



# High and Dry

**O**n every continent, water tables are falling, wells are running dry, and drought threatens the livelihood of farmers. Water shortages will only increase with the rise in global population, and shortages will intensify as rural residents migrate to urban areas, where water usage is typically three times greater than in the country. When demand for water outstrips supply, conflict is inevitable.

The term *water wars* conjures the image of a standoff between livestock owners in the American West, but in the future, water wars may instead be fought over grain. When farmers in one country export irrigated crops such as wheat, they are in fact exporting their most precious, and nonrenewable, resource. "The water required to produce the grain and other foodstuffs imported into North Africa and the Middle East last year was roughly equal to the annual flow of the Nile River," says Worldwatch Institute President Lester Brown.

The deficit is in part due to new technologies of the last 50 years that allow us to pump huge amounts of water from the aquifer, initially for irrigation. As populations increase and urbanization creates new demand, water is diverted from irrigation, resulting in food production capacity losses and the need

to import grain and other foodstuffs. Severe water shortages almost inevitably follow. We cannot prevent catastrophic deficits that could lead to famine and international strife unless we raise water productivity by eliminating inefficient water subsidies, raising the price of water to reflect its cost, and shifting to new and more-efficient technologies, crops, and forms of animal protein, Brown says.

Along the Mexican-Texas border, recent droughts have uncovered the inadequacies of old treaties to deal with fair allocation of the waters of the Rio Grande—known in Mexico as the Rio Bravo—as well as the aquifer, which is being depleted. Increased economic development and a growing population have meant that water historically used for irrigation is now being diverted for industrial and municipal uses. The drought of 1998 hit agricultural irrigators particularly hard. David Hurlbut, formerly at the University of Texas, outlines the need for a new treaty to help the region deal with their shared water problems and stave off the threat of water bankruptcy.

Finally, Jefferson Edgens at the University of Kentucky looks at an interstate battle between Georgia, Alabama, and Florida. At issue are two major river systems that have their headwaters in the north Georgia mountains. Although Georgia is one of the wettest states in the nation, the burgeoning de-

mands of metro Atlanta—one of the fastest growing cities in the nation—is rewriting water law in the East.

Atlanta has been siphoning off water that, under traditional eastern water law, should be available for downstream users. As a result, policymakers are looking to legal solutions, such as interbasin water transfers, that are more typical of the water-scarce West.

Although no settlement of the battle is in sight, negotiators are attempting to tie local land-use planning with regional watershed management. Allocations for water use will remain at the local level, but local decisions about such questions as how many new subdivisions and industrial parks can be constructed will have to be coordinated with regional watershed plans. Unfortunately, however, the states have not been able to develop the needed watershed plans.

Edgens believes the ultimate solution lies in developing a market-based system for allocating water. Lack of ownership rights to water translates into greater waste, he says: "A market-based strategy, in which the water that people use is accurately reflected by price, can go a long way toward minimizing water allocation problems."

*The Editors*