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**Expanding Regional Linkages in South Asia on  
Water Management**



## Expanding regional linkages in South Asia on water management

### Key Messages

- **Water scarcity, degradation of its quality, siltation, groundwater depletion and lack of funds on the maintenance and development of irrigation systems are symptoms of deeper problems related to policy, institutional and market failure, all of which impact the overall development and management of water resources in South Asia.**
- **Improve efficiency of water use in the region by enhancing water productivity; moving incrementally towards full cost pricing and making agriculture commercial and profitable on sustainable basis.**
- **Develop regional cooperation to avoid water related conflicts and disasters due to climate change, population pressure and growth needs of the region. Development of regional water markets; knowledge sharing and scientific water shed management practices are the policy options for regional leaders, instead of contingencies and lucrative short term political gains from confrontation.**

### Introduction

Twenty major rivers, which originate from the Greater Himalayas are shared across borders in the South Asia. More than two billion people depend on these waters for their livelihood. The division of water among the countries of the region has remained a contentious issue, resulting in political acrimony and international disputes among Pakistan, India, Bangladesh, Nepal and China. Most of the territorial disputes are also rooted in perceived risks to water security of the countries of the region.

Some historically successful formulas do exist, such as Indus Basin Water Treaty to share waters among upper and lower riparian. However, these treaties were brokered before new realities dawned in the form of climate change, increased population, depletion of groundwater and the need for environmental flows. The policy makers of these countries lack the capacity to fully comprehend the technical and technological implications of the new threats. They are instead more focused on repercussions of the disputed water projects, such as the Tulbul Navigation Project on River Jhelum, Baglihar Dam Project on River Chenab and the Kishanganga dam over Neelum River in Jammu and Kashmir.

### Workshop on Expanding Regional Linkages in South Asia

The Shahid Burki Institute of Public Policy in collaboration with LEAD Pakistan, the Urban Unit, Institute of South Asian Studies and National University of Singapore, invited leading experts from India, Bangladesh, Pakistan and other countries to a workshop on 'Expanding Regional Linkages in South Asia' in Lahore from 7th to 9th of March, 2016. The researchers and policymakers presented their researches and experiences on public policies in South Asia in sectors relevant to water security and management.

The workshop aimed to develop regional linkages at policy making levels, by investigating the issues underlying low economic output of water resources and higher water losses in the region, despite water scarcity and increasing water demand in the agriculture and energy sectors.

The following findings and recommendations were shared during the workshop.

### Findings

1. Agriculture sector, the main user of water in the region, is experiencing increasing water scarcity. Increase in water demand in other sectors, such as new coal fired and nuclear power generation projects in the region, industrial and household usage and forestry for carbon capture and storage is further straining water resources. Moreover, lack of effective watershed management practices turns much of rainfall into runoff, causing soil erosion, decline in soil fertility, heavy sedimentation load, flash floods, low productivity of rain fed agriculture and low fishery catch.

2. Besides declining water quantity, its deteriorating quality is another issue. Industrial and municipal water is being disposed in the rivers and canals without

being treated. River water quality has alarmingly deteriorated in India, Nepal and Bangladesh. In Pakistan, the Eastern Rivers, such as Sutlej and Ravi have virtually been turned into sewerage beds. The siltation load is one of the highest in the Indus and Ganges basins. This has led to low agricultural productivity, loss of fishery, reduced water supply and decline in useful life of the dams.

3. Lack of defined water rights and regulatory policies in the region is resulting in groundwater depletion to dangerous levels. This situation has further strained surface water resources. According to estimates, the size of the groundwater irrigation economy of India hovers around US \$ 75-80 billion<sup>(1)</sup>. Institutional arrangements at different levels of water distribution are inefficient, inadequate, inequitable, non-transparent and non-participatory. Budgetary and capacity issues, besides role overlaps, make water governance a nightmare. Water theft and wastage are being somehow promoted due to poor water pricing system.

4. South Asian countries have not applied innovative systems and technologies for using non-conventional water sources, such as the reuse of wastewater, rainwater and water desalination. Moreover, the inland navigational potential of water courses is not being utilized because of heavy silting load in Indus-Ganges-Brahmaputra river systems.

