employment from demographic section and sum of all food system employment from this section.
Farm Product Raw Material Wholesaler Employment, County	72, 77, 82, 87, 92, 97	One graph with a line for each measure vs. time, economic census years.	U.S. Census of Agriculture, Geographic (Area) Series.
Food Manufacturers Employment, County			
Food Wholesalers Employment, County			
Food Retailers Gross Employment, County			
Food Servers Gross Employment, County			



## FOOD CONSUMPTION INIDICATORS

Descriptor	Years	Measure/Graph	Source
Inflation Adjustment	72, 77, 82, 87, 92, 97	Factor used as multiplier to convert dollar values for a given year to 1997 equivalent.	Consumer Price Index data compiled by Robert Sahr, Political Science Department, Oregon State University, Corvallis, Oregon.
<b>Total Food Expenditures</b>			
Total Food Expenditures, County	72, 77, 82, 87, 92, 97	Sum of food retailer and food server gross receipts reported in the Economic Census vs. time, Economic Census years.	U.S. Economic Census, Geographic Area Series.
Total Food Expenditures in County Derived from National Average	72, 77, 82, 87, 92, 97	County population divided by US population, multiplied by total US food expenditures from Food Consumption, Prices, and Expenditures vs. time, Economic Census years.	Bureau of Economic Analysis Regional Economic Analysis CD ROM; US Census Bureau Historical National Population Estimates; Food Consumption, Prices, and Expenditures, USDA.
Total County Earnings	72, 77, 82, 87, 92, 97	Total county wages vs. time, Economic Census years.	Bureau of Economic Analysis Regional Economic Analysis CD ROM.
Total Food Expenditures in County as % Total County Earnings	72, 77, 82, 87, 92, 97	Total food expenditures as percent of total county earnings vs. time for Economic Census years.	Calculated from Economic Census and Bureau of Economic Analysis data in this section.
<b>Per Capita Food Expenditures</b>			
County Population	72, 77, 82, 87, 92, 97	County population vs. time, Economic Census years.	Bureau of Economic Analysis Regional Economic Analysis CD ROM.
County Per Capita Income	72, 77, 82, 87, 92, 97	County per capita income vs. time, Economic Census years.	Bureau of Economic Analysis Regional Economic Analysis CD ROM.
Per Capita Food Expenditures, National Average	72, 77, 82, 87, 92, 97	Total US food expenditures reported in Food Consumption, Prices, and Expenditures divided by US population vs. time, Economic Census years.	Food Consumption, Prices, and Expenditures, USDA; US Census Bureau Historical National Population Estimates.
Per Capita Food Expenditures, County	72, 77, 82, 87, 92, 97	Total food expenditures for county from Economic Census data divided by county population vs. time for Economic Census years.	Bureau of Economic Analysis Regional Economic Analysis CD ROM.; U.S. Economic Census, Geographic Area Series.
Per Capita Food Expenditures, County Deviation from National Average	72, 77, 82, 87, 92, 97	Difference between per capita food expenditures, county and per capita food expenditures, national average, vs. time for Economic Census years.	Calculated from preceding two variables.
County Per Capita Food Expenditures as % Per Capita Income (adjusted for inflation)	72, 77, 82, 87, 92, 97	Per capita food expenditures, county, as percent county per capita income vs. time, Economic Census years.	Bureau of Economic Analysis Regional Economic Analysis CD ROM.; U.S. Economic Census, Geographic Area Series.
National Average Derived County Per Capita Food Expenditures as % Per Capita Income (adjusted for inflation)	72, 77, 82, 87, 92, 97	Inflation adjusted per capita food expenditures, national average, divided by inflation adjusted county per capita income times 100 vs. time, Economic Census years.	Bureau of Economic Analysis Regional Economic Analysis CD ROM.; U.S. Economic Census, Geographic Area Series.

