

## **The Economic Impacts of the Proposed Federal Bay/Delta Standards on the California Dairy Industry**

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### **ABSTRACT**

California has experienced two severe droughts in the last two decades, and California agriculture has been severely impacted. Those irrigators and regions with access to alternative sources of reasonably-priced water have adapted more successfully than others. Nonetheless, because of water shortages and reduced water supply reliability, large amounts of prime agricultural land in the Central Valley of the state have been idled some permanently. Additional large amounts of prime land are seriously threatened by the reduced reliability of water supplies in the future.

**Key Words:** irrigation, alfalfa, milk producers, Bay/Delta

### **INTRODUCTION**

On December 15, 1993, the Environmental Protection Agency (EPA), the National Marine Fisheries Service (NMFS), the U.S. Fish and Wildlife Service (USFW), and the U.S. Bureau of Reclamation (BOR) made a joint proposal for measures to improve environmental conditions in San Francisco Bay, the Sacramento/San Joaquin Delta ("Delta"), and tributary areas. This joint agency group, called "Club Fed", identified operational requirements for increased water flows through the Delta under the ESA for the Delta smelt and the winter-run Chinook salmon as well as water quality standards proposed by EPA under the Clean Water Act (CWA). Club Fed prepared a Draft Regulatory Impact Assessment (RIA) to estimate the economic impacts of the proposed action on San Joaquin Valley agriculture. Because of unrealistic simplifying assumptions made in the analysis, the results significantly underestimate the potential impacts on San Joaquin Valley agriculture of the proposed action.

In particular, Club Fed posits that the water supply restrictions due to the proposed action will be met by idling 130,000 acres of hay and pasture land alone. In contrast, history indicates that it is far more likely that such water restrictions will affect not only hay and pasture acreage, but also cotton, vegetables, grains, and permanent crops. In addition, the analysis assumes that ground water pumping will not be increased to offset reduced surface water supplies. Evidence from the 1987-1992 drought proves just the opposite (See [CDWR 1993], [NEA 1992], and [NEA 1993]).

Although not usually considered in impact analyses related to water shortages, the California dairy industry is in fact very vulnerable to such shortages. The dairy industry is the largest single user of alfalfa in California, and alfalfa is the most important roughage material used in dairy feed rations. Further, dairies use large amounts of corn silage, cottonseed meal, sugar beet and tomato pulp, and other

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agricultural products and byproducts as concentrates and roughages in feed rations. Since all of these crops are directly vulnerable to the proposed federal action and other regulatory water restrictions, dairy producers are also directly vulnerable. The potential effects extend to input industries (such as chemicals, machinery, and finance) supplying growers of alfalfa and other crops used in dairy feeds; to industries supplying dairy producers and dairy plants; and to consumers.

### **Purpose and Approach of Study**

The purpose of this study is to analyze the impacts of agricultural water restrictions on alfalfa and other crops and the resultant impacts on the dairy industry, related industries, and consumers. Because of the linkages from alfalfa to the dairy industry and those in turn from the dairy industry to consumers, an analysis of water restrictions which stops after estimating hay acreage reductions misses the many important forward linkages which must be considered.

The analysis begins with a discussion of the importance of the California agricultural sector and in turn of the importance of the dairy sector to agriculture and the economy. Following is an analysis of the structure of the California dairy industry, with emphasis on characteristics of demand, prices, and regulations. Next is a discussion of the importance of alfalfa to the dairy industry, including physiological and nutritional factors that make alfalfa such an important input in dairy rations. Next is a review of potential water supply impacts of the Club Fed proposal and of other regulatory actions on agriculture overall and on the acreage of alfalfa and other crops. These developments are followed by an estimation of impacts of reduced alfalfa acreage on California dairy product availability and costs and the resultant impacts on consumers.

Both short-run and long-run impacts of water restrictions are considered. In the short run, the Club Fed proposal by itself will cause statewide declines in alfalfa acreage, and there will be impacts on dairy producers. In the intermediate and long term, however, much larger acreages of alfalfa and other crops will be affected because of the cumulative impacts of the Club Fed proposal, other regulatory water restrictions, and cyclical hydrologic droughts. As a result, the probability of much larger adverse impacts on dairy producers, on milk and processed products outputs and prices, and on consumers increases sharply as larger acreage adjustments occur.