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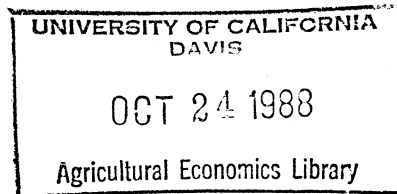


Women in agriculture



Agricultural Issues Center  
University of California  
Davis, CA 95616

AAEA 1988



MINORITIES AND WOMEN IN CALIFORNIA AGRICULTURE

by Suzanne Vaupel\*

Report sponsored by the UC Agricultural Issues Center

UC AIC Issues Paper No. 88-2, January 1988.

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University of California, Davis

**PREFACE**  
*Harold O. Carter*

In recognition of the need for a forum where agricultural issues of importance to California and the West can be analyzed and where the results of the analyses can be made available to those making and to those affected by decisions, the state legislature provided special funding for the UC Regents to establish the Agricultural Issues Center in July 1985. One of the Center's six priority areas of concentration as stated in House Resolution 8 of the California Assembly is: "a heightened awareness of the role of various minority groups in agriculture and allied industries." In response, the Center commissioned a research project to find out the distribution of women and minorities in agriculture, natural resources, and allied industries in California.

In December 1987, a workshop was held to review, comment on, and offer additions and corrections to an earlier draft of this report prepared by Suzanne Vaupel. Attending the workshop, conducted by the Agricultural Issues Center, were:

Suzanne Vaupel, for the Agricultural Issues Center, UC Davis  
Evelyn Bolinger, Agriculture Stabilization and Conservation, USDA  
Steve Brush, Applied Behavioral Science, UC Davis  
Doug Gwynn, Applied Behavioral Science, UC Davis  
Lynn Horel, Marketing, CDFR  
Kofi Kondwani, Agricultural and Environmental Science, UC Davis  
Steven Mendevil, Cooperative Extension  
Barbara Nichols, Agricultural and Environmental Science, UC Davis  
Refugio I. Rochin, Agricultural Economics, UC Davis  
Nancy Rupp Tibbets, Work Learn, UC Davis  
Janet Toppenberg, California Farm Bureau Federation  
Louis Valenzuela, Cooperative Extension  
Miriam Wells, Applied Behavioral Science, UC Davis  
Carole Nuckton, UC Agricultural Issues Center

Additional comments were received from several others who could not attend the workshop. These include:

Philip L. Martin, Agriculture Economics, UC Davis  
Gene Miyao, Cooperative Extension  
Ann Scheuring, English Department, UC Davis

This report, Minorities and Women in California Agriculture, which evaluates the distribution of minorities and women in all phases of California agriculture is seen as the first stage of the Center's project. Work is in progress preparing further publications based on the information in this report. Subsequent work will focus on identifying barriers preventing minorities and women from employment in higher paying agricultural jobs. Special thanks are extended to John Woolcott for producing this report.

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## SUMMARY

This report evaluates the distribution of minorities and women in all phases of California agriculture. It is the first stage of the Agricultural Issues Center's research on minority groups in agriculture and allied industries. Subsequent work will focus on identifying barriers which prevent minorities and women from employment in higher paying agricultural jobs.

California has a large and growing minority population which is predicted to surpass the number of non-Hispanic Whites in the next 25 years. However, ethnic groups in the labor force have higher unemployment and lower income than the labor force as a whole. The conclusions of the present study confirm this trend in agriculture, finding that, with few exceptions, minorities and women are under-represented in agricultural production and higher-paying jobs in agriculture. The patterns of distribution vary, however, among different groups. Blacks and women tend to be under-represented in virtually all sectors (Summary Figures 1 and 2). Hispanics tend to be under-represented in agricultural production and higher-paying jobs and over-represented in lower paying jobs (Summary Figure 3). Asians show under-representation in some sectors and over-representation in others with no consistency as to higher- or lower-paying jobs (Summary Figure 4).

Minorities are under-represented among agricultural producers, but they have tended to specialize in certain commodities, such as horticulture, where they represent an average proportion of growers, and berries, where they represent an above average proportion. Asians (Japanese) are the largest minority group in horticulture and Hispanics (Mexicans) are the largest in berries.<sup>1</sup> Asian growers are distributed evenly among all sales categories, but Hispanics are concentrated in annual gross sales categories under \$40,000 and Blacks under \$10,000. All minorities are concentrated in the lowest acreage categories. Hispanics comprise 3.7 percent of all farm operators, but about 20 percent of farm managers and 40 percent of farm supervisors. Blacks also comprise a larger proportion of farm managers and supervisors than farm operators, but Asians and women comprise smaller proportions of managers and supervisors than farm operators.<sup>2</sup>

The proportion of women in agricultural production overall is low. The highest proportion of women is in animal specialties, especially horses. Many women who participate with their husbands in farming are not counted since the Census of Agriculture names only one farm operator per farm.

Minorities are under-represented in professional and technical positions in agricultural and marketing associations and there are no minorities in top management. Women comprise an average proportion of professional and technical employees in these associations and a below average proportion of top management.

Accurate data for hired farm labor is difficult to obtain because of the seasonality of the work and the migrancy of many farm workers. The Hispanic proportion ranges from 45 to 95 percent, depending on the data source. Sources which focus more closely on the California farm labor force show a higher proportion of Hispanics and are probably more accurate.

Three industries associated with agriculture were studied: inputs (chemicals, machinery, credit, etc.), processing, and marketing. Minorities and women are under-represented in

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<sup>1</sup>This Hispanic and Asian categories are diverse, with each representing different national heritage groups. Countries of origin for Hispanics include Mexico, Puerto Rico, Cuba and Spain. Countries of origin for Asians include China, Philippines, Japan, Korea, India, Vietnam and other Southeast Asian countries.

<sup>2</sup>However, there is a higher proportion of female contract farm managers than farm operators.

managerial, professional and technical positions in all three,<sup>1</sup> but their proportions are higher than in similar positions in education and government. Certain minorities are over-represented in the lower-paying jobs in private industry (service, farm, skilled, unskilled). Overall, women are under-represented in these jobs but there are concentrations of women in unskilled jobs in processing industries (mostly Hispanic women) and service jobs in marketing industries. Fewer women are found in skilled than unskilled jobs.

Among university tenure track faculty, minorities (mostly Asians) comprise 12 percent at the University of California and 7 percent at California State University. There were no Blacks or Native Americans among ladder rank faculty at UC Berkeley or UC Riverside and only .5 percent of each group at UC Davis. Women comprise 12 percent of tenure track positions at UC and 5 percent at CSU.

Minorities are under-represented among UC and CSU undergraduate agricultural majors, except in wood sciences and renewable natural resources at UC, and international agriculture at CSU. Asians are the largest minority group at UC and Hispanics are the largest at CSU. Women are over-represented in agricultural majors at UC and comprise a majority of undergraduates in animal science and poultry majors. There is an average proportion of undergraduate women at CSU and women comprise a majority in animal science and food science. Minorities and women are under-represented among graduate agricultural students at all campuses in both systems, except at UCD and CSU Pomona. The proportion of girls enrolled in public school agricultural courses is average overall, but below average in many major agricultural counties.

Minorities are under-represented overall among professional and technical employees in California offices of federal and state agencies, but they represent an average to above average proportion in several California agencies, including Food and Nutrition Service, Agricultural Marketing Service, and Economic Research Service of USDA, Bureau of Indian Affairs at Department of Interior and California Department of Water Resources.

Women are also under-represented in government agencies with a few exceptions, including Agricultural Marketing Service, Food and Nutrition Service and Economic Research Service at USDA, and National Park Service at Department of Interior.

This pattern of distribution of minorities and women in the agricultural industry leads to questions about the reasons for their overall under-representation in agricultural production and well-paying jobs and their concentrated numbers in other generally lower-paying jobs. Follow-up research should explore these questions, investigating each minority and nationality group specifically, and studying comparisons and contrasts between the groups.

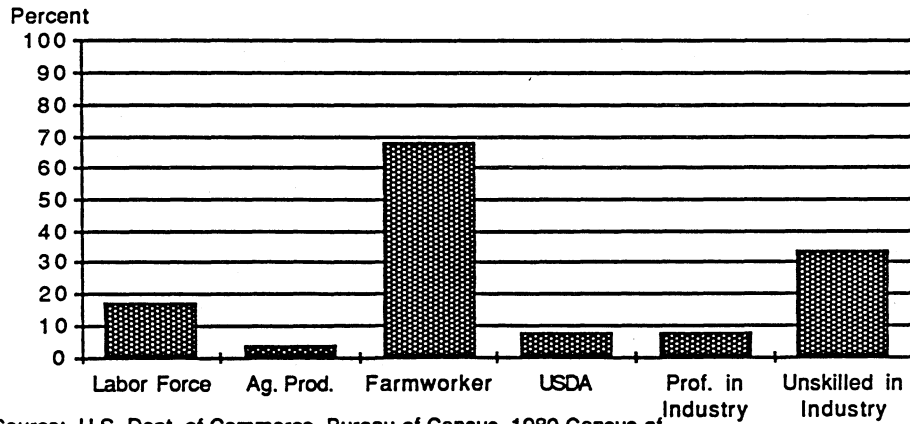
The Appendix to this report containing detailed tables of all data collected is available from the UC Agricultural Issues Center, University of California, Davis, CA 95616.

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<sup>1</sup>The single exception is a high proportion of women in professional positions in marketing.

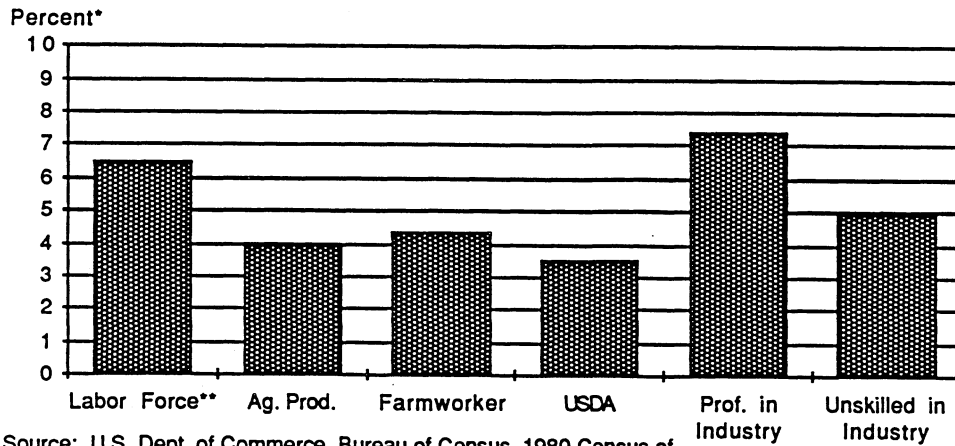


**Summary Figure 3: Percentage of Hispanics in California's Labor Force & Selected Agricultural Sectors**



Source: U.S. Dept. of Commerce, Bureau of Census, 1980 Census of Population & 1982 Census of Agriculture, USDA.

**Summary Figure 4: Percentage of Asians in California's Labor Force & Selected Agricultural Sectors**

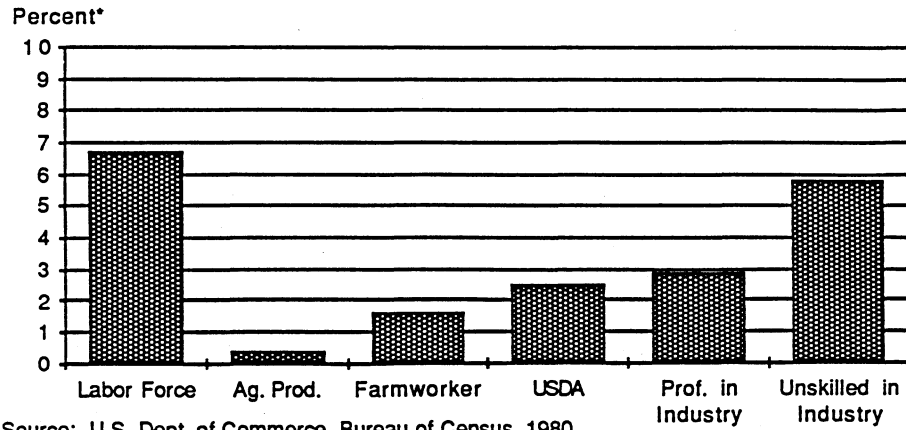


Source: U.S. Dept. of Commerce, Bureau of Census, 1980 Census of Population & 1982, Census of Agriculture, USDA.

\*Note that the vertical axis goes from 0 to 10 percent.

\*\*The data were for "Asians and Others."

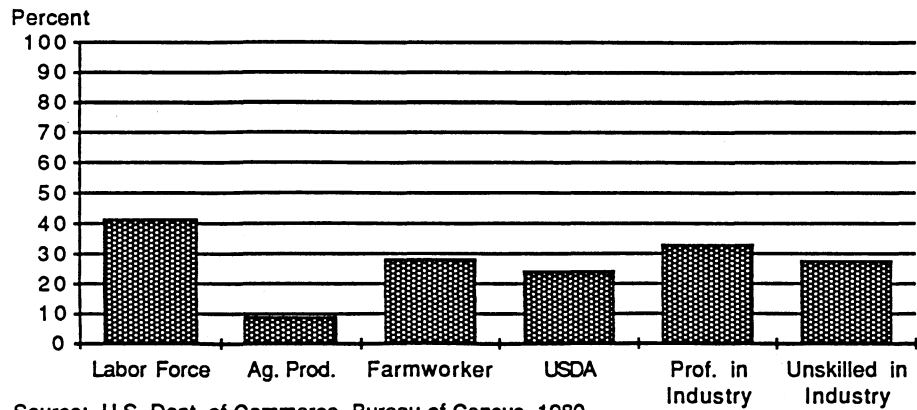
**Summary Figure 1: Percentage of Blacks in California's Labor Force & Selected Agricultural Sectors**



Source: U.S. Dept. of Commerce, Bureau of Census, 1980 Census of Population, 1982 Census of Agriculture, USDA.

\*Note that the vertical axis goes from 0 to 10 percent.

**Summary Figure 2: Percentage of Women in California's Labor Force and Selected Agricultural Sectors**



Source: U.S. Dept. of Commerce, Bureau of Census, 1980 Census of Population & 1982 Census of Agriculture, USDA.

respectively. A slightly different approach to defining any sector could yield similar differences. Secondly, not all the data could be obtained for the most recent or even for the same year. At best, each data source only reflects the situation as of the date the survey was made. Major data sources include the 1980 Census of the Population and the 1982 Census of Agriculture. Most university

Table 1. Agricultural Sectors in this Report.

A. Production

1. Growers
2. Hired Farm Workers
3. Agricultural and Marketing Associations

B. Industries Associated with Agriculture

1. Input Industries
2. Processing Industries
3. Marketing Industries
4. Agricultural Professionals

C. Education

1. Faculty
  - a. University of California
  - b. California State University
  - c. California Community Colleges
  - d. Secondary Schools
  - e. Cooperative Extension
2. Students
  - a. University of California
  - b. California State University
  - c. California Community Colleges
  - d. Secondary Schools
  - e. 4-H and FFA

D. Governmental Regulatory Agencies

1. U.S. Department of Agriculture
2. U.S. Department of Interior
3. California State Agencies

## MINORITIES AND WOMEN IN CALIFORNIA AGRICULTURE

The study consists of an analysis of all available statistics on the numbers of minorities and women in California agriculture. Because of the difficulty of the task of identifying and locating data sources (over 225 phone calls were made toward this ends), we believe this to be the first time such statistics have been assembled. All aspects of agriculture are included, from the input industries through production, processing and marketing, as well as governmental and educational institutions associated with agriculture. The data were gathered from many sources including the Census of Agriculture, Census of Population, Postsecondary Education Commission, the University of California and California State University systems, the California Department of Education, USDA, U.S. Department of Interior, five California agriculture and resources agencies, and an original survey. Specific sources as well as contradictions in the data are noted in the text.

