

WaterBytes – Water for Food, Irrigation, and Fisheries

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Intro

Water is essential to human existence. We use it everyday for various purposes, most obviously drinking and cleaning. However, water is used in massive amounts for other reasons. Food production and its counterpart, irrigation, account for much of the water usage in America and abroad. In addition, aquaculture, or the farming of fish and other seafood, is obviously greatly dependent on water. We will now examine some of the specific problems found in the usage of water for food, irrigation, and aquaculture.

Food

We actually “eat” much more water than we drink (“Food production and water,” 2008). One calorie of food eaten equals one liter of water used (Black, & King, 2009). This means that thousands of liters of water are used for the food in a daily diet. In fact, one person’s annual diet requires 1.5 million gallons of water (Aitchison, 2008). Beef, rice, and wheat require the most water, while vegetables need the least. In addition, the feeding of farm animals requires much water (“Food production and water,” 2008). More water is being taken from lakes and rivers, as well as aquifers, to be used for agriculture. Developing countries, which are being introduced to industrial practices, are using increasingly high amounts of water for farming (Black, & King, 2009).

Irrigation

Another usage of water that goes hand-in-hand with farming is irrigation. Irrigation in food production uses 3/4ths of the freshwater found in the world (“Food production and water,” 2008). Obviously drier regions, like those in Africa or the southwest United States, depend on irrigation (Black, & King, 2009). In fact, 33% of water used in America is used for irrigation. It has become increasingly dependent on groundwater too. Over 40% of water used for irrigation in this country in the year 2000 was groundwater. More and more land is being irrigated as well with each passing year (“Water use in,” 2011).

Again, increased industrialization has played a role in the usage of irrigation. This greatly relates to the factory-farming practices of growing the most profitable crops as well as using artificial chemicals and pesticides. Many poor nations rely on irrigation and would face dire shortages without it. Nevertheless, the problems are evident. In Asia, 10% of land that is irrigated has been destroyed because of salt build-up. Irrigation water taken from aquifers is causing problems in many places, including India, where over 26 million hectares of irrigated land depends on groundwater (Black, & King, 2009).

Fisheries and Aquaculture

Finally, aquaculture is clearly related to water issues as well. Over 8.7 billion gallons of freshwater were used daily in 2005 in America for aquaculture. 1.9 billion

gallons were groundwater, and 6.8 were surface water ("Aquaculture water use," 2011). Because there is such high demand for fish, especially in Asian countries, aquaculture has become a major industry. Over one-third of seafood in the world comes from aquaculture. And in 2006 in China, over 34 million tonnes of aquaculture-based seafood were supplied (Black, & King, 2009).

Perhaps the biggest issue with this new industry is that it increases the levels of waste and chemicals in water. Aquaculture can increase the levels of algae, which take away oxygen from water, increasing the levels of toxic gases like ammonia and methane. Furthermore, many chemicals are used in fish farming, similar to the pesticides used in ordinary agriculture ("Aquaculture problems: pollution," 2011). The waste from farmed fish, as well as the chemicals used, can destroy wetlands and even parts of lakes and oceans (Black, & King, 2009).

Conclusion

Thus it is clear that extremely large volumes of water are being used in our agricultural practices. It has also been shown that the new industry of aquaculture has contributed to pollution and depletion of water sources. However, with changes at the macro and micro levels, great improvements can be made to preserve this valuable resource. For instance, we can eat more plant foods, which do not need as much water. It should also be noted that organic practices require much less water ("Food production and water," 2008). New innovations and technologies can improve irrigation and higher environmental standards can be set for aquaculture. Overall, people all throughout the world must realize that water needs to be used wisely and this podcast can help provide valuable information.

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