



Role of Institutions in River Basin Management



The Mississippi Experience Informs the Brahmaputra

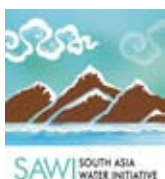
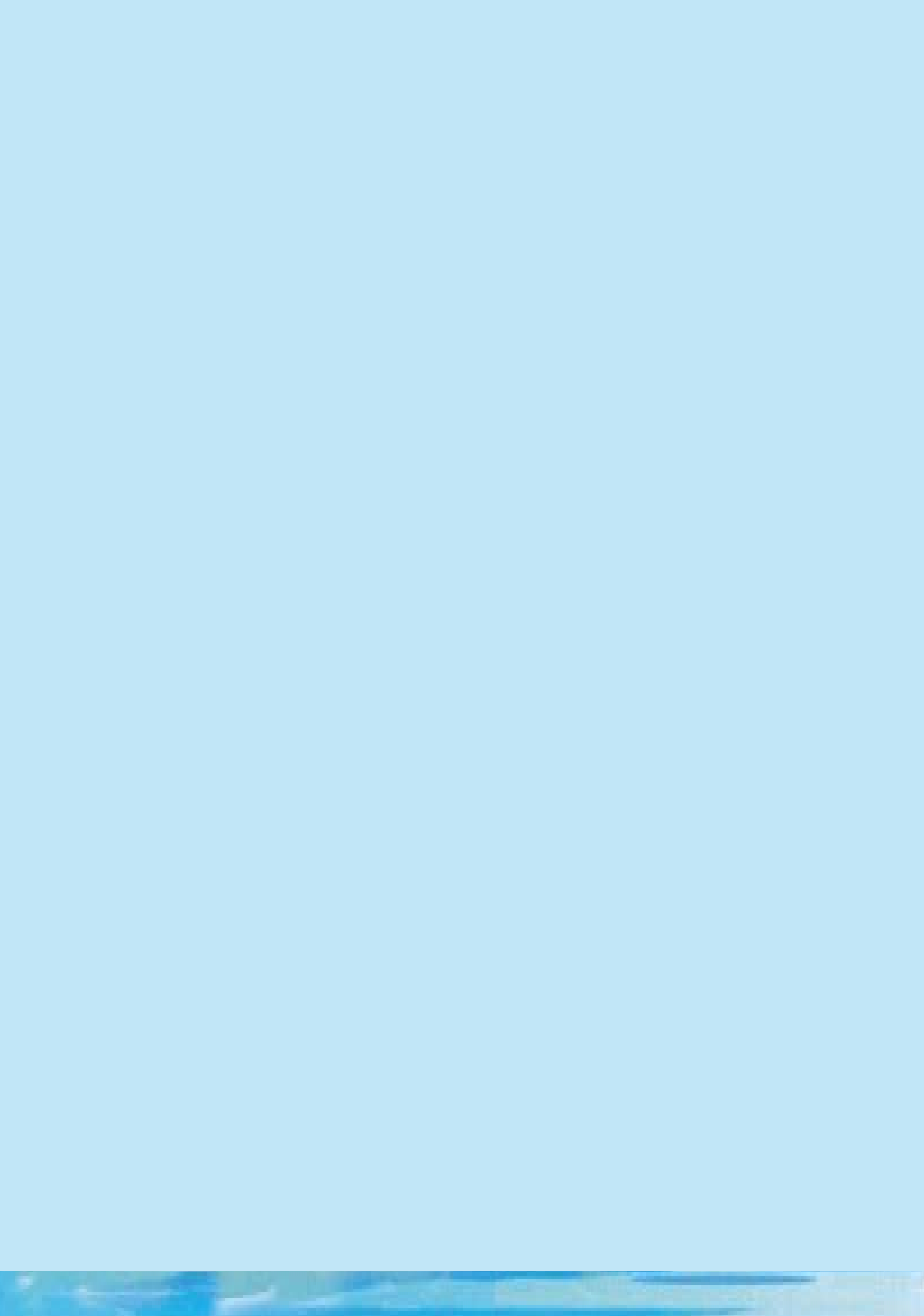






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Study Tour to the Mississippi River Commission, November 18-20, 2015

Highlights

- A high-level delegation comprising the Minister of Water Resources, Bangladesh and Secretary of Economic Affairs, Bhutan, came together to discuss cooperation on the management of the Lower Brahmaputra Basin using the experience of the Mississippi River Basin.
- Delegates appreciated the role institutions play in maintaining and managing the river and mediating positions taken by the different states involved .
- The study tour was well received and a follow-up meeting has been proposed in early 2016, preferably on the Brahmaputra River.

