

Peace through transboundary water management?

# The Indus Waters Treaty between India and Pakistan

*The partitioning of the Punjab («land of five rivers») between the two «arch-rivals» India and Pakistan in the year 1947 tore apart the world's largest irrigation system, which had been created by the British colonial administration. In 1960, the signing of the Indus Waters Treaty establishing the bilateral Indus Water Commission restored an equitable distribution of water between the two countries. Despite friction and ongoing political tensions, so far no war over water has broken out between them.*

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The two neighbouring southern Asian states of India and Pakistan have fought three wars since they gained independence in 1947, and in the spring of 2002 many political observers thought another armed conflict was imminent (D. Rothermund: *Krisenherd Kaschmir [Trouble-spot Kashmir] Munich 2002*). A key focus of conflict is the former principality of Jammu and Kashmir in the northwestern Himalayas. Its territory is now partitioned into the Indian state of 'Jammu and Kashmir' on one side of the «Line of Control» (the ceasefire line that runs through Kashmir), which is the larger area, a separate state of «Azad Jammu and Kashmir» (with its own constitution but under Pakistani sovereignty in matters of foreign and security policy) on the other side, and the «Northern Areas» administered directly by Pakistan (see map on page 62, and H. Kreutzmann: *Streit um Kashmir [Dispute over Kashmir]. In: Geographische Rundschau, Vol. 3, 2002, pages 6–61*).

For both countries, control of Kashmir means control of the upper reaches of the total of six large rivers of the Indus plain, and of the irrigation system developed there, for the most part during the British colonial era from the mid-19th century onwards. The region was one of the most important «granaries of British India», and prime land for the still ongoing cultivation of other significant cash crops such as cotton or sugar cane (see box).

Irrigated area of the Punjab		
Period	Dates	Irrigated area (1 000 ha)
Moghul period	to 1849	> 400
British-India	1849–1900	4 000
	1900–1947	10 900
Post-independence	1947–1960	14 000
Since foundation of WAPDA	from 1960	> 17 000

Source: Kreutzmann, in: *Geographische Rundschau*, 1998

## Political frontiers through irrigation networks

When India and Pakistan gained independence in the year 1947, the border was drawn between the two countries primarily according to the areas settled by Muslim and Hindu populations, without taking topographical criteria into account. Thus, not only the headwaters of these rivers but also important dams built by the British and control of the connected canal system were handed to India. The view prevailed among British lawyers and colonial officials that both states would uphold the water distribution practice of the colonial era. But directly after the expiry of a transition period, India blocked the course of the Ravi river at the Madhopur dam, and that of the Sutlej at the Ferozepur dam. In Pakistani territory, the canal networks branching off from these dams, which would normally have fed the irrigation system, were left without water at the worst possible time, the spring sowing season. The water supply for 5.5 percent of all Pakistan's farmland was affected, as was the water supply to major cities such as Lahore.

India, however, being the upper riparian, was able to conduct subsequent bilateral negotiations from a position of strength. In a provisional treaty of May 1948 it dictated to Pakistan the conditions, quantities of water and payments it would accept. Many in Pakistan now see it as a critical error to have agreed to this, since it gave India repeated opportunities to make new demands which contravene international standards on controlling the discharge rates of international rivers.

## Conflict resolution through external moderation

Following the failure of further negotiations and Pakistan's attempt to have the dispute resolved at the International Court of Justice, in 1951 both parties were finally brought back to the negotiating table, in a process moderated by the World Bank. One aim of this moderation



Confluence of the Indus and Gilgit rivers between the mountain ranges of the Himalayas, the Karakorum and the Hindukush.

Photo: Clemens

was to focus on technical-hydrological aspects in order to divert both countries from the politically and ideologically charged dispute over Kashmir and achieve a vital rapprochement on the existential issue of water. However, the prolonged negotiations on the Indus Waters Treaty of 1960 soon revealed water distribution to be a particularly contentious political issue. Under the articles of this treaty, which was brought into force with retrospective effect to 1 April 1960, India is granted exclusive use of the eastern tributaries of the Indus: the Ravi, Beas and Sutlej rivers. Pakistan, for its part, is given similar exclusive use of the water in the three western rivers: the Indus, Jhelum and Chenab. Further passages of the

treaty provide in detail for India's permitted level of use along the upper reaches of the western rivers, while Pakistan was guaranteed minimum quantities of water from the eastern rivers for a transitional period.