All collected data are assembled in the Appendix to this report.<sup>1</sup> In order to make the data more manageable, however, the text aggregates the data into major groupings, characterizing minority and women employment in broad categories of low, below average, average, above average and high. Readers interested in specific figures for an industry or a group are invited to refer to the appropriate tables in the Appendix.

The major topics of analysis are

- A. Production
- B. Industries Associated with Agriculture
- C. Education
- D. Governmental Regulatory Agencies

A complete outline of the various groups analyzed under each category is given in Table 1.

The first draft of this report was reviewed by a group of individuals who represent many of the sectors studied here. Their input was helpful in finding additional data sources and suggesting methods for improving the organization and presentation of the report.

While the data collected in this report are the most comprehensive and up-to-date available on the topics studies, these figures, like all data, should be considered indicative of trends rather than absolutely precise numbers. Assuming the data are correct (and that the samples accurately reflect the population), there are various approaches to defining the sectors and subsectors studied and each approach can result in different figures. For example two different data sets on students enrolled in UC agriculture and resource majors include different majors and therefore vary by 1043 students. The overall proportions of minorities and women vary by 2.7 and 2.5 percent,

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<sup>1</sup>Each data set has been arranged in either two or four tables. The original data and a percentage table are given for each set. Where helpful, the data is also rearranged by level of employment and a percentage table is given for this arrangement.

respectively. A slightly different approach to defining any sector could yield similar differences. Secondly, not all the data could be obtained for the most recent or even for the same year. At best, each data source only reflects the situation as of the date the survey was made. Major data sources include the 1980 Census of the Population and the 1982 Census of Agriculture. Most university

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1. U.S. Department of Agriculture
2. U.S. Department of Interior
3. California State Agencies

and government data are from 1985 and 1986. The current proportions of minorities and women could be higher or lower than those reported here.

In this first stage of research, no explanations have yet been formulated for the relative percentages of minorities and women found in different categories or levels of employment. However, several hypotheses for further study are discussed. These are meant to suggest avenues of exploration for possible barriers hindering further employment.

### BACKGROUND: BASE STATISTICS

The cultural diversity of California's population is greater than in most parts of the United States and it is growing. Between 1970 and 1980 ethnic minorities increased from 22.9 percent to 33.5 percent of California's population (Table 2). Most of the population growth of minorities occurred among Asians and Hispanics.

The Hispanic category is composed of several different national heritage groups and all races. The 1980 breakdown of Hispanics by national origin and race is given in Table 3. The "Asian and Pacific Islander" category is also diverse, comprised of individuals from Japan, China, the Philippines, Korea, India, Vietnam, Hawaii, Guam, Samoa, Laos, Cambodia, and other countries. The 1980 population distribution of Asian nationalities is shown in Table 4. Projections of the California population indicate a continued increase in ethnic groups until they actually become the majority of the population by the year 2010 (Table 5).

Present minority participation in the labor force is 30.2 percent, slightly below its proportion of the population (Table 6). Ethnic groups are expected to become the majority in the labor force sometime between the years 2000 and 2030 (Table 7). The 1980 Census of Population reports that ethnic groups have higher unemployment and lower income than the labor force as a whole. The 1980 unemployment rate for the California civilian labor force was 6.5 percent, but 9.8 percent for Blacks, 10.3 percent for Hispanics and 10.7 percent for Native Americans. The average income among all Californians was \$25,540, but it ranged from \$18,077 for Blacks to \$27,896 for non-Hispanic Whites. The proportion of families below the poverty level<sup>1</sup> ranged from 5.5 percent for non-Hispanic Whites to 20.6 percent for Blacks (Table 8).<sup>2</sup>

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<sup>1</sup>\$6,700 for a nonfarm family of four in 1979; \$5,700 for a farm family of four.

<sup>2</sup>The Current Population Survey (CPS) gives an annual update, but these data are based on a sample in the major metropolitan areas only. The Census of Population samples the entire population. CPS data for Blacks and Whites are not comparable to the 1980 census since they include both non-Hispanic and Hispanic; no other racial groups are given. CPS figures for 1986 indicate continuation of the same pattern for Hispanics: The Hispanic proportion of the population was 19.9 percent in 1986; of the labor force, 20.2 percent; and unemployment among Hispanics was 10.4 percent.

Table 2. U.S. and California Population by Race/Ethnicity, 1970 and 1980 (in thousands).

	Non-Hispanic White	Black	Hispanic	Asian	American Indian	Not Elsewhere Classified	Women	Total
United States								
1970	N/A	22,539	9,073	N/A	N/A		104,328	203,212
Percent		11.1	4.5				51.3	100
1980	180,256	26,104	14,609	3,334	1,326	917	116,495	226,546
Percent	79.6	11.5	6.4	1.5	0.6	0.4	51.4	100
% Change		3.6	42.2					11.5
California								
1970	N/A	1,397	2,369	N/A	N/A		10,136	19,953
Percent		7	11.9				50.8	100
1980	15,764	1,784	4,544	1,186	163	227	12,001	23,668
Percent	66.5	7.5	19.2	5.0	0.7	1	50.7	100
% Change		7.1	61.3					18.6

Source: U.S. Department of Commerce, Bureau of the Census, 1970 and 1980 Census of the Population.

Table 3. Persons by Spanish Origin and Race, in California, 1980 (in thousands).

	TYPE				RACE					Total
	Mexican	Puerto Rican	Cuban	Other Spanish	White	Black	American Indian	Asian and Pac. Islanders	Race nec.	
Number	3,613	93	64	771	2,371	35	42	71	2,023	4,541
Percent	79.6	2	1.4	17	52.2	0.8	0.9	1.6	44.5	100

Source: U.S. Department of Commerce, Bureau of the Census, 1980 Census of Population, Part 6, California §1, Table 59, p. 6-57, July, 1983.

Table 4. Asian Persons in California by Country of Origin, 1980 (in thousands).

	Chinese	Filipino	Indian	Japanese	Korean	Vietnamese	Southeast Asian	Other	Total
Number	325	358	59	268	102	85	18	93	1,312
Percent	24.8	27.3	4.6	20.5	7.8	6.5	1.4	7.1	100

Source: Bouvier, L. and P.L. Martin, Population Change and California's Future, Population Reference Bureau, Inc., 1985, p. 15.

Table 5. Projected Population by Race/Ethnicity 1980 to 2030 (in thousands).

	Non-Hispanic White	Black	Hispanic	Asians	Others	Total	Ethnic Total
1980	15,704	1,783	4,544	1,312	263	23,608	7,904
Percent	66.5	7.5	19.2	5.6	1.2	100	33.5
1990	16,410	2,098	6,736	2,312	322	27,880	11,470
Percent	58.8	7.5	24.2	8.3	1.2	100	41.1
2000	16,704	2,353	9,085	3,371	368	31,883	15,179
Percent	52.4	7.4	28.5	10.6	1.1	100	47.6
2010	16,859	2,578	11,548	4,471	411	35,869	19,010
Percent	47	7.2	32.2	12.5	1.1	100	53
2020	16,856	2,761	12,799	5,598	450	38,466	21,610
Percent	43.8	7.2	33.3	14.6	1.1	100	56.2
2030	16,388	2,862	16,273	6,667	472	42,665	26,277
Percent	38.4	6.7	38.1	15.6	1.2	100	61.6

Source: Bouvier, L. and P. L. Martin, Population Change and California's Future, Population Reference Bureau, Inc., 1985, p. 13.



Table 6. California Population and Labor Force by Gender and Ethnicity, 1980 (in thousands).

	White			Black			Hispanic			Asian			American Indian			Other			Total			Ethnic Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Population	7,764	8,086	15,851	873	912	1,784	2,298	2,244	4,541	608	634	1,242	93	97	190	31	29	60	11,667	12,002	23,668	3,903	3,916	7,817
Percent	32.8	34.2	67.0	3.7	3.9	7.5	9.7	9.5	19.2	2.6	2.7	5.2	0.4	0.4	0.8	0.1	0.1	0.3	49.3	50.7	100.0	16.5	16.5	33.0
Labor Force*	4,726	3,403	8,129	421	367	788	1,208	777	1,985	342	292	634	50	38	88	15	10	25	6,762	4,887	11,649	2,036	1,484	3,520
Percent	40.6	29.2	69.8	3.6	3.2	6.8	10.4	6.7	17.0	2.9	2.5	5.4	0.4	0.3	0.8	0.1	0.1	0.2	58.0	42.0	100.0	17.5	12.7	30.2

\*16 years and over.

Source: U.S. Department of Commerce, Bureau of Census, 1980 Census of Population, Part 6, California sec. 1, Tables 59, 101, July 1983, pp. 6-57, 6-154.

Table 7. Projected California Labor Force by Race/Ethnicity 1980, 2000, 2030 (in thousands).

	Non-Hispanic		Hispanic	Asians and Others	Total	Ethnic Total
	Whites	Black				
1980	8,198	792	2,026	784	11,800	3,602
Percent	69.5	6.7	17.3	6.5	100	30.5
2000	9,576	1,262	4,701	2,032	17,571	7,995
Percent	54.5	7.2	26.8	11.5	100	45.5
2030	8,610	1,478	8,716	3,894	22,698	14,088
Percent	37.9	6.5	38.4	17.2	100	62.1

Source: Bouvier, L. and P. L. Martin, Population Change and California's Future, Population Reference Bureau, Inc., 1985.

Table 8. Unemployment, Average Income, and Families Below Poverty Level by Race/Ethnicity in California, 1980.

	Non-Hispanic		Hispanic	Asian	American Indian		Other	Total
	White	Black			Indian	Other		
Percent of Civilian Labor Force Unemployed		5.4	9.8	10.3	4.9	10.7	7.4	6.5
Mean Income	\$27,896	\$18,077	\$18,557	\$26,597	\$20,177	\$20,847		\$25,540
Percent of Families Below Poverty Level		5.5	20.6	16.8	9.7	14.4	15.9	8.7

Source: U.S. Department of Commerce, 1980 Census of Population, Part 6, California §1, Tables 103, 104, pp. 6-156, 6-157, July, 1983.

Women comprise 50.7 percent of the California population and 41.9 percent of the work force. Table 6 gives the racial breakdown of women in the population and labor force.

In putting this report in perspective, it is helpful to consider the total picture in relation to the portion studied here (minorities and women). White males comprised 40.6 percent of the labor force in 1980. In agricultural production and most-well paying agricultural jobs, the white male proportion is greater than its proportion of the labor force. For example, white males comprised 82.8 percent of farmers, 60.8 percent of managers in input, processing and marketing industries studied, 76.4 percent of UCD faculty and 85.2 percent of permanent professional and technical employees in USDA California offices. The remaining portions in each group are the focus of this report (Figure 1).

In order to give a succinct overall picture of the employment of minorities and women, this report characterizes levels of employment in ranges. The following ranges were designated for minority employment based on the percent of minorities in the California population (33.5) and work force (30.5) (1980 Census of Population):

less than 10% :	low
10-25% :	below average
25-35% :	average
35-50% :	above average
above 50% :	high

The descriptive ranges chosen for women are:

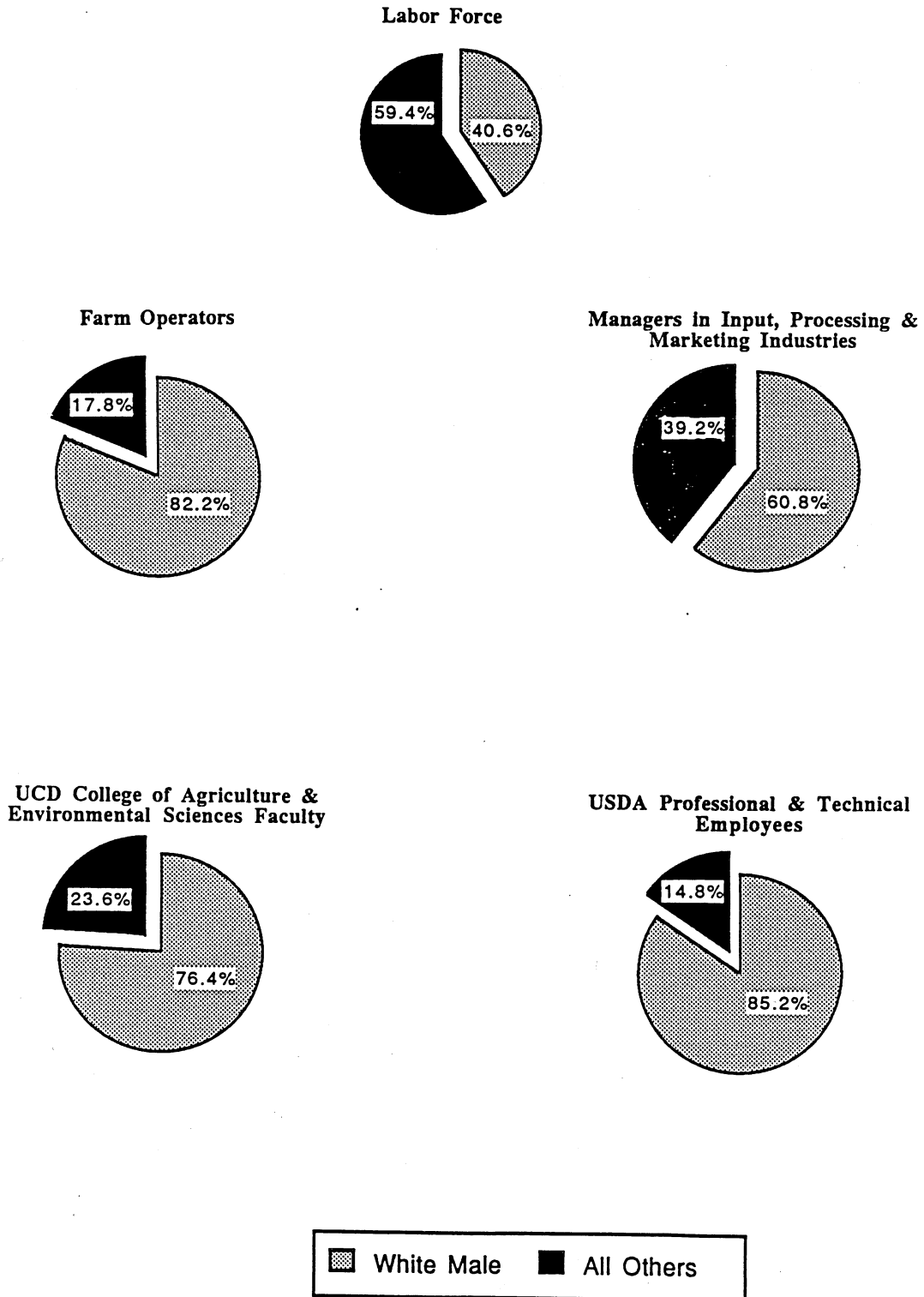
less than 20%:	low
20-35% :	below average
35-45% :	average
45-60% :	above average
above 60% :	high

The pool of minorities and women eligible for certain jobs, such as university faculty and professional and managerial positions, is smaller than their representation in the total labor force. This report, however, compares present employment to the total labor force since the purpose of this project is to identify deficiencies and barriers that presently exist. For affirmative action programs, the numbers of qualified persons in the labor force might be a more important comparison.<sup>1</sup>

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<sup>1</sup>For example, a recent study showed that the University of California is currently doing as well or better than comparable universities in the percentage of minorities on its faculty (UC Focus). UC Affirmative Action is based on meeting goals set by the proportion of minority groups among the pool of eligible persons determined by their education level.