5. Climate change is exacerbating chronic water related disasters in the region. In recent years, India, Pakistan, Bangladesh and Nepal have seen a rising trend in flooding and droughts. The economic cost of these floods was over US\$1 billion in 2007, and nearly US\$10 billion in 2010<sup>(2)</sup> (Haq 2013). Besides that, the climate effect is making the water, energy and food nexus all the more important. According to the United Nations, by 2030, the world will need at least 30% more water, 45% more energy, and 50% more food (FAO).<sup>(3)</sup>

## Recommendations

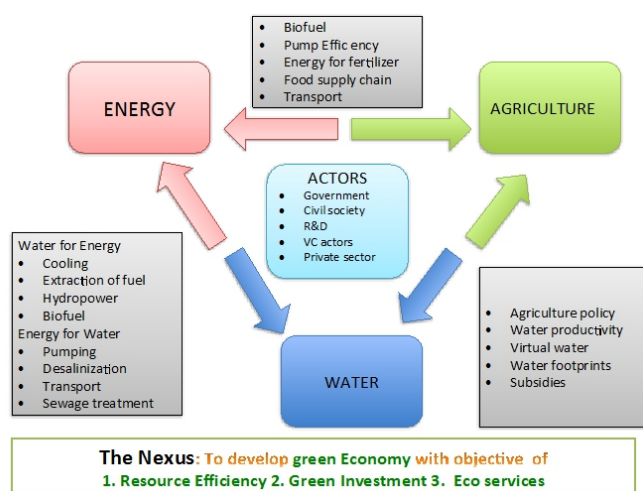
1. This is the time to develop basin-wise integrated water management framework to reduce potentially disastrous risks to food and livelihood security of at least the quarter of humanity living in the region. This starts from addressing the problems related to watershed management, which are trans-boundary in nature. There is a need to incorporate regional perspectives to identify solutions. Large potential exists for stabilizing and improving crop production and enhancing the carrying capacity of rangelands by adopting good watershed management practices. Joint activities focusing on improving national water policies are needed, through the use of integrated water resource management, integrating climate change in policies, enacting cross-border projects, and developing a basin decision support system to exchange information to support dialogue and identify investment projects. Experts believe that Indus basin still has a huge quantum of water. However, it is grossly mismanaged. While there is no chance of Indus Water Treaty to be revised in the near future, a holistic approach to water resources will be to recognize linkages between water, land, users, environment and infrastructure, to evade crisis of water scarcity in the basin states.

2. Water productivity can be enhanced in the region, through small-scale, privatized, farmer controlled irrigation systems, such as shallow tube wells, low-lift pumps, pressurized irrigation systems and increased use of solar energy. These are more efficient technologies (50-90% water use efficiency), cost-effective, and allow farmers greater flexibility in their choice of crop-mix or farming systems. These can enhance marketable yield of the crops for each unit of crop transpiration; reduce non-beneficial atmospheric depletions; and enhance effective-use of rainfall.

3. Development of water markets is the preferred policy option recommended in many studies to promote conservation of water and raise funds to meet operation and maintenance (O&M) cost of water supply to agricultural, household and industrial uses. This will help internalize the social and political cost of rational water pricing. However, it will need developing water rights that reflect capitalized value derived from water. In addition, there is a need to evaluate the market value of groundwater for each and every country of the region to regulate the informal market that exists in some areas and regions, such as Sri Lanka etc.

4. Technology based monitoring systems, such as Intelligent Energy and Water Metering can be installed to reduce water theft and cost of monitoring at local levels. Technology based monitoring systems are also needed to monitor transboundary water pollution, on which treaties like Indus Water Treaty are silent. Specific joint action/ activities are needed, such as developing strict water quality standards; sustainable use of groundwater; and adopting good watershed management