Overview

As part of its knowledge exchange activities in the Brahmaputra basin, the South Asia Water Initiative (SAWI) convened a Lower Brahmaputra Cooperation Forum from November 16-20, 2015 comprising formal and informal discussions at the World Bank headquarter followed by a study tour to the Mississippi River Basin. SAWI is a multi-donor partnership between the World Bank and the governments of United Kingdom, Australia and Norway. The initiative is working to increase regional cooperation in the management of the major rivers of the Himalaya in South Asia. The objective of the study tour was to share lessons in river basin management, specifically focusing on flood management, bank erosion, navigation, and integrated water resource management, and to share best practices within basins. The study tour included visits to the US Army Corps of Engineers, St Francis Levee District, Mississippi River Commission (MRC) and Engineering Research and Development Center.



Study tour participants in Memphis.



The participants included high level representations from Bangladesh and Bhutan including the Minister of Water Resources and Minister of State for Water Resources, Bangladesh. The Indian delegation had confirmed participation but was unable to attend due to last minute procedural constraints.

The activity was a follow up to the study tour conducted in June 2015 wherein mid-level government officials and technical staff from India, Bangladesh, Bhutan and China had participated.

Learning from the Mississippi Experience

- River basin management in the Mississippi is primarily focused on addressing flood risk and ensuring navigability, for which river training and dredging has been important.
- Successful flood management depends on robust institutions which have precedence and experience as well as support of laws and policies that empower institutions.
- Effective flood management requires a combination of structural interventions as well as softer initiatives such as river flood and hurricane forecasting, communication strategies and evacuation plans.
- A suite of decision support tools are required to make informed decisions and plans at a basin scale.
- Adaptive management requires resilience and coordination at all levels at all times.
- Active engagement with communities and coopting them in the planning process is integral to flood risk management and building resilient systems.
- Water resource management requires a multidisciplinary approach using a combination of engineering, technological, social, economic and legal expertise.

For details, please refer to the Mississippi River Commission Study Tour, June 2015 Report

The Mississippi is the largest river in the United States and third largest in the world, draining approximately 41 percent of the country. It extends from the continental divide in the Rocky Mountains to the Appalachian Mountains, and from just south of the Great Lakes to the Gulf of Mexico. The Mississippi River Basin is a good example of how the role of the federal government has evolved with regard to flood control, and illustrates the different objectives for which it is managed. Federal involvement started with the need to make the river navigable for which dredging and river training were necessary. As a result, the US Congress had established the MRC to ensure the river's navigability. In 1927, following the Mississippi flood, the mandate of the MRC increased to include flood management as well. Today, the MRC works in conjunction with the US Army Corps of Engineers to ensure that an integrated and holistic approach is adopted to manage the basin.

The delegates noted similarities in addressing challenges and optimizing opportunities between the Brahmaputra and Mississippi River Basins and the avenues for technical and policy learnings on basin cooperation in flood management, integrated water resources management, and opportunities in navigation.

While there was considerable opportunity for participants to gain technical capacity and learn modern approaches to river basin management, a significant takeaway from the tour was to assess good practices that could be applied to the Brahmaputra basin. There were also



Left: Mr. Stephen Gambrell, Director, Mississippi River Commission, describing the flood risk management system to the delegates at the US Army Corps of Engineers office, Memphis; right: a view of the overflowed areas in the alluvial valley during the 1927 flood.

“The Mississippi had its worst floods in 2011. Yet, not one life was lost and not one acre of land that wasn’t designed to flood, flooded. We take that as one of the greatest achievements of the Mississippi River Commission”

Stephen Gambrell
Director, Mississippi River Commission

focused technical discussions with experts on best practices and strategies to address common key challenges in managing large river basins. These discussions also provided insight on river training, which is seen as a precondition to ensuring a navigable river, as well as the benefits and costs of dredging. The learnings from these discussions are directly transferable to the Brahmaputra Basin and help in thinking through some of the challenges that can be encountered should Bangladesh follow a path similar to that of the Mississippi.

For the participants from Bangladesh, one of the most important sessions was on the training regime of the Mississippi, as this has significant potential for replication in the Brahmaputra basin as well. The Prime Minister of Bangladesh has identified the need for narrowing the width of the Brahmaputra and reclaiming land for human habitation as one of the country’s key priorities. Thus, the delegates felt that these lessons from the Mississippi could prove useful in achieving the aforementioned objectives. The Minister also spoke about deepening the channel to improve navigation, and said that developing a strong communication strategy to minimize flood damage was a key focus for Bangladesh. Bangladesh is keen to preserve its water ecosystem while, at the same time, provide livelihoods to the millions of people inhabiting the basin areas.

