**[The eastern rivers](https://www.dawn.com/news/1774527/the-eastern-rivers)**

[Ali Tauqeer Sheikh](https://www.dawn.com/authors/4987/ali-tauqeer-sheikh) Published September 7, 2023

CLIMATE change has made the South Asian monsoon evermore unpredictable. Heavy rains in the catchment areas of the Beas, Ravi and Sutlej rivers deep inside India have [flooded](https://www.dawn.com/news/1773207) Pakistan’s Punjab province. It has become vital for India and Pakistan to initiate a dialogue on the transboundary impact of climate change, starting with water management between the two countries.

The eastern rivers were awarded to India for its exclusive use under the Indus Waters Treaty (IWT). Their total water at the time amounted to about 33 million acre feet. Over the years, India has developed a complex web of dams, supported by link canals and barrages, to utilise its share almost entirely. They include Bhakra Dam on the Sutlej, the Pong and Pandoh dams on the Beas, Thein (Ranjitsagar) on the Ravi, the Beas-Sutlej Link, the Madhapur-Beas Link, and the Indira Gandhi Canal to Rajasthan. They collectively divert about 95 per cent of water flows — all in accordance with the treaty.

India has additionally planned three projects to bring new areas under irrigation, instead of leaving the balance of about 2MAF for environmental flows. The IWT, though, had not envisioned this, and neither has Pakistan raised it as an option to test the waters. Pakistan has not raised any concerns over India’s plans to divert the remaining water of its eastern rivers.

In doing so, while both countries are true to the letter of the treaty, they are violative of its spirit: it was not the treaty’s intent to disturb the hydrology, ecology, economy, culture or folklore of the birthplace of the Indus Valley Civilisation that probably originated with the city of Harappa and flourished, according to some experts, between 3,500 and 2,700 BCE.

Floods in the eastern rivers provide a chance to leapfrog towards flood-resilient infrastructure.

The construction of the Bhakra and Beas dams was, however, conceived decades before the two countries signed the water distribution treaty in 1960. Bhakra Dam was first conceived in 1916 and the preliminary work started in 1946, a year before independence. It was completed in 1963, within two years of the signing of the IWT. This dam has helped India utilise almost all of its share of the eastern rivers. The Pong and Pandoh dams were conceived in 1926. The second phase of construction began in 1961 and was completed in 1974.

As these projects were completed, the flow of waters to Pakistan decreased to a trickle. In the Sutlej at Suleimanki, the peak of 598,872 cusecs per second in 1955 was reduced to a mere 17,462 cusecs in 2022. In the Ravi, at Ravi Syphon, the flows shrank from a peak of 920,000 to just 63,720 cusecs during the same period. Except for the high floods of 1988, the upstream infrastructure has steadily become watertight, not allowing any downstream leakage.

This has posed monumental challenges to communities living along the Ravi and Sutlej rivers in Pakistan: the recharging of groundwater and flushing of stagnant and polluted waters of dying rivers no longer happens annually. The sedimentation and nutrients that periodic flooding brought to their fields has ceased. Farmers keep up the yield with costly inputs that further degrade the quality of surface water and groundwater.

For illustrative purposes, the Ravi’s high floods at Jassar in 1955 crossed 680,000 cusecs, compared to only 71,010 cusecs in 2023. In Sutlej, at Suleimanki, it crossed 598,872 cusecs, compared to 191,053 cusecs during the same period. In other words, the present flooding is nothing when compared to the floods of 1955, in spite of the multiple challenges they posed.

Several conclusions can be drawn from these trends: one, the construction of infrastructure upstream by India, has reduced for Pakistan the risks of frequent floods. Allowances for human error and management practices, however, need to be agreed on with India to mitigate Pakistan’s risks. Two, intense monsoon can still render the existing infrastructure inadequate and unsafe. Pakistan’s risks will compound if present thresholds become more frequent.

Three, as India-Pakistan improve their early warning systems and bilateral communication mechanisms, Pakistan will need to undertake a strategic resilience assessment of its infrastructure. A relatively small number of families were recently evacuated to safety. Is it possible to permanently move the settlers in riverbeds to safer locations? In Sindh, this is presently being done under a World Bank project, by granting land ownership documents and extending financial support for flood-proof housing. The present floods in the eastern rivers provide an important turning point to leapfrog towards flood-resilient communities and infrastructure.

Both the Bhakra and Beas dams are located in Himachal Pradesh, bordering Indian Punjab. The changes in precipitation trends there are, therefore, of paramount interest to Pakistan. According to the Indian Institute of Meteorology, the monsoon season is getting longer there, stretching from June to September, giving 10-15pc more rainfall. Further, because of heat spikes, glacial melt is faster and now contributes between 19 to 24pc of the river flows. This is particularly true for the Sutlej-Beas basin that originates in the western Himalayan region in the Tibetan plateau.

These climatic changes have several implications for the duration and severity of the flooding season in Pakistan as well as for cropping patterns and human settlements that have sprung up in the riverbeds.

The changing climate also has implications for [Indo-Pakistan water relations](https://www.dawn.com/news/1678182). Scientific knowledge of the environment, ecosystems, hydrology and social geography was limited when the IWT was signed. In fact, except for devising a water distribution formula and proposing mechanisms to resolve differences, the treaty is silent on such recent scientific challenges as climate change, environment, ecosystems, or even ecology, glacial melt and changing rainfall patterns. They were taken as constants, assuming that no significant changes would occur to alter them. It was also assumed that the water quantities and water demands would remain unchanged.

Yet, the treaty is considered to be one of the most successful water-sharing mechanisms in the world. In fact, it has emerged as a global common good that needs systematic global endeavours to protect it from emerging climatic challenges. Article 7 deals with future cooperation regarding the Indus river system. Pakistan needs to request an extraordinary meeting to discuss climate change under Article 7, as it has the inbuilt flexibility and provisions to address emerging issues.

*The writer is an expert on climate change and development.*

*Published in Dawn, September 7th, 2023*