Chapter 19
Environmental Justice

The concept of environmental justice embraces two principles: 1) fair treatment of all people regardless of race, color, nation of origin, or income and 2) meaningful involvement of people in communities potentially affected by program actions. Executive Order 12898, Section 2-2, signed by President Clinton in 1994, requires all Federal agencies to conduct "programs, policies, and activities that substantially affect human health or the environment, in a manner that ensures that such programs, policies, and activities do not have the effect of excluding persons (including populations) from participation in, denying persons the benefits of, or subjecting persons to discrimination because of their race, color or national origin". Section 1-101 requires Federal agencies to identify and address, as appropriate, "disproportionately high and adverse human health or environmental effects" of programs on minority and low-income populations.

State law defines environmental justice in Government Code Section 65040.12(e) as the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies. Government Code Section 65040.12(a) designates the Governor's Office of Planning and Research (OPR) as the coordinating agency in State government for environmental justice programs, and requires OPR to develop guidelines for incorporating environmental justice into general plans.

The Bay Delta Public Advisory Committee (BDPAC) has an Environmental Justice Subcommittee composed of Federal and State agency representatives, tribal members, community-based organizations, advocacy groups, and others interested in achieving environmental justice. As set forth by the Record of Decision (ROD), CALFED agencies are committed to addressing environmental justice challenges related to water management in the Bay-Delta. The purpose of the BDPAC environmental justice subcommittee is to provide advice and guidance to BDPAC to ensure that implementation of the CALFED Bay-Delta Program actions provides benefits to minority, low-income, tribal or other potentially affected communities. The subcommittee works to meet its goal through the implementation of a strategy that requires collaboration and support from each CALFED Program Element. The subcommittee meets on a regular basis, at various locations throughout the State to provide meaningful public participation to interested communities, stakeholders, and others impacted by CALFED program activities.

EWA agencies could acquire water through stored groundwater, groundwater substitution, stored reservoir water, or through crop idling. Of these actions, only crop idling could affect farm labor employment and other individuals involved in farming (including farm supply companies, custom operators, and related businesses). The agribusiness industry employs wage earners of all income levels and of all ethnic compositions. The concern for environmental justice is that minority and low income persons would be disproportionately affected.

Crop idling would involve not irrigating crops for a season and transferring the unused irrigation water to the Environmental Water Account (EWA). Workers on the farms would need to find alternative employment - an effort that could be hampered by their level of education, English speaking ability, and unfamiliarity with local employment services.

Ninety-three percent of workers on farms are of Hispanic origin and earn a median annual personal income between $7,500 and $10,000. They typically possess a sixth grade education (Rosenberg et al 1998). These identifying factors place these workers into a low income, minority group that will represent the environmental justice community – a community who could bear the greatest burden of crop idling. The remainder of this chapter will focus on workers on farms whose jobs are lost by crop idling.

19.1 Affected Environment/Existing Conditions

EWA agencies incorporated rice and cotton for crop idling in the EWA project description for four basic reasons:

1) These crops require greater amounts of water per acre than most other crops;

2) There are adequate acreages of these crops that can provide the quantities of water needed by the EWA;

3) Farmers have expressed willingness to provide water and idle their land; and

4) These crops typically require less labor than other crops.

Table 19-1 shows the amount of labor required to grow 1000 acres of commonly grown, annual crops[1] and the amount of water required for each crop throughout the growing season. The amount of water is also referred to as the estimated evapotranspiration of applied water (ETAW). ETAWs change as the science for generating the values improves.

Wheat and various types of silages require less labor than either cotton or rice; however, acreages are not available in quantities that could supply the amount of water required by the EWA. Cotton in the Upstream from the Delta Region could also appear to be a potential selection; however, the number of acres devoted to this crop in the Upstream of the Delta Region limits the ability to make water transfers sufficiently large for the EWA.

[1] Potential crops for idling do not include orchards, pasture, or alfalfa crops because water consumption cannot be readily metered. Common crops in the program area are those with the largest amount of acreages within the counties. Full time labor equivalents represent the number of full time individuals required to produce 1000 acres of a crop throughout a season. Full time labor equivalents are determined by the amount of machine and nonmachine labor required for each crop.

Table 19-1
Labor and Water Requirements per Common Crop

Crop		*Full Time Labor Equivalents*	*ETAW*
Upstream from the Delta[1] (Butte, Colusa, Glenn, Placer, Sutter, and Yolo Counties)	Rice	2.7	3.3
	Cotton[2]	5.0	2.3
	Beans	5.9	1.5
	Corn	6.2	1.8
	Wheat	1.6	0.5
	Tomatoes	20.4	1.8
	Safflower	2.5	0.7
Export Service Area (Fresno, Kern, Kings, and Tulare counties)	Cotton	6.6	2.3
	Corn for Grain[3]	6.2	2.0
	Safflower	2.5	2.0
	Wheat	1.6	1.0
	Corn Silage	1.6	2.0
	Wheat Silage	1.2	1.2
	Carrots	5.5	1.4
	Cantaloupe	14.5	1.4
	Alfalfa Silage[4]	1.5	3.1
	Tomatoes	20.4	2.1

(1) ETAWS from Jerry Johns, DWR, January 5, 2002, Water Transfers Based on Crop Shifting and Crop Idling – How to Make Them Work
(2) Less than 11,000 acres of cotton available only in Colusa County.
(3) Scott Hayes, Land and Water Use Analyst, DWR, November 2002, 1995 DWR ETAWs. Less than 70,000 acres "field crops unspecified" (CAC 2002) available in Kings County only (Vernon, 2002)
(4) Less than 60,000 acres "silage" (CAC 2002) available in Tulare county (Schoenborn, 2002)

