

Kashmiri Water: Good Enough for Peace?

Erin Blankenship

Conflict and Historical Context

Despite decades of attention given, the Kashmir dispute between Pakistan and India remains one of the most persistent and heated conflicts in international relations, one whose history is well known. The unrest started during the British partition of India in 1947. Kashmir's ruler was given the option to choose between Pakistan and India based on the guiding principles of geographical continuity and religious majority. Close to 80 percent of the Jammu Kashmir state was, and is, Muslim though a few of the regions within it had a measurable presence of Hinduism and Buddhism. The Maharaja at the time of partition, a Hindu, was facing a Muslim rebellion that threatened his rule. Most likely wanting full independence though fearing a rebel takeover, he requested military help from India as a precondition to acceding to that state. However by the time the Indian forces arrived the Muslim rebellion had already managed to capture territory, whose lines are much the same today.¹ Pakistan refused to acknowledge Kashmir's accession to India which it claimed violated the basic principle of religious majority. Pakistan further alleged that the decision was a result of fraud and violence that India was able to exploit in pressuring the Maharaja.

The Jammu Kashmir crisis entered onto the wider international stage when India brought it to the UN Security Council in 1948, but despite UN efforts and various bilateral attempts to discuss the issue, no tangible progress has been made since then. Rather, the Kashmir situation has given rise to violent armed conflict or near-war crises in 1948, 1965, 1987, 1990, 1999, and 2001-2002.² Jammu Kashmir's existence has been turbulent since partition but the violence and active insurgency that erupted in 1989, particularly on the Indian side, has continued with an intensity matched by few other conflicts in the world. Over the last fifteen years between 30,000 and 50,000 people have been killed^{3,4} and countless more injured and or displaced. The ongoing conflict and inability to resolve the issues has perpetuated and intensified the overall mistrust between India and Pakistan, not to mention played a crucial role in the under-socioeconomic development of the state. No matter whether measured by per capita income, aggregate growth rates, or GSDP, Kashmir ranks among the bottom one-third economically of the Indian states, and has been one of the slowest growing regional economies in South Asia.⁵ In 2002, more than

¹ Sumantra Bose, *Kashmir: Roots of Conflict, Paths to Peace* (Cambridge, MA: Harvard University Press, 2003).

² BBC Kashmir Flashpoint, online. Accessed at:

http://news.bbc.co.uk/2/hi/in_depth/south_asia/2002/kashmir_flashpoint/default.stm.

³ Victoria Schofield, *Kashmir in Conflict: India, Pakistan and the Unfinished War* (New York: I.B. Tauris, 2000).

⁴ Alexander Evans, "The Kashmir Insurgency: As Bad As It Gets," *Small Wars and Insurgencies*, no. 1 (Spring 2000), 69-81.

⁵ Shahid Javed Burki, *Kashmir: A Problem in Search of a Solution* (Washington DC: United States Institute of Peace, March 2007). Pg.5.

one third of the population lived on less than one dollar a day. The lack of development is one of the most crucial barriers to the peace process.

India and Pakistan of late have begun to back away from their maximalist positions that have characterized the relationship since 1989, including a formal ceasefire along the Line of Control (LoC) and minimal border crossings and trade exchange. But to say that full normalization between the two parts of Kashmir and an agreement between Pakistan and India over the crisis' resolution are still a long way off would be an understatement. Rather than demanding the final agreement in its entirety, breaking down the issues into palatable pieces could arguably build momentum for a later, more complete resolution. In that light, there are many contentious issues wrapped up in the Jammu Kashmir conflict, but few carry the weight and influence that water does and will in the future. As the most precious resource in the region and one undergoing rapidly escalating stress, addressing sustainable water-sharing and joint management is not only critical in its own right, but may be the key to real progress towards peace.

