

Transboundary Water Resource Management - Indus Basin and Beyond

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- The presentation will focus on the nature of transboundary conflicts for the key players in the Indus Basin, and discuss the underlying **determinants** of such conflicts.
- The analysis points to the need for **making water an instrument of cooperation and unity rather than conflict.**

Countries sharing the Indus System

Countries sharing river systems are 'hydrologically dependent' on each other....

River basin	Total area	Area division (%)	
Indus	1,138,800	Pakistan	52.48
		India	33.51
		China	6.69
		Afghanistan	6.33
		Chinese control, claimed by India	0.84
		India control, claimed by China	0.14
		Nepal	0.00

Human Consequences of this 'hydrological interdependence'

- Transboundary water management has profound impacts on human development. The way one country uses water transmits effects to other countries.
- For instance, the retention of water upstream in India for energy generation restricts flows downstream for Pakistani farmers.
- Apart from affecting the quantity of water that downstream countries receive, upstream countries can also affect its quality. Industrial and human pollution is transmitted through rivers to other countries as seen in the case of the Ganges River that flows from India to Bangladesh.
- The timing of water flows is another transboundary issue for human development. Secure livelihoods depend on a predictable supply of water. The use of water in one country can affect the timing of delivery for downstream users, even if the volume of water is unchanged. (UNDP 2006)

Indus Basin - Key Players

- India-Pakistan
- Afghanistan-Pakistan
- China – Why it needs to be factored into the region's water equation?

India-Pakistan

- The two largest economies of the South Asian region share six rivers—Indus, Chenab, Jhelum, Sutlej, Beas and Ravi
- The Indus Water Treaty of 1960 sets out the legal framework for the sharing of these rivers
- The current water discourse between India and Pakistan is being shaped by the increased demand for water in both countries coupled with its inefficient and wasteful use and the growing need for hydropower development for economic growth.
- Increased *water stress (water availability per capita is less than 1000 cubic meters)* in the two countries, which is further reinforced and exacerbated by climate change, has contributed to escalating tensions on the issue of water.

India-Pakistan: Indus Water Treaty

- The Indus Water Treaty has created a legal framework for governing transboundary water resources between India and Pakistan
- It is largely regarded as a successful framework for cooperation on shared water resources, having survived three wars and other hostilities between the two neighbours.
- However, several important areas of concern fall outside the ambit of the Treaty and are increasingly becoming a source of hydro conflict between the two riparian's.
- The major points of contention include:
 - a) numerous hydropower projects planned by India on western rivers and Pakistan's apprehensions about the control potential of these dams;
 - b) technical specification of Indian hydropower projects especially the legitimacy of the storage component;
 - c) data sharing and exchange of information on the use of shared rivers.

Afghanistan-Pakistan

- Afghanistan and Pakistan share the Kabul River that flows in eastern Afghanistan and North-western Pakistan.
- The Kabul River Basin
 - most important river basin representing approximately 26 per cent of the available water resources in Afghanistan
 - containing almost half of the country's urban population.
 - crucial to the livelihoods of the millions of people sharing its water resources for drinking water, sanitation, agriculture, power generation, and industry.
- (IUCN 2010).

Afghanistan-Pakistan

- The most important issue driving hydro-politics between Pakistan and Afghanistan is the fact that there is **no basin treaty with regards to water sharing between the two countries.**
- **Rapid and persistent decline recorded in the flow of the Kabul River at Attock in Pakistan.** This could be the result of a myriad of factors ranging from climate variability, persistent droughts or the enhanced use of water by Afghanistan.

Afghanistan-Pakistan

- Water is a critical issue not only for Afghanistan but also for its riparian States. **Pakistan gets about 17 per cent water supply from the Kabul River when Indus flows decline in winter** and its recent energy crisis has served to further its dependence on Afghan water.
- The need for an effective water sharing arrangement between Afghanistan and Pakistan is vital for any positive development in transboundary water management in the region.