EWA water transfers are consistent with guidelines contained within the CALFED Water Transfer Program. The CALFED Water Transfer Program is a framework of actions, policies, and processes that facilitate, encourage, and streamline a properly regulated and protective water market which will allow water to move between users, including environmental uses, on a voluntary and compensated basis. The Water Transfer Program has a set of criteria that helps facilitate a protective market, or one that protects both those directly and indirectly involved in the water transfer transaction. Specifically, water transferees are encouraged to consider beneficial and adverse impacts on the fiscal integrity of districts and on the economy of agricultural communities in source and receiving areas. Policy-level recommendations of the CALFED Program are based upon the objectives and criteria of the Water Transfer Program.

EWA agencies factored into the project description the rationale for crop selection. Furthermore the project description limits EWA water acquisitions from idling to no more than 20 percent of recent harvested rice or cotton acreage in a county (refer to Section 11.2.8 for consideration of other water acquisition programs). EWA Project Agencies would gather accurate data regarding the amount of crop acreage previously harvested and idled in participating counties. The data are available from DWR Land Use Surveys, the USDA, and county crop reports. This information would be confirmed by the local Farm Bureau, local UCCE offices, the Agricultural Commissioners Office, or other crop specific authorities. Data collection and

confirmation strengthens the consistency between EWA and the Water Transfer Program.

The measures incorporated into the EWA project description are consistently applied in multi-year crop idling contracts. These stipulations would seek to maintain the current economic and social conditions.

The tables below provide background data on ethnic compositions (Table 19-2), and poverty and unemployment rates (Table 19-3) for counties in the Upstream from the Delta Region and the Export Service Area. Table 19-2 shows that on average, the Export Service Area is 44.2% Hispanic.

Table 19-2
Ethnicities by Region

	Upstream from the Delta Region	***Export Service Area***
Hispanic	24.1%	44.2%
White	74.1%	57%
Asian	5.3%	4.5%
African American	1.2%	5.3%
American Indian/Alaska Native	1.7%	1.6%
Native Hawaiian/Pacific Islander	0.2%	0.2%

Source: U.S. Census Bureau. Mapstats, 2000; values do not equal 100% due to multi-race reporting

Poverty rates are expressed as a percentage of households in the county living at the poverty level or below. The U.S. Census Bureau defines poverty thresholds (levels of income) for families of various sizes and compositions. Unemployment rates are expressed as the percent of the civilian labor force (all civilians 16 years of age and over) that is unemployed.

As shown in Table 19-3, U.S. Census data reveals that counties comprising the Export Service Area average a 24.5 percent poverty rate. In the Upstream from the Delta Region, the poverty rate is 16.6 percent[2]. Unemployment in Export Service Area counties in which EWA acquisitions could occur is 13.6%; unemployment in the Upstream from the Delta counties is 9.1%.

[2] The U.S. Census Bureau calculates information on poverty levels from forms requesting family size and income sent to one in every six households. In 1999, an annual income of $19,882 represented the U.S. Census Bureau poverty threshold for a family of five including three related children under 18 years of age; a single individual under 65 who earned $8,667 annually lived at the Federal poverty level. In California the poverty level for a family of five is a little higher, ranging between $22,940 and $24,160 (EDD 1999). Rosenberg, et al, (1998) describe average farmworkers as married with an average of 3 children, constituting a family of five.

Table 19-3 Average Poverty and Unemployment Levels		
	Upstream from the Delta Counties	Export Service Area
Poverty Rate[1]	16.6%	24.5%
Unemployment[2]	9.1%	13.6%

1 U.S. Census Bureau, 1999
2 EDD, 1999

Figure 19-1
Environmental Justice Area of Analysis

19.1.1 Area of Analysis

Consistent with corresponding portions in this EIS/EIR, the Environmental Justice Chapter divides the State into two regions: the Upstream from the Delta Region and the Export Service Area. EWA agencies are considering rice idling in Butte, Colusa, Glenn, Placer, Yolo, and Sutter in the Upstream from the Delta Region. They are also considering crop idling in Fresno, Kern, Kings, and Tulare in the Export Service Area. The boundaries of each county in each region define the Upstream from the Delta Region and the Export Service Area (refer to Figure 19-1).

19.1.2 Upstream from the Delta Region

Table 19-4 and 19-5 provide ethnic compositions, unemployment, and poverty rates for Upstream from the Delta counties.

Table 19-4 Ethnicities in Upstream from the Delta Counties						
County	Caucasian (%)	African-American (%)	American Indian/ Alaska Native (%)	Asian-American (%)	Native Hawaiian/ Pacific Islander (%)	Hispanic (%)
Butte	84.5	1.4	1.9	3.3	0.1	10.5
Colusa	64.3	0.5	2.3	1.2	0.4	46.5
Glenn	71.8	0.6	2.1	3.4	0.1	29.6
Placer	88.6	0.8	0.9	2.9	0.2	9.7
Sutter	67.5	1.9	1.6	11.3	0.2	22.2
Yolo	67.7	2.0	1.2	9.9	0.3	25.9

Source: U.S. Census Bureau, Mapstats, 2000; values do not equal 100% due to multi-race reporting

Table 19-5
County Demographics – Upstream from the Delta

County	*Population*[1]	*Portion of Total Hispanic Population that are Farmworkers*[2]	*Unemployment Rate*[3]	*Poverty Rate*[4]
Butte	195,220	23.4%	6.8%	20.9%
Colusa	18,844	43%	11.2%	19.9%
Glenn	26,328	37.6%	19.9%	11.2%
Placer	239,485	6.1%	3.2%	7.7%
Sutter	78,423	32.0%	4.3%	17.2%
Yolo	155,573	26.5%	4.3%	15.8%

(1) REIS, 1999
(2) U.S. Census Bureau, 2000 Mapstats
(3)EDD, 1999
(4) U.S. Census Bureau, 1999, State and County QuickFacts

References to demographic information sources are consistent throughout the chapter and will not be cited hereafter.

