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# Parched in the West but Shipping Water to China, Bale by Bale

*Exporting water—embedded in alfalfa destined to feed cattle—is the odd offshoot of tangled, antiquated laws.*

By PETER CULP  
AND ROBERT GLENNON

In 2012, the drought-stricken Western United States will ship more than 50 billion gallons of water to China. This water will leave the country embedded in alfalfa—most of it grown in California—and is destined to feed Chinese cows. The strange situation illustrates what is wrong about how we think, or rather don't think, about water policy in the U.S.

In connection with government-led initiatives to improve the Chinese people's diet, China has massively expanded its dairy industry. Even though a large segment of the population is lactose intolerant, Chinese consumers are responding with enthusiasm. Milk consumption has tripled in 10 years and is expected to increase another 50% by 2015. This means millions more cows on the mainland, and millions more tons of cattle feed.

But despite China's vast landmass, pasturage is relatively scarce—and so the Chinese are buying alfalfa, particularly from the U.S. The trade is booming. Alfalfa exports to China from America ballooned to 177,423 metric tons in 2011 from 2,321 metric tons in 2007, and they are on pace to exceed 380,000 metric tons in 2012.

Importing a feed crop from halfway around the world might seem inefficient, but the trade imbalance between the two countries has made it cost-effective. For every two shipping containers of Chinese-made pajamas, televisions and other consumer goods unloaded at the California ports of Long Beach and Los Angeles, one container usually returns to China empty.

Or that used to be the case. Now shipping companies are filling those containers with alfalfa. The result: It now costs twice as much (about \$45 per ton) to truck alfalfa from a Southern California farm to a dairy in California's Central Valley as it does to ship it from Long Beach to Beijing.

Chinese demand has prompted alfalfa prices to double in the past two years. Farmers and investors alike are rushing to convert lands to the crop, and the U.S. Department of Agriculture is promoting the development of this new export market. Ninety-nine percent of the exported alfalfa comes from a handful of Western states, especially California.

But the most curious consequence of this export market involves water. Alfalfa is a water-guzzling crop—and the water embedded in the alfalfa that the U.S. will export to China in 2012 is enough to supply the annual needs of roughly 500,000 families.

Southern California's Imperial Irrigation District gets its water from the Colorado River, 82 miles to the east. Alfalfa farmers in the district use as much as 50% more water than growers in other areas of the state due to scorching heat, salty soil and, perhaps most important, their legal rights to an enormous quantity of cheap water. This single irrigation district controls more than 20% of the total annual flow of the Colorado River. Remarkably, the district's water rights are 10 times higher than that of the entire state of Nevada.

Las Vegas has become so desperate for water that the Southern Nevada Water Authority, which serves the greater metro area, has paid residents \$200 million to conserve water by ripping out their lawns. It also has proposed building a \$3 billion pipeline to import groundwater from hundreds of miles away. The pipeline would deliver less than half of the water the Imperial Irrigation District is expected to ship to China in alfalfa bales this year.

Meanwhile, the U.S. Bureau of Reclamation recently released a draft study of water availability in the Colorado River Basin that suggests the need for enormous new investments in water conservation, infrastructure and environmental protection to meet the challenges of growing populations and climate change. In July, California Gov. Jerry Brown proposed a \$24 billion plan for the Sacramento-San Joaquin River Delta that would restore habitat and improve the reliability of water supplies to the Central Valley and Southern California's coastal cities.

The perversity of a situation in which California taxpayers must spend tens of billions to protect the water supplies of vital farms and cities—even as California farmers convert tens of thousands of irrigated acres to feed cows in China—reflects the growing incoherence of domestic water and agricultural policy. Antiquated Western water laws often block intrastate or interstate water transfers that could satisfy changing domestic urban, agricultural and environmental needs.

Most water rights in the arid West were obtained under a legal system known as prior appropriation, which granted the first user of water the right to continue using it. As a result, the historic users of water in the West, predominantly agricultural districts, typically hold rights that are senior to the growing cities and industries that came later.

In many Western states, moreover, farmers who conserve water by modernizing their irrigation systems don't get to use, lease or sell the water they save. Instead, the conserved water typically belongs to the next junior user (usually another farmer), in an extended chain of historic uses and priorities. Transfers of water rights from historic senior users can require the consent of multiple parties, making the movement of water rights to serve changing demands costly and legally complex.

Even when a transfer is possible, complicated regulatory procedures mean that final approvals can take years. Interstate transfers typically fare even worse. For example, if a California farmer sought to sell excess water to water-starved Las Vegas, he or she would encounter a Byzantine array of laws that make interstate transfers on the Colorado River all but impossible. Yet U.S. trade policy fosters the international export of those same water resources embedded in high-water-use crops such as alfalfa.

The export of alfalfa to China reflects a larger trend in U.S. international trade. America increasingly exports raw materials that China converts into valuable products: cotton into shirts, hides into shoes, logs into furniture. It doesn't have to be this way. New Zealand's highest-value export these days is powdered milk destined for China.

Instead of exporting alfalfa grown in the water-starved West, the U.S. could capture more of the economic benefit of the embedded water by feeding it to cows here, supporting the growth of the dairy and milk-processing industries. Trade policies should encourage development of such value-added activities, particularly where essential natural resources are concerned.

In the midst of a drought, rising food prices, growing urban populations and demands on agricultural land, federal and state governments need to promote policies that maximize the potential benefits of water resources.

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