Overview of Trans-boundary Cooperation in South Asia and the Role of GWP

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GWP Nepal/JVS
South Asia

- Home to over one forth of the world’s population (>1.7 billion, WB, 2015).
- The region has 15.1% of the poorest people in the world (WB, 2013).
- Has 4.5% of World’s internal renewable water resources (FAO, 2016).
## Availability of Water in South Asia

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<tr>
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</thead>
<tbody>
<tr>
<td></td>
<td>Million</td>
<td>Million m³</td>
<td>m³/year</td>
</tr>
<tr>
<td>Afghanistan</td>
<td>30.6</td>
<td>65,000</td>
<td>2,124</td>
</tr>
<tr>
<td>Pakistan</td>
<td>173.4</td>
<td>200,000</td>
<td>1,153</td>
</tr>
<tr>
<td>India</td>
<td>1170.9</td>
<td>2,015,000</td>
<td>1,721</td>
</tr>
<tr>
<td>Nepal</td>
<td>29.9</td>
<td>215,000</td>
<td>7,191</td>
</tr>
<tr>
<td>Bhutan</td>
<td>2.3</td>
<td>65,000</td>
<td>28,261</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>164.4</td>
<td>1,314,000</td>
<td>7,993</td>
</tr>
<tr>
<td>Myanmar</td>
<td>55.4</td>
<td>476,000</td>
<td>8,592</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>20.5</td>
<td>51,300</td>
<td>2,502</td>
</tr>
<tr>
<td>South Asia</td>
<td>1,647.4</td>
<td>4,401,300</td>
<td>2,672</td>
</tr>
</tbody>
</table>

Based on UNDP 2003, World Bank 2011  
Source: Sharma, 2011
Major River Basins in South Asia

- Ganges
- Brahmaputra
- Indus
- Water shared among different nations
Climate Realities of South Asia

- **Rise in Temperature**
  - More significant rising trend in high elevations;
  - Climate-related risks threaten lives, food security, health and wellbeing across many parts of South Asia (IPCC 2014).

- **Glacier melt**
  - > 15,000 glaciers and > 8,800 glacial lakes in the Hindu Kush Himalayan (HKH) region
  - Higher rate of glacier retreat; 24 Glacial Lake Outburst Flood (GLOF) have been occurred in past, 14 in Nepal & 10 in China-Tibet Region (ICIMOD, 2011).
  - 5 newly identified potentially dangerous glacial lakes (ICIMOD, 2011).

- **Extreme Events**
  - Increase in occurrence of extreme weather events is projected in South Asia (Lal 2003).
  - Inter-annual variability of daily precipitation would increase in the...
Food Security in South Asia

- Agriculture is the mainstay of several economies in South Asia.

- 60% of the cropped area is rain-fed (IWMI, 2010).

- Different studies show decrease in agricultural production in near future in Asia
  - demand for agricultural irrigation in arid and semi-arid regions of Asia is estimated to increase by at least 10% for an increase in temperature of 1°C.
  - A study points out that in Bangladesh, production of rice and wheat might drop by 8% and 32%, respectively, by the year 2050 (Shivkumar and Stefanski, 2011-WMO).
  - A consistent yield loss of major crops (wheat, maize, sorghum and millet) by the 2050s (Knox et al, 2012).
The Case of the Ganges

- Three main riparian countries of South Asia: **Nepal, India** and **Bangladesh**.
- Significant variation in spatial and temporal distribution of precipitation.

*Freshwater availability of Ganges basin Countries (Pun,*

<table>
<thead>
<tr>
<th>Country</th>
<th>Ganges basin freshwater availability (billion cubic meters or BCM)</th>
<th>2001 Ganges basin population</th>
<th>2001 Freshwater availability in cubic meters per capita per annum</th>
<th>2025 Ganges basin population</th>
<th>2025 Freshwater availability in cubic meters per capita per annum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nepal</td>
<td>230</td>
<td>23 million</td>
<td>10,000</td>
<td>37 million</td>
<td>8,649</td>
</tr>
<tr>
<td>India</td>
<td>671</td>
<td>440 million</td>
<td>1,525</td>
<td>634 million</td>
<td>1,060</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>218</td>
<td>41 million</td>
<td>5,892</td>
<td>49 million</td>
<td>4,449</td>
</tr>
</tbody>
</table>
The Case of the Ganges...