19.1.3 Export Service Area

Table 19-6 and 19-7 provide ethnic compositions, unemployment, poverty rates, and ethnic compositions for Export Service Area counties in which EWA acquisitions could occur.

Table 19-6
Ethnicities in Export Service Area

County	*Caucasian (%)*	*African-American (%)*	*American Indian/ Alaska Native (%)*	*Asian-American (%)*	*Native Hawaiian/ Pacific Islander (%)*	*Hispanic (%)*
Fresno	54.3	5.3	1.6	8.1	0.1	44.0
Kern	61.6	6.0	1.5	3.4	0.1	38.4
Kings	53.7	8.3	1.7	3.1	0.2	43.6
Tulare	58.1	1.6	1.6	3.3	0.1	50.8

Source: U.S. Census Bureau, Mapstats, 2000; values do not equal 100% due to multi-race reporting

Table 19-7
County Demographics – Export Service Area

County	*Population*[1]	*Portion of Total Hispanic Population that are Farmworkers*[2]	*Unemployment Rate*[3]	*Poverty Rate*[4]
Fresno	763,069	18.6%	13.4%	25.6%
Kern	642,495	9.6%	11.4%	21.0%
Kings	123,241	11.0%	13.1%	23.6%
Tulare	358,470	13.7%	16.5%	27.9%

(1)REIS, 1999
(2)U.S. Census Bureau, 2000 Mapstats
(3)EDD, 1999
(4)U.S. Census Bureau, 1999, State and County QuickFacts

19.2 Environmental Consequences/Environmental Impacts

Farmworkers affected by crop idling represent the community of concern for environmental justice in this analysis. This analysis defines disproportionate effects as effects that exceed a proportionate distribution of 50:50, which is defined as farmworker jobs affected over the total agricultural jobs affected by EWA. The remainder of this chapter discusses this relationship.

19.2.1 Assessment Methods

Although the environmental justice approaches contained within Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, and California Government Code Section 65040.12 differ, the underlying intention of both regulations is the fair and equal treatment of all races, cultures, and incomes. The following text includes a statistical analysis that incorporates U.S. Census Bureau information, poverty rates, and ethnic compositions, as recommended by Executive Order 12898. The statistical analysis provides evidence of a social change associated with the EWA, yet the findings consider not only the statistical conclusions but also the more basic issue of whether the EWA Program is consistent with fair treatment of all races, cultures, and incomes.

This analysis assumes a worst-case scenario for crop idling conditions. In actual conditions, water contract negotiations would rely on a number of water acquisition options, as described in Chapter 2. Underlying each transaction is a number of factors that include price, water availability, and location. These factors change from year-to-year; therefore, the EWA Project Agencies would vary their acquisition strategy in each year. With the intent of providing the EWA Project agencies the greatest flexibility, the following text describes the maximum potential effect of idling in both the Upstream from the Delta Region and Export Service Area.

California Environmental Quality Act (CEQA) Guidelines provide guidance in determining Environmental Justice effects. CEQA Guidelines Section 15382 does not recognize an economic or social change as a significant effect, but social change may be considered as it relates to determining the significance of a physical change. For the purposes of this document, both quantitative and qualitative methods were used to evaluate whether the EWA Program would result in fair and equal treatment.

The analysis quantifies the effects on farmworkers using University of California Cooperative Extension (UCCE) crop budgets and county-level EWA crop idling acreage limits (Chapter 11). The UCCE crop budgets provide the number of full-time farmworkers needed for every 1,000 acres of productive rice and cotton farmland. The number is then multiplied by the number of acres that would be idled to provide an estimate of the maximum number of farmworkers displaced through EWA crop idling. The UCCE crop budgets do not count migrant workers; therefore, estimated labor effects may be conservative.

The findings of proportionality rely heavily on one main ratio:

> The total number of farmworkers and the total number of agriculturally-related jobs affected by EWA. (Chapter 11, Regional and Agricultural Economics, employs the IMPLAN model to derive the total number of jobs affected by EWA crop idling.)

This ratio is supported by the percentage of total farmworkers in the county affected by EWA, which is defined as total number of farmworker jobs lost by EWA of the total number of farmworkers in the county.

The total farmworker population, for the purposes of this analysis, uses the general "rule of thumb" adopted by local farm labor expert Phillip Martin, Ph.D., UCD, which states that between 25-30% of people reported by agricultural employers are not farmworkers. This analysis conservatively reports the number of farmworkers in each county as 70% of 1999 REIS farm employment.

19.2.2 Criteria for Determining Adverse Effects

The following factors will be considered in evaluating the environmental justice effects of the EWA Program:

- Whether there is or will be a direct or cumulative effect on the natural or physical environment that adversely affects a minority or low-income population that is proportionately high or adverse.

