

## **The Indus River Basin in the 21<sup>st</sup> century**

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This project is an examination of the ecological and political relations in South Asia regarding the Indus River Basin in 21<sup>st</sup> century. The basin is a critical watershed area with a population of over 100 million people. It includes territory in Pakistan, India, Afghanistan, and China and crosses three disputed international borders (Afghanistan-Pakistan, India-Pakistan, India-China). Since the partition of South Asia in 1947, the basin has been subject to numerous development projects (including dams, canals and large scale irrigation works). The governments of China, India, and Pakistan as well as the United States, the Asian Development Bank, and the World Bank have all been involved in some, but not all the projects. The Indus River basin includes the Indus and Sutlej rivers which originate in Tibet, the Kabul and Kurruam rivers which originate in Afghanistan, the Swat River which originates in Pakistan, the Jhelum River which originates in Kashmir, and the Chenab, Ravi, and Beas rivers which originate in Himachel Pradesh. In terms of waterflow, largest tributary of the Indus is the Chenab followed by the Jhelum, Kabul, Sutlej, Beas, and Ravi rivers.

The political ecology of the basin is divided so that there is little coordination between all of the riparian states. The most notable measure has been the Indus Waters Treaty (1960) between India and Pakistan. The treaty was facilitated by the World Bank and has proven to be successful in political terms. That is, the treaty was designed to prevent conflict between India and Pakistan over use of the Indus waters and, despite decades of hostility, both sides still observe the treaty's requirements. The treaty has been extensively studied as a political document, but much less so as an ecological document. Past studies focus on diplomacy, international law, and security questions rather than examine the sustainability of water use or wildlife conservation in the basin as a whole

Beginning in 1951, India and Pakistan began the negotiations that lead to the signing of the Indus Waters Treaty in 1960. The treaty was facilitated by the World Bank and has proven to be successful in political terms. That is, the treaty was designed to prevent conflict between the two countries over use of the Indus basin waters and, despite decades of hostility, both sides still observe the treaty's requirements. However, the

treaty has important limitations which need to be addressed. The treaty has two major flaws in that only two of the four countries located in the basin are parties to the treaty and that the treaty does not address either the issue of sustainable use of the water or wildlife conservation.

The population of the basin is projected to grow substantially over the next few decades while the amount of water declines as global warming affects the snowfall patterns in the high Himalayan mountains. A major source of the water in the basin is the glaciers of the Himalayas, but these glaciers are now shrinking. The exact volume of the reduction in the waterflow is difficult to determine, but it is likely to be substantial.

There have been serious border disputes between Afghanistan-Pakistan, India-China as well as Pakistan-India. While new border wars between these countries seem highly unlikely, future water shortages are likely to exacerbate competition over water access. The Indus Waters Treaty can serve as a model for a new four country treaty in terms of conflict prevention, but a new treaty must include consideration of water use sustainability and wildlife protection. If the total water supply declines in the future, the allocation of water will have to be adjusted as the various Himalayan glaciers are melting at differing rates. A permanent, fixed settlement between the four may not be possible and they will be required to actively cooperate in managing the basin.