

Economic Impacts of Reductions in Delta Exports on Central Valley Agriculture

Update Summary

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Overview

This summary serves as an update to previous reports prepared for DWR and published in ARE Update and reflects current CVP and SWP deliveries announcements. Additionally, the most recent and updated version of SWAP has been used in this analysis. All model inputs/data are updated; the most significant change is disaggregated regions for a total of 27 CVPM regions. Regions were disaggregated to more accurately reflect groundwater availability and project water deliveries. The result is an increase in projected impacts in regions with limited groundwater availability and/or heavy reliance on project deliveries.

Another important change is groundwater pumping capacities have been updated for the disaggregated regions. The year 2000 DWR data is used as the base groundwater availability by region. DWR completed analysis of groundwater pumping capacity by region for 2009 and these are taken as the maximum groundwater pumping increases by region. DWR's analysis finds that regions 14B, 15B, and 19A have decreased pumping capacity since 2000. As such, these regions were assumed to have no increase in pumping capacity. More details are provided in table 1 in the following section.

All costs reported are in 2008 dollars to be consistent with previous reports, groundwater pumping capacity and local supply reductions are consistent with DWR projections. Additional results for groundwater pumping costs are summarized by Sacramento and San Joaquin Valley regions. This report summarizes results for regions 1-9 and 10-21C. Additionally, employment losses are broken down by income group using REMI multipliers.

Water Availability Scenarios

USBR and DWR May update deliveries forecasts are incorporated into the model and run for both 90-percent 50-percent exceedence forecasts. Since farmer planting decisions have already been made, acres are held fixed equal to acres planted under the previous model run (5/5/09), thus the only change is to groundwater pumping.

The 90-percent exceedence forecast: 10% CVP agricultural water service contract supply for south of Delta export regions and 15% for Tehama-Colusa (Region 3B) contract delivery, 100% for all Settlement and Exchange regions, 100% Friant Class 1 (Regions 13,16,17,18,20,21), 0% Friant Class 2 and 40% SWP.

The 50-percent exceedence forecast: 15% CVP agricultural water service supply for south of Delta export regions and for Tehama-Colusa (Region 3B) contract delivery, 100% for all Settlement and Exchange regions, 100% Friant Class 1 (Regions 13,16,17,18,20,21), 0% Friant Class 2 and 40% SWP.

Table 1: Local Supply and Groundwater Data from DWR.
Percent decrease/increase over base

CVPM Region	Percent Local Supply Available	Percent GW Increase Capacity
1	n/a	63.2
2	0.58	18.4
3A	0.6	48.6
3B	0.6	48.6
4	n/a	2.9
5	0.67	125.0
6	0.79	21.6
7	0.67	7.8
8	0.74	0.0
9	0.76	47.1
10	0.79	24.8
11	0.71	401.6
12	0.72	29.0
13	0.72	74.1
14A	0.6	75.9
14B	0.6	0.0*
15A	0.43	74.7
15B	0.43	0.0*
16	0.42	457.8
17	0.43	124.8
18	0.43	87.1
19A	0.74	0.0*
19B	0.74	53.3
20	0.73	50.9
21A	0.73	35.6
21B	0.73	25.3
21C	0.73	23.0

* Set to zero

Results Summary

Results are summarized in terms of jobs, revenue, and income losses for the Sacramento and San Joaquin Valley (regions 1-9 and 10-21, respectively). 90-percent and 50-percent exceedence forecasts are summarized and employment losses are broken down by income group using a set of REMI multipliers (tables 2 and 3, respectively).

Table 2: 90 Percent Exceedence Scenario

90 Percent Exceedence				
Region	CVPM Regions	Revenue Loss	Income Loss	Employment Loss
SAC	1-9	\$7,123,666	9,624,287	354
SJV	10-21	\$703,030,230	949,815,009	34,931
Total	1-21	\$710,153,896	959,439,296	35,285

Employment Loss Breakdown				
Worker Group	Annual Wage Rates	Employment Loss SAC	Employment Loss SJV	Total
(1st 20%)	\$16,652 - \$19,632	279	27,494	27,772
(2nd 20%)	\$21,296 - \$28,466	29	2,854	2,882
(3rd 20%)	\$31,372 - \$39,076	15	1,482	1,497
(4th 20%)	\$39,316 - \$50,019	18	1,745	1,763
(5th 20%)	\$50,876 - \$75,275	14	1,357	1,371

Table 3: 50 Percent Exceedence Scenario

50 Percent Exceedence				
Region	CVPM Regions	Revenue Loss	Income Loss	Employment Loss
SAC	1-9	\$7,123,666	9,624,287	354
SJV	10-21	\$620,358,540	838,123,067	30,824
Total	1-21	\$627,482,206	847,747,354	31,178

Employment Loss Breakdown				
Worker Group	Annual Wage Rates	Employment Loss SAC	Employment Loss SJV	Total
(1st 20%)	\$16,652 - \$19,632	279	24,261	24,539
(2nd 20%)	\$21,296 - \$28,466	29	2,518	2,547
(3rd 20%)	\$31,372 - \$39,076	15	1,308	1,323
(4th 20%)	\$39,316 - \$50,019	18	1,540	1,558
(5th 20%)	\$50,876 - \$75,275	14	1,197	1,211

Additional Results Summary

Included is a breakdown of groundwater pumping cost increases (aggregate) over regions 1-9 and 10-21C. Note that this is the increase in groundwater pumping cost due to drought, not the total cost of groundwater.

90 Percent Exceedence Additional Groundwater Pumping Costs		
Region	CVPM Regions	Increase Groundwater Cost
SAC	1-9	\$5,305,000
SJV	10-21C	\$141,659,000
Total	1-21C	\$146,964,000

50 Percent Exceedence Additional Groundwater Pumping Costs		
Region	CVPM Regions	Increase Groundwater Cost
SAC	1-9	\$5,305,000
SJV	10-21C	\$131,539,000
Total	1-21C	\$136,844,000