The basic features of this water distribution are in line with an earlier proposal by India, rejected at the time by Pakistan because it was claiming the natural right to all the headwaters of the Punjab. Moreover, to begin with, Pakistan was unwilling to give treaty recognition to changes to the status quo which Indian hydrological projects had brought about in the meantime. Pakistan's consent was finally gained for the Indus Basin Development Fund Agreement, coordinated by the

World Bank and passed at the same time as the Indus Waters Treaty was signed. With the help of newly established state institutions, in the years that followed Pakistan built two large impounding reservoirs, several headworks and seven connecting canals to channel the waters from the western rivers into the courses of the eastern rivers which had dried up after 1973. Along with international donor countries, India also undertook to part-finance these measures while Pakistan assumed responsibility for the remainder as its own share. This, however, laid the foundation for Pakistan's indebtedness, which persists to this day.

### Water commissioners instead of generals – the Indus Water Commission

The Permanent Indus Commission set up under the 1960 treaty and the annual working meetings of the Water Commissioners appointed by both countries were

## The Indus, its tributaries and alluvial plain

The Indus (Sanskrit: Sindhu) rises in the Tibetan Kailash range close to Lake Manasarovar, at an altitude of around 5,100 metres, and follows a course of some 3,180 km to flow south of Karachi into the Arabian Sea (see map on p. 62). Its watershed also takes in parts of China, Afghanistan and the Indian state of Jammu and Kashmir. The river survived the geologically recent elevation of the Himalaya and Karakorum complex in antecedent valleys, i.e. deep gorges which predated the rise of the mountain ranges. On passing into the lowland regions, the landscape changes dramatically. Here the Indus and its tributaries, which likewise originate in the mountains, become allogenuous rivers which flow oasis-like through the hot and arid lowlands. They have carved down into the sediment masses which they themselves deposited, forming raised and potentially fertile interfluvial plains on either side, known as «doabs» (do = two, ab = water).

These alluvial plains were the basis for the highly developed Indus civilization dating from the fourth millennium BC, known for the towns of Harappa on the Ravi river and Mohenjo Daro on the Indus.

The combination of meltwater from snow and glaciers in the high mountain system of the Himalayas and Karakorum, the largest glacial region in the world after the polar regions, and monsoon rains in summer make the runoff regime very uneven. Around 70 percent of total annual runoff occurs between June and September. Thus it is necessary to store the

summer runoff in order to produce the second winter crop, that is potentially feasible in the lowland climate and soil conditions, and for the spring sowing. Of the total water volumes in the Indus lowland, around 46 percent originates from the Indus itself, and 42 percent from the eastern tributaries, the Chenab, Jhelum, Sutlej, Beas and Ravi rivers. The remaining volumes (approx. 12 percent) feed in from the west, particularly through the Kabul river system. (Source: F. Scholz: *Bewässerung in Pakistan [Irrigation in Pakistan]. In: Erdkunde, Vol. 38, 1984, pp 216–226*).

The region through which the five eastern tributaries of the Indus flow is called the Punjab or land of five rivers. Under British rule in the mid-19th century, the Punjab, which was previously used predominantly as nomadic grazing land, was developed with headworks and an extensive network of linked canals into the largest interconnected irrigation system in the world. After the partitioning of British India, according to the treaty around 80 percent of the water volumes in the Indus system belonged to Pakistan and around 20 percent to India. For both countries, agriculture and irrigation are of prime economic importance: India's agricultural sector currently employs about 60 percent of the working population and generates a quarter of gross domestic product. In Pakistan, agriculture employs about 44 percent of working people and accounts for 26 percent of economic output (source: *Fischer Weltalmanach [World almanac] 2003*).

the most significant bases for a lasting dialogue on the technical issues of water distribution. In addition to these consultations, held alternately in India and in Pakistan, the treaty regulates the constant exchange of hydrological data and reciprocal notification of planned construction projects along the water-courses. An annual report to both governments on this aspect is compiled at the end of each treaty year on 31 March. Only in 2002 did India begin to charge for the provision of water data, although the treaty permitted this from the outset. Up to that point, the free exchange of data was a token of goodwill. Despite further wars and advances of troops in both countries, the consultations of the Indus Commission were never suspended and even took place in Delhi in the spring of 2002 during the «imminent war» phase (M. Paukert: *Kooperation versus Konfrontation [Cooperation versus confrontation]*. In: *Südasiens*, Vol. 2, 2002, pp 46–49).