- Basin countries (Nepal, India & Bangladesh) have very low per capita commercial energy consumption as compared to global average.

<table>
<thead>
<tr>
<th>Per Capita Energy Consumption in Kilograms of Oil equivalent (kgoe)</th>
<th>Ganges Basin Countries</th>
<th>Global</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>Nepal: 304</td>
<td>1,668</td>
</tr>
<tr>
<td></td>
<td>India: 377</td>
<td>1,657</td>
</tr>
<tr>
<td></td>
<td>Bangladesh: 123</td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>Nepal: 334</td>
<td></td>
</tr>
<tr>
<td></td>
<td>India: 452</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bangladesh: 145</td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td>Nepal: 338</td>
<td></td>
</tr>
<tr>
<td></td>
<td>India: 491</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bangladesh: 171</td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>Nepal: 369</td>
<td></td>
</tr>
<tr>
<td></td>
<td>India: 606</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bangladesh: 215</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Global: 1,778</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1,929 (2014)</td>
</tr>
</tbody>
</table>

Source: WB 2013 & 2014
Towards Cooperation...1

- Ganges Treaty between India and Bangladesh, 1996

- Project Agreements on the tributaries of Ganges between Nepal and India:
  - Koshi Agreement, 1954
  - Gandak Agreement, 1959
  - Mahakali Treaty, 1996
Towards Cooperation...2

- The window for comprehensive approach
  - Bangladesh – India
- The Ganges Treaty, 1996: cooperate in finding long term solution for augmenting the flow (Article 8)
- Framework Agreement, 2011: sub-regional cooperation in the power and water, management (Art. 7)
- Joint Statement, 2011 Undertake regional projects (Para 58)
Towards Cooperation…3

- Nepal – India
  - Power Trade Agreement, 2014:
  - Recognition to common electricity market that could extend to sub-regional and regional levels.

- China – India
  - Sharing of Flood data on Brahmaputra, 20th June 2014
Challenges to Cooperation…1

■ Captive of the Past legacy: Nepal-India

■ Hindrances on the way: Bangladesh – India

■ Way apart on the main issue: China-India
Challenge to Cooperation...2

- No country is prepared to accept any common principle or rule of the game
- No one has ratified the UN Convention
- Abstentions and against in the voting at UN
- Perhaps setting the evidence and gradual move seems to be the only way at present. But may be too late.
Experiences of Transboundary Water Cooperation

- Nile River Basin
- Mekong River Basin
- WHY not in South Asia (Ganges Basin)
GWP-SAS and Regional Cooperation

- IWRM is the main flagship of GWP.
- In South Asia; very few cases of joint studies.
- Only country-specific studies and there is no cross-fertilization of the research outcomes.
- Such cooperation not seen among countries neither in conservation nor in utilization.
- No holistic/basin wide agreement in the region.
GWP SAS and Opportunities for Regional Cooperation

- GWP SAS
  - is a repository of experts and Government/NGO personnel from the region.
  - Has the network and capability for taking lead for regional cooperation.

- Exchange of data and information among the basin countries help enhance optimal utilization of water resources and mitigate the impacts of water induced hazards.
GWP SAS and Opportunities for Regional Cooperation

- CWPs must choose common program on issues which are common to at least two or more countries.

- Tailor the activities under the program to complement each other.

- Exchange of information and experience session to bring the conclusion.
GWP SAS and Opportunities for Regional Cooperation..

- Wide dissemination of information
- Identify the intervening points in the policy of the govt.
- Work with the Govt. with a view to complement the goal of the govt.
- Start from bottom to the top.
THANK YOU!