For the Bhutanese delegation, the primary areas of interest included the potential of levee network systems as protection against glacial lake dam bursts, and the challenges that were encountered while training the Mississippi upper reaches, where the terrain was similar to that of Bhutan. The delegates also noted the need for a collaborative arrangement to optimize management of residual waters that come down from the Chinese slopes, and the need for factoring in appropriate safeguards.



Left: Delegates at the Observation Deck, Bass Pro Shops Pyramid, Memphis; right: Mr. Anisul Islam Mahmud, Minister of Water Resources, Bangladesh, in discussion with MRC officials.

“Brahmaputra is one of the widest rivers in the world. We need to narrow the width to a 10th of its present, at its widest”

Anisul Islam Mahmud

Minister of Water Resources, Bangladesh

Both delegations appreciated the critically important role of the MRC, not only for maintaining and managing the river but in mediating the positions taken by different states within the US federal construct; a situation similar to South Asia where the waters of the Brahmaputra are shared between four different countries.

Agreements and Follow Up Action

Delegates agreed that the study tour to the MRC provided a conducive platform for them to jointly discuss and identify areas of collaboration and activities that may be undertaken to better manage the water resources of the Brahmaputra basin.

As a follow up, it has been proposed that a Knowledge Conclave should be organized in South Asia, preferably on the Brahmaputra River in India/Bangladesh, bringing in senior-level participation from all three countries to discuss the applications of the learnings from the Mississippi and identify potential synergies on effective management of the Brahmaputra basin.

The Bangladesh Minister of Water Resources also expressed interest in inviting the MRC officials to Dhaka to make the same presentation to the Prime Minister.



Annex I: Tour Highlights

Study Tour to the Mississippi River Commission November 18-20, 2015

District Office, MRC, Memphis



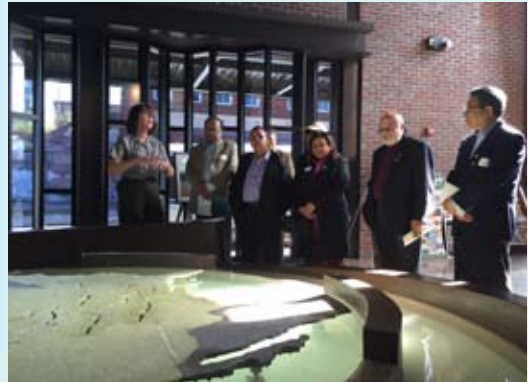
Observation Deck, Bass Pro Shops Pyramid, Memphis



Headquarters, St. Francis Levee District, West Memphis



Lower Mississippi River Museum, Vicksburg



Engineering Development and Research Center, Vicksburg





Annex 2: Participant List

Country	Name	Title	Organization
Bangladesh	Mr. Anisul Islam Mahmud	Honorable Minister	Ministry of Water Resources
Bangladesh	Mr. Muhammad Nazrul Islam	Honorable State Minister	Ministry of Water Resources
Bangladesh	Mr. Zafar Ahmad Khan	Secretary	Ministry of Water Resources
Bangladesh	Md. Ismail Hossain	Director General,	Bangladesh Water Development Board
Bangladesh	Md. Habibur Rahman	Project Director, ECRRP	Bangladesh Water Development Board
Bangladesh	Ms. Suraiya Begum	Bumthang Forest Division	Prime Minister's Office
Bhutan	Mr. Dasho Yeshe Wangdi	Honorable Secretary	Ministry of Economic Affairs
Bhutan	Mr. Kinzang Gyeltshen	Chief Forestry Officer	Bumthang Forest Division, Dept. of Forest & Park Services
Washington DC	Mr. Param Iyer	Practice Manager	World Bank
Washington DC	Mr. Abedalrazq Khalil	Senior Water Resources Specialist	World Bank
Washington DC	Mr. Bill Young	Lead Water Resources Specialist	World Bank
Washington DC	Ms. Christina Leb	Senior Water Resources Specialist	World Bank
Washington DC	Ms. Cecilia Belita	Senior Program Assistant	World Bank
Washington DC	Ms. Priyanka Chaturvedi	Consultant	World Bank
Bangladesh	Mr. Rafiqul Islam	Consultant	World Bank
Washington DC	Mr. Tariq Ahmad Karim	Consultant	World Bank