- Whether that effect on the natural or physical environment results in an effect on minority or low-income population that is disproportionately high, considering the population levels or income levels of all affected groups.

19.2.3 Environmental Consequences/Environmental Impacts of the No Action/No Project Alternative

The No Action/No Project Alternative describes future conditions during Stage 1 of CALFED, if the EWA did not exist. With the exception of Placer County, the analysis of agricultural production during this assessment period shows that the current practices would remain constant. Farmers would continue to temporarily idle some land due to land practices and market issues, while other farmers would place previously idled land back into production. The continued rotation of these farming practices would cause some fluctuations in agricultural employment, but those changes would be expected to reflect that of the employment fluctuations described in the Affected Environment section.

Additionally, several CALFED and other government sponsored programs would idle land for restoration and habitat purposes. This would permanently take agricultural land out of production. (Refer to Chapter 22, Cumulative Analysis.)

The analysis of agricultural employment in Placer County indicates that urbanization would result in a decline to 1240 farm laborers in 2004 from 1720 employed

farmworkers in 1983 (REIS 1983). The No Action/No Project alternative would not alter this trend and thus, would have no effect on environmental justice issues in the county. The No Action/No Project alternative would have no bearing on positive farm labor employment trends in Colusa, Yolo, Butte, Sutter, Fresno, Kern, and Tulare counties.

19.2.4 Environmental Consequences/Environmental Impacts of the Flexible Purchase Alternative

The Flexible Purchase Alternative allows transfers of up to 600,000 acre-feet and does not specify transfer limits in the Upstream from the Delta Region or the Export Service Area. Crop idling potential in the Upstream from the Delta Region is greater during dry years when Delta availability allows EWA agencies additional capacity for transfers. Crop idling in the Export Service Area would most likely occur during wet years or when stored/banked groundwater would not be available; however, the purchases likely would be more expensive. The Flexible Purchase Alternative could limit crop idling transfers to between 540 and 550 TAF in the Export Service Area during wet years and progressively less during dry conditions. Crop idling decisions also depend upon precipitation in the north and south of the Delta that influence how the State Water Project (SWP) allocates existing resources.

Described below are the effects on farmworkers that may occur with maximum crop idling. The basis for a worst cast scenario analysis is to identify all potential effects and to provide EWA agencies flexibility in negotiating water transfer contracts with willing sellers.

19.2.4.1 Upstream from the Delta Region

Table 19-8 identifies the maximum amount of acreage that could be idled annually in each upstream county, as defined in Chapter 11 Regional and Agricultural Economics. As indicated, acreages represent the 20 percent of the county's rice acreage under 1995 through 1999 conditions.

Table 19-8
Proposed Acreages for Rice Idling –Upstream Areas
Flexible Purchase Alternative

County	*Total Acres of Rice in County*[1]	*Acreage Proposed for Idling*	*Percent of Total Rice Acres to be Idled*
Butte	95,120	19,000	20.0%
Colusa	132,338	26,460	20.0%
Glenn	83,777	16,750	20.0%
Placer	16,379	3,280	20.0%
Sutter	96,722	19,340	20.0%
Yolo	23,822	4,770	20.0%

(1) The figures representing total acres within the counties are based on a five-year average to take into account any recent land trends. The data is taken from the County Agricultural Commissioners Reports from 1995 to 1999.

Rice requires 2.7 full time farm labor equivalents for every 1000 acres (UCCE 1999). The total number of agribusiness laborers affected by crop idling[3] varies in each county. Chapter 11 Regional and Agricultural Economics contains a full account of the total number of agribusiness workers affected by crop idling. The total number of jobs affected in each county varies. The total number of jobs affected by crop idling in Butte County is 30 for every 1000 acres idled; in Colusa County it is 18 for every 1000 acres idled. (Refer to Table 11-30 in Chapter 11 Regional and Agricultural Economics.)

Table 19-9 compares the effects on the number of farmworkers who would lose jobs through EWA crop idling as a proportion of the total number of agribusiness jobs lost by EWA (various income levels and ethnicities comprise agribusiness workers). The table also provides the percentage that compares the total number of farmworkers in the county affected by EWA crop idling. The percentages vary with respect to the number of acres proposed for idling and the number of farmworkers in the county. The largest proportion of farmworkers affected in the Upstream of the Delta Region is in Colusa County where 15 percent of the EWA job losses affect farmworkers. These farmworkers represent 2.7 percent of the total farmworkers in Colusa County.

Table 19-9
EWA Labor Effects in Upstream from the Delta Counties
Flexible Purchase Alternative

County	*Number of County Farmworkers*[(1)]	*Number of Farmworkers' Jobs Lost by EWA*[(2)]	*Total Number of Jobs Lost by EWA*[(3)]	*Proportion of Jobs Affected by EWA that are Farmworkers (percent)*	*Percent of Total County Farm Labor Jobs Lost by EWA*
Butte	3,496	51	570	8.9	1.5
Colusa	2,633	71	476	14.9	2.7
Glenn	2,062	45	385	11.7	2.2
Placer	1,032	9	62	14.5	0.9
Sutter	3,937	52	425	12.2	1.3
Yolo	3,576	13	110	11.8	0.4

(1) REIS, 1999; county farm employment data incorporates Census of Agriculture, the Hired Farm Labor Survey from the National Agriculture Statistical Service (USDA), and Economic Research Service (USDA) wages. The Census of Agriculture offers the most complete geographic coverage of hired and contract farm labor use as measured by labor expenditures, and is currently the only national level data source that offers consistent farm labor information at the county and State level. The data includes hired workers on the farm, bookkeepers, secretaries, and mechanics who are generally not considered to be hired farmworkers. Philip Martin, Ph.D., UCD, nationally recognized local expert on farm labor issues, states as a "rule of thumb" that 25-30% of people reported by agricultural employers are not farmworkers. County Farmworker column represents 70% of REIS farm employment.
(2) Refer to Section 12.2.3
(3) Refer to Section 11.2.5.1.2

[3] Includes farmworkers, agribusiness workers, and others as calculated by the IMPLAN model (Chapter 11).