Figure 1: White Male Proportion of the California Labor Force and Selected Agricultural Sector



The findings of this report indicate that, in general, minorities and women are under-represented in agricultural production and higher-paying jobs in agriculture. Some minorities are over-represented in lower-paying jobs. There are three different patterns, however, of under-representation and over-representation in the work force. The first pattern, represented by Blacks and women, is one of under-representation in virtually all sectors, including both high- and low-paying jobs (Figures 2 and 3). The second pattern, represented by Hispanics, shows under-representation in production and higher-paying jobs and over-representation in lower paying jobs (Figure 4). The third pattern, represented by Asians, shows under-representation in some job categories and over-representation in others, with no definite pattern relating to high- or low-paying jobs (Figure 5). Since the Asian category is made up of many different nationalities, however, some Asian groups might still be under-represented in all categories.

## I. Production

Agricultural production is, of course, the center of the agricultural industry. Two major production groups must be analyzed--growers and hired farm workers. A few additional categories exist, however, and are worth noting. These include farm managers and supervisors.

### A. Growers

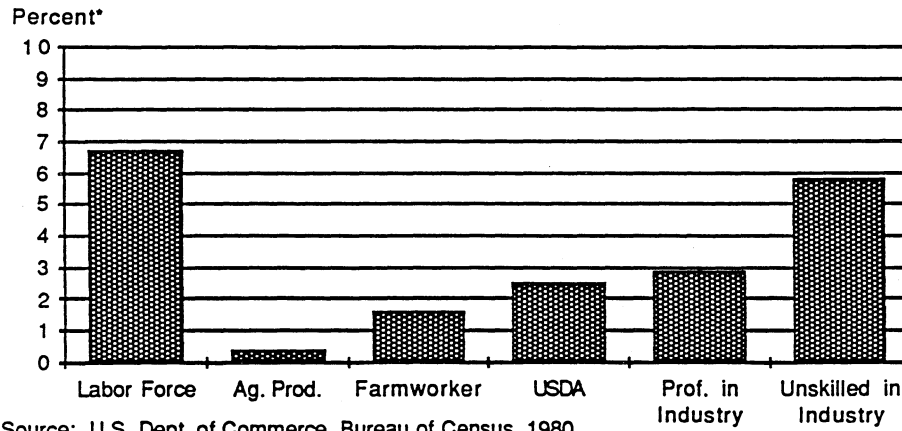
#### 1. Data Sources

Several sources of data exist on growers and hired farmworkers, but none are totally satisfactory as accurate sources. The Census of Agriculture and the Census of Population are two official sources of data. The most comprehensive source of information on growers is the Census of Agriculture. The goal of this census, which is compiled every five years, is a complete and accurate account of farms and farm production. This census is conducted primarily by mail, but in 1978 the mail survey was supplemented by direct interviews of households not on the mail list. It was found that most farms not included on the mail list are small both in acreage and gross annual sales. Due to budget cuts, the 1982 Census of Agriculture did not include direct interviews.

Census of Agriculture questions relevant to this study are asked of 100 percent of farm households, not a sample. The questions are asked of the farm operator, defined as the person who does the day-to-day work and makes day-to-day decisions. An operator can be the owner, a family member, or farm manager. The number of operators should equal the number of farms. The most recent Census of Agriculture was taken in 1982.

The Census of Population, on the other hand, samples 5 percent of the population and asks questions concerning a person's principal occupation during the week preceding the week the questionnaire was filled out (usually the last week of March). Doctors or university professors who also own farms will not appear as growers in the Census of Population, but can appear in the

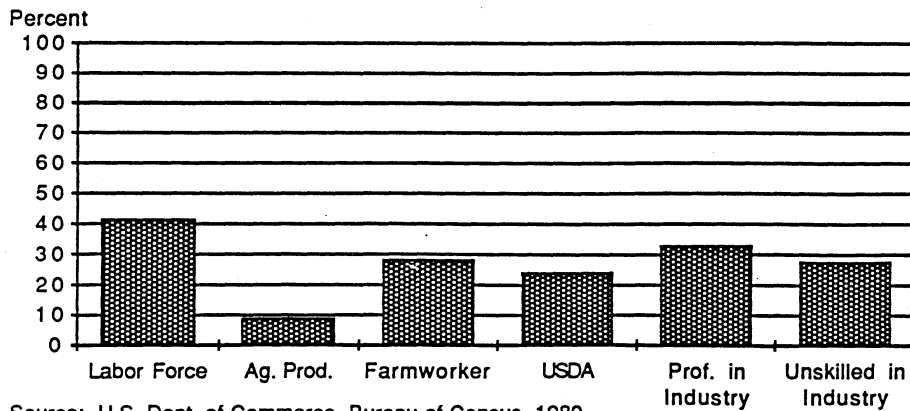
Figure 2: Percentage of Blacks in California's Labor Force & Selected Agricultural Sectors



Source: U.S. Dept. of Commerce, Bureau of Census, 1980 Census of Population, 1982 Census of Agriculture, USDA.

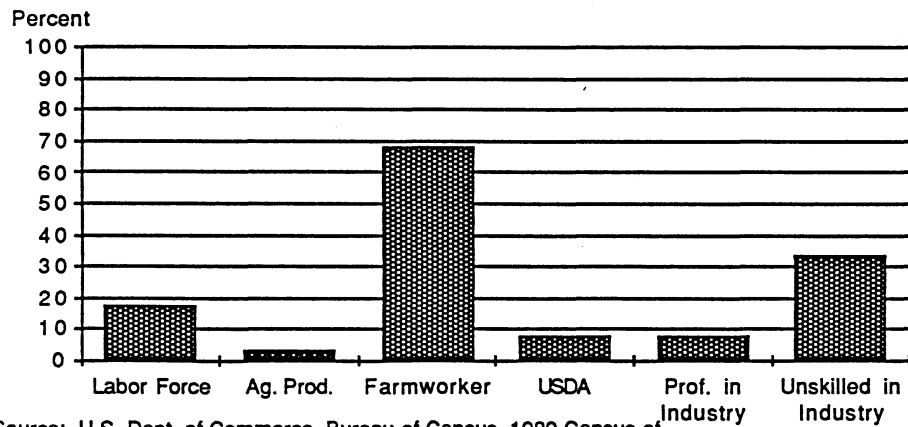
\*Note that the vertical axis goes from 0 to 10 percent.

Figure 3: Percentage of Women in California's Labor Force and Selected Agricultural Sectors



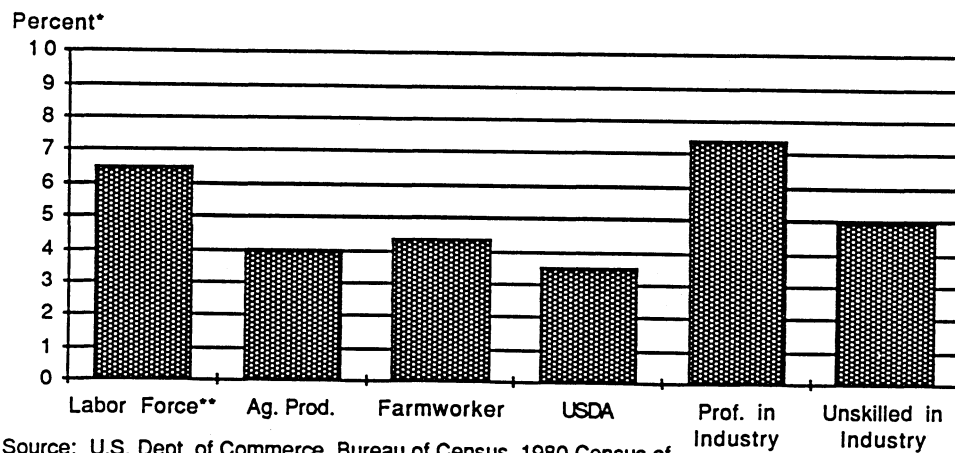
Source: U.S. Dept. of Commerce, Bureau of Census, 1980 Census of Population & 1982 Census of Agriculture, USDA.

**Figure 4: Percentage of Hispanics in California's Labor Force & Selected Agricultural Sectors**



Source: U.S. Dept. of Commerce, Bureau of Census, 1980 Census of Population & 1982 Census of Agriculture, USDA.

**Figure 5: Percentage of Asians in California's Labor Force & Selected Agricultural Sectors**



Source: U.S. Dept. of Commerce, Bureau of Census, 1980 Census of Population & 1982, Census of Agriculture, USDA.

\*Note that the vertical axis goes from 0 to 10 percent.

\*\*The data were for "Asians and Others."

Census of Agriculture as farm operators. The Census of Population classifies employment in detail, so it gives a breakdown of farm managers and farm supervisors. The Census of Agriculture asks only whether farming is the principal occupation of the owner.

Because of the different purposes of these two data sources, no attempt is made here to corroborate the figures, although differences are pointed out. Census of Agriculture data are used to analyze the grower category and Census of Population data are used to analyze the numbers of farm operators, farm managers and farm supervisors.

## 2. Findings

Agricultural production statistics are divided into 11 major agricultural categories, each with various subgroups. The major categories are cash grain, other field crops, vegetables and melons, fruits and tree nuts, horticultural specialties, general farms--primarily crops, livestock, dairy, poultry, animal specialties, general farms--primarily livestock. Ethnic minority farm operators are a low proportion of California farms as a whole (9.2 percent). Representation is also low in each separate category except vegetables and melons and horticultural specialties, in which the minority proportion is average, and fruits and tree nuts, where the minority proportion is below average. Within the fruit and nuts category, the subgroup of berry farms shows a high (64.8 percent) proportion of minority operators. Other subgroups that have above low minority percentages are horticultural specialties--nursery and food (29.7 percent each), grapes (14.2 percent), deciduous fruits (14.7 percent), and broilers (19.7 percent) (Table 9).

Asians are 4.0 percent of all farm operators, which is almost 75 percent of the Asian representation in the California labor force. The 3.7 percent proportion of Hispanic growers is about 20 percent of the Hispanic representation in the work force; and the 0.4 percent Black growers is less than 6 percent of the Black proportion of the labor force. These figures are supported by historical trends which show that of the many different minority groups which came to California as farmworkers, the Japanese were most successful in saving enough capital to purchase farms and eventually compete with white growers (Vaupel and Martin, pp. 9-14).

Asian growers are concentrated in a few commodities. They comprise over 25 percent of berry growers, almost 25 percent of horticultural specialty growers and slightly less than 20 percent of vegetable and melon growers. Japanese growers are the predominant Asian group in berries and horticultural specialties. Hispanic growers are concentrated in berries (almost 35 percent) and vegetables and melons (about 12 percent). Mexican farmers are the predominant Hispanic group throughout the state. Virtually all of the Hispanic berry growers in the Central

Table 9. Minorities and Women in California Agricultural Production, Selected Categories, 1982 (Percent).

	Hispanic	Black	Asian	American Indian	Other	Ethnic Total	Women
Cal. Farms	3.7	0.4	4.0	0.5	0.6	9.2	9.4
Veg. & Melon	11.6	0.3	17.8	0.3	2.1	32.0	4.1
Fruit & Tree Nuts	4.2	0.2	5.0	0.3	0.7	10.3	8.0
Berries	34.8	0.0	28.4	0.0	1.6	64.8	13.7
Grapes	4.9	0.2	7.8	0.2	1.1	14.2	6.8
Decid. Fruits	4.0	0.3	9.4	0.1	0.8	14.7	6.7
Hort. Spec.	4.5	0.3	23.8	0.4	0.6	29.6	9.8
Nursery	4.6	0.3	23.9	0.4	0.5	29.7	10.0
Food	2.2	1.1	22.0	0.0	4.4	29.7	4.4
Hogs	4.7	3.5	0.4	1.0	0.3	9.9	12.6
Broilers	5.8	0.7	13.1	0.0	0.0	19.7	8.8
Animal Spec.	2.3	0.5	0.6	0.7	0.2	4.4	23.9
Fur Bearing	3.8	1.0	0.7	0.7	0.7	7.0	24.0
Horses	2.2	0.4	0.4	0.7	0.2	3.9	27.5

Source: U.S. Department of Commerce, Bureau of the Census, 1982 Census of Agriculture, special run.

Coast region are Mexican.<sup>1</sup> The highest concentration of Black growers (3.5 percent) is in livestock (hogs).

The commodities in which minorities are concentrated have a relatively low requirement for land and/or land ownership. Horticultural specialties and berries are high profit crops grown on small acreages. Land quality is not essential for these crops, since strawberries can be grown on marginal land and horticultural specialties are often grown in greenhouses. Vegetables and melons can be grown on rented land, since these are annual crops with no fixed investment as in orchards or vineyards.

Wells' study of Central Coast strawberry growers indicates that a combination of several factors facilitated the increase of Mexican growers from fewer than ten in the early 1970s to 108 (49 percent of Central Coast strawberry growers) in 1986. These factors include the relatively small amount of land required; increased demand for strawberries; capital availability through processors; institutional support, such as cooperatives (now disbanded), a confederation which provided technical assistance and other support, and Cooperative Extension Spanish-speaking small farm advisors; and the use of family labor and labor hired through ties with their villages of origin. Additionally, many had been sharecroppers in strawberries and had already acquired production skills. Wells' study also points out, however, that throughout the state many factors

<sup>1</sup>Wells also points out that the highest percentages of Hispanic growers are found in Monterey (12 percent), Santa Barbara (8.9 percent), Santa Cruz (7.3 percent) and Fresno (6 percent) counties.



now work against limited-resource Mexican farmers, including increased competition in market niches other than strawberries, limited access to land and capital, and limited English-speaking ability and low educational level. Mexican growers have higher failure rates than the overall grower population.

Analyzing the ethnicity of growers by gross annual sales and by farm acreage shows that the highest concentrations of most minorities are in the lowest gross sales and acreage categories. About one third of Hispanics have gross annual sales under \$10,000. Blacks and Native Americans each comprise 1 percent of the \$2,500-10,000 category and do not register in any other category. Asians, however, register their highest percentage (8 percent) in the \$100,000-250,000 category. The highest proportion of each minority group falls in the category of less than 20 acres. Over 40 percent of Hispanics farm fewer than 20 acres (Table 10).<sup>1</sup>

The number of women farm operators is low overall (9.4 percent) and in each category except animal specialties such as horses (27.5 percent) and fur-bearing animals (24.0 percent) (Table 9). The only crop commodity in which women comprise greater than 10 percent is berries where they comprise 13.7 percent. Asian women make up 5.1 percent of berry growers.

The Census of Agriculture is unsatisfactory, however, for statistics concerning female growers, since only one person on each farm is designated the farm operator. Therefore many women who share equally in the farming enterprise with their husbands are not counted. Gwynn et al., in a study of Yolo County farms, found that the percentage of farm households where production decision-making is shared equally between the husband and wife ranges from 9.3 percent in decisions regarding labor and supervision to 44.4 percent in decisions regarding size of the farm operations (Table 10a). Production tasks are shared equally in 2.9 to 7.1 percent of farms.

The Census of Population classifies farm operators, managers, supervisors and contract farm managers. Supervisors include crew leaders and farm labor contractors.<sup>2</sup> The ethnic total is below average for farm operators, average for farm managers, slightly above average for farm

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<sup>1</sup>The Hispanic figures for gross sales categories and acreage have not been separated out of each racial category, so the total is greater than 100 percent.

<sup>2</sup>Compared to the Census of Agriculture, the Census of Population shows about 10 percent more minority farm operators, but fewer total farm operators. This difference appears in the absolute numbers as well as proportions, with the Census of Population showing about 2,600 additional Hispanics and 1,800 additional Asians. About 3,000 more women operators also appear in the Census of Population. This difference could result from the fact that the Census of Population records an occupation for every person rather than recording information about one operator per farm. Therefore a woman who engages in farming with her husband could be counted in the Census of Population as a farm operator, but probably would not be counted in the Census of Agriculture. Additionally, or alternatively, the difference could be accounted for by a sampling error in the Census of Population or a bias against small farmers in the Census of Agriculture. The Census Bureau attempted to make up for this bias in 1978 when it conducted additional interviews with small farmers.

Table 10. Gross Sales and Acreage of California Growers by Ethnicity, 1982 (Percent).

