Transboundary Water Treaties in South Asia: Exploring Climate Change and Climate Intervention Challenges

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What are we looking at?

https://rds.icimod.org/home/datadetail?metadataid=3924

Hindu Kush Karakoram Himalaya Region

https://www.grida.no/resources/6699

What makes South Asia so vulnerable to climate change?

Extreme weather events in the world's most populous and one of the poorest sub regions susceptible to food insecurity, displacement and diseases.

https://www.aljazeera.com/news/2023/7/8/what-makes-south-asia-so-vulnerable-to-climate-change

The New York Times

India and Pakistan's Air Battle Is Over. Their Water War Has Begun.

Though the two neighbors declared a cease-fire this month, a crucial water-sharing treaty remains at risk.

China Builds Mega Dam to Gain Leverage Over South Asia

China is building the world's biggest dam on the Brahmaputra River to boost its power and sway in South Asia. The move has set off alarms in India and Bangladesh over water, security and sovereignty. India needs to lead a regional response before water becomes a weapon.

BY NAFEES AHMAD

The lifeline

Key Claim

Modernizing South Asia's transboundary regimes with adaptive, equity-centered and conflict-abating tools and processes is necessary to:

1. Manage climate change-induced water governance risks,
2. Develop a consensus on approaches to address global climate recalcitrance
3. Identify and manage collective SRM-related hydrological risks in South Asia while ensuring that the potential for conflict is mitigated.

From the Mountains to the Delta

- **HKH cryosphere:** Glacier mass balance trends; contrasting signals in Karakoram vs central Himalaya; implications for early/late-season flows.
- **Monsoon dynamics:** Potential dampening of warming-driven increases under some SRM scenarios vs altered spatial distribution; significance for allocation regimes.
- **Basin heterogeneity:** Glacier-dominated Indus vs monsoon-dominated Ganges–Brahmaputra–Meghna (GBM); compound risks (glacial lake outbursts, sediment, floods).
- **Sea Water Inundation**: Reduced flows resulting in inundation impacting livelihoods across South Asian Deltas
- **Human Dimensions:** Social inequities, Food insecurity, Water insecurity, Economic insecurity, Child stunting

South Asian Water Dynamics in a Nutshell

- India-Pakistan: IWT (1960); 2025 suspension post-attack; dams (Baglihar, Kishanganga)
- China-India: No treaty; MoUs expired (2023); Brahmaputra mega-dam (2025)
- Bangladesh-India: Ganges Treaty (1996, expires 2026); Farakka/Teesta disputes
- Nepal-India: Kosi (1954), Gandak (1959), Mahakali (1996); uneven benefits
- Pakistan-Afghanistan: No treaty; Afghan dams (Shahtoot) cut flows 16%
- Pakistan-Afghanistan-Iran: Helmand Treaty (1973); drought tensions

Basin Dynamics

Power: Upstream hegemons (India/China) dominate

Institutions: Bilateral treaties fragile (e.g., IWT in limbo)

Issues: Dams, data gaps, climate amps floods/droughts

Tensions: 2025 IWT ruling voids suspension; China dam fears; Helmand border violence

SRM and Transboundary Water Governance

- **Hydrological relevance:** Monsoon/precipitation distribution and variability could shift; inter-annual predictability and extremes matter for allocations; asymmetric basin sensitivities could reshape perceptions of gains/losses.
- **Governance questions:** What notification/consultation norms apply if SRM experiments or modeled effects have basin relevance? Who monitors signals? How to incorporate SRM uncertainty into treaty design without over-claiming precision?

Thematic Analysis

Zero Sum Game

- Water as zero-sum: Allocation battles pit upstream vs. downstream, like India's IWT suspension vs. Pakistan's vulnerabilities.
- SRM parallel: Unilateral deployment (e.g., SAI over monsoons) creates hydrological "winners" (stabilized flows) and "losers" (droughts elsewhere), echoing dam brinkmanship.
- Connection: Both weaponize shared systems—SRM's precipitation shifts could intensify transboundary conflicts, per 2025 social cost analyses. In South Asia, this risks "climate warfare" amid 2025 trust deficits

Colonial Legacy

- Water's colonial echo: British canals centralized power, marginalizing locals; today, upstream hegemons (e.g., China on Brahmaputra) perpetuate dominance.
- SRM link: Global North-led research (U.S./EU funding) risks "neo-colonial" imposition on South Asia's monsoons, potentially sidelining vulnerable voices.
- Intersections: Just as colonial canals prioritized revenue over equity, SRM could marginalize vulnerable riparian communities, exacerbating transboundary tensions in an era of climate disruption.

Data Concerns

- Data asymmetries in South Asian water governance—e.g., guarded hydrological information by upstream states like China and India—undermine trust and equitable decision-making, limiting watershed approaches.
- SRM parallel: Strategic withholding of SRM research data or experiment outcomes could exacerbate uncertainties, such as monsoon alterations affecting transboundary flows, akin to data opacity in river management
- Unified challenges: Both involve contested geographies—rivers crossing borders, SRM transcending sovereignty—potentially used as bargaining tools in negotiations, with cascading effects on food security and hazards.

Equity and Access

- Water management in South Asia prioritizes technical allocation over equitable access, often sidelining vulnerable communities and ecological needs, as seen in downstream impacts from upstream developments.
- SRM interconnection: SRM's uneven regional effects, e.g., altered rainfall patterns disproportionately affecting rain-fed agriculture in lower riparians—raise global equity concerns, amplifying disparities in food security and adaptation capacity.
- Broader nexus: Deployment decisions mirror water hegemonies, where powerful actors decide interventions without input from those most impacted, necessitating justice-oriented frameworks.

Static Policy Thinking

- Water governance rigidity: Treaties frozen in time, ignoring climate risks and social justice concerns—e.g., IWT's 2025 strains.
- SRM synergy: Uncertainties (termination shock, regional shifts) expose policy gaps.
- Integrated view: Climate-water interactions demand anticipatory governance; SRM's deployment could disrupt historical hydrological assumptions, intensifying competition unless policies evolve.

Recommendations

1. Multi-Level Hubs: Governments + NGOs + locals co-design
2. Trust Builders: Start with shared data apps for floods
3. Equity Audits: Mandate vulnerable voices in treaties/SRM policies
4. Future-Proofing: Precautionary scenarios; adaptive "living treaties"
5. Mediation Labs: Joint AI-simulated conflict resolution
6. Integrated Dashboards: Real-time climate-water-SRM monitoring

7. Regional Charter: SAARC-led, with SRM safeguards
8. SRM Alignment: Basin-specific impact evals; prioritize adaptation
9. Accountability Nets: Ombudsmen + global oversight
10. Creative Diplomacy: Art/music exchanges on shared waters

Conclusion

- South Asia faces escalating water conflicts from climate change & power dynamics
- SRM offers cooling but risks uneven hydrological shifts & geopolitical tensions
- Current governance: Bilateral, static; needs inclusive, adaptive frameworks
- Path Forward: Equity-focused cooperation to prevent "climate warfare"
- Call to Action: Integrate SRM into transboundary policies for shared resilience

Feedback Sought

- Top **two treaty updates/ revisions** that would most reduce conflict risk under volatility.
- A **low-regret climate/SRM governance hook** you would endorse (if any), and where to place it (treaty annex vs protocol vs RBO).
- The largest **justice/exposure mismatch** in basin shifts under climate change, and any missing safeguards.
- **One dataset** that would most improve adaptive sharing and verification in basins.
- **Feasibility:** Which pilots are implementable within 12–24 months in your context?