



CALIFORNIA DEPARTMENT OF
FOOD & AGRICULTURE

A. G. Kawamura, Secretary

June 20, 2008

Honorable Philip Isenberg, Chair
Delta Vision Blue Ribbon Task Force
650 Capitol Mall, 5th Floor
Sacramento, CA 95814

Dear Chairman Isenberg:

As part of the fact-finding process in preparation of the Task Force's Delta Vision Strategic Plan, you have posed a series of questions to several state agencies, including the California Department of Food and Agriculture.

You asked this Department to respond to three questions. In our previous memorandum to you, dated May 8, I responded to the first two questions dealing with our capacity to support the sustainability of Delta agriculture and the role of agriculture in contributing to the Delta as a location unique to California.

Attached please find our response to your final, and I feel most vexing, question.

Please contact me if you have any questions or comments. Thank you.

Sincerely,

A handwritten signature in black ink, appearing to read "A.G. Kawamura", with a long horizontal flourish extending to the right.

A.G. Kawamura, Secretary
California Department of Food and Agriculture

Attachment



What are the implications for regional and California agriculture of the significant loss of delta agricultural lands either from a catastrophic event or as a result of the implementation of actions to meet other Delta Vision recommendations (e.g., large scale conversion of Delta farmland to habitat, flood-ways or water storage)?

This is a difficult question to answer, even assuming the worst-case scenario. There are so many variables that affect farmers' decisions on what to grow, such as market and climate, decisions that vary from year to year. Nevertheless, I will endeavor to respond to your question in both broad economic, as well as qualitative, terms. I will leave the detailed statistical economic impact analysis to work already done or in progress to others; i.e., the Department of Water Resources' Delta Risk Management Study (DRMS); and, the anticipated Public Policy Institute of California/University of California, Davis report due out this month. As I understand it, both studies and their reports will assess the economic impacts, including agricultural, of various Delta levee failure scenarios on both the Delta and on the Delta-reliant economy.

Background

First, I would like to establish a context for the question you pose.

Food Supply and Demand. Over this past year the news has been filled with reports of the United Nation's food summit in Rome. The June 2nd edition of the Washington Post, which covered the just concluded summit, quoted U.N. Secretary General Ban Ki-moon as challenging food producing nations to increase food production to avoid adding "more than 100 million people to the ranks of the chronically poor." Giving credence to this warning, the June 5th edition of the New York Times published the article, "Food is Gold, So Billions Invested in Farming." This story reported on the heightened interest by big, private investors to invest in agricultural land based on the bet that the current costs and shortages for food are not just part of a cycle, but a trend.

In a January 2008 United Nations Food and Agriculture Organization website response to frequently asked questions on the "World Food Situation," a number of reasons were given by the Food and Agriculture Organization for rising food prices. A short list of causes was given, including population growth, increased demand in developing countries, climate change and bio-fuels. Climate change will create winners and losers. However, the intractable problems of population growth and the steady loss of the resources needed to feed and provide renewable energy to this growing population are, to me, the foundational challenges that California faces as one of the top agricultural nation-states in the world. As New York Times columnist, Paul Krugman wrote in his April 21, 2008 column, *Running out of Planet to Exploit*. "But this time may be different: Concerns about what happens when an ever-growing world economy pushes up against the limits of a finite planet ring truer now than they did in the 1970s. For one thing, I don't expect growth in China to slow sharply anytime soon."

Cumulative Hits on California Agriculture's Resources and Market

Advantages. California is a microcosm of the challenge set forth by the U.N. and Mr. Krugman. The Sacramento-San Joaquin Valley and other regions that benefit from Delta-bound or exported water provide an example. California's population continues to grow at a rapid pace towards 40 million people. The Delta water-dependent agricultural counties contribute more than half of the state's agricultural production value. At the same time, the Department of Conservation reports that the rate of irrigated agricultural land conversion from 2002-2004 has doubled over the previous two-year reporting cycle. Much of this lost land is the state's best farmland and is located predominantly within the very Delta-dependent counties that produce the majority of our food and fiber: the San Joaquin Valley and the Inland Empire. The conversion comes from not only urbanization, but also from public acquisition of lands for open space purposes, and the retirement of land for the transfer of water to non-agricultural uses and the reduction of salty, selenium-laden drainage water.