Why Water

Much recent scholarship has been devoted to the concept of 'water wars.' Considering the renewed awareness of geostrategic security concerns based on energy and resources, this should be no surprise. The combined forces of the world's population demographics with the impending effect of global climate change has forced environmental and security strategists to acknowledge both each other and the potential devastating severity of such a crisis. Conflict over water has been a tendency of human behavior throughout history though it does not tend to fit the traditional mold of full-scale wars fought purely over water. Particularly since the 20th century, water has been a significant feature of the various conflicts rather than their sole purpose.⁶ However, now in the first decade of the 21st century, this may no longer be the case. With the increasing pressures, especially from rapid population growth, urbanization and climate change, this century may in fact witness a birth of full-scale wars for fresh water.⁷

The demand for water is rapidly overtaking the existing supply. Though water covers roughly two thirds of the planet, only 3 percent of the total water supply is fresh water, another two thirds of which is frozen in glaciers and the polar ice caps. Further, much of the rest is in underground aquifers or in the soil, leaving less than one percent available to the human population.⁸ Currently 2 billion people do not have enough water for even basic needs, approximately one third of the world's population. Increasing demands from exploding populations is exacerbated as these societies become more affluent and developed because as such they tend to use more water. While the world's population doubled between 1950 and 1990, global water use increased by 300 percent. Frank Rijsberman, director of the International Water Management Institute has said, "Globally, water usage has increased by six times in the past 100 years and will double again by 2050, driven mainly by irrigation and demands of agriculture." The fact that many of the critical water sources in these areas are shared by two or more countries, coupled with the

⁶ Peter Gleick, *Water Conflict Chronology*, Oakland, CA: Pacific Institute for Studies in Development, Environment and Security. Updated 12 October 2006. Available online at: <http://www.worldwater.org/chronology.html>.

⁷ Peter Gleick, "Water and Conflict: Fresh Water Resources and International Security", *International Security*, vol. 18, no. 1 (Summer, 1993), pg. 79-112.

⁸ United Nations, Commission on Sustainable Development (UNCSD), *Comprehensive Assessment of the Freshwater Resources of the World*, Report of the Secretary General, UN doc. E/CN.17/1997/9, 4 February 1997, pg. 8-9.

involved states' rare agreement on how to divide up the available supply, means that disputes over access to the contested resources will become increasingly contentious.⁹

In fact, 145 of the world's countries depend on shared water systems for at least some portion of their fresh water supply.¹⁰ Tensions arise whenever a member of the shared water resource system, a riparian, attempts to increase its share of the dwindling supply and the other members are likely to respond forcefully. In the same light, any effort by upstream countries to dam the river or otherwise control its onward flow is almost sure to produce concern and hostility among the downstream states.¹¹ Although attempts have been made at drafting equitable water-sharing agreements, discrepancy over the distribution of their flow persists. Studies by independent scientists, institutes and corporate analysts all agree the costs of increasing water shortage affect both wealthy and developing nations, and will include among them a significant rise in global violence.^{12, 13} According to Michael Klare in his book *Resource Wars*, "unless more progress is made in negotiating cooperative arrangements, growing scarcity combined with rising population will produce an increasingly unstable environment."¹⁴ That instability can quickly morph into something more severe; in water-scarce regions it is typical for states to view combat over vital sources of supply as a legitimate function of national security and survival. In the words of UNESCO Director-General Klaus Toepfer in 1999, "As [water] becomes increasingly rare, it becomes coveted, [and] capable of unleashing conflicts. More than over land or oil, it is over water that the most bitter conflicts of the near future may be fought."¹⁵

The Plight of South Asia

Of the many parts of the world that will face increasing water scarcity, it will be a particularly extreme predicament in most of South Asia. Fresh water is emerging as its most crucial resource issue due to the massive population growth, its largely agricultural economies, and its rampant poverty in human and economic terms. The population of the region is expected to hit 1.5 billion by 2020 with 50 percent of that population below the poverty line.¹⁶ Further, the region's water availability is limited and the demand is expanding rapidly. Such a high population density combined with a low per capita income and a predominantly agricultural economy in water scarce regions necessitates sustainable water management of shared sources.

Pakistan and India for their part have clashed over water issues since the 1947 partition. Rivalry over the Indus River resources has been a chronic source of heightened tension between the two states and with the issues intensifying, the possibility for interstate conflict will likely increase. Beyond the practical realities of their explosive demographics, disputes over the Indus in

⁹ Michael Klare. *Resource Wars: The New Landscape of Global Conflict*. New York: Henry Holt and Company, 2001. pg. 139.

¹⁰ A.T. Wolfe, J.A. Natharius, J.J. Danielson, B.S. Ward and J.K. Pender, "International River Basins of the World", *International Journal of Water Resources Development*, 15, 4 (1999).

¹¹ Sandra L. Postel, Aaron T. Wolf, "Dehydrating Conflict", *Foreign Policy*, No. 126 (Sep. - Oct., 2001), pp. 60-67.

