



Consultative Workshop
**Upper and Lower Riparian's
Issues and Options**

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Selected Topics

- Indus Water Treaty and Managing Shared Water Resources for Benefit of Basin States
- Beyond Indus Water Treaty: Groundwater and Environmental Management
- Towards Kabul Water Treaty: Managing Shared Water Resources
- Pakistan Water Apportionment Accord for Resolving Inter-provincial Water Conflicts

Policy Brief #1

Indus Water Treaty and Managing Shared Water Resources for Benefit of Basin States

Issue: Indus Water Treaty under Strain

- Treaty and conflict resolution– over 30 years

- Increased water stress since 90s

- Treaty difficult to survive in next decade

- No exit clause in Treaty

- Treaty silent for sharing water shortages by India – dry years and Rabi season

- Strategy for sharing water shortages

Issue: Water Entitlements of India and Interpretation of Treaty

- ‰ Treaty permitted India for storages on Western Rivers of 1.54, 1.98 and 0.93 km³ for general, power and flood – total of 4.45 km³ (3.6 MAF)
- ‰ Annexure D and E illustrate utilization of waters by India – while designing new schemes to ensure agreement of Pakistan
- ‰ Conflict arises on interpretation or violation of provisions of Treaty
- ‰ India's entitlement and sharing shortages

Issue: Water Scarcity and Emerging Conflicts

- Climatic variability and change
- Rising water demand and environmental issues
- Impacts of Water Development by India on Flows

Options

- **Building Areas of Cooperation**

- ™ Joint watershed management

- ™ Joint hydrologic studies

- ™ Comprehensive planning to optimize water use

- ™ Resolve conflicts through cooperative programmes

- ™ Manage water as a shared resource/commodity

- ™ **Support Paradigm Shift in Mindset of People of Basin States**

- ™ **Managing water for benefit of people of basin states**

Options

- **‰ Restructure and Strengthen Pakistan's Chapter of Indus Water Commission**

- ™ High performance institution

- ™ Developing capacity in diplomacy, conflict resolution, entitlements, legal and technical issues

- **‰ Establish Tripartite Water Forum**

- ™ Basin states and a developed nte vsin

Way Forward

Who will be the Champions of building a booming future for the indigent population of the basin states and make it happen for the benefit of Pakistanis and Indians – on the Indus?

Policy Brief #2

Beyond Indus Water Treaty: Groundwater and Environmental Management

Issues

‰ Depletion of Aquifers in Northern India – Evidence generated under NASA study

- ™ Extended effect on aquifers of Pakistan

- ™ Rising demand of groundwater abstractions

‰ Entry of Effluents to Western Rivers

- ™ Extensive development of chemical agriculture in India

- ™ Domestic effluents - rapid urbanization

- ™ Drainage water flowing to Pakistan having higher concentration of chemicals – environmental impacts

- ™ Mortality of livestock reported

Issues

‰ Growing Demand of Surface Water to Recharge Aquifers of Indus-India

™ Recharging or supplementing groundwater

™ Diversions to support shortages of water

‰ Seepage Losses in Lakes and Reservoirs

™ Large heads of water in reservoirs induce recharge to groundwater and reduce flow of water to Indus-Pakistan

™ True for hydro-projects – Wular Lake, Kishenganga, Salal and Baglihar dam projects

Options

% Dialogues for Transboundary Aquifer's Management

™ Sharing information – aquifer abstraction, policies encouraging over-abstraction, efficient use of surface water under *Warabandi*

™ Developing capacity for use of remotely sensed data

% Managing Groundwater as a Resource as well as Trust

™ Joint organisation to identify short- and long-term supply capacity of basin and its integrated development

™ Setting up of infrastructure and coordinating activities

™ Groundwater as a trust - a demand based system

™ Larger impacts on productivity of irrigated agriculture

Options

Support Paradigm Shift in Mindset of People

Support paradigm shift in mindset of people

Settlement in letter and spirit

Trans-boundary water and aquifers as an opportunity to manage water while developing future plans

Monitoring of Hydro-power Projects on Western Rivers

Monitor river flows and seepage losses

Water apportionment to India on western rivers in terms of storage induced seepage losses

Exchange data and information to formulate options for benefit of basin states

Way Forward

Who will be the Champions of creating a shift in the mind set of the experts and people to consider environmental concerns and groundwater issues and to formulate detailed provisions on trans-boundary aquifers and environmental pollution so that dialogues can be initiated to address emerging issues and formulate plans for benefits of basin states – on the Indus?

Issue: Kabul River Transboundary Water

- New water development in Afghanistan–
International support

- Historic rights of Pakistan

- Pakistan– upper and lower riparian of Kabul
River

- Afghanistan– middle riparian

- Regional cooperation requires political will

- Mistrust and political considerations–
perceived national interest hampered
potential for cooperation

Issue: Trends of Flows of Kabul River

% Sharp decline in annual flows of Kabul River at Attock from 34.6 to 23.5 km³

™ climatic variability or change or persistent drought or enhanced use of water by Afghanistan.

% Probability analysis of annual flows

™ Lowest and highest annual flows - 13.82 km³ and 42.94 km³ based on historical data of 1937-07

™ Ratio of lowest and highest annual river flows is 1:3

™ Highest compared to any river of Indus-Pakistan – why?

™ Decline in Kharif season river flows – changes in monsoon rainfall in last 70 years

Option: Resolving Conflicts on Shared Water

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Way Forward

- Change must start in Pakistan to develop a mindset to assist neighbour in building infrastructure and leading towards Kabul Water Treaty:
 - Courageous and open-minded Pakistanis and Afghanis – water Treaty an existential issue
 - Resolving pending issues of mistrust using principles of International Water Laws for a win-win situation
 - Good will and multiple ways for Treaty Negotiations
 - Discussions on Kabul waters be de-linked from historic grievances – Durand Line
 - Statesmanship, not weakness, to acknowledge past and then move beyond it

Policy Brief #4

Pakistan Water Apportionment Accord for Resolving Inter- provincial Water Conflicts

Issues

Issue: Water Entitlements and Availability

% Water availability is less than water entitlements

% Accord distributes 141.1 km³ of canal water supplies

% Maximum water diverted to canals during post-Tarbela period was 137.15 km³ with mean supplies of 122.2 km³ - 13.4% less than entitlements

% Variability in canal water supplies ranges 98.3 to 137.15 km³ - 30.4 and 13.4% less than entitlements

% How to share water shortages among provinces

% Why water entitlements are higher than availability

% Ety

Issue: Need for Storages and Opposition from Provinces

- %Storage on Indus Main to regulate water supply – ensuring surpluses are used in times of shortage
- %Serious inter-provincial disputes on construction of Kalabagh dam since last 25 years, with Punjab on one side and rest of provinces on other side
- %Royalties for power generation go to province where they originated
- %Basha is first what out of five dams government

Options for Resolving Inter-provincial Water Conflicts

- Amendment in Accord allowing provinces to market excess water
- Develop reliable system of water measurement
- Build consensus for construction of carryover dams
- Implementing Accord in full
- Giving power to CCI to resolve water disputes
- Feasibility studies for alternatives to controversial dams projects
- Seek consensus through open and informed policy dialogues
- Compensation and resettlement provisions for affected communities
- Allocate more resources for water infrastructure
- Strengthen water management for optimal water use

Options for

Thanks