

Amid Drought, California Water Virtually Draining Away

The state is exporting water-intensive alfalfa hay to fuel China's growing demand for dairy.

Kelsey Nowakowski, National Geographic, 4-10-15

Last week when Governor Jerry Brown imposed the first mandatory statewide water restrictions in the California's history—municipalities were ordered to slash their water use by 25 percent—the state's agricultural sector was notably exempt from the cutbacks.

Critics of the governor's plan argue that excluding agriculture from the restrictions is shortsighted, since farming accounts for 80 percent of the state's water usage. Brown defended the decision explaining that cutting allocations would result in major job losses and decreased food production. "There are people in agriculture areas that are really suffering," he said.

Some have questioned the production of so much food for export during a water shortage. Even as many farmers struggle to meet their crops' demand for water in drought-stricken California, every year they also send billions of virtual gallons to other countries—in the form of the food and animal feed grown with that water.

Virtual water flows are a global phenomenon. Africa, North America, South America, and Australia export more virtual water than they import in the form of traded crops and goods, while Europe and Asia are net importers. The United States exports about 82 trillion gallons of water a year—more than twice as much virtual water as any other country. That's largely because American farms are a big supplier of the global food chain.

In California, alfalfa production has been scrutinized at a time when both exports of the crop and public awareness of the drought are growing. The expanding global dairy industry, particularly in China, Japan, and the United Arab Emirates, is driving demand for alfalfa as animal feed. Much of the alfalfa that the U.S. exports is grown in water-scarce western states.

According to water management expert Arjen Hoekstra of the University of Twente in the Netherlands, the issue of agriculture's water footprint—all the water used to produce a commodity and get it to a consumer—is contentious, since many farmers use scarce water to produce low-value export crops.

Historically, water rights in California make it relatively inexpensive for some farmers to buy water. This low cost allows them to sell their crops at competitive prices on the global market. The resulting low pricing of thirsty crops like alfalfa and almonds can mask the true cost of their production during a drought. "Water is a public good," says Hoekstra, "so allocation systems should support its sustainable use."

But alfalfa is just one example of a water-intensive export crop. California also exports nuts, wine, citrus, rice, cut flowers, and fruits, all of which take significant amounts of water to grow. Around 80 percent of almonds are exported, making them the number one export crop.

Alfalfa is drawing notice because of the tensions between California's drought and the rising global demand for dairy, but exports of other water guzzlers, especially luxury ones like wine grapes, are also

under scrutiny. And while alfalfa may sell for low prices, it also provides income for farmers, feed for local dairy industries, and habitat for wildlife.