¹² Stephen Leahy, "Thirstier World Likely to See More Violence", Inter Press Service, 16 March 2007.

¹³ John Vidal, "Cost of Water Shortage: civil unrest, mass migration and economic collapse," *Guardian Newspapers*, 17 August 2006.

¹⁴ Klare, 147.

¹⁵ From an interview in the 1 January 1999 edition of *Environmental Science and Technology*, as cited in "Water Wars Forecast If Solutions Not Found," *Environmental News Service*, 1 January 1999, electronic document accessed at <http://ens.lycos.com/ens/archives/Jan99/1999L-01-01-02.html>.

¹⁶ Ashok Swain. *Managing Water Conflict: Asia, Africa and the Middle East*. Routledge: London, 2004. pg. 44.

particular and water in general have taken on a deeply emotional or symbolic nature, as matters of national or regional survival and identity. Both countries face problems that include flooding or drought in multiple regions, inefficient and inadequate irrigation, inadequate supplies of clean water in both rural and urban areas, ground water depletion and contamination, lack of pollution control and treatment facilities, and insufficient and poorly maintained infrastructure.¹⁷ Some believe that as the gap between water availability and requirements widens, terrorist operations and recruitment in the region will follow.¹⁸ While such a relation between water availability and terrorism is vastly oversimplified, it does exemplify a possible if extreme route of future conflict if water issues remain unsettled.

The two countries face similar, precarious predicaments. India has been steadily moving closer towards a ‘danger zone’ in terms of its water supplies. In the last fifty years, per capita availability of water has dropped by roughly 60 percent from over 5000 cubic meters in 1950 to 1800 cubic meters in 2005, a drop that may indeed be repeated in the next fifty years.¹⁹ Some provinces are already below the 1000 cubic meter threshold, the “water stress” limit per person per year as defined by the World Bank. Below this limit the possibility for serious economic and social consequences dramatically increases. Over-pumping underground water wells has been a serious problem for both states for many years; for example, water levels have been dropping at a rate of 5 percent annually in India’s Punjab and Haryana, escalating conflict between the states themselves as well as with the national government over water allocation for their agricultural needs.²⁰ Meanwhile, Pakistan is rapidly nearing the same crisis levels: its per capita water availability has fallen from 5,600 cubic meters at the time of independence to 1,200 cubic meters in 2005, and its groundwater table has dropped in 26 out of 45 canal commands.²¹ Both countries face issues in water storage because of the high levels of silt carried by the Indus; in fact, by 2010 Pakistan may already see a 50 percent loss in its water storage capacity.

The water shortages would be enough to generate serious concern and tension between the two, but to add the projected human population growth is to raise the stakes to an entirely different level. The anticipated population increases between 1998 and 2050 run at approximately 57 percent to India and 142 percent to Pakistan.²² Assuming that current predictions prove accurate, India’s population will grow to three times what it was when it signed the Treaty, 1.3 billion by 2025. By that time Pakistan will have more than six times its original population at 270 million.²³ These populations depend on the Indus system for drinking water, sanitation and the bulk of their food: as the natural precipitation patterns are already sparse in this largely arid region, and many local aquifers face total depletion, irrigated agriculture is the only reliable means of producing sufficient food. For example, 90 percent of Pakistan’s agriculture is dependent on the Indus

¹⁷ Col. Steven W. Peterson, “Water Issues in India and Pakistan”, course 5604 paper, National Defense University, National War College, Washington DC. Accessed online at: <http://www.ndu.edu/nwc/writing/AY04/5604/04a.pdf> on 10 June 2007.

¹⁸ S. Waslekar, *The Final Settlement: Restructuring India-Pakistan Relations* (Mumbai: Strategic Foresight Group, 2005), pg. 54-62.

¹⁹ Waslekar, 54-62.

²⁰ “Asia: Nor Any Drop to Drink; Water in India”, *The Economist*, Vol.364, issue 8287, 24 August 2002, pg.31-32.

²¹ Waslekar, 54-62.

²² “Anticipated Population Growth in Selected Countries of the Jordan, Tigris-Euphrates, and Indus River Basins”, *World Resources 1998-1999*, Washington DC, World Resources Institute, 1998. pg 244.

