

Pathways to Change in Water

Background

South Asia is blessed with resourceful Himalayan Rivers – the Indus, Ganges and Brahmaputra - which sustain agricultural production and livelihoods of millions. However, reduced water flow, over exploitation of groundwater, erratic rainfall and increased water contamination has delineated the region as water scarce. Hydro-cooperation in South Asia has always been a bone of contention owing to the mistrust existing among member countries, upstream-downstream dynamics and emerging water crisis. The hydrology of the region is defined by monsoon and Himalayan glaciers which is under the threat of climate change affecting region's water security.

What we found

The region accounts for nearly half of global groundwater used for irrigation. Yet, per capita water availability in the region is dropping dramatically. Subsequently, depleting water table has emerged as a policy concern at subnational and national levels, especially in India, Pakistan and Bangladesh. Lately, renewed focus in the use of inland waterways as an alternative mode of transportation, particularly for trade towards enhancing the cooperation and connectivity among the South Asian countries has been initiated. Recent developments in BBIN Motor Vehicle Agreement for the regulation of passenger, personal and cargo vehicular traffic and signing of a draft MoU on passenger and cruise services on coastal and protocol route have revived this interest. Inland

Instruments of Observation¹

*(Nine locations, Five countries,
Three river basins)*

- Issue specific discussion papers
- Policy specific mapping activity and report
- Policy briefs
- Diagnostic study and report
- Perception survey and report
- Presence in media through articles

waterways have certain decided advantages when compared with land-based transport system, such as those pertaining to cost, traffic congestion, unnecessary administrative hassles and carrying capacity.

1 Details of the instruments of observations can be accessed at: <http://www.cuts-citee.org/SDIP/Outputs.htm>

What we achieved

In household surveys, CUTS observed high water scarcity in farms for less than three months across most of the sites. Rain harvesting structures and dams were the prominent sources of water storage whereas ground water was the main source for irrigation in all the five countries. As such, bringing ground water into the agenda of trans-boundary water sharing and promoting sustainable irrigation policies and practices are vital for an integrated approach for groundwater management. It was also evident that the upstream-downstream dynamics of river water management becomes critical in trans-boundary sharing of water resources. The degradation of the *Chure* region (Siwalik Hills) in Nepal due to excessive mining and deforestation has affected the water flow downstream in the *Terai* and the Ganges plain in India. Maintenance of water bodies and ensuring minimal flow is also critical for inland navigation and would create an enabling environment for the larger goal of water sharing. Minimal water flow is to be assured in trans-boundary waterways for each cropping season in the lower riparian.

| Ground Water Resource Management | Development of Inland Waterways |
|--|---|
| <ul style="list-style-type: none"> • Need to highlight the trans-boundary nature of groundwater resources and the crisis, and raise the issue in wider regional forums. • Aquifer-level planning for groundwater resource management • Need to develop a data base on availability and withdrawal, which has to be developed jointly by affected governments • Promotion of sustainable irrigation policies and practices like alternate wetting and drying, laser levelling etc. • Revival of surface irrigation systems | <ul style="list-style-type: none"> • Concrete and stringent regulations for mining and deforestation in the <i>Chure</i> region • Sharing and scaling up of Payment for Environmental Services for maintenance and sustenance of the inland water systems • Develop and rejuvenate the inland water ways to boost trade and trans-boundary cooperation in the region, through greater public-private dialogues |

Since trans-boundary water concerns vary among South Asian countries, a directed effort was made to target key change makers in relevant locations. To adapt and consummate the advocacy messages in the South Asian context, location specific engagement platforms were created to try, test and evolve the advocacy messages. The targeted change agents at these engagement platforms included policy makers, government officials, farmers, CSOs, academia and media at local, sub-national, national and sub-regional levels.²

| Engagement Platforms | | |
|----------------------|----------------|--|
| Country | Platform Level | Platform Type |
| Bangladesh | Sub-national | 1. Advocacy workshop on water at Chappainawabganj (Ganges) and Kurigram (Brahmaputra) |
| Bhutan | National | 2. Advocacy workshop on Payment for Environmental Services (PES) Scheme at Thimphu |
| India | Sub-national | 3. Roundtable discussion on development of inland waterways for trade and transit at Patna (Ganges) |
| | Sub-national | 4. Advocacy meeting on building civil society voice for use of cross border inland waterways in Guwahati (Brahmaputra) |

² Details of the instruments of observations can be accessed at: <http://www.cuts-citee.org/SDIP/Outputs.htm>

| Country | Strategy Level | Strategy Format |
|------------|----------------|--|
| | National | 5. Advocacy workshop on Valuing vital resources: a reform approach for pricing of water, energy and food in India at Delhi |
| Nepal | National | 6. Advocacy event on <i>Chure</i> destruction and water issues at Kathmandu |
| Pakistan | National | 7. Consultation on water related sustainable development goals & their implementation at Islamabad |
| South Asia | Regional | 8. Regional Dialogue on exploring trans-boundary cooperation in agriculture, water and energy |

Insights from engagement platforms

The overexploitation of groundwater resources in South Asia for irrigation is mostly due to poor surface irrigation systems. Poor maintenance and operational cost recovery mechanisms for water canals and subsidised electricity have led to depletion of ground water resources. The insights from CUTS interventions in the policy space reveal that unavailability of data on existing ground water resources is a major concern with policy makers for proper planning. Also, ground water has never been the topic discussion in trans-boundary water sharing while some aquifer can feed to adjacent countries in the border areas. Thus, severe depletion of groundwater in one country will affect the availability across the border. Further, in the federal system of administration existing in India and Pakistan water is a state/provincial subject and the latter doesn't have a national water policy. Owing to this, water tussles exists between states/ provinces and there is a separation between state and union government when it comes to water sharing with neighbouring countries. Promotion of efficient irrigation practices, water conservation and storage, growing water saving crops instead of water intensive crops, and proper pricing of water and electricity were some of the suggestions which came up in engagement platforms. The need for aligning water sector policy goals with federal and state budgets was also highlighted.