<b>Dollars Spent on Food, Home vs. Away</b>			
Food Retailers' Gross Receipts (Home)	72, 77, 82, 87, 92, 97	Food retailers' gross receipts vs. time, Economic Census years.	U.S. Economic Census, Geographic Area Series.
Food Servers' Gross Receipts (Away)	72, 77, 82, 87, 92, 97	Food servers' gross receipts vs. time, Economic Census years.	U.S. Economic Census, Geographic Area Series.
Money Spent on Food at Home in County, Derived from National Average	72, 77, 82, 87, 92, 97	Total US food expenditures for home reported in Food Consumption, Prices, and Expenditures divided by US population, multiplied by county population vs. time for Economic Census years.	Food Consumption, Prices, and Expenditures, USDA; US Census Bureau Historical National Population Estimates; Bureau of Economic Analysis Regional Economic Analysis CD ROM.
Money Spent on Food Away from Home in County, Derived from National Average	72, 77, 82, 87, 92, 97	Total US food expenditures away from home reported in Food Consumption, Prices, and Expenditures divided by US population, multiplied by county population vs. time for Economic Census years.	Food Consumption, Prices, and Expenditures, USDA; US Census Bureau Historical National Population Estimates; Bureau of Economic Analysis Regional Economic Analysis CD ROM.
Ratio, Food Consumed Home vs. Away, County	72, 77, 82, 87, 92, 97	Ratio, food retailers' gross receipts divided by food servers' gross receipts for county vs. time for Economic Census years.	U.S. Economic Census, Geographic Area Series.
National Averages, Ratio Food Consumption, Home vs. Away	72, 77, 82, 87, 92, 97	Ratio, total US food expenditures for home divided by expenditures away, data reported in Food Consumption, Prices, and Expenditures vs. time for Economic Census years.	Food Consumption, Prices, and Expenditures, USDA.

## COMMUNITY FOOD SECURITY AND ACCESS INDICATORS

Indicator	Years	Measure/Graph	Source
<b>Government Food Program Participation</b>			
County Population	69, 74, 78, 82, 87, 92, 97	Number of People in the county vs. time. Not graphed.	California Department of Finance Demographic Research Unit.
Number of People Receiving Food Stamps	69, 74, 78, 82, 87, 92, 97	Number of individuals participating in the food stamp program in the county vs. time.	California Department of social Welfare, Public Assistance in California (Periodical).
Percent of County Population Receiving Food Stamps	69, 74, 78, 82, 87, 92, 97	Number of individuals participating in the food stamp program in the county as a percent of total county population vs. time.	Calculated from preceding two measures.
County Population	90, 92, 94, 96, 98	Number of People in the county vs. time. Not graphed.	California Department of Finance Demographic Research Unit.
Number of People in WIC Programs	90, 92, 94, 96, 98	Number of people in WIC programs in the county vs. time.	California State WIC Office.
Percent of County Population in WIC Programs	90, 92, 94, 96, 98	Number of people in WIC programs as a percent of county population vs. time.	California State WIC Office.
Number of FMNP's	Single year?	Number of FMNP's in the county.	California State WIC Office.
Number of People Reached by FMNP's	1997	Number of people reached by FMNP's vs. time.	California State WIC Office.
Number of Children Enrolled in School Meal Programs	Single year?	Number of students receiving free and reduced price lunches.	California Department of Education, Compiled by RAND Corporation.
<b>Community Kitchens</b>			
Number of Community Kitchens	Single year?	Number of community kitchens in the county.	Cooperative Extension.
<b>Food Banks</b>			
Number of Food Banks	Single year?	Number of food banks in the county.	SAREP, NE-185 phone survey
Number of People Served by Food Banks	Single year?	Number of people served by county food banks.	None yet found
Pounds of Food Served at Food Banks	Single year?	Pounds of food served at county food banks.	None yet found
<b>Gleaning Programs</b>			
Number of Gleaning Programs	Single year?	Number of gleaning programs active in the county.	None yet found
Pounds of Food Gleaned	Single year?	Pounds of food gleaned from sources in the county.	None yet found
Number of Gleaning Program Participants	Single year?	Number of people participating in gleaning programs and activities.	None yet found
<b>Community Gardens</b>			
Number of Community Gardens	Single year?	Number of community gardens in the county.	Shauna Cozad, UC Cooperative Extension, Alameda County
Number of Community Gardeners	Single year?	Number of people using community gardening space in the county.	Shauna Cozad, UC Cooperative Extension, Alameda County