²³ Klare, 187.

water system,²⁴ a country already facing a shortfall in food grain availability by about 4 million tons per year. It is feared that this number could triple by the end of the decade, representing a collapse of Pakistan's agricultural productivity.²⁵

The Indus Waters

The 1947 partition put the headwaters of the Indus River in India and its lower basin in Pakistan, thereby setting the stage for battle over resource allocation because the partition had not provided for any agreed formula of how to share the Indus River system. Both countries see the river as vital to their own respective development and wish to claim ever increasing portions. Following the split, the increasing political unease, massive refugee movement and the issue of Kashmir further provoked the water sharing dispute for the two newly independent countries. With the bisection of the region into separate antagonistic nations, the British-designed canal system, the absolute foundation of the region's economy, was also broken into separate networks. As mentioned before, Pakistan ended up with most of the canals and irrigated land but the new border left all of the headwater's tributaries in India.²⁶ There was incessant argument, unsuccessful interim agreements, and deadlock between them until the World Bank came in 1952 and for eight years conducted intense and often acrimonious negotiations over the Indus and its tributaries. Finally in 1960 both countries signed the Indus Waters Treaty.

The World Bank's negotiators had expressed the hope that India and Pakistan would agree to the integrated development on the Indus basin through some form of a joint management system. However neither side was willing to entrust its vital water interests to a mixed governing body.²⁷ Instead it ended up as a permanent division of the river network into two separate systems: India would maintain exclusive control over the three eastern tributaries (the Ravi, Beas, and Sutlej) which represents about one fifth of the total flow. Pakistan would control the flow of the Indus proper and the other two western rivers (the Jhelum and Chenab), the other four fifths of the system. The Treaty also provided for storage capacity on the western rivers and extensive irrigation works for Pakistan, limited aggregate storage capacity on the western rivers' single and multipurpose reservoirs for India, an elaborate system of mutual obligation by the two parties, and a permanent commission with representatives from both sides to maintain a cooperative arrangement for implementation.²⁸

While the Indus Waters Treaty has been viewed by many as a model for the peaceful resolution of international water disputes, it does not provide for joint development nor does it eliminate the grounds for conflict over water distribution between India and Pakistan. Both countries are in search of more water to meet their growing demands; according to Sundeep Waslekar, director of the Mumbai-based International Center for Peace Initiatives, many areas in Pakistan are

²⁴ Swain, 46.

²⁵ Daniel Nelson, "Water War Warning As Tension Escalates in Kashmir", OneWorld.net, published on 21 May 2002. Accessed online at Common Dreams News Center: <http://www.commondreams.org/cgi-bin/print.cgi?file=/headlines02/0521-07.htm>.

²⁶ Niranjana D. Gulhati, *Indus Waters Treaty: An Exercise in International Mediation* (Bombay: Allied Publishers, 1973), pg. 18-30.

²⁷ Klare, 185.

²⁸ Swain, 48.

already facing serious water shortages that could lead to the collapse of its agricultural production in the next decade, and India's water table is falling rapidly.²⁹ Moreover, the Indus waters and its allocations have been the source of conflict in both countries' rivaling internal provinces. India faces potential crisis from Punjab, Haryana and Rajasthan while Pakistan faces similar dangers in Sindh, Balochistan and Punjab.³⁰ Internationally, disputes continue with Pakistan accusing India of building too much storage capacity on the western rivers. Pakistan is also wary of India's various hydropower projects on the Jhelum and Chenab rivers, seeing them as controversial to the "run-of-the-river" allowances of the Treaty and thus a threat to its own allocation. It has even threatened to take the case to the International Court of Justice.

In fact, for the past several years serious doubt has risen as to whether the treaty will last. Its initial success in allowing for development for India and Pakistan within their respective parts of the basin has become overwhelmed by both countries' intensifying demands for more water. From December 2001 to June 2002, India was vocally considering pulling out of the treaty as one of the steps of hitting back at Pakistan for its alleged support of terrorist outfits targeting India,³¹ and in turn Pakistan has stated that it would be prepared to use nuclear weapons over a water crisis.³² "Increased tensions over water, in other words, help exacerbate or intensify overall tensions, thus at worst creating a more favorable environment for interstate conflict, or at least making resolution of interstate issues between the countries even more difficult."³³ Reduced flow of the Indus in recent years has coincided with a rise in regional and interstate discord, a foreboding indication for the future.³⁴ A senior Pakistani diplomat, among other regional experts, confirms that "water has become the core issue between India and Pakistan."³⁵ ³⁶