	White	Black	Asian	American Indian	Other	Hispanic*
<b>Gross Sales</b>						
\$2,500-10,000	95	1	2	1	2	31
\$10,000-20,000	93	0	4	0	2	15
\$20,000-40,000	91	0	6	0	2	15
\$40,000-100,000	90	0	7	0	2	16
\$100,000-250,000	90	0	8	0	2	11
\$250,000-500,000	90	0	7	0	2	5
>\$500,000	92	0	6	0	2	7
<b>Acres</b>						
1-19	89	1	7	0	3	44
20-39	91	0	6	0	2	16
40-79	92	0	6	0	2	12
80-159	93	0	5	0	2	8
160-319	95	0	3	0	1	7
320-639	96	0	3	0	1	5
≥640	97	0	2	0	1	9

\*Hispanics are included with each racial group in the breakdown on the left, and grouped together on the right.

Source: U.S. Department of Commerce, Bureau of the Census, 1982 Census of Agriculture, Special Tabulation.

supervisors and below average for contract farm managers. The predominant ethnic group in each category is Hispanic, comprising over 26 percent of farm managers and about 40 percent of farm supervisors. Asians comprise a higher percentage of farm operators (almost 9 percent) than farm managers and farm supervisors (about 6 percent each) or contract farm managers (1 percent). There are fewer Black farm operators (less than 1 percent) than farm managers and supervisors (between 2 and 3 percent), and no Black contract managers. In each category, there is a far greater number of Blacks, Hispanics, and Asians in crop farms than in farms with predominantly animal commodities. The reverse is true of Native Americans, who are found in higher proportions in animal production. Women make up a low proportion of each occupation category except contract farm manager, where they are below average in representation (Table 11).

The higher proportion of Hispanics in farm managerial and supervisory positions is not surprising in light of the predominance of Hispanics among hired farm labor (see following section). These figures indicate that more Hispanics are promoted from hired worker to manager and supervisor than become farm operators.

TABLE 10A

## Relative Involvement of Women in Production Decision-Making and Production Tasks

Item	Husband Exclusively	Wife Exclusively	Shared Equally	Other Household Member	Service Purchased	Combination (often includes Husband & Wife)	Estimated Participation of Wife
<u>Production Decision-Making</u>							
Deciding crops to plant	50.2 (86)	2.0 (3)	18.7 (32)	3.4 (6)	6.6 (11)	19.2 (33)	24.7 (41.8)
Labor supervision and hiring	48.5 (87)	1.9 (3)	9.3 (17)	5.0 (9)	10.5 (19)	24.8 (44)	14.0 (24.9)
Deciding size of farm operation	31.1 (70)	5.3 (12)	44.4 (99)	2.7 (6)	0	16.5 (37)	57.9 (129.5)
Deciding size of animal operation	31.9 (31)	15.2 (15)	36.7 (35)	3.6 (3)	0	12.6 (12)	58.4 (56.2)
Purchasing major farm equipment	40.0 (81)	2.2 (4)	29.8 (60)	2.5 (5)	2.2 (4)	23.3 (47)	39.5 (79.0)
Obtaining agricultural credit	41.9 (73)	4.1 (7)	32.4 (57)	2.9 (5)	0.8 (1)	17.9 (31)	43.0 (75.5)
<u>Production Tasks</u>							
Cultivating	56.0 (111)	1.6 (4)	2.9 (6)	2.9 (6)	15.2 (30)	21.2 (42)	5.6 (11.9)
Irrigating	37.4 (71)	2.3 (4)	6.2 (12)	4.7 (9)	28.0 (53)	21.4 (41)	10.3 (19.5)
Hand Fieldwork	32.3 (63)	3.7 (7)	4.1 (8)	2.5 (5)	36.6 (71)	20.9 (40)	9.4 (18.2)
Harvesting	24.5 (49)	1.5 (3)	7.1 (14)	2.8 (6)	30.4 (61)	33.7 (68)	11.5 (23.1)

SOURCE: Gwynn, Douglas, et al., The Role of Women in Farming, ABS, UCD, 1986.

Table 11. California Farm Operators, Managers, Supervisors and Contract Managers by Ethnicity, 1980 (Percent).

Classification	White	Black	Hispanic	Asian	American		Total		Total	Ethnic Total
					Indian	Other	Male	Female		
Farm Operators--All	80.41	0.7	9.48	8.61	0.57	0.23	81.84	18.16	100	19.59
Crops	75.94	0.81	11.49	11.22	0.36	0.18	82.77	17.23	100	24.06
Animals	92.99	0.38	3.82	1.27	1.15	0.38	79.24	20.76	100	7.01
Farm Managers--All	68.34	2.15	22.54	6.26	0.72	0	86.76	13.24	100	31.66
Crops	63.12	2.36	25.77	8.04	0.71	0	87	13	100	36.88
Animals	84.09	1.52	12.88	0.76	0.76	0	85.61	14.39	100	15.91
Farm Supervisors--All	49.66	2.74	40.6	6.04	0.69	0.27	87.52	12.48	100	50.34
Crops	47.49	2.98	41.69	6.9	0.63	0.31	86.68	13.32	100	52.51
Animals	64.84	1.1	32.97	0	1.1	0	93.41	6.59	100	35.16
Contract Farm Managers	80.61	0	18.37	1.02	0	0	78.57	21.43	100	19.39
Total	73.76	1.21	16.52	7.71	0.59	0.21	83.34	16.66	100	26.24

Source: U.S. Department of Commerce, Bureau of the Census, 1980 Population of the Census, Special Run.

Table 11a. Minorities and Women Employed by California Agricultural and Marketing Associations, 1987.

	Minorities		Women	
	Rank	Percent	Rank	Percent
All Employees	below average	18.0	high	64.1
Top Management	low	0.0	below average	32.1
Professional and Technical	low	7.8	average	42.6
All Others	average	26.9	high	81.4

Source: Agricultural Issues Center, Original Survey, 1987.

## B. Agricultural Marketing Associations

Agricultural and marketing associations serve the grower community by providing a concerted voice to commodity groups, leadership, research, lobbying and by administering commodity marketing orders. Since no information was available on minority and women employment in these associations, the UC Agricultural Issues Center conducted a mail survey. Survey forms were sent to 84 organizations and returned by 33 organizations. The associations were asked to give the number of employees in each ethnic group by gender. All jobs were grouped into three classifications: top management; professional and technical; other.

Based on the returned survey forms, the proportion of minorities employed by agricultural associations is below average overall (18.0 percent). Half of minority employment is Hispanic women in the "other" category. There are no minorities in top management and 7.8 percent minorities in professional and technical positions (Table 11a).<sup>1</sup>

The overall proportion of women is high, with three-quarters of them employed in the "other" category. Nevertheless, 32.1 percent of top management is female, and 42.6 percent of the professional and technical employees are women (Table 11a).

## C. Hired Farm Labor

### 1. Data Sources

Accurate statistics for hired farm labor are especially difficult to obtain because of the seasonal nature of the work and the migrancy of many farm workers. The number of hired workers varies greatly through the year, from a peak of about 180,000 in September to a low of about 77,000 in February (Martin, p. 29). Any survey of farmworkers not conducted during a peak season will miss many migrants who return to Mexico and other states after the harvest season, and seasonal farmworkers who worked at a different job during the survey week. In analyzing farmworker statistics, it is also important to remember that the high rate of turnover results in many more persons than jobs. In 1984, for example, about 620,000 persons filled the average 228,000 jobs available to hired workers (ibid., p. 31).

Three sources of hired farmworker data are the Census of Population, USDA's Hired Farm Working Force Profile (HFWF) and miscellaneous ad hoc surveys. The Census of Population records the occupation of each person in the sample during the last week in March and therefore

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<sup>1</sup>It is possible that the organizations which returned the survey might be those with better records in hiring minorities and women. If this is the case, then the data on agricultural and marketing associations could be biased in favor of minorities and/or women.

misses many migrant and seasonal workers who have returned to Mexico or other states. Also, farmworkers employed in March tend to be year-round employees who are more often older Whites. The HFWF survey is conducted during December and suffers some of the same limitations. It misses foreign nationals and migrants from other states who have returned home during the off-season. It does, however, collect information on all persons who performed hired farm work during the census year, not just the survey week. HFWF statistics are based on a sample of 59,000 households, which include only 1,500 households with persons who did hired farm work. Responses are expanded to estimate characteristics of the entire farm labor force. Under-coverage in this biennial survey is about 17 percent as compared to the Census of Population. Generally under-coverage is worse for males than females and for ethnic minorities than whites (USDA, 1986). The HFWF profile does not provide state-level detail, but groups California with Washington, Oregon, Alaska, and Hawaii in the Pacific Region. The HFWF survey is considered better at locating students and women in the midwestern and southeastern states than California's Hispanic farmworkers (ibid.).

## 2. Findings

As studies become more specific to California or are focused more specifically on farmworkers, the proportion of Hispanics increases. The 1983 HFWF profile reports that the Pacific Region farm work force is 45 percent White, 45 percent Hispanic and about 10 percent Black and others. Sample size was 534 (Table 12). The 1980 Census of Population, with a sample size of 9,574, shows 68 percent Hispanic, 25 percent White, about 2 percent Black and 4 percent Asian, with the minority proportions much higher in crop production than in animal production (Table 12). The Hispanic proportion is also greater under farm labor contractors than among directly hired workers. This expanded 5 percent sample indicates that 191,480 farmworkers are represented, far fewer than the 620,000 person work force reported by Martin (p. 29) for 1984.

The proportion of women among farmworkers is about 28 percent in both surveys. It is also greater among farm labor contractor crews than directly hired crews. A higher proportion of women farmworkers, as with all farm labor, are found in crop production than in animal production. Women farmworkers, therefore, differ from women farm operators, where a higher proportion is found on livestock and animal specialty farms.

The third source of hired farm labor statistics is the general category of ad hoc surveys. Two such surveys have been conducted in recent years. The most recent was in 1983 and was conducted by the University of California and the California Employment Development Department among a sample of 1,300 farmworkers throughout the state (Mines and Martin). Although this

Table 12. Hired Farmworkers by Race and Ethnicity, Various Sources.

1983 Hired Farm Work Force: Pacific Region (Calif., Washington, Oregon, Alaska, Hawaii) (Number and Percent).

	WHITE			BLACK AND OTHERS			HISPANICS			TOTAL			ETHNIC TOTAL		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
	177	65	242	39	12	51	167	74	241	383	151	534	206	86	292
Percent	33.1	12.2	45.3	7.3	2.2	9.6	31.3	13.9	45.1	71.7	28.3	100	38.6	16.1	54.7

Source: USDA, ERS, The Hired Farm Working Force of 1983, Ag. Econ. Report 554, 1986, p. 16.

1980 Census of Population: California (Percent)

	White	Black	Hispanic	Asian	American		Male	Total		Ethnic Total
					Indian	Other		Female	Total	
Farmworkers--Direct Hire	25.14	1.61	67.77	4.53	0.85	0.1	72.08	27.92	100	74.9
Crops	19.55	1.77	72.82	4.97	0.83	0.07	70.75	29.25	100	80.5
Animals	64.86	0.47	31.87	1.4	1.03	0.37	81.55	18.45	100	35.1
Farmworkers--FLCs	22.46	1.82	71.61	3.42	0.57	0.11	62.6	37.4	100	77.5
Total	24.89	1.63	68.12	4.43	0.83	0.1	71.21	28.79	100	75.1

Source: U.S. Department of Commerce, Bureau of Census, 1980 Census of Population, Special Run.

1983 UC-EDD Study (Percent)

	California and United States		Mexico	Other Countries
Place of Birth (Percent)	19.9		73.3	6.8

Estimated Hispanic proportion of hired farm labor: 85 percent

Source: Mines, Richard and P.L. Martin, A Profile of California Farmworkers, Giannini Foundation, Giannini Information Series No. 86-2, 1986, p. 5; Martin, Philip L., California's Farm Labor Market, UC AIC Issues Paper No. 87-1, 1987, p. 56.

1978 Cal. Comm. on Status of Women

	White	Black	Hispanic	Asian	American		No Answer	Ethnic Total	Total
					Indian	Other			
	5	12	547	6	1	1	4	567	576
Percent	0.8	2.1	95.0	1.0	0.2	0.2	0.7	98.4	100.0

Source: California Commission on the Status of Women, Campesinas: Women Farmworkers in the California Agricultural Labor Force, 1978, p. A-5.

survey did not ask the race of the participants, it did ask their birthplace. About 73 percent of those interviewed were born in Mexico. The estimated total proportion of Hispanics (those born in Mexico plus the estimated number of those born in California and Texas) is 85 percent (Martin, p. 56) (Table 12). Workers born in other countries comprise about 7 percent of the sample.

In 1978, the California Commission on the Status of Women issued a report on a study of male and female farmworkers in Fresno and Imperial counties. The sample size was 576. Those interviewed were located by a random sample of residential areas where farmworkers were located, farm labor camps, and, in Imperial county, farmworkers crossing the border. This survey indicates 95 percent of the farm labor force is Hispanic and less than 1 percent is non-Hispanic White (Table 12).

The four data sources on hired farmworkers show Hispanic participation rates ranging from 45 to 95 percent. The Hispanic proportion is higher and probably more accurate in the surveys that are more targeted to the California farm labor force.

It is generally accepted today that a sizeable majority of the farm labor force is Hispanic, with Spanish being the predominant language in the fields. The Hispanic proportion has become a large majority since about 1966 (Martin, p. 63). Before that time, a succession of immigrants from different areas of the world performed the harvest tasks in California agriculture, starting with the Chinese who had been brought to this country to build the transcontinental railroad. When the railroad was completed in 1869, 12,000 Chinese workers were hired in agriculture, thereby enabling California growers to grow labor-intensive crops--and sometimes teaching them how. After Chinese immigration was halted by the Chinese Exclusion Act of 1882, Japanese workers were brought into the country as farmworkers. About 56,000 Japanese workers came to California between 1900 and 1909. The Japanese managed to purchase land and become growers. By 1921 they dominated production in several labor intensive crops (berries--91 percent, onions--81 percent, asparagus--65 percent, green vegetables--59 percent).

During the second and third decades of the 20th century, Mexican and Filipino farmworkers remedied farm labor shortages. During the 1920s, Mexicans comprised 50 to 75 percent of California's average farmworker employment. The Depression brought white workers from the dust bowl of Oklahoma and Arkansas to the California fields. In the 1940s, however, Whites left agricultural labor for wartime industrial jobs. In 1943 Congress passed the first of the Bracero programs which, by 1964, brought 5 million Mexican farmworkers to the United States. (Some workers returned year after year and were counted each time.) Since termination of the Bracero Program, California's hired farm labor force has been composed of white adults (including housewives) and teenagers, Hispanics (U.S. citizens, documented and undocumented immigrants), and a variety of other immigrant groups including Filipinos, Yemenis, Punjabis, and, more recently, Vietnamese (Vaupel and Martin, pp. 7-13).



## II. Industries Associated With Agriculture

### A. Data Sources

Three groups of industries associated with agriculture are considered here: agricultural input industries, agricultural processing industries, and agricultural marketing industries. Statistics for these industries were extracted in a special run from the 1980 Census of Population.<sup>1</sup> All persons working in all job categories in these industries are included and subdivided into eight occupational levels: managerial, professional, technical, sales, service, farm, skilled labor and unskilled labor. Definitions for these categories and for the industries are taken directly from the Census of Agriculture. Another group called "agricultural professionals" is considered separately. While this group overlaps with other industries, employment in these categories is specified separately by the census.

The industries comprising each group were selected from the Census of Population. Specific agriculturally-related industries could be identified in most cases (agricultural chemicals, for example). In a few cases, however, a larger industry-grouping had to be used (such as "credit agencies" for the capital input industry), since the census does not identify agricultural credit sources separately. In these cases, the larger industry was used to give a proxy for the ethnic and gender distribution within the agriculturally-related sector. We have no way of knowing, however, if the distribution is the same for the agricultural sub-sector as in the industry as a whole. A list of industries included in each major group is given in Table 13.