## EDUCATION AND ADVOCACY INDICATORS

Indicator	Years	Measure/Graph	Source
<b>K-12 Schools with Agriculture/Food Education</b>			
Number of Schools in the County with Educational Gardens	Single year?	Number of schools in the county with educational garden programs.	Garden Survey 2000, UC Cooperative Extension, Alameda County
Number of Schools in the County with Agricultural Vocational Education	Single year?	Number of schools in the county with courses in agriculture as a vocation.	None yet found
Number of Schools in County with "Agriculture in the Classroom"	Single year?	Number of schools in the county with "Agriculture in the Classroom" programs.	None yet found
<b>Higher Education Institutions with Sustainable Agriculture Courses</b>			
Number of Universities, Colleges, and Community Colleges in the County with Sustainable Agriculture Courses	Single year?	Number of universities, colleges, and community colleges in the county with courses in sustainable, organic, or other alternative agriculture.	NE-185 survey of course catalogs
<b>Sustainable Agriculture and Consumer Advocacy</b>			
Number of Sustainable Agriculture Organizations Active in the County	Single year?	Number of sustainable agriculture organizations active in the county.	None yet found
Number of Consumer Advocacy Organizations Active in the County	Single year?	Number of consumer advocacy organizations active in the county.	None yet found
Number of County-Resident Members in Sustainable Agriculture Organizations	Single year?	Number of county-resident members in sustainable agriculture organizations.	None yet found
Number of County-Resident Members in Consumer Advocacy Organizations	Single year?	Number of county-resident members in consumer advocacy organizations.	None yet found
<b>Agricultural Tourism</b>			
Number of Agricultural Tourism Programs in the County	Single year?	Number of agricultural tourism programs in the county.	NE-185 phone interviews
<b>Community Food Security</b>			
Number of Community Food Security Projects in the County	Single year?	Number of community food security projects in the county.	None yet found
Number of Hunger Advocacy Organizations Active in the County	Single year?	Number of hunger advocacy organizations active in the county.	None yet found

## Resources

Alameda County Community Food Bank website, [www.accfb.org](http://www.accfb.org)  
Jessica Barthalow, Alameda County Food Bank  
Bay City Produce 2001  
Frank Buck, California Nutrition Network, 2001  
Community Alliance with Family Farmers (CAFF) website for CSA's that deliver to Alameda County  
California Food Policy Advocates Hunger Update, November 1999  
California Foundation for Agriculture in the Classroom 1999 Teacher Resource Guide  
Janet Caprille, Contra Costa County Farm Advisor, UC Cooperative Extension  
Cattleman's Association, 2001, Darrel and Karen Sweet [www.rangelandtrust.org](http://www.rangelandtrust.org)  
Center for Ecoliteracy, [www.ecoliteracy.org](http://www.ecoliteracy.org)  
Center on Budget and Policy Priorities <http://www.cbpp.org>  
Shauna Cozad, SAREP and Alameda County Cooperative Extension, 1999-2001  
Steve del Masso, Oakland Produce Association, 2000 and 2001  
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Economic Development Alliance for Businesses (EDAB)  
Frank and Janise Delfino, San Francisco Bay Wildlife Refuge  
Feenstra, Gail and Chris Lewis, "Farmers markets offer new business opportunities for farmers."  
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Graham Fogg, email exchange, UC Davis Hydrology Program, September 2001  
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From western North America tree rings. Laboratory of Tree-Ring Research, University  
of Arizona  
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John Gouveia, Alameda County Agricultural Commissioner's Office, 2001  
Patty Hunt, Alameda County Agricultural Commissioner's Office  
Susan Kegley, Pesticide Action Network (PANNA)  
Henry Krusekopf, SAREP 1998  
Deborah Leff, CEO of America's Second Harvest  
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Julianne Morris, Daily Bread, 2001  
John Norwood, Livermore Valley Land Preservation/South Livermore Land Trust, 2001  
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Gayle Momono  
Berti Produce  
Tommy Navas, West Coast Produce  
Steve del Masso, Vice President of Bay City Produce  
Ray Ratto, Ratto Produce  
Emilia Ortero, Fruitvale Vendors Association, 2001  
Erica Pang, Berkeley Unified School District, 2001

Jeremy Pearson, Oakland Potluck, 2001  
Brian Sharp, California Certified Organic Farmers (CCOF)  
San Francisco Chronicle, "Census 2000, Who We Are" March 30, 2001  
Shyaam Shabaka, Strong Roots Community Garden  
Sonoma County Grape Growers Association Vineyard Views online newsletter,  
[www.sonomagrapevine.org/pages/vineyardviews/vvhistory.html](http://www.sonomagrapevine.org/pages/vineyardviews/vvhistory.html)  
State Water Project Analysis Office, January 2000  
Beebo Turman, East Bay Community Gardens  
Debbie Tardiff, Our Garden Nursery, 2001  
USDA Economic Research Service, 1995  
Jacoba van Staveren, Oakland Community Gardens  
Mike Wanless (phone interview) Wente Winery Agricultural Specialist  
Sheri Zidenberg-Cherr, UC Davis Dept. of Nutrition, 2001