Why Kashmir

The territorial dispute for strategic resources upon which both countries absolutely depend for their stability and survival, and the treaty intended to avoid war over it, is centered in none other than Jammu Kashmir. Some even argue that water issues are in fact the main driver of its ongoing stalemate, particularly from the perspective of Pakistan.³⁷ They conclude that as water problems get worse, so will the conflict over Kashmir. A 2005 report by the Strategic Foresight Group found that the treaty only offers a frail defense against heightened conflict over river resources between Pakistan and India, and that it is only a matter of time before water war becomes a virtually unavoidable feature of the region's political environment. The study also contends that every proposal made by Pakistan through track-two diplomatic channels since 1999 has referred to water as a pivotal concern.³⁸

²⁹ Nelson, "Water War Warning As Tension Escalates in Kashmir."

³⁰ Swain, 49.

³¹ Fred Pearce, "Water War", *New Scientist*, vol.174, issue 2343, 18 May 2002, pg.18.

³² Nelson, "Water War Warning As Tension Escalates in Kashmir."

³³ Robert G. Wirsing and Christopher Jasparro, "Spotlight on Indus River Diplomacy: India, Pakistan, and the Baglihar Dam Dispute", Asia-Pacific Center for Security Studies, Department of Defense, May 2006. pg. 1. Extracted from an article in *Water Policy* with permission from IWA Publishing. Accessed online at www.apcss.org.

³⁴ Triluchan Upreti. *International Watercourses Law and Its Application in South Asia*. Katmandu: Pairavi Pakashan Publishers and Distributors, 2006. pg.28. Accessed online at: <http://www.internationalwaterlaw.org/articles/general/upreti/upreti-book.pdf>.

³⁵ Wirsing and Jasparro, 6.

³⁶ Subrahim Sridhar, "The Indus Waters Treaty", *Security Research Review*: vol. 1(3), 2005. Accessed online at: <http://www.bharat-rakshak.com/SRR/Volume13/sridhar.html>.

³⁷ Waslekar, *The Final Settlement*.

³⁸ Waslekar, *The Final Settlement*.

Geographically, three of the five key tributaries and the Indus River proper pass through Kashmir on its journey to Pakistan. While its heavy endowment of water resources would traditionally be seen as a stroke of good fortune, this luck has yet to come to fruition for the struggling region. Any conflict over the treaty directly affects Jammu Kashmir, and conversely any tensions and battles over water in Jammu Kashmir directly pressure the Indus Waters Treaty and the ongoing struggle between the two countries to provide enough water to their own states. Both sides believe that they gave up more water than they gained from the treaty, and from Pakistan's perspective, India's retention of the right to non-consumptive uses on the western rivers, "presents it with the endlessly frustrating and ultimately futile task of guarding its water resources against Indian poaching."³⁹ It sees India's dams and upper riparian status as potential means to economically squeeze or starve Pakistan, or alternatively to flood it, conceivably for military purposes. From the Indian side, it sees Pakistan as making it virtually impossible for them to exploit effectively the Treaty's non-consumptive uses, especially hydropower production.⁴⁰ As India labors to find more water and be able to use it, it watches carefully as the three western Indus rivers flow from its territory to Pakistan. The opportunity to tap the Jhelum and the Chenab rivers would provide windfall gains not only to India's side of the LoC in Kashmir, but also to its three desperate states of Punjab, Rajasthan and Haryana.⁴¹

Moreover, Kashmir is perhaps the clearest example of the treaty's fundamental weakness: rather than providing support for integrated development of the basin, it partitioned the waters into separately owned entities. This negative settlement has kept both countries from having the tools to address serious needs demanded of them from the region. Even though the Indus Waters Treaty's mediators understood the restrictions and dangers of dividing the water system, they were unable over those eight years to convince India and Pakistan of the intrinsic threats of refusing a more integrated model for the future. While the interior provinces of Pakistan and India fight for more allocation of the rivers, Jammu Kashmir is the hardest hit victim. Though obviously well endowed with water resources, it has not been allowed to develop it for themselves. The three rivers given to Pakistan were the major water sources for the state prior to partition. The area is overwhelmingly agriculturally based, dependent on farming, livestock and its related activities, but it remains only marginally irrigated and has had hardly any development projects planned; Kashmir's resources are tapped for others but it is not accurately compensated for these losses or able to work towards its own advancement.⁴²

The Kashmiri people are quite aware of their inability to develop their agricultural base, grow economically, or attempt to deal with their own energy demands. Because of the limitations of the Indus Waters Treaty and the desperation for water on both sides, Jammu Kashmir has been stuck in a development rut that is largely responsible for the lack of stability and security that could play a critical role in the conflict's resolution. While not yet the primary issue in the Kashmir dispute,⁴³ competition over water resources will rise in significance as aquifers are

³⁹ Wirsing and Jasparro, 3.