Crop idling in the Upstream from the Delta Region could contribute to disproportionate unemployment of low-income, minority farmworkers. Although crop idling does result in farmworker job loss, the majority of the loss affects agricultural services (a diverse and multi-faceted industry). Crop idling in the Upstream from the Delta Region results in no disproportionate effect.

19.2.4.2 Export Service Area

Table 19-10 identifies the maximum amount of cotton acreage that would be idled in each county in the Export Service Area.

Table 19-10
Proposed Acreages for Cotton Idling – Export Service Area
Flexible Purchase Alternative

County	*Total Acres of Cotton in County*[1]	*Acreage Proposed for Idling*	*Percent of Total Cotton Acres to be Idled*
Fresno	352,880	70,500	20.0%
Kern	246,616	49,300	20.0%
Kings	222,543	44,500	20.0%
Tulare	92,680	18,500	20.0%

(1) The figures representing total acres within the counties are based on a five-year average to take into account any recent land trends. The data is taken from the County Agricultural Commissioners Reports from 1995 to 1999.

Every 1000 acres of cotton requires 6.6 full time farm labor equivalents (UCCE 1999). Table 19-11 shows the total number of jobs lost and the number of farmworker jobs lost when maximum idling occurs in each Export Service Area county. The table also shows the percentage of all farm labor in each county that is affected by EWA crop idling. The largest proportion of farmworkers affected in the Export Service Area is in Kings County where job losses from EWA crop idling affect farmworkers 44.0 percent of the time. Of the 4,361 farmworkers in Kings County, EWA would affect 6.7 percent.

Crop idling in the Export Service Area could contribute to disproportionate unemployment of low-income, minority farmworkers. Although crop idling does result in farmworker job loss, the majority of the loss does not fall upon farmworkers. Crop idling in the Export Service Area results in no disproportionate effect.

Table 19-11
EWA Labor Effects Export Service Area Counties
Flexible Purchase Alternative

County	Number of County Farmworkers[1]	Number of Farmworkers' Jobs Lost by EWA[2]	Total Number of Jobs Lost by EWA[3]	Proportion of Jobs Affected by EWA that are Farmworkers (percent)	Percent of Total County Farm Labor Jobs Lost by EWA
Fresno	25,161	465	1127	41.2	1.8
Kern	17,126	325	740	43.9	1.9
Kings	4,361	294	668	44.0	6.7
Tulare	17,982	122	276	44.2	0.7

(1) REIS, 1999; county farm employment data incorporates Census of Agriculture, the Hired Farm Labor Survey from the National Agriculture Statistical Service (USDA), and Economic Research Service (USDA) wages. The Census of Agriculture offers the most complete geographic coverage of hired and contract farm labor use as measured by labor expenditures, and is currently the only national level data source that offers consistent farm labor information at the county and State level. The data includes hired workers on the farm, bookkeepers, secretaries, and mechanics who are generally not considered to be hired farmworkers. Philip Martin, Ph.D., UCD, nationally recognized local expert on farm labor issues, states as a "rule of thumb" that 25-30% of people reported by agricultural employers are not farmworkers. County Farmworker column represents 70% of REIS farm employment.
(2) Refer to Section 12.2.3
(3) Refer to Chapter 11.2.5.1.2

Though difficult to quantify and factor into the analysis, farmers would benefit by receiving a more reliable water supply, which could enhance their ability to plan for production. Any financial returns could be invested into various sectors of the agribusiness community, which may result in increased farmworker opportunities.

Public meetings introducing the EWA EIS/EIR will encourage open participation of people of all race, color, and national origin. Diverse involvement accommodates an equitable distribution of EWA benefits. Informational materials regarding EWA crop idling actions will be made accessible and understandable to farmworkers and all members of the public attending the meetings.

19.2.5 Environmental Consequences/Environmental Impacts of the Fixed Purchase Alternative

The Fixed Purchase Alternative would involve the same actions as the Flexible Purchase Alternative, but to a lesser degree. The Fixed Purchase Alternative limits Upstream from the Delta transfers to 35,000 acre-feet and Export Service Area transfers to 150,000 acre-feet likely resulting in less idling upstream and in the Export Service Area. Although it is unlikely that the EWA agencies would rely entirely on crop idling because of other available options, this section discusses the maximum amount of crop idling that can occur in one year under the Fixed Purchase Alternative.

Table 19-12 shows the maximum idling acreages under the Fixed Purchase Alternative. Acreages are less than the Flexible Purchase Alternative in Butte, Sutter, and Fresno Counties. Acreages are consistent with those found in Chapter 11,

Regional and Agricultural Economics, and reflect idling associated with maximum Fixed Purchase Alternative transfers.