### B. Findings

Overall, ethnic employment in these three industries ranges from below average in input industries to average in marketing industries to above average in the processing industries. Striking differences in ethnic employment are observable by occupational level. Minority employment is below average in the top two levels (managerial and professional) in all industry groups and above average to high in almost all the lower four occupational levels (service, farm, skilled and unskilled). In the middle levels (technical and sales), minority employment is below average in the input industries and average in the processing and marketing industries (Table 14, Figure 6).

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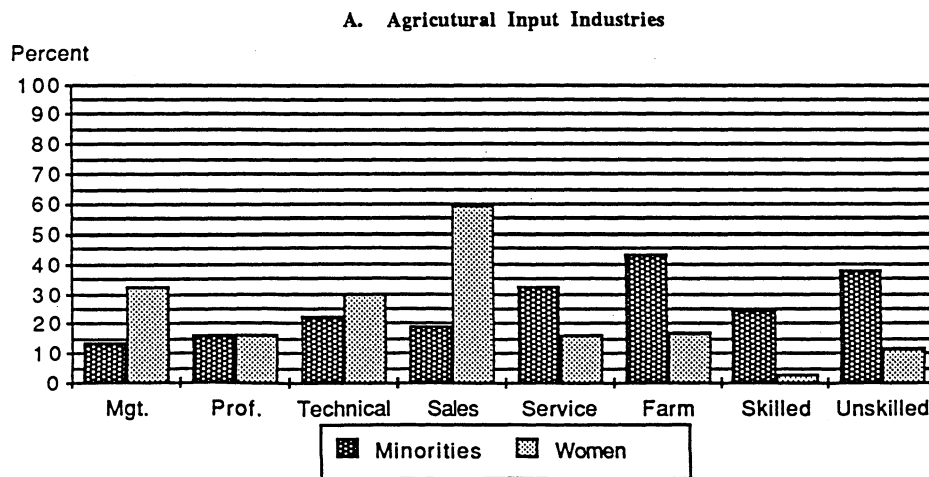
<sup>1</sup>As noted earlier, census statistics are compiled from a 5 percent sample of the population and multiplied by 20. In some occupations with a small number of people, a finding of two or three persons of a particular ethnic group can appear as a fairly high percentage. Appendix D of the 1980 Census of Population provides standard error adjustment factors for race and ethnicity of 1.2 when the percent of persons in the sample is less than 33 and .7 when the percent of persons is more than 33.

Table 13. Specific Industries Studies in Each Industry Group.

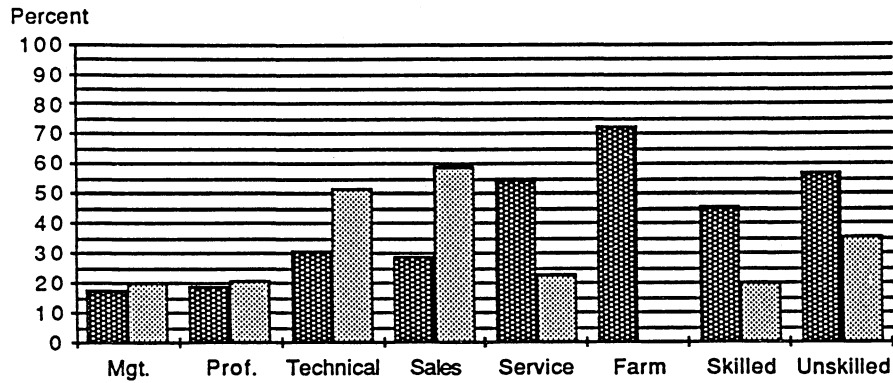
- A. Agricultural Input Industries
  - Agricultural Chemicals
  - Farm Machinery and Equipment
  - \*Water Supply and Irrigation
  - Farm Supplies--Wholesale
  - \*Credit Agencies
  - \*Securities, Commodities, Brokerage and Investments
  - \*Commercial Research and Development Testing Laboratories
- B. Agricultural Processing Industries
  - Meat Products
  - Dairy Products
  - Canned and Processed Fruits and Vegetables
  - Grain Mill Products
  - Bakery Products
  - Sugar and Confectionery Products
  - Beverage Industry
  - Miscellaneous Food and Kindred Products
  - Not Specified Food Industries
- C. Agricultural Marketing Industries
  - Groceries and Related Products
  - Farm Products
  - Retail Nurseries
  - Grocery Stores
  - Dairy Product Stores
  - Retail Bakeries
  - Food Stores
  - Retail Florists
- D. Agricultural Professions
  - Agricultural Engineer
  - Agriculture and Food Science
  - Biology and Life Science
  - Forestry and Conservation Science
  - Veterinarian
  - Agriculture and Forestry Teacher

\*No specific agricultural category could be separated out of these groups. Therefore the group is used as a proxy for the included agriculture category.

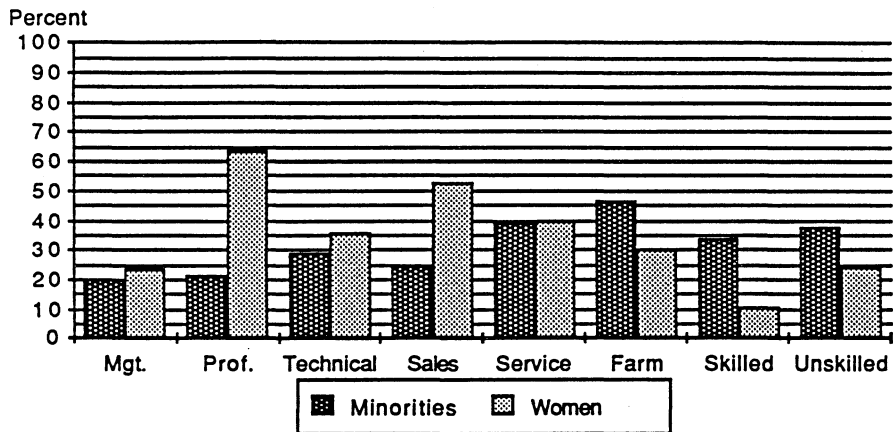
Figure 6: Percentages of Minorities and Women in Agricultural Input, Processing and Marketing Industries.



B. Agricultural Processing Industries



C. Agricultural Marketing Industries



Source: U.S. Department of Commerce, Bureau of Census, 1980 Census of Population.

TABLE 14

Minorities Employed in California Industries Associated With Agriculture, 1980 (Percent)

	Industry		
	Input	Processing	Marketing
<b>Total Ethnic Employment</b> (30.2 percent of Labor Force)	below average 20.3	above average 45.9	average 30.1
<b>Occupational Levels (percent)</b>			
<b>Top Levels</b>	below average	below average	below average
Managerial	14.0	18.0	20.3
Professional	16.8	19.1	21.5
<b>Middle Levels</b>	below average	average	average
Technical	22.6	31.3	29.3
Sales	19.6	29.0	25.3
<b>Lower Levels</b>	above average	above average to high	average to above average
Service	32.7	55.6	39.6
Farm	43.5	72.7	47.0
Skilled	24.6	46.1	34.0
Unskilled	38.0	57.5	38.1

Source: U.S. Department of Commerce, Bureau of Census, 1980 Census of Population, special run.

Examining the higher occupational levels more closely, we find that, despite the below average representation of all minorities, Asians<sup>1</sup> are often represented at a higher rate than their proportion in the labor force, while Blacks and Hispanics are often under-represented<sup>2</sup> (Table 15). The proportions of Asians in professional positions in dairy processing and wholesale farm products are especially high.

The proportion of Blacks in managerial and professional positions is less than half their representation in the labor force in processing and marketing industry groups as a whole. There is a total absence of Blacks in professional positions in many of the processing and marketing industries. Hispanic employment in managerial positions is far below labor force representation in all three industries, but especially low in the input industries.

Employment of women is average in the input and marketing industries as a whole and below average in the processing industries. By occupational level, the employment of women is below average or low in the managerial and professional levels of the three industry groups with one exception. The exception is a high level of employment (64.0 percent) as professionals in the marketing industry, due to the high number (3,260 out of 4,340) in retail florists. Employment of women is above average in sales and below average to low (3.4 percent) in most skilled and unskilled jobs (Table 16).

The proportion of minority women in managerial and professional jobs in these three industries is less than one-third their representation in the labor force (16.5 percent), with the single exception of professionals in marketing. In this case, the exception is traceable to a high proportion of Hispanic women in wholesale farm produce (33.0 percent) and average to high proportions of Hispanic women in retail nurseries (16.7 percent) and minority women as retail florists (16.1 percent). The proportion of minority women employed in skilled labor positions is extremely low in input industries (.8 percent) and marketing industries (3.2 percent) (Table 17). There is a high concentration of Hispanic women in unskilled jobs in processing industries, especially fruits and vegetables, meat, miscellaneous, and unspecified food processing industries.

### C. Agricultural Professions--Data Sources and Findings

The Census of Population reports the number of persons employed in the following agricultural professions, regardless of the industry or sector in which they are employed: agricultural engineer; agricultural and food scientist; biological and life scientist; forestry and

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<sup>1</sup>The category of Asians is composed of Japanese, Chinese, Filipino, Korean, Asian Indian, Vietnamese, Hawaiian, Guamanian, Samoan and Other Asian. In the discussion which follows concerning the higher proportion of Asians in the labor force, some groups of Asians may nevertheless be severely underrepresented. We have no way of separating out the different Asian groups in the Census of Population data.

<sup>2</sup>We do not discuss Native Americans here, since their proportion in the work force is so low (.8 percent) that there is no range to characterize. Nevertheless, it should be noted that in almost all categories of industry, Native Americans are under-represented.

TABLE 15

Blacks, Hispanics and Asians Employed in Managerial and Professional Positions  
in California Industries Associated With Agriculture, 1980 (Percent)

	Black		Hispanic		Asian	
Representation in Labor Force	6.8		17.0		5.4	
	Managerial	Professional	Managerial	Professional	Managerial	Professional
Input Industries	2.9	3.6	7.0	4.5	3.8	8.2
Ag Chemicals	2.4	0	4.8	5.9	4.8	11.6
Farm Mach. & Equip.	0	0	6.5	0	5.2	11.1
Water Supply & Irrig.	2.4	1.2	7.9	6.0	1.6	7.2
Farm Supplies-Whs.	0	12.5	6.7	12.5	0	0
Credit Agencies	3.8	7.4	9.6	11.1	2.7	3.7
Sec. Commod. Brokerage	2.7	6.1	3.1	3.0	7.4	6.1
Commercial R&D Testing	2.1	3.7	4.5	3.7	3.7	.9
Processing Industries	2.2	1.9	10.4	9.6	4.8	7.6
Meat	1.8	0	7.1	22.2	3.6	11.1
Dairy	0	0	5.5	12.5	4.1	25.0
Fruit & Veg.	1.0	0	11.1	5.3	6.5	2.6
Grain	2.6	0	15.4	14.3	5.1	14.3
Bakery	6.7	0	11.7	25.0	1.7	12.5
Confec.	0	0	0	0	2.6	9.1
Beverage	5.0	2.9	8.3	2.9	.8	5.7
Misc.	1.6	10.5	16.1	5.3	6.5	0
Not Spec.	1.4	0	12.2	28.6	9.5	7.1
Marketing Industries	3.0	2.1	8.5	12.9	7.8	6.0
Wholesale Grocery	2.4	0	7.5	12.5	6.7	6.3
Wholesale Farm Products	2.5	0	4.7	33.3	2.3	33.3
Retail Nurseries	0	0	8.7	25.0	19.6	8.3
Grocery Stores	4.0	0	10.0	10.9	8.7	4.3
Dairy Products	4.5	0	0	0	13.6	0
Retail Bakeries	2.6	0	5.3	0	10.5	0
Food Stores	2.2	0	11.2	0	5.6	16.7
Retail Florists	2.0	2.9	4.1	12.9	4.1	5.7

Source: U.S. Department of Commerce, Bureau of Census, 1980 Census of Population, special run.

TABLE 16

Women Employed in California Industries Associated With  
Agriculture, 1980 (Percent)

	Industry Input	Processing	Marketing
<u>Employment of Women</u> (41.9 percent of Labor Force)	average 39.7	below average 33.9	average 37.4
<u>Occupational Levels</u>			
<u>Top Levels:</u>	low to below average	below average	below average to high
Managerial	32.9	20.5	23.7
Professional	16.5	21.0	64.0
<u>Middle Levels:</u>	below average to above average	above average	average to above average
Technical	29.8	52.2	36.2
Sales	59.9	59.0	53.0
<u>Lower Levels:</u>	low	below average to average	low to average
Service	16.7	23.2	39.9
Farm	17.4	0	30.3
Skilled	3.4	20.4	10.8
Unskilled	11.8	35.9	24.1

Source: U.S. Department of Commerce, Bureau of Census, 1980 Census of  
Population, special run.

TABLE 17

Minority Women Employed in California Industries Associated With  
Agriculture, 1980 (Percent)

	Industry Input	Processing	Marketing
<u>Employment of Minority Women</u> (16.5 percent of Labor Force)	8.7	17.2	9.9
<u>Occupational Levels</u>			
<u>Top Levels:</u>			
Managerial	5.4	5.1	4.7
Professional	2.6	4.3	13.9
<u>Middle Levels:</u>			
Technical	7.7	14.8	10.3
Sales	13.5	15.2	12.2
<u>Lower Levels:</u>			
Service	4.7	11.8	8.4
Farm	0	0	13.6
Skilled	.8	12.5	3.2
Unskilled	5.7	23.6	9.9

Source: U.S. Department of Commerce, Bureau of Census, 1980 Census of  
Population, special run.

conservation scientist; veterinarian; and agricultural and forestry teacher. Analysis of the numbers of minorities and women employed in these fields overlaps with those employed in the input, processing and marketing industries discussed above and with university and government employment. However, it also offers a focused view of the ethnic and gender makeup of these professions.

The proportion of minorities employed in these professions is 13.8 percent, less than half the minority proportion of the labor force (30.2 percent) (Table 18). Black and Hispanic employment is well below labor force representation while Asian employment is slightly greater than the Asian proportion of the labor force. Minority employment is below average in all categories except agricultural engineers (28.6 percent)<sup>1</sup> It is especially low among veterinarians (5.7 percent) and agriculture and forestry teachers (8.7 percent).

The proportion of women employed in agricultural professions is also below average. It is low for all categories except agriculture and food science (24.2 percent) and biology and life

TABLE 18  
Minorities and Women Employed in Agricultural Professions  
in California, 1980 (Percent)

	Minorities		Women		Minority
	Rank	Percent	Rank	Percent	Women Percent
Representation in Labor Force		30.2		41.9	16.5
<u>Agricultural Professions</u>	below average	13.8	below average	22.1	4.5
Agricultural Engineer	average	28.6	low	14.3	0
Agriculture and Food Scientist	below average	16.7	below average	24.2	6.7
Biology and Life Scientist	below average	16.8	below average	32.1	7.6
Forestry and Conservation Scientist	below average	13.9	low	12.0	2.4
Veterinarian	low	5.7	low	14.2	.6
Agriculture and Forestry Teacher	low	8.7	low	13.0	0

Source: U.S. Department of Commerce, Bureau of Census, 1980 Census of Population, special run.

<sup>1</sup>The high figure for agricultural engineers is due to a reported 60 male Hispanics (25 percent of total) in the category, which reflects a finding of three male Hispanic agricultural engineers in the sample. The number appears out of line with the 23 male Hispanics (7 percent) who reported their occupation as agricultural engineers. No explanation for the discrepancy is available.

science (32.1 percent). The proportion of minority women is 4.5 percent, with no representation among agricultural engineers and agriculture and forestry teachers, and less than 1 percent of veterinarians (Table 18).