China-its importance for the Indus Basin Waters

- China is the **largest source of transboundary river flows to much of South Asia.**
- More importantly, China's plans to harness the immense water resources of the Tibet region are crucial to the hydro-politics of the South Asian region.
- According to the IPCC, the region's warming climate is already causing glaciers to withdraw almost one metre per annum, portending substantial impacts on future water flows. . (IPCC 2007)
- **The waters of Tibet may prove to be one of its most important resources in the long run—for China and for much of Southern Asia.** Figuring out how to sustainably manage that water will be a key to reducing political conflicts and tensions in the region

Hydrodiplomacy in the Indus Basin in particular and across South Asia has been acrimonious at best.

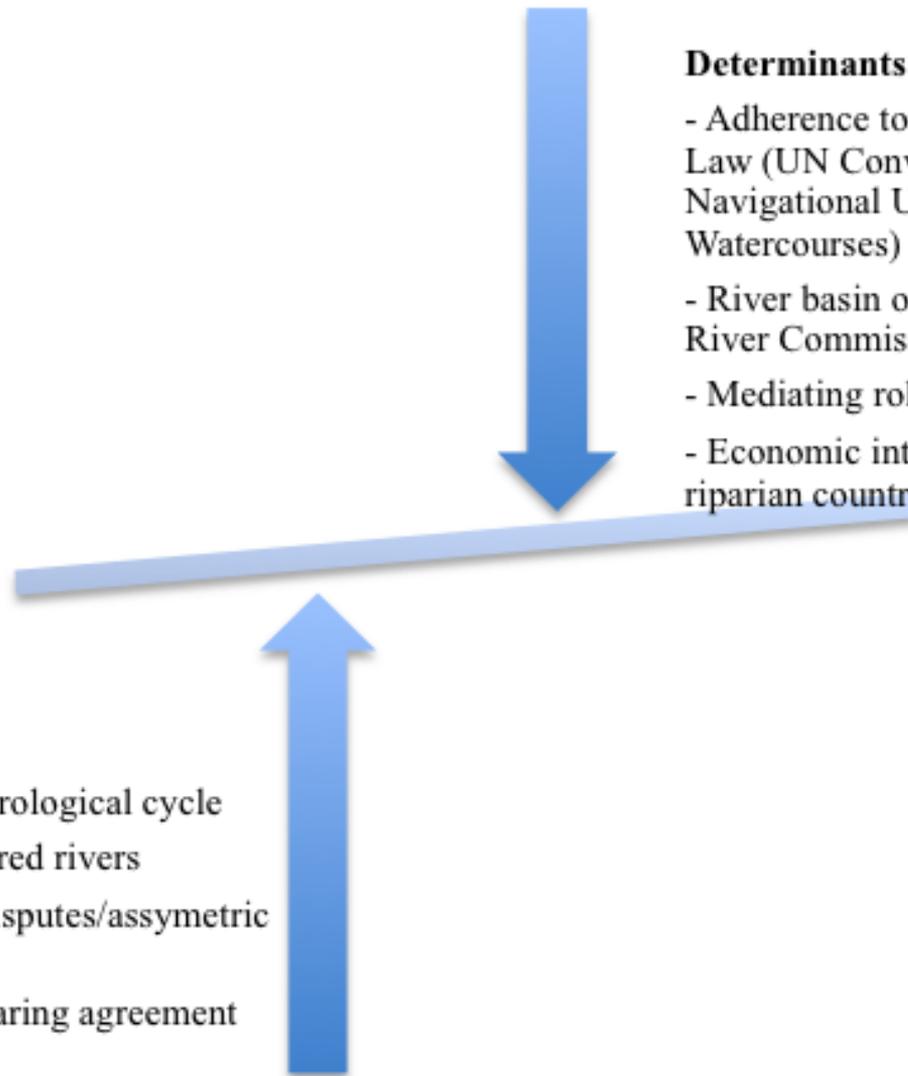
Understanding the **determinants of the region's hydropolitics** is essential before one can talk about bilateral or multilateral solutions for resolving them

Determinants of conflict

- Population growth
- Water scarcity
- Environmental degradation
- Climate change affecting hydrological cycle
- Hydroelectric projects on shared rivers
- Political mistrust/territorial disputes/asymmetric power relationships
- Lack of an effective water sharing agreement between riparian countries
- Securitization of water discourse
- Classification of hydrological information

Determinants of cooperation

- Adherence to principles of International Law (UN Convention on Non-Navigational Use of International Watercourses)
- River basin organizations eg. Indus River Commission
- Mediating role of IFIs (eg. World Bank)
- Economic interdependence between riparian countries



Determinants of Conflict

Some of them are more obvious...