⁴⁰ B.G. Verghese, "Fuss Over Indus-I: India's Rights Are Set Out in the Treaty," *The Tribune* (Chandigarh), 25 May 2005.

⁴¹ "Indian Group foresees Pak-Kashmir water war", *The News International*, 23 March 2005. Accessed online on J&K News at: <http://jammu-kashmir.com/archives/archives2005/kashmir20050323c.html>.

⁴² J&K News, 23 March 2005.

⁴³ Swain, 159.

depleted and both sides try to increase their appropriations from the Indus and its tributaries for their growing populations, food production and energy needs.

Kashmir's water potential

Due to restrictions imposed on tapping of water resources, in conjunction with faltering policies of successive state governments, Kashmir has been unable to grow to the optimum potential of its agriculture and electricity sectors, its most vital needs for economic and human development. The Treaty permits building storage aggregating 3.6 million acre feet (MAF) on the three rivers of the Indus, Jhelum and the Chenab.^{44, 45} This capacity is shared between hydropower, flood moderation and general storage for non-consumptive uses. The Treaty further permits additional irrigation of only 1.21 lakh hectares since its effective date of April 1st, 1960. These restrictions act as a chokehold on Kashmir's capacity for progress. As far as irrigation goes, while about 80 percent of Pakistan's cultivated areas are irrigated, Kashmir has only been able to do about 10 percent.⁴⁶ In Pakistani Kashmir only 13 percent of the land is under farming, but provides the livelihood for close to 84 percent of the households. Of its enormous hydroelectricity potential estimated at around 15,000 MW, Kashmir has been able to harness barely 10 percent, a critical barrier to the area's growth. Over 90 percent of Kashmir's capacity comes from hydroelectric plants. There is little scope for any other forms of power generation in the state since there are few feasible sites for plants and the area's difficult topography makes the transport of raw materials complicated and costly. Further, each of the state's power projects begun and currently under construction has become controversial due to the competing agendas of the parent states.⁴⁷ As India and Pakistan battle over the legalities of the technical engineering and the Treaty details for each proposed dam, spillway, and plant, Kashmir waits.

Yet, Kashmir's untapped potential for its energy and agricultural growth represents the equally foregone possibility for bridging important gaps in the ongoing crisis. A 2002 report "Reshaping the Agenda in Kashmir" by Waslekar comments that the disputed territory's potential could help to transform it "from a valley of death and destruction to a center of excellence in...engineering." Other experts agree in the potential that Kashmir's geography offers. Amending the limitations of the Indus Waters Treaty so that sustainable development is integrated throughout the area would greatly improve the hydroelectricity sector's potential, improve irrigation facilities and regulations which would in turn boost agricultural growth, give rise to employment opportunities, help attract private investment, and in general pave the way for a healthy industrialization of the state. Agreement on a joint development strategy for the Indus Waters Basin that would implement sustainable projects would thus be a major contribution to economic growth, which according to multiple sources is a top priority in securing peace for the region. Other positive developments could build from the economic growth's impact on stability and the water sharing and joint development structure, such as a mutual confidence in peaceful and cooperative means of solving disputes.^{48, 49}

⁴⁴ Gulhati, *Indus Waters Treaty*.

⁴⁵ Sridhar, "The Indus Waters Treaty".

⁴⁶ Waslekar, 62-73.

⁴⁷ Nelson, "Water War Warning As Tension Escalates in Kashmir".

⁴⁸ Priscoli, J.D., "Conflict Resolution, Collaboration and Management in International and Regional Water Resource Issues", Paper delivered at the VIIIth Congress of the International Water Resources Association (IWRA), Cairo, Egypt, November 1994.