Regional Food Self-sufficiency and Security. Another element of the backdrop for my response is at the other end of the market spectrum, the importance of maintaining strong local agricultural economies to promote regional food self-sufficiency and security. For example, the City of San Francisco, in partnership with the American Farmland Trust and Roots of Change, is investigating the "foodshed" necessary to support its food purveyors and residents. The Delta is an obvious critical part of this foodshed. A loss of Delta agriculture would be a serious loss of a local supply of food for the Bay Area, resulting in an increased reliance on more distant sources of food subject to less accountability, greater carbon inputs, and drawing local dollars away from the local economy. The Delta is also a significant portion of the greater Sacramento-Stockton area foodshed, and in fact the California foodshed.

I provide this context to your question to make two fundamental points. First, the loss of Delta agriculture due to land use change, and the loss of Delta-reliant agriculture in the Sacramento and San Joaquin Valleys (and beyond) is part of an increasingly large cumulative impact on California's capability to produce food for its citizens, as well as the citizens of the nation and world. Second, if the loss is long-term, its significance will only grow as the World's and State's populations expand. While protecting the health of our aquatic ecosystem is important for a myriad of reasons, sustaining the land, water and farmers that feed us must remain, as you have stated in your Delta Vision Report's first goal, co-equal in importance.

The Loss of Delta Agriculture: Delta Regional Economic Impacts

Under a worst-case scenario, urbanization, levee failures, and conversion of Delta agricultural islands to non-agricultural uses could result in a Delta without agriculture, or at least without sufficient enough production to support the infrastructure and services needed for Delta agriculture to continue in any meaningful way. The first part of your question ponders the implications of this loss.

According to the five County Agricultural Commissioner reports for 2007, the Delta accounts for about a quarter of the Delta's five-county region's gross agricultural production value, or about \$740 million. Applying the economic multiplier used by the State Department of Water Resources of 3.0, the total value of Delta agriculture that would be lost is approximately \$2.2 billion. This is worst-case scenario. According to the Delta Risk Management Study's preliminary data, a more likely impact would be a total loss in agricultural production of \$433 million, which after accounting for the ripple effects through the regional economy, would amount to \$1,039 million (DRMS used a multiplier of 2.4), with a loss of jobs, farm labor income and value added production of 4,718 jobs, \$204 million and \$384 million, respectively.

The loss of Delta agriculture is significant to the five counties that make up most of the Delta. Economically, the worst hit would be the rural communities of the Delta, whose economies are largely dependent on agriculture. In Yolo and San Joaquin Counties, where agricultural values have been growing, the Delta is a major acreage and production value component of the County's agricultural economy. Even though agriculture is a small component of the total economy of the Delta's urban counties, such as Solano, Sacramento and Contra Costa, it has been a foundational source of economic activity over the years while other industries wax and wane.

Economics is just one component of the value of Delta agriculture as your Vision report acknowledges in its second goal; i.e., that the Delta as a unique and valued area is worth protecting and enhancing. Further, you point out that agriculture must be a major part of the Delta landscape of the future for this goal to be accomplished. Farmers and ranchers not only produce income and pay taxes that support local government and reclamation and water districts, but they also create revenues that help to maintain lands in working open space that have, in addition to food producing value, aesthetic, flood management, recreational and wildlife values. A loss of this agricultural landscape is a loss of a number of public values.