Table 19-12
Proposed Acreages for Rice/Cotton Idling for Fixed Purchase Alternative

Region	*County*	*Total Acres of Rice/ Cotton in County*[1]	*Acreage Proposed for Idling*	*Percent of Total Rice/ Cotton Acres to be Idled*
Upstream Region	Butte	95,120	10,600	11.1%
	Colusa	132,338	15,000	11.3%
	Glenn	83,777	15,000	17.9%
	Placer	16,379	3,280	20.0%
	Sutter	96,722	10,600	10.9%
	Yolo	23,822	4,770	20.0%
Export Service Area	Fresno	352,880	65,000	18.4%
	Kern	246,616	49,300	20.0%
	Kings	222,543	44,500	20.0%
	Tulare	92,680	18,500	20.0%

(1) The figures representing total acres within the counties are based on a five-year average to take into account any recent land trends. The data is taken from the County Agricultural Commissioners Reports from 1995 to 1999.

19.2.5.1 Upstream from the Delta Region

Table 19-13 shows the number of farmworker jobs lost with maximum crop idling proposed by the Fixed Purchase Alternative. The largest proportion of farmworkers affected in the Upstream from the Delta Region is in Colusa County where farmworkers lose 15.2 percent of the total EWA job loss. This number affects 1.6 percent of the total farmworkers in Colusa County.

Table 19-13
EWA Labor Effects in Upstream from the Delta Region

County	*Number of County Farmworkers*[1]	*Number of Farmworker Jobs Lost by EWA*[2]	*Total Number of Jobs Lost by EWA*[2]	*Proportion of Jobs Affected by EWA that are Farmworkers (percent)*	*Percent of Total County Farm Labor Jobs Lost by EWA*
Butte	3,496	29	318	9.1	0.8
Colusa	2,633	41	270	15.2	1.6
Glenn	2,062	41	345	11.9	2.0
Placer	1,032	9	62	14.5	0.9
Sutter	3,937	29	233	12.4	0.7
Yolo	3,576	13	110	11.8	0.4

(1) REIS, 1999; county farm employment data incorporates Census of Agriculture, the Hired Farm Labor Survey from the National Agriculture Statistical Service (USDA), and Economic Research Service (USDA) wages. The Census of Agriculture offers the most complete geographic coverage of hired and contract farm labor use as measured by labor expenditures, and is currently the only national level data source that offers consistent farm labor information at the county and State level. The data includes hired workers on the farm, bookkeepers, secretaries, and mechanics who are generally not considered to be hired farmworkers. Philip Martin, Ph.D., UCD, nationally recognized local expert on farm labor issues, states as a "rule of thumb" that 25-30% of people reported by agricultural employers are not farmworkers. County Farmworker column represents 70% of REIS farm employment.

(2) Refer to Section 12.2.4

(3) Refer to Section 11.2.7, Table 11-43

Crop idling in the Upstream from the Delta Region could contribute to disproportionate unemployment of low-income, minority farmworkers. Although crop idling does result in farmworker job loss, the majority of the loss affects agricultural services (a diverse and multi-faceted industry. Crop idling in the Upstream from the Delta Region results in no disproportionate effect.

19.2.5.2 Export Service Area

Table 19-14 shows the number of farmworker jobs lost with maximum crop idling in the Export Service Area. Farmworkers lose approximately 40 percent of the total EWA job loss. This job loss would affect between 0.7 and 6.7 percent of all farm labor in the region.

Table 19-14
EWA Labor Effects in Export Service Area

County	*Number of County Farmworkers*[1]	*Number of Farmworker Jobs Lost by EWA*[2]	*Total Number of Jobs Lost by EWA*[3]	*Proportion of Jobs Affected by EWA that are Farmworkers (percent)*	*Percent of Total County Farm Labor Jobs Lost by EWA*
Fresno	25,161	429	1038	41.3	1.7
Kern	17,126	325	752	43.2	1,9
Kings	4,361	294	668	44.0	6.7
Tulare	17,982	122	276	44.2	0.7

(1) REIS, 1999; county farm employment data incorporates Census of Agriculture, the Hired Farm Labor Survey from the National Agriculture Statistical Service (USDA), and Economic Research Service (USDA) wages. The Census of Agriculture offers the most complete geographic coverage of hired and contract farm labor use as measured by labor expenditures, and is currently the only national level data source that offers consistent farm labor information at the county and State level. The data includes hired workers on the farm, bookkeepers, secretaries, and mechanics who are generally not considered to be hired farmworkers. Philip Martin, Ph.D., UCD, nationally recognized local expert on farm labor issues, states as a "rule of thumb" that 25-30% of people reported by agricultural employers are not farmworkers. County Farmworker column represents 70% of REIS farm employment.

(2) Refer to Section 12.2.4

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Crop idling in the Export Service Area could contribute to disproportionate unemployment of low-income, minority farmworkers. Although crop idling does result in farmworker job loss, the majority of the loss affects agricultural services (a diverse and multi-faceted industry. Crop idling in the Export Service Area results in no disproportionate effect.

Though difficult to quantify and factor into the analysis, farmers would benefit by receiving a more reliable water supply, which could enhance their ability to plan for production. Any financial returns could be invested into various sectors of the agribusiness community, which may result in increased farmworker opportunities.

Public meetings introducing the EWA EIS/EIR will encourage open participation of people of all race, color, and national origin. Diverse involvement accommodates an equitable distribution of EWA benefits. Informational materials regarding EWA crop idling actions will be made accessible and understandable to farmworkers and all members of the public attending the meetings.