⁴⁹ Verhese, B.G. and Iyer, R.R. (eds.), *Converting Water into Wealth*, Konark Publishers: New Delhi, 1994.

A path to peace?

If it is true that as water problems get worse, so will the Kashmir conflict, then conceivably the opposite is also true. There is as of yet inadequate international law governing transboundary rivers and defining the rights and obligations of riparian states. However, water sharing is not unheard of and has been an important feature of resolving many conflicts.⁵⁰ The UN's International Law Commission is developing guidelines to help settle water-related conflicts. Some articles include the call for cooperation and the regular exchange of information between riparian states, that transboundary rivers should be used in an equitable, reasonable and optimum manner, and due diligence to ensure not inflicting significant harm to other water sharing states.⁵¹ In most international river basins competing and disrupting riparian countries have recognized the dangers of growing water scarcity and are now moving towards cooperation. Nearly 150 water-related treaties have been signed in the last hundred years. Since the 1990s there have been riparian agreements on the Zambezi, Okavango, Limpopo, Mekong, Jordan, Mahakali and Ganges rivers. Sharing agreements on the Nile, Orange Euphrates-Tigris, and Indus rivers have been going through severe stress but are still holding up.⁵² However, these agreements have for the most part only tried to address the supply side rather than supply and demand together. Increasing demand from all riparians is raising critical doubt about the continuation of every water-sharing agreements and treaty.

Indus Article XII does allow for modification of the treaty when agreed to by both parties.⁵³ While both Pakistan and India have serious issues and complaints with the treaty, neither may be willing to renegotiate for fear of losing ground. Even though the treaty casts unilateral responsibility for compliance on India as to all upper riparian states, renouncing it would be dangerous for India. Abrogation of the treaty would not be defensible on any understanding of the current international water laws or international humanitarian laws and is bound to incite reactions from the World Bank and other countries party to the treaty. India has never ventured down that path in spite of two wars and persistent skirmishes in Kashmir. Yet there is bound to be a persistent sense of insecurity in Pakistan's mind given that any call on India's part to change the treaty could jeopardize its water lifeline. If revoked, the loss of the rivers would be catastrophic to Pakistan. Herein explains its constant vigilance and challenges to all Indian projects on the three western rivers. Until recently the treaty has safeguarded Pakistan's water requirements and has reliably served both countries as a means of forestalling water-related disputes. But the voracious demand for water and its related developments from the Basin's multiple provinces and Kashmir itself, may have finally reached the breaking point.

The idea of renegotiating the Indus Waters Treaty has opponents and supporters within the region. B.G. Verghese, one of India's most frequent commentators on river resource issues, is an advocate of what he calls an 'Indus II' built on the foundation of the first Indus Waters Treaty; he strongly believes in the potential of "joint investment, construction, management and control" of the three western rivers. In his words, it "should be fed into the current peace process as a means both of defusing current political strains over Indus-I and insuring against climate change.

⁵⁰ Wolf, A. T., "International Water Conflict Resolution: Lessons from Comparative Analysis", *International Journal of Water Resources Development*, 13, 3 (1997).

⁵¹ Upreti, pg.320-343.

⁵² Swain, 158.

⁵³ Sridar, "Indus Waters Treaty."

It could reinforce the basis for a lasting solution to the Jammu and Kashmir question by helping transform relationships across the LoC and reinventing it as a bridge rather than a boundary in the making.”⁵⁴ His longtime colleague and collaborator, India’s former Water Resources Secretary Ramaswamy Iyer at New Delhi’s Centre for Policy Research, however, is opposed to the Indus Waters Treaty. He argues that the treaty “was a negative, partitioning treaty, a coda to the portioning of the land,” and disagrees that cooperation can be built from that basis.⁵⁵ While unsure if a new treaty can in fact be negotiated successfully, he is in complete agreement with Verghese on the desirability of a new relationship between India and Pakistan on the Indus. Both experts are among many who believe in the cooperative potential of working out the water-sharing for the resolution of tension between the countries and their respective states, and its role in improving the general security of South Asia.^{56 57}

