

Abstract

The United States, along with the rest of the world, uses significant volumes of water for agriculture, particularly crop production. Water footprint and virtual water, two concepts that refer to the amount of freshwater used or polluted to produce a product, are useful for quantifying the amount of water actually used in crop production. The water footprint of crop production in the U.S. is about 826 Gm³/y which accounts for 78% of the country's total water footprint. While the water footprint varies across different crops and regions, commodities grown in the U.S. with relatively high water footprints include nuts like almonds and pistachios, olives, cotton, and even wheat. The depletion of the Ogallala Aquifer, the reduced streamflow of the Colorado River, and the California water crisis are three serious problems confronting the U.S. today due, at least in part, to this country's high water footprint of crop production. The United States must reduce its agricultural water footprint in order to mitigate the possibility of future water shortages. This can be achieved by setting water footprint benchmarks for crop production and then implementing solutions such as increasing water productivity in agriculture, shifting water-intensive crops from water-stressed regions to places with less water-stress, and changing consumption patterns.