19.2.6 Comparative Analysis of Alternatives

19.2.6.1 Upstream from the Delta

This section provides an analysis of maximum effects on farmworkers produced by the Fixed and Flexible Purchase Alternatives. In each case, "worst-case scenarios" in a given year identified impacts of maximum reliance on crop idling for water acquisitions. This approach ensures that all effects of transfers are included, and provides the EWA Project Agencies the flexibility to choose transfers that may be preferable in a given year. The EWA, however, would not actually purchase all of this water in the same year. This section provides information about how EWA would more likely operate in different year types.

No Project conditions in the Upstream from the Delta Region indicate that farm labor employment is generally increasing in Colusa, Yolo, Butte, and Sutter counties. Urbanization in Placer County is resulting in a declining trend in farm labor employment levels. These trends are expected to continue during wet and dry years regardless of EWA. The Baseline Condition reflects no disproportionate affects on minority and low-income communities.

In the Upstream from the Delta Region, the Fixed Purchase Alternative would be limited to a maximum acquisition of 35,000 acre-feet from all sources of water. In most years, this amount could be obtained from stored reservoir water purchases. In those years when surface water assets were not available (in part or in total), the EWA agencies would acquire water first from groundwater substitution and/or groundwater purchase, followed by crop idling. Because of other available options, the Fixed Purchase Alternative would not likely require nor involve acquisition of water from crop idling; therefore it would not result in environmental justice effects. However, the analysis provides the maximum number of jobs lost via the Fixed Purchase Alternative, in the unlikely chance that crop idling was the only option available for provision of the entire 35,000 acre-feet of water.

The Flexible Purchase Alternative could involve the purchase of up to 600,000 acre-feet of water from all sources in the Upstream from the Delta Region. EWA agencies would prefer to purchase water from upstream sources because the water is generally less expensive. The amount that could be purchased would be limited by the availability of the Delta export pumps to move the water to export areas south of the Delta. During wet years, pump capacity availability may be limited to as little as 50,000 acre-feet of EWA asset water because the pumps primarily would be used to export State and Federal Project water to Export Service Area users. During dry years, when there would be less Project water available for pumping (and therefore the pumps would have greater availability capacity), the EWA Project Agencies could acquire up to 600,000 acre-feet of water in the Upstream from the Delta Region.

The potential for environmental justice effects during wet years for the Flexible Purchase Alternative would be very similar to the Fixed Purchase Alternative. That is, during wet years, acquisitions would most likely be from stored water sources and

crop idling would not be exercised. However, as rainfall amounts for areas north of the Delta decrease, reflecting dry year conditions, the greater capacity of the export pumps to move EWA assets could result in a greater reliance on crop idling for the additional EWA acquisitions. If the EWA Project Agencies were to acquire 600,000 acre-feet in the Upstream from the Delta Region, they would need to utilize most available sources, which would include stored reservoir water, groundwater substitution, groundwater purchase, and crop idling. Increased crop idling in dry years would increase agricultural worker unemployment in Butte, Colusa, Glenn, and Sutter counties.

19.2.6.2 Export Service Area

No Project conditions in the Export Service Area indicate that farm labor employment is generally increasing in Fresno, Kern, and Tulare counties, yet remains stable in Kings County. These trends are expected to continue during both wet and dry years regardless of EWA. No Project conditions reflect no disproportionate effects on minority and low-income communities.

EWA asset acquisitions in the Export Service Area under the Fixed Purchase Alternative would be limited to 150,000 acre-feet from stored groundwater and crop idling sources. The EWA agencies would purchase stored groundwater first, and then purchase water from crop idling if more is needed. Stored groundwater has finite availability, and 150,000 acre-feet would not likely be available in all years. In years with less stored groundwater availability, EWA agencies would turn to crop idling for the remaining water.

EWA asset acquisitions in the Export Service Area under the Flexible Purchase Alternative would be dependent on the water year type north of the Delta. Export pump availability during wet years would limit the ability of the EWA Project Agencies to move assets through the Delta, requiring reliance on greater purchase amounts from export area sources. During wet years, acquisitions within the Export Service Area could involve up to 600,000 acre-feet of assets. Much of this water would be from crop idling; therefore, environmental justice effects of the Flexible Purchase Alternative are likely to be greater than the Fixed Purchase Alternative, but still not significant.

Table 19-15 (below) reflects the effects on the number of farmworker jobs lost by the Fixed and Flexible Alternative transfers. Water transfers under the Fixed Alternative result in fewer job losses in Butte, Colusa, Glenn, Sutter, and Fresno, yet percentage of effects on farmworkers relatively remains the same.

