

International Waters: Conflict, Cooperation, and Climate Change

Aaron T. Wolf

Professor of Geography and Chair

Department of Geosciences

Oregon State University, USA

Almost all human and ecosystem activity relies on a safe, stable supply of water resources. And since the resource needs to be allocated to its myriad uses, from drinking to agriculture to instream flows to transportation, industry, and spiritual transformation, water management *is* conflict management. Moreover, when surface basins or aquifer systems cross international boundaries the unifying principles of integrated watershed management and all the attendant centripetal forces within a basin come in direct contradiction to the centrifugal needs of state separation and sovereignty.

There are 263 basins, and 265 aquifers, which cross the political boundaries of two or more countries. International basins cover 45.3% of the land surface of the earth, affect about 40% of the world's population, and account for approximately 80% of global river flow. 90% of the global population lives in countries with international basins. While the potential for paralyzing disputes are especially high in these basins, history shows that water can catalyze dialogue and cooperation, even between especially contentious riparians. Moreover, as we move from thinking about rights to thinking in terms of equitably sharing "baskets" of benefits, the opportunities of cooperation become palpable.

Evidence suggests that the likelihood of political tensions is related to the relationship between rates of variability or change within a basin and the institutional capacity to absorb that change, often exemplified by treaties or international river basin organizations (RBO).

The most critical lessons learned from the global experience in international water resource issues are as follows:

1. Water crossing international boundaries can cause tensions between nations which share the basin. While the tension is not likely to lead to warfare, early coordination between riparian states can help ameliorate the issue.
2. Once international institutions are in place, they are tremendously resilient over time, even between otherwise hostile riparian nations, and even as conflict is waged over other issues.
3. More likely than violent conflict occurring is a gradual decreasing of water quantity or quality, or both, which over time can affect the internal stability of a nation or region, and act as an irritant between ethnic groups, water sectors, or states/provinces. The resulting instability may have effects in the international arena.
4. The greatest threat of the global water crisis to human security comes from the fact that millions of people lack access to sufficient quantities of water at sufficient quality for their well being.
5. The increase in future water variability forecasted by most climate change scenarios is one change that may alter current hydropolitical balances, affecting in turn the ability of states to meet their water treaty commitments. This may raise serious questions about the adequacy of many existing transboundary arrangements and lead to the need for new focus on resilient agreements.