- -Population growth
- - Water scarcity
- - Environmental degradation
- - Climate change affecting hydrological cycle
- - Hydroelectric projects on shared rivers

While others hardly surface as key issues:

- - Political mistrust/territorial disputes/assymmetric power relationships
- - Lack of an effective water sharing agreement between riparian countries
- - Securitization of water discourse
- - Classification of hydrological information

Determinants of Conflict: Political Economy Issues

Political issues between riparian states often serve to make even the smallest of water issues intractable.

a) **Territorial disputes** – In the case of India and Pakistan, the Kashmir issue cannot be extricated from the water issue. Some experts suggest that state level cooperation on the waters of the Indus has often faced a deadlock largely due to a lack of progress on the Kashmir issue

Determinants of Conflict: Political Economy Issues

b) **Assymmetric power relationships**

Most transboundary water resources of the world are dominated by regional economically, militarily or politically powerful countries that have a significant existing use of the water resources or intend to unilaterally develop the resources in their country at the expense of other less developed riparian countries. In many cases, these powerful countries do not actively engage in transboundary initiatives, tend to postpone meaningful bilateral and multilateral engagement, use soft power to subvert the terms of agreements with less powerful riparians.

Assymmetric power relationships have served to preclude effective transboundary water cooperation. In the Indus and GBM basins India's economic and military position with respect to other countries has created less favourable conditions for transboundary water cooperation.

In the Indus Basin, several Indian planned projects on shared waters have been unilaterally initiated fueling water issues with neighbouring Pakistan.

Determinants of Conflict: Political Economy Issues

c) **Securitization of water**

Control over water resources is increasingly regarded as important for national security by all riparian countries.

In the case of India and Pakistan's shared transboundary waters, a number of analysts have even gone as far as to say that the dispute over Kashmir is really about the control of the headworks of the Indus.

India's strategic control over the Indus headworks as the upper riparian leads to apprehensions downstream in Pakistan that the former may withhold water for an extended period, especially during the dry season.

Planned Indian hydroelectric projects such as the Baglihar and Kishenganga in Kashmir contribute towards further emphasizing water as a national security issue for Pakistan.

Determinants of Conflict: Political Economy Issues

d) **lack of information sharing**

- South Asia does not have a regional mechanism for sharing hydrological data between riparian countries. What is worse, data sharing arrangements between riparians that have been incorporated in the few treaties that govern water use in the region are either ambiguous or have hardly been implemented.
- With Pakistan and India, a key issue that complicates transboundary water resource management is the lack of timely sharing of information on planned hydropower projects upstream in India.
- The Indus Water Treaty only incorporates the provision of data exchange six months before the actual construction of the dam. The countries are not liable to exchange information during the planning stage. This increases Pakistan's apprehensions and further reinforces water as a national security issue.

Institutional Determinants of Conflict

Presence or absence of institutions has proven to be one of the most important factors influencing co-riparian water relations.

Historical record the world over indicates an increased likelihood of conflict in basins lacking institutions that can accommodate changing political, hydrologic, or other basin conditions.

Where international water institutions exist, however, relations among riparian States are generally more cooperative than in basins without treaties or other cooperative management mechanisms.

Presence/Absence of Water sharing agreements in the Indus Basin?

- The Indus Basin Treaty is the only treaty that governs water sharing in the Indus Basin.
- There is no water treaty between Pakistan and Afghanistan on the Kabul River, even though Pakistan draws as much as 17 per cent of its water supplies from the Kabul River.
- None of the South Asian countries have a water sharing agreement with China, where the source of all major rivers in South Asia lies.
- Riparian countries on the Indus have not subscribed to principles of international water law. India and Pakistan abstained from the 1997 UN Convention on the Law of the Non-Navigational Uses of International Watercourses (UNCIW).

Efficacy of The Indus Water Treaty

The Indus Water Treaty does not include **any clause regarding the usage of groundwater resources.**

The Indus Water Treaty **does not address the effects of climate change on water availability in the Indus Basin.**

The Treaty also **does not provide conclusive solutions for the issue of water pollution.** In Article IV, Clause 10 of the Treaty, it does refer to the intent of each riparian to conserve quality of waters of the Indus Basin, but does not provide for appropriate monitoring and surveillance mechanisms to ensure this.