Even if the terms of the Indus Waters Treaty governing the water use rights of both parties can only be viewed as a minimum consensus, the fact that it came into being at all, and the regular dialogue within the expert commission, must be adjudged a success in terms of conflict prevention (J. Scholz: *Bilaterale Konflikte um Wasser zwischen Indien und Pakistan [Bilateral conflicts over water between India and Pakistan]*. In: T. Hoffmann (Ed.): *Wasser in Asien*. Osnabrück, pp 247–252).

### Political dimensions of water use

Nevertheless, even the tried and tested international instrument of the Indus Water Commission is not without its frictions. On the Indian side, several projects are being pursued on the use of hydro-electric power and the expansion of irrigation, policies which Pakistan in turn understands as potential breaches of specific treaty terms. For example, this was true of a planned impoundment reservoir construction near Salal on the headwater



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of the Chenab in the year 1970 – a dispute which was not laid to rest until 1978. For several years, press reports have repeatedly covered Pakistan's criticism of the construction of the Baglihar hydro-electric power station with a capacity of 450 megawatts on the headstream of the Chenab. According to Indian sources it will be completed in the summer of 2004. Only the threat of external mediation – which is possible under the treaty – induced India to allow a Pakistani commission to visit the construction site. The argument particularly revolves around whether the impoundment dam erected here is intended for the – prohibited – storage of large quantities of water, or whether these facilities are solely intend-

ed to safeguard against seasonal disruptions to the operation of the stream-flow power plant. Even the negotiations in Islamabad in January 2004, directly after the first summit meeting between the Pakistani President Musharraf and the Indian Prime Minister Vajpayee, did not produce any concrete, official outcome for several years, although both negotiating parties underlined the constructive climate of the talks (*Delhi agrees to remove Islamabad's doubts* in <http://dawn.com>, 19.1.2004).

Ultimately the bilateral water issue remains a vital piece of the puzzle, as much for foreign policy strategies as for domestic policy, since the two are virtually inseparable. India is aware of Pakistan's

The Indus valley  
through the Pakistani  
Himalayas.

dependence on this river system as a national lifeline, and of its own topographically advantageous position. Increasingly, regional distribution issues and usage rights for both parties are setting the agenda of further meetings. Thus the government of the Indian state of Jammu and Kashmir is pressing for a share in the use of the headstreams, particularly the income from electricity generation. This calls into question not only the underlying basis of the Indus Waters Treaty but also the past dominance of the Indian state of Punjab over neighbouring regions. In Pakistan, the conflicts between upstream and downstream riparians over water use are mirrored in the relationship between the Sindh in the south and the Punjab in the north (see map).

On the grounds of the undue domination of Indus water distribution by the Punjab hitherto, other provinces vetoed further impoundment dams, and even Musharraf's military government was unable to resolve the conflict despite several attempts (J. Scholz: *Innenpolitische Konflikte um Wasser: das Beispiel Pakistan* [Domestic policy conflicts over water: the example of Pakistan]. In: T. Hoffmann (Ed.): *Wasser in Asien. Osnabrück*, pp 252–257; H. Kreuzmann: *Wasser aus Hochasien. Konflikte und Strategien der Ressourcennutzung im pakistanischen Punjab* [Water from High Asia. Conflicts and strategies for resource use in the Pakistani Punjab]. In: *Geographische Rundschau*, Vol. 7–8, 1998, pp 407–413; M. Paukert: *Die Wasserkrise versinkt im Paragraphendschungel* [The water crisis is drowning in red tape]. In: *Südasiens*, Vol. 2, 2001, pp 35–36).