Table 19-15
Comparison of the Flexible Purchase and Fixed Purchase Alternatives
Environmental Justice

Region	*County*	*Asset Acquisition or Management*	*Result*	*Impacts*	*Flexible Purchase Alternative Job Loss*	*Fixed Purchase Alternative Change*	*Significance of Effects for Flexible Purchase Alternative*	*Significance of Effects for Fixed Purchase Alternative*
Upstream from the Delta Region	Butte	Crop Idling	Conversion of rice crops to bare fields	Reduce rice crop acreage in Butte County	51 farmworker jobs lost; 570 total jobs	29 farmworker jobs lost; 318 total jobs lost	No disproportion-ate effect	No disproportion-ate effect
	Colusa	Crop Idling	Conversion of rice crops to bare fields	Reduce rice crop acreage in Colusa County	71farmworker jobs lost; 476 total jobs lost	41 farmworker jobs lost; 270 total jobs lost	No disproportion-ate effect	No disproportion-ate effect
	Glenn	Crop Idling	Conversion of rice crops to bare fields	Reduce rice crop acreage in Glenn County	45 farmworker jobs lost; 385 total jobs lost	41 farmworker jobs lost; 345 total jobs lost	No disproportion-ate effect	No disproportion-ate effect
	Placer	Crop Idling	Conversion of rice crops to bare fields	Reduce rice crop acreage in Placer County	9 farmworker jobs lost; 62 total jobs lost	9 farmworker jobs lost; 62 total jobs lost	No disproportion-ate effect	No disproportion-ate effect
	Sutter	Crop Idling	Conversion of rice crops to bare fields	Reduce rice crop acreage in Sutter County	52 farmworker jobs lost; 425 total jobs lost	29 farmworker jobs lost; 233 total jobs lost	No disproportion-ate effect	No disproportion-ate effect
	Yolo	Crop Idling	Conversion of rice crops to bare fields	Reduce rice crop acreage in Yolo County	13 farmworker jobs lost; 110 total jobs lost	13 farmworker jobs lost; 110 total jobs lost	No disproportion-ate effect	No disproportion-ate effect
Export Service Area	Fresno	Crop Idling	Conversion of cotton crops to bare fields	Reduce cotton crop acreage in Fresno County	465 farmworker jobs lost; 1127 total jobs lost	429 farmworker jobs lost; 1038 total jobs lost	No disproportion-ate effect	No disproportion-ate effect
	Kern	Crop Idling	Conversion of cotton crops to bare fields	Reduce cotton crop acreage in Kern County	325 farmworker jobs lost; 752 total jobs lost	325 farmworker jobs lost; 752 total jobs lost	No disproportion-ate effect	No disproportion-ate effect
	Kings	Crop Idling	Conversion of cotton crops to bare fields	Reduce cotton crop acreage in Kings County	294 farmworker jobs lost; 668 total jobs lost	294 farmwworker jobs lost; 668 total jobs lost	No disproportion-ate effect	No disproportion-ate effect
	Tulare	Crop Idling	Conversion of cotton crops to bare fields	Reduce cotton crop acreage in Tulare County	122 farmworker jobs lost; 276 total jobs lost	122 farmwworker jobs lost; 276 total jobs lost	No disproportion-ate effect	No disproportion-ate effect

19.2.7 Cumulative Effects

Programs cumulatively considered in conjunction with the EWA are: 1) Sacramento Valley Water Management Agreement, 2) Dry Year Purchase Program, 3) Drought Risk Reduction Investment Program (DRRIP), 4) Central Valley Project Improvement Act (CVPIA) Water Acquisition Program (WAP), 5) Environmental Water Program (EWP), and the Ecosystem Restoration Program (ERP). For details of each program, please see Chapter 22. At this time, the Sacramento Valley Water Management Agreement does not include water acquisition via crop idling and would not contribute to effects on low-income or minority people. The EWP retains the option to incorporate crop idling into the program. The Dry Year Purchase Program and DRIPP would combine into one program upon completion of a programmatic document in October 2004 (Jones 2002). Though the full scope is yet undetermined, it is possible that water acquisition via crop idling in the Export Service Area is possible (Jones 2002). Of additional consideration are future crop idling programs such as the

Westlands Global Land Settlement Program and programs that arise in response to a reduction of Colorado River water.

Cumulative effects analysis for environmental justice focuses on those water acquisition programs involving crop idling in the upstream region during dry years and in the Export Service Area. During dry years, the capacity to transfer water through the Delta increases. Programs that would exercise parallel options are the CVPIA (WAP), the ERP, the EWP, and DRRIP. CVPIA (WAP) purchases water from willing sellers given sufficient quantities are available (Jewel 2002). CALFED agencies developed the EWP to carry out flow-related goals of the ERP. The EWP on behalf of the ERP could purchase agricultural land in the Upstream from the Delta Region for habitat restoration and reduce the demand for farm labor.

Although details are still under negotiation and the final outcome is unclear, Westland Water District, under the Global Land Settlement Program, is planning to permanently idle up to 200,000 acres of drainage-impaired land. Once details of the proposed Global Land Settlement Program become available, it is assumed that there will be a transition period requiring coordination between water acquisition programs and farm labor. EWA agencies would maintain close contact with these counties to determine crop idling potential for the Westland Water District. If unemployment conditions are higher than the EWA baseline presented in this EIS/EIR, EWA agencies may choose to avoid crop idling in the district until unemployment conditions stabilize.

EWA agencies would avoid cumulative effects to farmworkers subsequent to these programs by conducting annual investigations of crop idling conditions in each county and water district before initiating further crop idling discussion. During such investigations the EWA agencies would consider other reasonably, foreseeable transfers by all water transfer programs when determining where to acquire water through crop idling. EWA agencies would then only purchase water from idling 20 percent of the rice land in a county, where this 20 percent would include the other, reasonably foreseeable transfers. Information regarding the amount of idled crop acreage should come from DWR Land Use Surveys, the USDA, and county crop reports. Local Farm Bureaus, UCCE offices, Agricultural Commissioners Offices, or other crop specific authorities could verify the information. With careful coordination, data collection, and verification efforts, crop idling for the EWA would not cumulatively contribute adverse conditions on farm labor.

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