

The two Punjabs: water security, human rights, and climate change in borderlands

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The concept of water security (for definitions, see [here](#) and [here](#)) has been examined on different scales: from international, regional, national to sub-national. There are also efforts to recognise and address the inter-scalar dimensions of water security from the international level to the sub-national level within one country. A missing piece of the puzzle is a consideration of water security at the sub-national level in two neighbouring countries with several shared characteristics.

India's independence from British rule in 1947 came at the cost of its partition into two countries - India and Pakistan. Further, the province of Punjab was partitioned into two Punjabs - East Punjab in India and West Punjab in Pakistan. An international border divides the two Punjabs, but they remain united by history, geography, ecology and the Indus River Basin. Punjab literally means the "land of five rivers" (Persian: panj = five; āb = water)!



The fertile land of the two Punjabs has earned them the title of "food bowl" or "breadbasket" that contributes around two-thirds of the annual food grain production in their countries.

Over the years, an over-reliance on surface water has shifted towards extensive groundwater extraction to meet the increasing demand for irrigation and other needs such as drinking water. Ironically, the over-exploitation and contamination of groundwater have prompted the government to revert to surface water as the main source of water supply.

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However, surface water and groundwater are interconnected parts of the hydrological cycle, and this should be reflected in governance strategies to ensure water security. Moreover, having enough water for different purposes is not sufficient. The two Punjabs face issues of poor water quality,



pollution, and groundwater contamination. An example of a shared water pollution source is the Hudiyara drain, which carries more effluents than stormwater and crosses from India's Punjab into Pakistan's Punjab, where it joins the river Ravi, which also receives effluents from domestic sources.

The governments of the State of Punjab (in India) and the Punjab province (in Pakistan) have enacted laws and policies to regulate water availability for various uses and users, ensuring water security to some degree.

Examples include the Punjab Water Resources (Management and Regulation) Act 2020 and the Punjab Preservation of Subsoil Water Act 2009 (in Indian Punjab) and the Punjab Water Act 2019 along with the

Punjab Irrigation, Drainage and Rivers Act 2023 (in Pakistani Punjab). These laws may also promote the realisation of human rights to life, health, water, food, and livelihood, and uphold water justice.

However, a broader understanding of water security must also integrate human rights as well as the rights of non-human beings. The recognition of the rights of Lake Sukhna in Chandigarh, the capital of Indian Punjab, marks a step in this direction.

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The two Punjabs share the adverse impacts of climate change. These include the effect on river flow of

unprecedented glacier melt in the Third Pole. More recently, in August 2025, heavy monsoon rains led to the release of dam water, swollen rivers and widespread flooding on both sides of the border. The results included submerged villages and agricultural land, devastating losses of life, livelihood and property and displacement, all of which undermine human rights.

Such sudden events as well as slow-onset climate events are likely to exacerbate water insecurity and water-related conflicts over the availability of water for different uses, both within and between the two countries.

Notably, India Punjab is embroiled in inter-state water disputes with neighbouring states such as Haryana and Rajasthan and Pakistan Punjab faces inter-provincial water sharing issues with Sindh and Khyber Pakhtunkhwa.

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The Indus Waters Treaty 1960 (the Treaty), brokered by the World Bank, outlines the bilateral water sharing

agreement between India and Pakistan. The upper riparian country, India, has exclusive control over the three eastern rivers (Beas, Ravi, and Sutlej), while the lower riparian country, Pakistan, manages the three western rivers (Chenab, Indus, and Jhelum). All these rivers originate in India and flow into Pakistan, with the three eastern rivers passing through Indian Punjab into Pakistani Punjab.

To facilitate cooperation, the Treaty mandates the exchange of hydrological data (such as flood warnings, river flow, and glacier melt) and the creation of the Permanent Indus Commission to oversee its implementation.

As a product of its time, the Treaty mainly focuses on the utilisation or uses of water in the aforementioned rivers, with less emphasis on water quality and pollution.

For example, Article IV, paragraph 10 merely states the “intention” of the parties “to prevent, as far as practicable, undue pollution of the waters of the Rivers which might affect adversely uses similar in nature to those to which the waters were put.” Furthermore, the Treaty remains silent on groundwater and ecology.

The Treaty was in the news in 2025, on the eve of its 65th anniversary, when India announced its immediate suspension following the Pahalgam terror attack in the State of Jammu & Kashmir.

In the aftermath of this decision, India ceased fulfilling its treaty obligations, including sharing hydrological data. Much has been written about India’s decision and its implications for the Treaty and the future of regional water security amidst climate-induced threats (see [here](#) and [here](#)).

The story of the two Punjabs highlights the need for a cooperative approach by the two countries within the Treaty framework for gradual change, as well as beyond this framework for transformative change. Immediate action points include cooperation on flood

forecasting, river basin management, disaster response, and climate adaptation.

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Both India and Pakistan have rightly made the case for climate justice “for” the countries at the international level.

It is also important to ensure justice “in” the two countries - in terms of the link between water justice, climate justice, and human rights - especially where the experience of water security, the enjoyment of rights, and the threats posed by the adverse impacts of climate change are shared at the sub-national level, as in the case of the two Punjabs.



(The views expressed in the article are those of the author and do not reflect in any way his affiliation to any organisation or institution)



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