Need to go beyond the Indus Water Treaty?

- *Can India and Pakistan move forward on the issue of transboundary water management using the existing framework of the Indus Water Treaty, or do the two countries need to go beyond the Treaty's provisions?*
- **The Indus Water Treaty may not be as static as some critics contend.** Article VII of the Treaty does provide a clause for 'future cooperation' between the two countries for optimizing the potential of the Indus River system. However, very little attention has been paid to areas of cooperation that could potentially fall in the ambit of Article VII.
- The lack of cooperation is in part due to the **trust deficit** between the two countries. Experts suggest that advance information to the lower riparian (Pakistan) about planned interventions such as dams and barrages, and exchange of real time hydrological data can bridge these issues. Article VI of the Indus Water Treaty incorporates the exchange of hydrological data between the two parties.
- Thus, given that the Indus Water Treaty clearly spells out the details on information exchange, making it incumbent upon both parties to share any information available, makes it a perfect platform to take the issue of cooperation forward.

Need to go beyond the Indus Water Treaty?

- Another area where **collaborative work should be urgently undertaken is on groundwater aquifers**, especially near the border areas of Pakistan and India.
- The Indus Water Treaty only considers sharing of surface water discharge from the rivers.
- A study conducted by IUCN using NASA's Gravity Recovery and Climate Experiment, found that the aquifers of Pakistan are going to be affected with the disproportionate abstraction of groundwater in India. It concludes that "the issue of transboundary groundwater with India has to be addressed and an addendum has to be negotiated between the basin States for inclusion in the Indus Water Treaty."
- In this regard, Pakistan and India can learn from the Israel-Jordan Treaty of 1994 on amicable sharing of both ground and surface transboundary water (IUCN 2010).

Conclusion: Architecture of Transboundary Cooperation on the Indus Basin and Beyond...

- Most countries in South Asia are at the crossroads of a water resources issue.
- The management of shared river systems needs to go beyond the sphere of national sovereignty and even bilateralism.
- Addressing the water issue requires a regional/multilateral perspective.

Key Questions:

What would be the ingredients and architecture of such an institutional setup?

What challenges would it entail?

Ingredients...

- A region-wide institution for shared water resources should have mechanisms and processes for
 - a) exchange of data and information to improve the current trust deficit between countries;
 - b) help the region forge more robust water sharing treaties especially with regards to climate change and hydrological variability particularly in the case of Afghanistan and many rivers in Bangladesh where there is an absence of any water sharing agreement;
 - c) be able to address issues of pollution and degradation especially in the context of arsenic in aquifers in India and Bangladesh, promote better flood management,
 - d) and be able to manage contentious hydroelectric projects on the shared watercourses.

Architecture...

An effective regional institution must involve all stakeholders in the Indus and GBM basins, including Afghanistan and China, both of which have no water sharing treaty with any of the other South Asian countries.

Potential Challenges?

A potential challenge in carving out a transboundary institutional framework **to address the region's requirement is the power asymmetry that persists between the countries.**

A regional power like India, which also has an upstream riparian position has considerable leverage to implement projects, sometimes unilaterally, which may become flashpoints for regional conflict.

To be able to be effective for transboundary water management, an institutional framework must address the power asymmetry in the region. **The inclusion of China** will not only ensure a more holistic basin wide approach, and may also mitigate power asymmetry issues to some extent.

Conclusion

- Political economy factors, mistrust between countries and power asymmetry issues have played a major role in precluding the development of an effective regional framework for holistic basin wide management for the Indus Basin and beyond in South Asia.
- **India's position** both as an upper riparian and a lower riparian, will be at the epicentre of carving out the new regional institutional framework for transboundary water management and hydro-diplomacy for basins in South Asia.

Conclusion

- For the benefits of transboundary cooperation to accrue, it must go hand in hand with **overhauling internal water management** within each country.
- Even if increased transboundary cooperation results in a better allocation of water for a downstream riparian, the extra water could just go to waste if internal water governance and infrastructure are faulty.
- Need a change in perspective from '*Dividing the Resource*' towards '*Sharing the Resource*'.