I previously cited the value of Delta agriculture to be nearly three-quarters of a billion dollars. This is about two percent of the state's total farmgate sales in 2006. This is a small number that even some Delta growers have argued would not be missed by the consumer at the grocery check-out stand. What this misses, though, is the unique growing niche presented by Delta and its rich soils and marine-influenced climate. Virtually every one of the crops from this diverse Delta agricultural palette, from field crops to blueberries, produces greater yields and fetches higher per unit prices than do most other growing regions of these crops in the state. For example, the Delta is renown for its top quality feed corn, which, though considered a low value field crop by some, supports two of the state's top five agricultural commodities, livestock and dairy, and contributes to our energy independence as at least a transitional energy crop.

Besides producing high quality crops, the Delta's unique combination of marine-influenced climate and rich soils enable it to fill a window in the market for many crops when other parts of the West Coast have either completed or not yet commenced their production. The Delta is just one example of the vast array of

unique growing niches that gives the state's agriculture the resiliency and adaptability necessary to successfully compete in the global market place. Yet, we are inexorably losing these niches. For example, Los Angeles County, not much more than 50 years ago the state's top agricultural county, is no longer a major producer of food and fiber outside of nursery crops. Santa Clara Valley, once known as the "Valley of the Heart's Delight" for its fruit production, is paved over. The loss of the Delta would be another lost piece of the jigsaw puzzle that is California agriculture.

Finally, losing Delta agriculture would mean a loss of a number of crops that, though grown elsewhere, are largely unique and well-adapted to the Delta, including varieties of apples, cherries, pears, and winegrapes, but also such standards as asparagus, and such relatively new crops as cool-season varieties of rice and blueberries. Loss of Delta agriculture could also mean the loss of other associated values as agro-tourism, wildlife habitat, and the living history of its "legacy towns" whose traditions were built on, and remain steeped in, an agricultural way of life.

The Loss of Delta and Delta-Dependent Agriculture

The second part of your question concerns the implications of a catastrophic loss of not only the Delta's agricultural islands, but also the ability to pump fresh water from a ravaged Delta to agricultural lands in the San Joaquin Valley and beyond. A collapse of the Delta's infrastructure -- its levees -- whether from an earthquake or an extreme flood event, would have implications for agriculture far beyond the Delta. Twenty-five of California's counties that produce at least 100 million dollars in agricultural farmgate sales depend on Delta water to a significant degree.

In the **Sacramento Valley**, a loss of 25 percent of its surface water due to transfers was studied by the UC Agricultural Issues Center (AIC Issues Brief #1, June 1997, "Economic Impacts of Irrigation Cuts in the Sacramento Valley"). It was assumed that growers would take one or all of following three actions: increase irrigation efficiency, switch to less water-intensive crops, or idle cropland. The study found that even with increased use of groundwater to substitute for the loss of surface water, the economic impacts on rural counties whose main economies are agriculture would be significant. Particularly hard hit, in terms of farm revenues, income, jobs, farm-related industries and local tax revenues, would be the major rice-producing counties of Colusa, Sutter, Glenn and Yolo. A catastrophic loss of Delta levees could result in a much greater loss than 25 percent of surface water supplies if state agencies invoked the Public Trust Doctrine to secure flows into the Delta to flush seawater away from the Delta pumps.

The **San Joaquin Valley** would be hardest hit from a catastrophic loss of Delta agriculture and the Delta pumps. It is estimated that, on average, Valley agriculture relies on state and federal project water that comes from the Delta for about 25 percent of its irrigation water. This is an average, with Delta farm water dependency varying from five to 90 percent throughout the Valley. Additionally, like the Sacramento Valley, flows from the watershed that are diverted from, or are destined to the Delta, would likely be impacted by the need to suspend at

least some riparian and appropriative water rights to increase flows into the Delta for the sake of protecting or regaining water quality at the pumps. The catastrophic loss of the Delta and its agriculture would be accompanied by a significant short- and long-term loss of production from Delta water-dependent lands that provide more than half of the state's agricultural value, including South and Central Coastal counties.