In the often fraught domestic policy debate, many Pakistanis fear that despite nearly 44 years of positive experience with the Indus Waters Treaty, India might revoke the terms of the treaty and embark on a war over water. Much seems to fit in with this threatening scenario, including

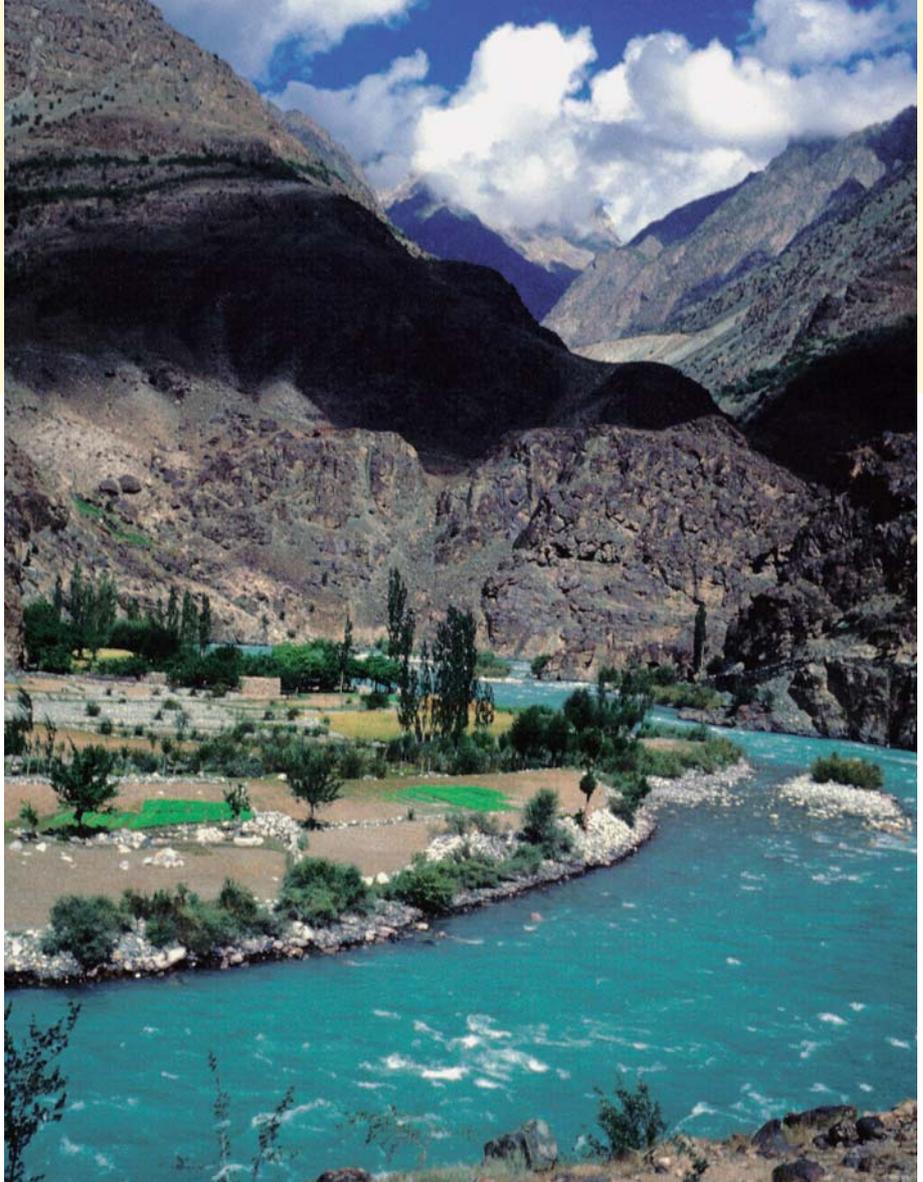


Photo: Clemens

the comments of Indian politicians who prioritize national water rights over bilateral agreements with Pakistan and international treaties. In Pakistan, Indian plans are also viewed very critically, plans which anticipate the support to Afghanistan in constructing an impoundment reservoir on the Kabul river upstream of the border crossing to Pakistan. This plan is seen as encirclement using the «weapon of water» (*Threat of Water War*. In: <http://dawn.com>, 22.12.2003).

Moreover, Pakistan takes a critical stance on India's repressive water policy towards

Bangladesh, which involves the diversion of river sections.

According to the assessment of political observers, pragmatism and willingness to compromise have so far prevailed on both sides, most of all thanks to the «professional» negotiations held regularly by technical experts in the Permanent Indus Water Commission, rather than by diplomats or politicians (M. Paukert, 2002). Furthermore, among all the Himalayan neighbours in the region, including Bangladesh, stronger regional cooperation is emerging – again with international support – for the purposes of trans-boundary flood management. In the framework of a programme initiated by the World Meteorological Organization, a joint hydrological information system is to be set up in the region.



Photo: Clemens

The Tarbela impoundment  
reservoir on the Indus in  
Pakistan.