What form either a new Indus Waters Treaty or other water-sharing agreement might take particular to Pakistan and India is the subject of much debate. Underlying all arguments, however, is the insistence of integrated planning, development, and management, of looking at the basin’s water as a shared resource vital to a cooperative future rather than state by state interpretations.^{58 59} The EU Water Framework Directive (EUWFD), a model for water management and protection, emphasizes that the best model to manage river water is according to the natural geographical and hydrological unit, instead of according to the administrative or political boundaries.⁶⁰ A water-sharing agreement can positively contribute to peace and cooperation in the basin by addressing the future water needs of the riparian countries. International laws regulating transboundary water resources up to this point have been able to stave off major crises, but the century’s escalating demand could well ‘break the dam.’ The agreements must be sustainable, lasting and progressive. Further, it is vital to build upon institutions at a basin level for the rational use and appropriate, competent management of shared water systems.⁶¹ In the case of Pakistan and India, pending demand will require much more of the Indus Waters Treaty in the near future, particularly in addressing the needs of Jammu Kashmir.

Closing Thoughts

An integrated development plan for the conservation and sustained management of the Indus Basin presents a powerful opportunity to open a new pathway to a negotiated settlement of the 60 year old conflict in Kashmir. The approach necessitates a plan jointly developed by Pakistan and India and would involve creative solutions to the political stalemate that could move from water management to broader bilateral rapprochement. “A holistic approach to water resources—recognizing the interaction and economic linkages between water, land, the users, the

⁵⁴ B.G. Verghese, “It’s Time for Indus-II”, *The Tribune* (Chandigarh), 25 May 2006.

⁵⁵ R.R. Iyer, “Indus Treaty: A Different View”, *Economic and Political Weekly*, v.11, n.29 (16 July 2005), pg.3144.

⁵⁶ Verghese, B.G., and Iyer, R. R. (eds), *Harnessing the Eastern Himalayan Rivers: Regional Cooperation in South Asia* (New Delhi: Konark Publishers, 1993).

⁵⁷ Swain, A., “Environmental Cooperation in South Asia”, in Conceca, K and Dabelko, G.D. (eds), *Environmental Peacemaking* (Baltimore: Johns Hopkins University Press, 2002).

⁵⁸ Albert Lepawsky, “International Development of River Resources”, *International Affairs (Royal Institute of International Affairs 1944-)*, Vol. 39, No. 4 (Oct., 1963), pp. 533-550.

⁵⁹ Kaiser Bengali (ed.), *The Politics of Managing Water*, (Islamabad: Sustainable Development Policy Institute, and Oxford University Press, 2003).

⁶⁰ Swain, “Managing Water Conflict”, 170.

⁶¹ Swain, “Managing Water Conflict”, 171-177.

environment and infrastructure—is necessary to evade the impending water crisis in the subcontinent.”⁶²,⁶³ The Asia-Pacific Center for Security Studies from the US Department of Defense recently released an article whose authors confirm that in the face of mounting water scarcity in the region, the integrated basin approach to water management may well be the essential approach to water resource management, particularly in these demographically explosive societies. Absence of such cooperation could lead these societies to become unmanageable, “an outcome that could lead to a variety of unwanted conditions, increasingly fertile grounds for political extremism and terrorism among them.” It continues: “On the other hand, should the bilateral relationship progress to the point where an integrated development approach becomes possible, then perhaps vicious cycles of deepening internal dismay and escalating interstate tension can be halted and even reversed.”⁶⁴ While there may be some variance in opinion as to how influential water cooperation would be in the resolution of the broader conflict of Jammu Kashmir, no one questions the importance of either water issues or integration in this process. Whether the politics will follow the water or water sharing precedes the complementing politics, a successful, long-term, comprehensive resolution in the region will be impossible without dealing with water.

Kashmir is at the headwaters for the Indus rivers as well as the broader conflict between Pakistan and India. Its situation is inextricable from that of its water, and its future depends on finding an equitable, sustainable outcome for the region’s most valuable resource. Failing to address the acute and escalating water issues will generate increasingly dire consequences, particularly considering the rising pressures of population growth and climate change. Integrated water cooperation and sharing between Pakistan and India is important enough in its own right, but perhaps finding a new way to navigate Kashmir’s waters will provide the path to peace that the people of Jammu Kashmir, its parent countries, and the wider international community seek.

⁶² Waslekar, 79.

⁶³ Surya P. Subedi, “Hydro-Diplomacy in South Asia: The Conclusion of the Mahakali and Ganges River Treaties”, *The American Journal of International Law*, Vol. 93, No. 4 (Oct 1999), pp. 953-962.

⁶⁴ Wirsing and Jaspardo, 6.