The DRMS study team estimates that the value of lost agricultural output from a worst case scenario Delta collapse would be \$1.5 billion south of the Delta, including multipliers. This corresponds with estimates made by UC Davis agricultural economists, who predict agricultural losses from a total Delta collapse of \$1.5 billion for Delta and San Joaquin Valley farming. Applying UC multipliers of 1.8 to 2.2, the value of lost output value could be between \$2.7 billion to \$3.3 billion. The DRMS study estimates lost agricultural labor employment and income from south of the Delta impacts of 8,019 jobs and \$267 million, respectively (this would be in addition to 4,718 jobs and \$204 million in labor income lost in the Delta). The loss in value-added agriculture would be \$527 million south of the Delta in addition to \$384 million lost within the Delta.

In 2006, California's total farmgate agricultural production value was \$31.4 billion. In light of the above statistics, it is clear that the economic impacts of the loss of the Delta on the state's agricultural economy would be significant. Neither would the long-term implications for the face of California agriculture and its resources be insignificant. The Department of Water Resources (DWR) DRMS study team, a study conducted for Western Growers ("Impacts to the California Agricultural Economy of Reduced Delta Water Exports Due to the Delta Smelt," August 21, 2007), and recent DWR reports have all documented the actual or projected impacts of water shortages in the San Joaquin Valley. In addition, reports done in the 1990s on the 1987-1991 drought portray scenarios that are likely to play out with a loss of the Delta. These models, reports and studies document the implications for Delta water-dependent agriculture and the rural communities it supports:

1. In San Diego County, with less security in their State Water Project water via Metropolitan Water District (MWD), citrus and avocado growers are "stumping" their orchards. DWR reports that up to 30 percent of orchard trees have been pulled out in response to a 30 percent cut in MWD water deliveries, largely due to the recent court decision curtailing Delta pumping for the sake of protecting the smelt. ("Economic Impacts in 2008 of Cuts in California Agricultural Water Supplies: A Case Study – Tree Stumping and Removal in San Diego County", a draft paper by Jim Rich, DWR Economist, May 22, 2008.)
2. In the San Joaquin Valley, a similar DWR report documents the deepening of old wells and the drilling of new, deeper wells in response to court-ordered and drought-driven cuts in Delta water supplies. ("Economic Impacts in 2008 of Cuts in California Agricultural Water Supplies: A Case Study – Well Drilling in the San Joaquin Valley," a draft paper by Jim Rich, DWR Economist, June 3, 2008). While the cost of new sources of groundwater is competitive with the higher costs of surface water, the long-term sustainability of an agriculture that is increasingly reliant on groundwater is poor. The over-draft of San Joaquin Valley aquifers prompted the Central Valley Project in the 1950s, and continues today. With

deeper wells and higher energy costs, comes a change in crops to those that offer higher returns, but are also subject to greater risks and hard to find financing because of these risks. On the Westside of the Valley, an increasing reliance on groundwater also means the addition of more salts to farmland, and land subsidence (resulting in loss of groundwater capacity and infrastructure damage) an obviously unsustainable practice without intensive water and crop management. Other constraints to the use of groundwater besides cost, quality and availability, is the ability to convey this water to where it is needed, or for inter-regional water transfers.

3. Fallowing has been and would continue to be another response to a loss of Delta water. Western Growers estimates that a permanent reduction in Delta water would result in the idling of 100,000 to more than 200,000 acres (10 to 26 percent of the SWP and CVP serviced irrigated lands) with a reduced production value of up to \$439 million. ("Impacts to the California Agricultural Economy of Reduced Delta Water Exports due to the Delta Smelt", prepared for Western Growers by ENTRIX, Inc., August 21, 2007.)
4. Crop-shifting would occur. Depending on a number of factors, row and field cropland would be idled in favor of more profitable permanent tree and vine crops. In other situations in the Valley, where water security is questionable, permanent crops would be abandoned or put on life-support (depending on perceived duration of Delta water cessation) in favor of lower value, less water intensive and risky row and field crops. In any event, there would be a loss in crop acreage and crop variety. Markets of some crops could be lost to out-of-state competitors, a loss that would be difficult to recoup.