### III. Education

Data were collected on both faculty and students from all levels of education from the California secondary school system through the University of California. As noted earlier, the available pool of persons eligible for positions as faculty and teachers may be lower than the proportion of minorities and women in the work force, but comparison is made to the work force as a whole in order to understand where deficiencies may exist. Analysis of percentages of minority and female students is useful in conjunction with a study of faculty and teachers in order to compare the incoming pool of educated persons.

In California the availability of agriculture courses varies from a handful of courses taught at public schools throughout the state<sup>1</sup> to specialized graduate courses at three UC campuses. Agricultural courses are also taught in the California Community College System and the California State University System. Additional opportunities for agriculture education are available in 4-H and Future Farmers of America programs and from UC Cooperative Extension.

The University of California system offers undergraduate, masters and Ph.D. programs in agriculture and natural resources at the Berkeley, Davis, and Riverside campuses. An extensive research program is operating at each of these campuses as well. UCD offers the largest program with 728 ladder rank faculty, lecturers, other teaching faculty and researchers in the College of Agricultural and Environmental Sciences, 1,709 undergraduate and 389 graduate students in agriculture and natural resources majors. UCB and UCR have 620 and 65 students respectively in agriculture and natural resources majors.

The California State University System offers agriculture courses at Chico, Fresno, Humboldt, and at the polytechnical universities in Pomona and San Luis Obispo (SLO). SLO has the largest program, with 120 faculty and 3,121 students. The other campuses have from 29 to 45 faculty and 360 to 973 students at each. Additionally, the Stanislaus campus has a small program in agribusiness and agricultural production. Each campus except Stanislaus has students enrolled in masters programs. Most campuses also have post-baccalaureate students enrolled, who are included here with undergraduate students.

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<sup>1</sup>Public school agricultural courses include introduction to agriculture, agricultural production, agricultural mechanics, agricultural resources, ornamental horticulture, and forestry.



The UC Cooperative Extension program provides a link between university research centers and the agricultural community. Program personnel include farm advisors, home advisors, youth advisors and 4-H program leaders.

### 1. Data Sources

Data on faculty and students were gathered from a number of different sources, using the most centralized sources available in each case. Faculty data were provided by each separate UC campus, the Office of the Chancellor of CSU and by the Postsecondary Education Commission for community colleges. Information on public school teachers was provided by the California Department of Education.

Student data for UC, CSU and California community colleges were supplied by the Postsecondary Education Commission.<sup>1</sup> Additional student data for UC were provided by the UC Office of the President and by the UCD Office of Student Affairs Research and Information. The California Department of Education supplied data on public school students and Future Farmers of America (FFA). Cooperative Extension provided information on 4-H members and adult volunteers.

Information from some of these sources was limited, but all available information is included in the analysis and Appendix tables. For example, records on public school students in agriculture programs are kept by gender but not by ethnicity. Data on faculty in the UCB College of Natural Resources at UCB were not available by ethnicity or by department.

### 2a. Findings: Faculty

For the University of California, data were assembled from the UCB College of Natural Resources, the UCD College of Agricultural and Environmental Sciences, and the agricultural departments of the UCR College of Natural and Agricultural Sciences. The proportion of minorities among ladder rank faculty is below average at Davis and Riverside and low at Berkeley. The proportion of women is low at all three campuses (Table 19). This distribution has remained the same at Davis since 1981, but there has been a slight increase in both categories (2.2 percent increase in minorities and 1.4 percent increase in women) (Table 20). Among minorities, Asians are the greatest proportion at each campus, comprising almost three-quarters of the minority faculty members at Davis and Riverside and slightly more than half at Berkeley. Hispanics comprise less than 4 percent of ladder rank faculty at each campus. There are no Blacks or Native Americans among the ladder rank faculty at Berkeley or Riverside; these races each represent .5 percent of the

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<sup>1</sup>All responses of students enrolled in agricultural courses in California community colleges were "declined to state." Therefore, no analysis can be made for proportions of minorities and women in community colleges.

Table 19. UC, CSU and Community College Faculties in Agriculture and Natural Resources by Classification, 4/30/86.\*

	Minorities		Women	
	Rank	Percent	Rank	Percent
<b>UNIVERSITY OF CALIFORNIA</b>				
Ladder Rank Faculty				
UCB <sup>a</sup>	low	8.3	low	15.1
UCD <sup>b</sup>	below average	13.2	low	11.8
UCR <sup>c</sup>	below average	12.1	low	8.6
Lecturers				
UCD	below average	15.0	below average	27.5
Other Teaching Faculty				
UCD	0	0.0	below average	25.0
Research				
UCD	below average	23.7	average	35.4
UCR	below average	20.0	low	15.0
<b>CALIFORNIA STATE UNIVERSITY<sup>d</sup></b>				
Ladder Rank Faculty				
Chico	low	7.1	low	5.3
Fresno	low	4.8	low	4.8
Humboldt	low	8.3	low	2.8
Pomona	low	9.4	low	3.1
San Luis Obispo	below average	13.2	low	10.5
Lecturers	low	4.3	below average	25.5
Chico	low	0.0	low	12.5
Fresno	below average	11.1	below average	33.3
Humboldt	low	0.0	low	0.0
Pomona	below average	20.0	average	40.0
San Luis Obispo	low	0.0	below average	27.3
<b>COMMUNITY COLLEGES<sup>e</sup></b>				
	low	6.4	low	4.7

\*UCB data on Ladder Rank Faculty is for 10/31/85. Data on other categories is unavailable from UCB. Community Colleges data is for Fall, 1985.

<sup>a</sup>UCB College of Natural Resources.

<sup>b</sup>UCD College of Agricultural and Environmental Sciences.

<sup>c</sup>UCR Agricultural Departments in College of Natural and Agricultural Sciences.

<sup>d</sup>CSU Agriculture Faculty.

<sup>e</sup>Community Colleges Agriculture Faculty.

Table 20. Minorities and Women on UCD Faculty, College of Agricultural and Environ. Sciences, 1981-1986 (Percent).

	Ladder Rank		Lecturers		Other Teaching		Research	
	Minorities	Women	Minorities	Women	Minorities	Women	Minorities	Women
1981	11	10.4	16.7	42.9	0	33.3	12	14.6
1982	10.7	12.4	19	27.6	11.1	27.8	14.3	18.6
1983	12	10.4	17.4	39.1	0	44.4	19	23.4
1984	12.3	11.5	14	32	11.1	22.2	17.9	32.7
1985	12.2	12.2	14.6	46.3	0	14.2	18.7	31.8
1986	13.2	11.8	15	27.5	0	25	23.7	35.4

Source: UCD

UCD ladder rank faculty. There are 26 minority women among the 728 faculty members at Davis and one minority woman on the 136-member faculty of UCR. No figures on minority women faculty could be provided by UCB.

UCD provided information on lecturers and other teaching faculty (Table 19). (UCR does not have these categories and UCB had no data available for these categories.) In 1986, the proportions of minorities and women were below average for lecturers (15.0 percent and 27.5 percent respectively). These proportions were down 1.7 percent for minorities and 15.4 percent for women since 1981. The category of other teaching faculty was comprised of 8 persons in 1986, including two women and no minorities. The total number of other teaching faculty and the proportions of minorities and women varied each year since 1981 with a high of 11.1 percent minorities and 44.4 percent women (Table 20).

Data on researchers were available from Davis and Riverside. In 1986 the proportions of minorities and women in research positions at Davis were 23.7 and 35.4 percent, respectively. At Riverside, the proportions were 20.0 percent for minorities and 15.0 percent for women. Most of the minority researchers at Davis were Asians (64 of 75 individuals) and all were Asians at Riverside. The Davis figures represent an increase from 12.0 percent minorities and 14.6 percent women in 1981.

The proportions of minorities and women on UC faculties vary by department. At UCD, six of the 25 departments and institutes had an average or above average proportion of minorities (including ladder rank faculty, lecturers, other teaching faculty and researchers) in 1986. These departments are Biochemistry and Biophysics, Environmental Toxicology, Genetics, Nematology, Plant Pathology, and Pomology. Six departments had an average or above average proportion of women in 1986. These are Applied Behavioral Sciences (ABS), Animal Physiology, Avian Science, Environmental Design, Nutrition, and Textiles and Clothing. Three of these departments, ABS, Nutrition, and Textiles and Clothing, have maintained this proportion of women since 1981 and the Department of Animal Physiology has had this proportion of women since 1983.

Among UC Cooperative Extension academic employees, the proportions of minorities and women are below average, with 13.4 percent minorities and 23.5 percent women (Table 21). Hispanics form the largest proportion of minority employees at 5.5 percent, followed by 3.8 percent Blacks and 3.2 percent Asians. All home advisors are women and almost 25 percent are Black. Over half the youth advisors are women and about 15 percent are Hispanic.

The proportions of minorities and women teaching agriculture at CSU are low on almost every campus (Table 19). The 225 tenured and tenure track faculty includes 16 (7.1 percent) minority members, 12 of whom are Asian. Of the 47 lecturers, 2 are minorities (4.3 percent) and both are Asian.

While minorities comprise a slightly larger proportion of the tenure track faculty than lecturers, the opposite is true for women. Women comprise 5.3 percent of the tenure track faculty, and 25 percent of the lecturers. There are no minority women teaching agriculture at CSU.

The proportions of minorities and women vary by campus in the CSU system. Pomona has the highest percentage of both groups. SLO and Chico have the lowest proportion of minorities, and Humboldt has the lowest proportion of women.

California community college faculties in agricultural disciplines also have low proportions of women and minorities (Table 19). The 11 minority members comprise 6.4 percent of the faculty and the eight women comprise 4.7 percent. The minority faculty members include six Hispanics, three Asians (no Filipinos) and two Native Americans. There are no Blacks and no minority women teaching agriculture at the community colleges. Ten of the eleven minority faculty members and seven of the eight women are tenured. The remaining one minority male and one woman are on tenure track. There is a slightly higher proportion of minorities and women teaching agricultural sciences than agribusiness and agricultural production at the community colleges. Of the 17 faculty members in renewable natural resources, one is a minority and there are no women.

Among vocational agricultural teachers in secondary schools, the proportions of minorities and women are low. In October 1986, 7.2 percent of teachers were minorities and 18.8 percent were women. Hispanics were the largest minority group, comprising 2.2 percent of the total (Table 22).

A recent study of vocational agriculture graduates by gender indicates that female graduates are less likely than male graduates to obtain a job teaching in the field. The proportion of women graduates increased from 14.3 percent in 1975 to 45.5 percent in 1984 (reaching a peak of 61.9 percent in 1983). But 48.0 percent of the women did not obtain a vocational agriculture teaching job in California compared to 33 percent of the men (Thompson et al., p.26)

Table 21. Academic Employment in UC Cooperative Extension, 9/26/86 (percent).

Title	White			Black			Hispanic			Asian			Amer. Indian			Total			Ethnic Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Mgmt Admin	62.6	12.6	76.0	12.6	0.0	12.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.5	12.5	75.0	25.0	100.0	12.5	12.5	25.0
Res Program	85.7	7.1	92.9	7.1	0.0	7.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	92.9	7.1	100.0	7.1	0.0	7.1
4-H Prog Ldr	33.3	66.7	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.3	66.7	100.0	0.0	0.0	0.0
Unit Dir	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0
County Dir	72.0	10.0	85.0	0.0	6.0	6.0	6.0	0.0	6.0	4.0	0.0	4.0	2.0	0.0	2.0	84.0	16.0	100.0	12.0	6.0	18.0
Farm Advisors	77.5	12.1	89.6	1.6	0.0	1.6	4.9	0.0	4.9	3.3	0.0	3.3	0.5	0.0	0.5	87.9	12.1	100.0	10.4	0.0	10.4
Forest Adv.	100.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	100.0	0.0	0.0	0.0
Marine Adv.	71.4	28.6	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	71.4	28.6	100.0	0.0	0.0	0.0
Spec. Agron.	83.0	13.3	96.3	0.7	0.7	1.5	0.0	0.7	0.7	0.7	0.0	0.7	0.7	0.0	0.7	85.2	14.8	100.0	2.2	1.5	5.7
Home Advisors	0.0	58.8	58.8	0.0	23.5	23.5	0.0	11.8	11.8	0.0	5.9	5.9	0.0	0.0	0.0	0.0	100.0	100.0	0.0	41.2	41.2
Youth Advisors	35.1	35.1	70.1	0.0	6.5	6.5	9.1	6.5	15.6	1.3	6.5	7.8	0.0	0.0	0.0	45.5	54.5	100.0	10.4	19.5	29.9
Total	68.8	17.8	86.6	1.2	2.6	3.8	3.8	1.6	5.5	2.0	1.2	3.2	0.6	0.2	0.0	76.5	23.5	100.0	7.7	5.7	13.4

Source: UC Cooperative Extension.

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Table 22. Vocational Agricultural Teachers in Public Schools, October, 1986.

	White	Black	Hispanic	Asian	Filipino	Amer. Indian	Other	Male	Total		Total	Ethnic Total
									Female			
Vocational Agriculture Teachers	538	9	13	7	3	9	1	471	109		580	42
Percent	92.8	1.6	2.2	1.2	0.5	1.6	0.2	81.2	18.8		100.0	7.2

Source: California Department of Education.

## 2b. Findings: Students

Data on students enrolled in agricultural majors were collected from UC and CSU.<sup>1</sup> The proportions of minority and women university students with agricultural majors are significantly higher than their proportions in agricultural production and in higher-paying jobs in agriculture. The proportions for both groups are higher in UC than in the CSU system. However, there is a great difference between the two groups at UC: The percentage of minorities is below average and the percentage of women is above average.

In the UC system, the minority proportion of domestic students is below average (19.5 percent) in agricultural and resources majors and the proportion of women is slightly above average (47.5 percent). The proportions of minorities and women are lower among graduate students (11.2 and 37.6 percent respectively) than among undergraduate students (21.2 and 49.6 percent respectively).

The Berkeley campus has the highest proportion of minority students (24.5 percent), but Davis has the greater number (372 compared to 142 at Berkeley). Davis has the greatest number (993) and proportion (48.8) of female students. Riverside has the lowest number and proportion of minority and women students (4 out of 47 students are minorities, 18 are women) (Table 23).

Minorities and women are concentrated in certain major fields at UC campuses. Women comprise a majority of students in animal science and poultry. The proportion of women is above average in renewable natural resources and food science. Minorities comprise an average proportion of students in wood science and renewable natural resources and slightly below average in food sciences. Asians comprise well over half of the minority students in each of these majors. Minorities comprise about one-quarter of domestic agricultural engineering students. The largest number and percentage of Black students is in renewable natural resources. The largest number of Hispanic students is in animal science and a majority of these (13 of 20) are women.

The CSU system has lower proportions of minorities and women than the UC system, with a below average proportion (12.8 percent) of minorities and an average (37.9 percent) proportion of women overall (Table 23). The Pomona campus has the highest proportion of each group (23.3 percent minorities and 51.4 percent women). SLO has the lowest proportion of minorities (10.1 percent) and Stanislaus has the lowest proportion of women (21.4 percent). Again, the proportions of minorities and women are lower among graduate students (10.1 and 33.2 percent) than undergraduate (12.9 and 38.0 percent), but the differences are smaller than in the UC system. A subsequent research question might be to determine why the proportions of

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<sup>1</sup>There is no exact correlation between agricultural majors and the agricultural colleges in the UC system. For example, some agricultural majors considered here, such as agricultural engineering, are not located in the agricultural college on campus. There are also some majors in the agricultural colleges of UCB and UCD (such as textiles and clothing at UCD) which are not considered agricultural majors.

Table 23. Minority and Women Students Enrolled in Agriculture and Natural Resources Majors, UC and CSU, by Campus, Fall 1985 (Percent of Domestic Students).