The high cost of transportation through road and railways has enhanced the scope of transit and trade via waterways, especially in the Brahmaputra basin. The inland waterways can be used for the movement of food grains (by Food Corporation of India), coal (from upper Assam), Over Dimensional Cargoes (ODC) for refineries and power plants. From the Inland Container Depot of Guwahati, direct dispatch of export cargo by river and sea route can take place. However, lack of awareness on the advantage of using inland waterways and lack of regulatory and policy framework for the operation and maintenance of these waterways are the main constraints. The need for maintaining the minimum dimensions of length by depth of 50m x 3m for fairway development also emerged in the engagement events. Heavy silting on riverbed and heavy erosion on the bank has made construction of permanent terminals difficult. Lack of proper navigational channel and night navigation is another limitation. Further, there are concerns about the impact of river navigation on its biodiversity. It was also suggested that minimal navigation should be imposed during the breeding season which coincides with monsoon. With regard to the management of *Chure*, communities on either side of the Indo-Nepal Ganges tributaries should be involved in maintaining the natural river flow and courses since the river directly provides for local livelihood options like fisheries, agriculture and river tourism. There is a need for greater cooperation among inland waterway related government bodies and other relevant stakeholders to realise optimal use of waterways.

What needs to be done

CUTS engagement platforms captured varied pathways for trans-boundary water cooperation. Due to the overlapping nature of these pathways, the prospective locations are also overlapping with far-reaching impacts on the sustainability aspect.

| Locations | Prospective Pathways | Targeted Change makers |
|--|--|--|
| Bangladesh, Bhutan, India, Nepal, Pakistan | <p>1. Raise issues of national and trans-boundary groundwater in regional forums</p> <ul style="list-style-type: none"> Engage directly with respective government agencies to highlight regional dimension of groundwater resource management and consumption Create a regional platform for deliberation and bring up the issue at formal regional forums Organise dialogue on trans-boundary water resource management | (Absence of a policy discourse) Policy makers, National governments, CSOs |
| India | <p>2. Update database on groundwater availability, withdrawal and recharge to support better planning of water usage</p> <ul style="list-style-type: none"> Work with government agencies, CSOs, and other relevant stakeholders to update and create a dynamic database on groundwater availability, withdrawal and recharge Ensure groundwater data is easily available to policy makers and civil society | Water and Power Consultancy Services Limited (WAPCOS), Central Ground Water Board (CGWB) |
| Bangladesh, Bhutan, India, Nepal, Pakistan | <p>3. Promote sustainable irrigation policy and practice to reduce the load on groundwater resources</p> <ul style="list-style-type: none"> Popularising technological solutions like laser levelling, tensiometers, alternate wet and drying and micro irrigation for efficient water use through government programmes Promote revival of canal irrigation systems through investment, maintenance and supporting Water User Associations to reduce the dependency on groundwater | Ministry of Agriculture, Department of irrigation, Farmer Groups, Water User Associations CSOs |

| Locations | Prospective Pathways | Targeted Change makers |
|------------------------|--|---|
| | <ul style="list-style-type: none"> Promote reviving indigenous irrigation systems that are found to be suitable to local topography and require minimal capital for maintenance and upkeep (e.g. in Brahmaputra basin in Bhutan and Assam, India) Promote incentivising farm water harvesting/conservation and clubbing it with irrigation subsidies to develop a practice of water conservation Promote crop diversification through incentives and price support | |
| Bangladesh, Bhutan, | <p>4. Develop and rejuvenate inland waterways to boost trade and trans-boundary cooperation in the BBIN region</p> <ul style="list-style-type: none"> Study and disseminate opportunities for increasing trade and transport on inland waterways Facilitate public-private dialogues at national and regional level Facilitate cooperation between government agencies, civil society, and private organisations | Inland Waterway Authority, Ministry of Commerce |
| India, Nepal | <p>5. Promote concrete and stringent regulations to conserve the <i>Chure</i> region</p> <ul style="list-style-type: none"> Facilitate policy discourse for better regulations in mining and deforestation in <i>Chure</i> region Promote declaring the <i>Chure</i> region a conservation zone Engage community leaders and forest users committee in conserving the resources in <i>Chure</i> region Study the impact of excessive mining and deforestation in <i>Chure</i> region in the water availability in the Ganges plain in India | Ministry of environment and forestry, National River Commission |
| India, Nepal Bhutan | <p>6. Scale up Payment of Environment Schemes</p> <ul style="list-style-type: none"> Facilitate knowledge sharing between South Asian governments and civil society through national and regional level policy advocacy | Farmer Groups, CSOs |

Pathways to Change