There would also be a shift away from water-intensive crops, such as cotton and alfalfa, which are critical rotational crops for the production of vegetable crops and vice versa. A shift away from one water-intensive crop will have implications for other crops. Furthermore, as noted previously, two of the state's top agricultural commodities, dairy and livestock, depend on key water-intensive crops, such as corn and alfalfa.

5. Another response would be agriculture-to-agriculture transfers from lower to higher value, permanent crops. Since urban transfers to agriculture would not be affordable for growers, transfers, though adding flexibility, would result in less land in production.
6. The effects of the drought of 1987-1991 portend a further concentration of agriculture if there were a significant loss of Delta water. At the beginning of the drought in 1987 there were 68 farm operations in the Mendota area. At the end of the drought, there were only 50. The drought hit small growers hardest, resulting in 70 percent attrition among these growers. Thus, it is likely that more competition for water would require greater investment in water efficiency measures and higher value crops, favoring larger, better capitalized farmers, resulting in the concentration of farming into fewer hands. ("93640 at Risk: Farmers, Workers and Townspeople in an Era of Water Uncertainty", Don Villarejo, March 1996.)

7. Many of the implications of a significant loss of Delta water from the collapse of the Delta will be off-farm, particularly where agriculture is a single or primary employer. As land goes out of production and farms, jobs and income are lost, water, flood and reclamation districts that serve rural communities and farmers will become stressed. Additionally, communities like Mendota will lose tax revenues, not only from farmers and farm workers, but from shuttered support industries, the loss of retail sales, and the decline of property values. These tax revenues support industries needed to support services for the poorest among us. In Mendota, these impacts were felt primarily by Hispanic/Latina(o) populations.
8. Urban water supply demands will impact the nursery industry (#3 in value) and the floriculture industry (#9 in value).
9. A study done for The San Joaquin Valley Agricultural Water Committee by Northwest Economic Associates in March 1992, "Economic Impacts of the 1991 California Drought on San Joaquin Valley Agriculture and Related Industries", concluded that if the drought conditions of 1987-1991 were to become a long-term condition of the San Joaquin Valley, the amazing value and diversity of crop production that now exists in this growing niche could be lost to other, off-shore competitors of the multi-billion dollar global agricultural market, a niche that would be "costly to recover, as competitors move to displace California producers."

It is on this latter point that I would like to conclude my response. The implications of the loss of the Delta as a food producing region and as a source of irrigation water to the Delta region, the Central Valley, and to California as a whole would be profound. The direct economics of the loss, by themselves, are serious, but not overwhelming. As in the past, California farmers will adapt and innovate. They will become more efficient, change crop mixes, and remove less profitable or resource-constrained lands from production to at least dampen the production impacts.

However, what concerns me most is what I emphasized at the beginning of my response. The loss of Delta and Delta-dependent agriculture is just part of the larger picture of the erosion of our food production capacity that is taking place throughout the state. Thousands of acres of cropland have been idled due to salinity; thousands more for its water to serve a growing metropolitan population and ecosystem function; urbanization and ranchette development of our best farm and ranchland on the east side of the Central Valley and around the Delta is accelerating; and, the purchase and retirement of agricultural land for wildlife habitat, recreation, floodways and other open space uses to serve a growing population has become a major cause for the termination of Williamson Act contracts meant to protect farmland.

The loss of Delta agriculture is part of a cumulative loss; a loss of acreage available for food production and a loss of diversity in growing niches that gives stability and market advantage to California agriculture.

To avoid the impacts on California's food production capacity that I've outlined above, I commend this vision not only for the Delta, but as a model to consider for many of California's working lands.

As you stated in your Delta Vision Report, we must not only protect the land and increase the resiliency of the Delta for its many uses, but find ways to use this land and water more than once. In your own words:

“The Delta’s land use pattern must enhance both the region’s unique values and the overall resilience of the system. To preserve the Delta’s place values, the region’s landscape should continue to be dominated by agriculture, wildlife habitat and recreation, with mutually beneficial mixtures of these wherever possible.”