Figure 1 : Water, Energy Food Nexus

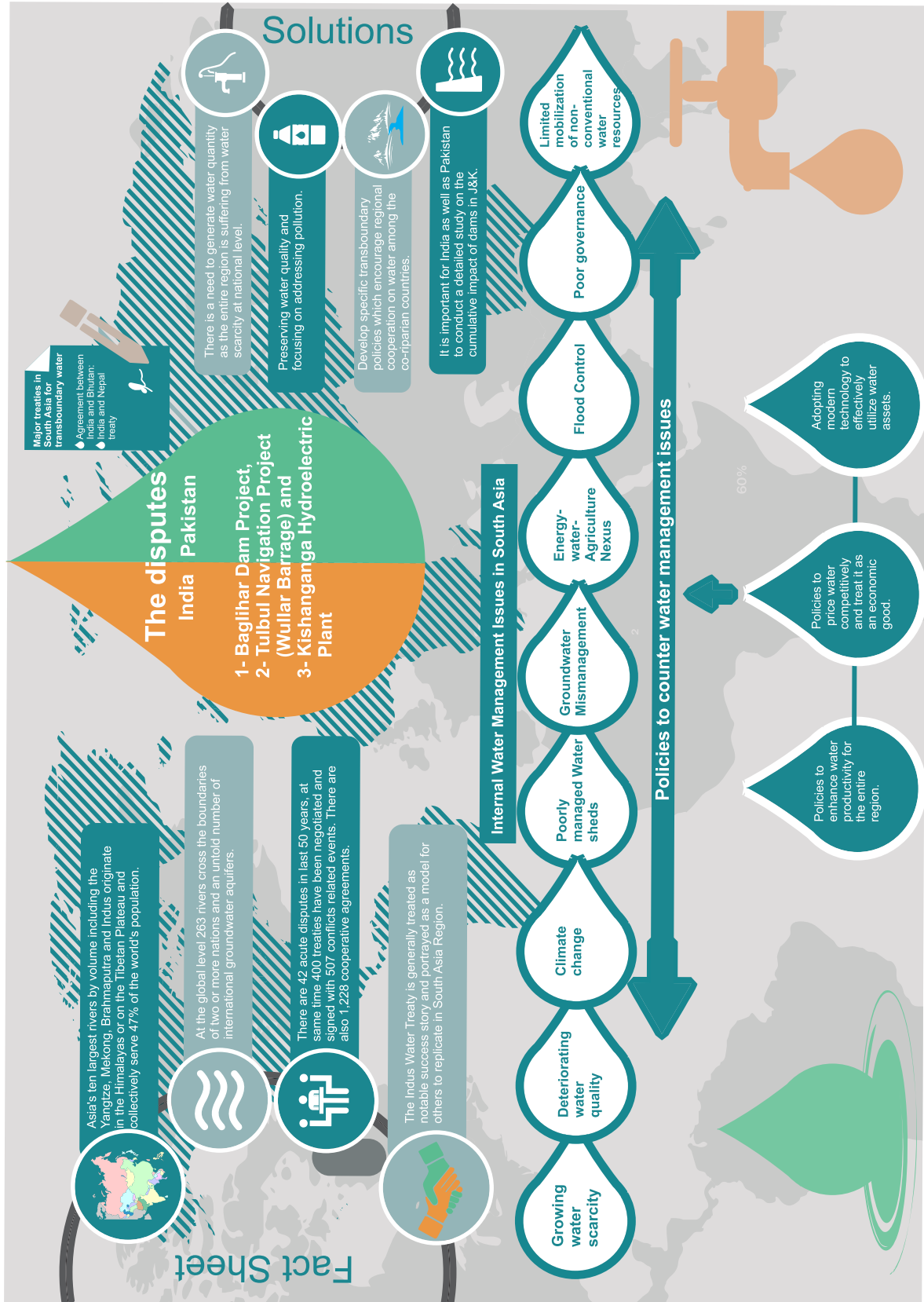




practices at basin levels.

5. Allocate additional financial resources for better water management. Many of the supply measures required to close the gap between increasing water demand and reduced supplies are demand management options that come at a cost between \$0.05-0.10/m<sup>3</sup> —with the most

costly measures, largely supply side options could reach costs of \$0.50/m<sup>3</sup> or more<sup>(4)</sup>. Moreover, for productive use of water courses, such as rivers and canals, the countries in the region should go an extra length in mobilizing and pooling financial and technical resources for carrying out desilting and cleaning of transboundary rivers and water courses.



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## About this publication

This policy brief shares research and experiences of the leading experts and policy makers from India, Bangladesh, Pakistan, who participated in the Workshop on 'Expanding Regional Linkages in South Asia' in Lahore, Pakistan in March 2016. It presents a comprehensive overview of the public policies in South Asia in sectors relevant to water security and management. Thus, it aims to develop regional linkages at the policy making levels, by investigating the issues underlying low economic output of water resources and higher water losses in the region, despite water scarcity and increasing water demand in the agriculture and energy sectors.

## About LEAD Pakistan

LEAD, or Leadership for Environment and Development, is a think tank with a focus on policy relevant research. In this connection, LEAD launched three special initiatives in 2015: Pakistan 2047; Knowledge Hub on SDGs; and Sustainable Cities. These are the strategic steps with an ambitious agenda and are aimed at shaping the development framework of the government of Pakistan in line with the global trends and requirements.

LEAD has been pursuing an ambitious research agenda (policy as well as action research) regarding various dimensions of climate change, environment, water, governance, health, education and other thematic areas relevant to its programmes. In addition to the demand driven research, we generate knowledge products, including case studies from all our project interventions to adduce evidence for contributing to the larger development discourse.

With a history of successful delivery of more than 180 development initiatives, we look forward to producing greater developmental impact through sophistication in design and implementation of projects and interventions.

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## Acknowledgement

LEAD Pakistan acknowledges Shahid Burki Institute of Public Policy for inviting leading experts from India, Bangladesh, Pakistan and other countries to workshop on 'Expanding Regional Linkages in South Asia' in Lahore, in association with LEAD Pakistan, the Urban Unit, Institute of South Asian Studies and National University of Singapore. This valued support will contribute to developing regional linkages at the policy making level, by exploring common strategies for developing synergies and cooperation for Expanding Regional Linkages in South Asia on water management.

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