	Minorities		Women	
	Rank	Percent	Rank	Percent
<b>University of California</b>	below average	19.5	above average	47.5
UCB	below average	24.5	average	43.6
Graduate	below average	12.5	below average	31.7
Undergraduate	average	27.6	above average	46.7
UCD	below average	18.3	above average	48.8
Graduate	below average	11.4	average	39.1
Undergraduate	below average	19.6	above average	50.6
UCR	low	8.5	average	38.3
Graduate	low	5.6	average	44.4
Undergraduate	below average	18.2	low	18.2
<b>California State University</b>	below average	12.8	average	37.9
CSU Chico	below average	11.2	below average	31.8
Graduate	below average	18.2	below average	27.3
Undergraduate	below average	11.0	below average	32.0
CSU Fresno	below average	14.0	below average	32.0
Graduate	low	9.8	below average	29.3
Undergraduate	below average	14.2	below average	32.2
CSU Humboldt	below average	11.3	below average	30.3
Graduate	low	7.6	below average	32.9
Undergraduate	below average	11.7	below average	30.1
CSU Pomona	below average	23.3	above average	51.4
Graduate	low	30.0	average	45.0
Undergraduate	below average	23.1	above average	51.5
CSU SLO	below average	10.1	average	38.9
Graduate	low	5.3	below average	33.3
Undergraduate	below average	10.2	average	39.0
CSU Stanislaus	below average	21.4	below average	21.4
Undergraduate (only)				

Source: California Post Secondary Education Commission

minorities and women drop off so much among UC graduate students, or conversely how CSU is able to maintain closer to the same proportions among graduate and undergraduate students.

By departments, the minority percentage of CSU students ranges from 7.2 (in dairy) to 44.8 percent (in international agriculture). After international agriculture, the largest percentages are in plant protection and agricultural economics. Hispanics constitute the largest minority in international agriculture and plant protection, and Hispanics and Asians have equal numbers in agricultural economics.

Women are mostly concentrated in the agricultural sciences, comprising a majority of students in animal science and food science. The lowest proportions of women are in agricultural mechanics, agronomy, fisheries, and agricultural engineering.

The above analysis has been based on data supplied by the California Postsecondary Education Commission (CPEC) for all UC and CSU graduate and undergraduate students majoring in agriculture, natural resources and agricultural engineering. Each university system supplies CPEC with information which conforms the names of the majors offered to the Classification of Instructional Programs (CIP) system of classifying majors by discipline. Additional UC student data for graduates and undergraduates enrolled in agriculture and natural resources majors were obtained from the UC Office of the President. Although both data sets cover UC enrollment in fall 1985, the selection and classification of majors are different<sup>1</sup> and the student totals are different, indicating that additional majors are included in the data set from UC. Another difference between the two data sets is the treatment of foreign students. CPEC data present foreign students as a separate group, instead of including them in the appropriate ethnic or racial group. We therefore excluded the 226 foreign students from the analysis presented here. Total percentages are given for domestic students only. The UC data, however, include foreign students in the appropriate ethnic group, so foreign students are included in the ethnicity analysis and total percentages.

Since there is no firmly established system of classifying agricultural and natural resources majors, observations from the UC data are presented here for comparison. While the above analysis was based on comparable data for UC and CSU, this analysis applies only to UC students. The UC data from the Office of the President includes 1043 more students than the CPEC data. Percentage totals for minorities and women are slightly higher in the UC data (2.7 and 2.5 percent higher, respectively). The proportions of Blacks and Native Americans are slightly lower (.1 and .3 percent, respectively). The data from the UC Office of the President

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<sup>1</sup>For example, the CIP category of "agricultural sciences, other", includes the UC majors of agricultural chemistry, bioenergetics, molecular plant biology and soils and plant resources.



indicate higher proportions of minorities and lower proportions of women at UCR, and higher proportions of both minorities and women at UCB (Table 23a).

A third data set covering UCD students only was obtained from the UCD Office of Student Affairs Research and Information. These data give an ethnic and racial breakdown of undergraduate students enrolled in the College of Agricultural and Environmental Sciences and of graduate students in the College of Veterinary Medicine. The UCD College of Agricultural and Environmental Sciences includes most of the majors considered in the above two analyses, but it also includes additional majors in departments such as Applied Behavioral Sciences and Textiles and Clothing. Data were obtained for 1983 through 1987. Foreign students are not included in the data (Table 23b).

The UCD College of Agricultural and Environmental Sciences shows a steady increase of minority enrollment from 20.9 percent in 1983 to 29.2 percent in 1987. This 39.7 percent increase was not shared equally among all minorities. Asian enrollment increased 56.6 percent and within this group Filipino enrollment increased 150 percent. Hispanic enrollment increased 26.8 percent and Black enrollment increased 15.4 percent. In 1985 (the year represented by the CPEC and UC data sets), undergraduate minority enrollment in the UCD College of Agricultural and Environmental Sciences (24.2 percent) was higher than undergraduate minority enrollment in agricultural majors as indicated by the UC data set (21.2 percent) and the CPEC data (19.6 percent). Minority enrollment in the College of Veterinary Medicine increased from 8.3 to 12.3 percent between 1983 and 1987.

The only data source available for California public school students enrolled in vocational agriculture courses is a breakdown by gender and by county. Overall, the proportion of women enrolled is average (34.0 percent) (Table 24). The female proportion is above average in a few counties: Napa, Orange, San Mateo, Sierra. It is below average in a large number of counties, including many of California's major agriculture counties, such as Fresno, Imperial, Kern, Kings, Merced, Monterey, San Benito, San Joaquin, Santa Barbara, Santa Cruz, Sonoma, Stanislaus, Tulare, Tuolumne, and Yolo.

USDA and UC Cooperative Extension coordinate and run the 4-H program for children and young adults ages eight to 21. The minority proportion of 4-H clubs is below average (10.0 percent). In contrast to regular 4-H clubs, 4-H groups are put together on a short-term basis, e.g., for one day or one month, usually on some special interest topic. The minority proportion of 4-H groups is high (57.6 percent). The proportion of minority adult volunteers is low (6.2 percent) for adults working with 4-H clubs and average (33.8 percent) for adults working with 4-H groups (Table 25). Since 1981-82 the proportion of minority 4-H members decreased 0.2 percent in club membership and increased 0.1 percent in group membership.

Table 23b. UCD Domestic Student Enrollment, Selected Colleges, 1983-1987 (Percent).

	White	Black	Chicano	Latino	All Hispanics	Asian	Filipino	All Asian	Amer. Indian	Other	No Response	Total	Ethnic Total
College of Agricultural and Environmental Sciences (Undergraduate)													
1983	75.3	2.6	2.3	1.8	4.1	10.5	1.0	11.5	0.8	1.9	3.8	100.0	20.9
1984	74.9	2.9	2.4	1.9	4.3	10.4	1.3	11.7	0.6	2.1	3.5	100.0	21.6
1985	73.0	2.8	2.9	1.8	4.7	12.1	2.1	14.2	0.5	2.1	2.8	100.0	24.2
1986	69.8	3.3	3.0	1.8	4.8	14.2	2.4	16.6	0.7	1.9	2.9	100.0	27.3
1987	68.2	3.0	3.2	2.0	5.2	15.5	2.5	18.0	0.8	2.2	2.6	100.0	29.2
College of Veterinary Medicine													
1983	86.6	0.8	1.9	0.9	2.8	4.1	0.0	4.1	0.6	0.0	5.1	100.0	8.3
1984	77.0	1.5	1.5	0.8	2.3	3.6	0.2	3.8	0.6	0.6	14.3	100.0	8.7
1985	86.4	1.2	1.0	1.4	2.3	4.1	0.2	4.3	1.4	0.6	3.9	100.0	9.7
1986	84.3	1.2	1.4	1.2	2.6	4.1	0.4	4.5	1.8	0.4	5.3	100.0	10.4
1987	83.7	1.1	3.3	1.3	4.6	3.8	0.4	4.2	1.3	1.0	4.0	100.0	12.3

Source: RR102 Fall Runs, Actual Headcount, Student Affairs Research and Information.

Table 23a. Minority and Women Students Enrolled in Agriculture and Natural Resources Majors, UC, Fall 1985 (Percent of Students).

	Minorities		Women	
	Rank	Percent	Rank	Percent
University of California	below average	22.2	above average	50.0
UCB	above average	35.3	above average	52.0
Graduate	below average	19.4	above average	35.1
Undergraduate	above average	43.5	high	60.8
UCD	below average	17.9	above average	50.0
Graduate	low	8.8	average	38.6
Undergraduate	below average	21.2	above average	54.2
UCR	below average	19.5	below average	32.7
Graduate	below average	18.8	below average	34.7
Undergraduate	average	25.0	low	16.7

Source: UC Office of the President.

Table 24. Enrollment in Agricultural Courses, California Public Schools, 1985-1986 (With Percent).

County	TOTAL ENROLLMENT			County	PERCENT		
	Male	Female	Total		Male	Female	Total
Alameda	422	285	707	Alameda	59.7	40.3	100.0
Amador	180	65	245	Amador	73.5	26.5	100.0
Butte	598	239	837	Butte	71.4	28.6	100.0
Calaveras	173	98	271	Calaveras	63.8	36.2	100.0
Colusa	156	59	215	Colusa	72.6	27.4	100.0
Contra Costa	85	70	155	Contra Costa	54.8	45.2	100.0
Del Norte	87	68	155	Del Norte	56.1	43.9	100.0
El Dorado	92	66	158	El Dorado	58.2	41.8	100.0
Fresno	2,266	924	3,190	Fresno	71.0	29.0	100.0
Glenn	428	86	514	Glenn	83.3	16.7	100.0
Humboldt	284	173	457	Humboldt	62.1	37.9	100.0
Imperial	493	173	666	Imperial	74.0	26.0	100.0
Inyo	78	44	122	Inyo	63.9	36.1	100.0
Kern	1,072	305	1,377	Kern	77.9	22.1	100.0
Kings	665	251	916	Kings	72.6	27.4	100.0
Lake	65	40	105	Lake	61.9	38.1	100.0
Lassen	246	151	397	Lassen	62.0	38.0	100.0
Los Angeles	4,928	3,378	8,306	Los Angeles	59.3	40.7	100.0
Madera	596	273	869	Madera	68.6	31.4	100.0
Marin	178	44	222	Marin	80.2	19.8	100.0
Mariposa	39	21	60	Mariposa	65.0	35.0	100.0
Mendocino	412	190	602	Mendocino	68.4	31.6	100.0
Merced	1,686	589	2,275	Merced	74.1	25.9	100.0
Modoc	253	100	353	Modoc	71.7	28.3	100.0
Monterey	548	269	817	Monterey	67.1	32.9	100.0
Napa	178	150	328	Napa	54.3	45.7	100.0
Nevada	285	136	421	Nevada	67.7	32.3	100.0
Orange	980	867	1,847	Orange	53.1	46.9	100.0
Placer	408	181	589	Placer	69.3	30.7	100.0
Plumas	71	37	108	Plumas	65.7	34.3	100.0
Riverside	1,440	792	2,232	Riverside	64.5	35.5	100.0
Sacramento	1,136	700	1,836	Sacramento	61.9	38.1	100.0
San Benito	45	20	65	San Benito	69.2	30.8	100.0
San Bernardino	1,411	1,003	2,414	San Bernardino	58.5	41.5	100.0
San Diego	1,552	1,154	2,706	San Diego	57.4	42.6	100.0
San Francisco	6	0	6	San Francisco	100.0	0.0	100.0
San Joaquin	805	330	1,135	San Joaquin	70.9	29.1	100.0
San Luis Obispo	822	473	1,295	San Luis Obispo	63.5	36.5	100.0
San Mateo	162	168	330	San Mateo	49.1	50.9	100.0
Santa Barbara	735	340	1,075	Santa Barbara	68.4	31.6	100.0
Santa Clara	632	387	1,019	Santa Clara	62.0	38.0	100.0
Santa Cruz	261	101	362	Santa Cruz	72.1	27.9	100.0
Shasta	630	177	807	Shasta	78.1	21.9	100.0
Sierra	53	51	104	Sierra	51.0	49.0	100.0
Siskiyou	152	43	195	Siskiyou	77.9	22.1	100.0
Solano	537	298	835	Solano	64.3	35.7	100.0
Sonoma	862	427	1,289	Sonoma	66.9	33.1	100.0
Stanislaus	1,624	490	2,114	Stanislaus	76.8	23.2	100.0
Sutter	410	243	653	Sutter	62.8	37.2	100.0
Tehama	456	134	590	Tehama	77.3	22.7	100.0
Trinity	122	36	158	Trinity	77.2	22.8	100.0
Tulare	1,805	752	2,557	Tulare	70.6	29.4	100.0
Tuolumne	224	82	306	Tuolumne	73.2	26.8	100.0
Ventura	571	347	918	Ventura	62.2	37.8	100.0
Yolo	664	173	837	Yolo	79.3	20.7	100.0
Yuba	257	124	381	Yuba	67.5	32.5	100.0
Total	35,326	18,177	53,503	Total	66.6	34.0	100.0

Source: CBEDS Data Collection, California State Department of Education.

Table 25. Minority and Female 4-H Members and Adult Volunteers, 1985-86 (Percent).

	Minorities		Women	
	Rank	Percent	Rank	Percent
All 4-H Members	average	27.7	above average	55.7
All Adult Volunteers	low	8.4	high	66.2
4-H Clubs:				
Members	below average	10.0	above average	59.8
Adult Volunteers	low	6.2	high	67.6
4-H Groups:				
Members	high	57.6	above average	48.8
Adult Volunteers	average	33.8	above average	50.9

Source: Cooperative Extension 4-H Program.

The proportion of female 4-H members is above average overall (55.7 percent), and in both 4-H clubs and 4-H groups. The pattern for females is the opposite of the minority pattern, with a higher proportion of females in 4-H clubs (59.8 percent) than 4-H groups (48.8 percent). The proportion of female adult volunteers is high overall (66.2 percent), and higher in 4-H clubs (67.6 percent) than in 4-H groups (50.9 percent) (Table 25).

Future Farmers of America (FFA) is an organization for high school students enrolled in vocational agricultural classes. FFA was limited to all male membership until 1968 when a U.S. Supreme Court decision required the organization to admit females. The proportions of minorities and women in FFA membership are average (23.6 percent and 35.0 percent, respectively) (Table 25a). Hispanics form the largest minority with 19 percent of total membership.

#### IV. Government Agencies

##### 1. Data Sources

This analysis of minorities and women in governmental agencies includes two federal agencies (U.S. Department of Agriculture and U.S. Department of the Interior) and five California departments (California State Departments of Conservation, Food and Agriculture, Resources, Water Resources and Water Resources Control Board). Each agency supplied data for its own employees. Data were requested for professional and technical employees only. Supervisors are included in each of these categories. An attempt was made to look at federal agency employees in California only. For the most part this was possible, but in several federal agencies only regional data were available.

Table 25a. Future Farmers of America Membership, by Race, Ethnicity and Gender, California, 1986-87 (With Percent).

	White	Black	Hispanic	Asian	Filipino	Amer. Indian	Male	Female	Total	Ethnic Total
Number of Members	22,113	637	5,499	289	145	260	18,814	10,130	28,944	6,831
Percent	76.4	2.2	19.0	1.0	0.5	0.9	65.0	35.0	100.0	23.6

Source: California Department of Education.

Table 26. Minorities and Women Employed in Federal and State Agriculture and Resource Agencies, California, 1986.

	Minorities		Women	
	Rank	Percent	Rank	Percent
<b>USDA (Professional and Technical)</b>	below average	16.4	below average	24.3
Permanent	below average	14.8	low	19.9
Temporary	below average	20.9	average	37.3
<b>Department of Interior</b>	below average	10.9	below average	20.2
Professional	low	8.1	low	10.6
Technical	below average	16.3	average	38.3
<b>California State Agencies</b>	below average	23.4	low	18.6
Professional	below average	22.8	low	15.1
Technical	below average	24.4	below average	24

Source: USDA, U.S. Department of Interior, individual California state agencies.

Employment data by gender and ethnicity were not available from the offices of County Agricultural Commissioners and County Sealers of Weights and Measures. These offices represent the closest government contact for many farmers and employ a substantial number of professional and technical employees (126 in Los Angeles County, for example).

## 2. Findings

Overall, the proportion of minorities employed by government agencies is higher in state than federal agencies, however, it is below average in each category. The opposite is true of women, with the proportion being lower in state than federal agencies (Table 26).

At USDA, the proportions of minorities and women employed in California offices are below average. USDA submitted data on permanent and temporary employees in each of its agencies. Minorities and women comprise a larger proportion of temporary than permanent employees (Table 26).<sup>1</sup> The distributions of minorities and women vary greatly among the USDA agencies (Figure 7). Minorities comprise an average or above average proportion at Food and Nutrition Service, Agricultural Marketing Service, Economic Research Service, Food Safety and Inspection, Office of the General Counsel, Office of the Inspector General and Packers and Stockyards Administration (Table 27). Agencies with the lowest proportions of minorities are Forest Service, Soil Conservation and National Agriculture Statistics Service.

Hispanics are the largest minority overall in USDA (7.6 percent), but this proportion is less than half their representation in the labor force (17.0 percent). Hispanics are concentrated in three agencies--Agriculture Marketing Service (17.2 percent), Forest Service (5.9 percent, but 321 employees) and Food Safety and Inspection Service (15.5 percent).

Asians are the second largest minority at USDA agencies, comprising 3.5 percent, or about two-thirds of their representation in the labor force (5.4 percent). Asians are the largest minority at the Agriculture Resources Service (11.2 percent), Animal and Plant Health Inspection (8.3 percent) and a number of the smaller agencies with 25 or fewer employees in California (Food and Nutrition Service--26.3 percent, Office of Inspector General--22.7 percent, Office of General Counsel--21.4 percent). The proportion of Asians at Food Safety and Inspection Service (9.3 percent) is also higher than their proportion of the labor force.

Blacks comprise 2.5 percent of USDA employees in California, less than half their representation in the labor force. Blacks make up more than their proportion of the labor force in several agencies. Among the larger agencies, the highest proportion of Blacks is found in the Food Safety and Inspection Service, with 9.1 percent. In agencies with 25 and fewer employees,

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<sup>1</sup>In 1985 the Reagan Administration adopted regulations expanding the authority of federal agencies to hire and retain temporary workers. Employees can now be kept on temporary status for at least four years. Temporary employees are not eligible for health care benefits (Meister).

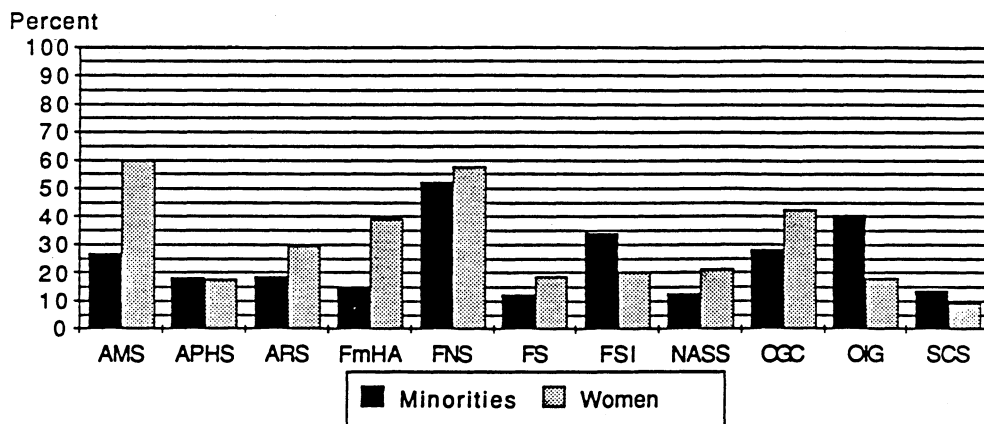
Table 27. Minorities and Women Employed in Professional and Technical Positions in USDA and Department of Interior Agencies, California, 1986 (Percent).

	Minorities		Women	
	Rank	Percent	Rank	Percent
<b>USDA</b>	below average	16.4	below average	24.3
All Permanent Employees	below average	14.8	low	19.9
All Temporary Employees	below average	20.9	above average	37.3
Agriculture Marketing Service	average	27.2	high	60.2
Animal and Plant Health Inspection	below average	18.6	low	17.9
Agriculture Resources Service	below average	19.1	below average	30.0
Economic Research Service	average	33.3	high	66.7
Fed. Coop Inspection Corp.	low	0.0	high	100.0
Fed. Grain Inspection Service	low	0.0	low	0.0
Farmers Home Administration	below average	15.2	average	39.3
Food and Nutrition Service	high	52.6	average	57.9
Forest Service	below average	12.4	low	19.2
Food Safety and Inspection Service	average	34.5	below average	20.5
National Ag. Stat. Service	below average	13.0	below average	21.7
Office of General Counsel	average	28.6	average	42.9
Office of Inspector General	above average	40.9	low	18.2
Packers and Stockyard	above average	40.0	average	40.0
Soil Conservation Service	below average	14.0	low	9.5
<b>Department of Interior</b>	below average	10.9	below average	20.2
All Professional Employees	low	8.1	low	10.6
All Technical Employees	below average	16.3	average	38.8
Bureau of Land Management	below average	10.0	low	17.7
Mineral Management Service*	below average	13.1	low	13.1
Bureau of Reclamation*	below average	14.4	below average	20.2
U.S. Geological Survey*	low	5.9	low	15.7
Bureau of Indian Affairs*	high	65.1	below average	27.9
U.S. Fish and Wildlife Service*	low	5.8	low	17.7
National Park Service*	below average	15.5	average	44.0

\*Designates a regional office.

Source: USDA, U.S. Department of Interior.

Figure 7: Percentages of Minorities & Women in USDA Agencies\* in California, 1986



Source: USDA

\*The data include permanent and temporary employees.

Blacks comprise 40.0 percent of employees at Packers and Stockyards Administration, 15.8 percent in the Food and Nutrition Service, 13.6 percent in the Office of the Inspector General and 8.7 percent in the National Agricultural Statistics Service. Fewer than 2 percent of the employees in Farmers Home Administration (FmHA) and in the Forest Service are Black.

The proportion of Native Americans employed in USDA agencies (2.8 percent) is higher than their proportion of the labor force (.8 percent). One hundred and ninety-five of the 227 Native Americans in USDA are employed by the Forest Service.

While the overall proportion of women at USDA is below average at 24.3 percent, it is high in two agencies, the Economic Research Service (66.7 percent) and the Agricultural Marketing Service (60.2 percent); above average in the Food and Nutrition Service (57.9 percent); and average in the Office of General Counsel (42.9 percent), Packers and Stockyard Administration (40.0 percent) and FmHA (39.3 percent). The lowest proportion of women is found in the Soil Conservation Service (9.5 percent).

The Department of Interior supplied data on employees for 1985 and 1986, distinguishing between professional and technical employees. For both years, the proportions of minorities and women were below average (barely above the low category). The proportion of professional employees was less than half the proportion of technical employees for minorities and less than one-third the proportion for women. The minority percentage was highest at the Bureau of Indian Affairs (BIA) at 65.1 percent in 1986. All minority employees at BIA are Native Americans. The lowest percentage of minorities is at U.S. Fish and Wildlife (5.8 percent).

The proportions of Blacks and Hispanics in Department of Interior agencies are about one-fifth their proportion in the work force. The Black proportion is highest at the Mineral Management Service (3.3 percent). The highest proportion of Hispanics is in the Bureau of Reclamation (8.0 percent). The Asian percentage of Interior employees is 3.5, about two-thirds of their representation in the labor force. Native Americans' representation in Interior (2.1 overall, most in BIA) is over twice their labor force representation.

Women comprise 20.2 percent of Interior's employees. The highest proportion of women is in the National Park Service (44.0 percent). The lowest proportion is in the Mineral Management Service (13.1 percent).

The proportion of minorities employed by the five California state agencies in professional and technical positions is below average at 23.4 percent (Table 28) It is only slightly higher among technical workers (24.4 percent) than professionals (22.8 percent). There are no minorities among the six professional and technical employees at the Resources Agency. The proportion of minorities as professional and technical employees is highest at Water Resources (26.9 percent) and lowest at the Department of Conservation (16.3 percent) (Figure 8). Again, the ethnic total conceals differences between the ethnic groups. While Black and Hispanic



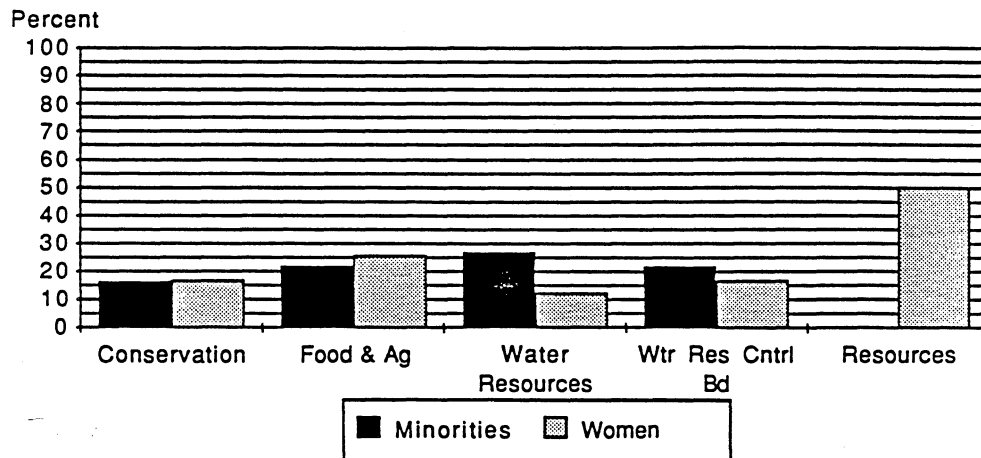
TABLE 28

Minorities and Women Employed in Professional and Technical Positions,  
California Agriculture and Resource Agencies, 1986 (Percent)

	Minorities		Women		Minority
	Rank	Percent	Rank	Percent	Women Percent
<u>State Agency:</u>	below average	23.4	low	18.6	5.4
Conservation	below average	16.3	low	16.9	4.1
Food and Agriculture	below average	21.8	below average	25.9	7.3
Water Resources	above average	26.9	low	12.5	4.7
Water Resources Control Board	below average	21.9	low	17.0	3.4
Resources (6 employees only)	low	0	above average	50.0	0.0

Source: State agencies.

Figure 8: Percentages of Minorities and Women in California  
Agriculture and Resources Agencies, 1986



Source: State Agencies

employment is about one-third their proportions of the work force (2.4 and 6.1 percent, respectively), Asian representation is greater than its proportion of the work force (11.1 percent). Since state agencies identify Filipino and Pacific Islanders separately, we can see that most of the Asian representation (9.4 percent) is from other than these two groups. Native American employment (1.2 percent) is slightly greater than their representation in the work force (8 percent).

Representation of women in state agencies is low, at 18.6 percent. It is lowest at Water Resources (12.5 percent) and highest at Food and Agriculture (25.9 percent). The proportion of professional women (15.1 percent) is lower than those in technical jobs (24 percent). Minority women are represented at less than one-third their proportion of the labor force (5.4 percent). Their representation is lowest at Water Resources Control Board (3.4 percent) and highest at Food and Agriculture (7.3 percent) (Table 28).

#### V. Summary and Questions for Further Research

California has a large and growing minority population which is predicted to surpass the number of non-Hispanic Whites in the next 25 years. However, ethnic groups in the labor force have higher unemployment and lower income than the labor force as a whole. The conclusions of the present study are that, with a few exceptions, minorities and women are under-represented in agricultural production and higher-paying jobs in agriculture and certain minorities are over-represented in the lower pay range of agricultural jobs.

The minority proportion of agricultural producers is low overall, but average in horticultural specialties, and high in berry farming. Asians form the largest minority group in horticulture specialties and Hispanics are the largest minority growing berries. While Asian producers are distributed evenly among all gross sales categories, Hispanics are concentrated in categories under \$40,000 gross annual sales and Blacks under \$10,000. Hispanics comprise 3.7 percent of farm operators, but one-fifth of farm managers, two-fifths of farm supervisors, and 45 to 95 percent of hired farm labor. Minorities are under-represented in professional and technical positions at agricultural and marketing associations and there are no minorities in top management.

Women are under-represented in agricultural production, and are concentrated in animal specialties, especially horses. Women are adequately represented in professional and technical jobs in agricultural and marketing associations and under-represented in top management.

Minorities are also under-represented in managerial, professional and technical positions in private industry related to agriculture, governmental agriculture and resources agencies, and agricultural education. In these sectors, a higher proportion of minorities is found in private industry (ranging from 25 percent in technical to 17 percent in managerial positions) than in

government and education. Overall the minority proportion in federal and state agencies ranges from 16 to 23 percent, but it is average to high in several agencies. Minorities comprise 12 percent of tenure track faculty at UC and 7 percent at CSU. Most minority faculty members are Asian.

Similarly, there are more women in managerial, professional and technical positions in private industry (ranging from 35 percent in technical to 27 percent in managerial) than government or education. Women comprise 12 percent of tenure track faculty positions at UC and 5 percent at CSU.

Enrollment of minorities in agricultural majors at the University of California and at California State University is below average at the undergraduate and graduate levels. Enrollment of women is above average in UC undergraduate agricultural majors and average in CSU undergraduate programs. Women comprise an average proportion in the graduate agricultural programs of both UC and CSU.

Establishing the distribution pattern of minorities and women in California agriculture leads to questions regarding the underlying reasons for under-representation in most well-paying jobs, yet average and above average representation in a few areas. Questions for further study might include these:

- Why are Hispanics a major proportion of farm managers and supervisors, but not farm operators? Is there a "farm ladder" of upward mobility from farmworker to producer?
- Are there any remaining "windows of opportunity" for minorities to become farm operators? Or were some immigrant groups able to become farmers because of economic or other conditions of earlier times?
- Why are Mexicans a major proportion of berry producers, and a small proportion of producers of other crops? Does this case represent upward mobility? Is it an isolated case?
- Are there other cases of concentration of a minority group in a particular crop or region?
- Which Hispanic and Asian nationality groups are represented in the categories studied?
- Why are so few minorities in professional and technical positions in agricultural associations, while an average proportion of women are in these positions, since both groups have similarly low proportions among agriculture producers?
- Do Hispanics and Blacks have little interest in professional and technical jobs in industries associated with agriculture? Inadequate education? Or are there other barriers to hiring?
- Why is the minority proportion in some government agencies average or above average but very low in others? Is there a "critical mass" after which more minorities are attracted to or hired by an agency?

- Why are women under-represented in well-paying jobs and on university faculties, when the proportion of women in university agriculture majors is average and above? Is present university enrollment higher than in the past, indicating that in the future more women will be in these jobs?
- Why is the enrollment of girls in secondary school agriculture classes in major agriculture counties below average? Does the enrollment indicate less interest among this age group than among the present university age group? Did women in university agriculture majors attend public school agriculture courses?
- Are more women enrolled in animal science courses and engaged in animal production because of their interest? Or are there fewer barriers to women in animal production than in crops? If so, why?
- Why is minority enrollment higher at UC than CSU? Why is the Hispanic and Black proportion higher at CSU than UC?
- Do minorities (especially Blacks and Hispanics) have little interest in agricultural majors in the universities or are there other barriers to enrollment?
- Is the exposure to careers in agriculture the same for Whites as for non-Whites?
- What recruitment efforts are made by UC, CSU, and the community colleges towards minorities in agriculture?
- How are hiring authorities held accountable for the hiring of minorities and women in each of the sectors covered in this report?

Now that the data on distribution of minorities and women in agriculture have been assembled, follow-up research can explore these and other questions regarding underlying causes.

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