

# **POLITICAL ECONOMY ANALYSIS OF THE TEESTA RIVER BASIN**



**The Asia Foundation**

**March 2013**

**Prepared by**

The Asia Foundation  
465 California Street, 9th Floor  
San Francisco, CA 94104 USA  
Tel: (415) 982-4640  
Fax: (415) 392-8863  
Email: [info@asiafound.org](mailto:info@asiafound.org)  
Website: [www.asiafoundation.org](http://www.asiafoundation.org)

**For**

Skoll Global Threats Fund  
1808 Wedemeyer Street, Suite 300  
San Francisco, CA 94129 USA  
Website: <http://www.skollglobalthreats.org/>

## **Acknowledgements**

This report was a collaborative effort between The Asia Foundation and its partners, the Lawyers Initiative for Forest and Environment (LIFE) and the Bangladesh Environmental Lawyers Association (BELA). The Asia Foundation is grateful to the Skoll Global Threats Fund for their support.

The principle authors of this report were: Dr. Sagar Prasai (The Asia Foundation, Nepal) and Mandakini D. Surie (The Asia Foundation, India). Nick Langton (The Asia Foundation, India), Srabani Roy, and Daniel Stokes (The Asia Foundation, San Francisco) provided valuable guidance and support throughout the study and in compiling the final report.

In India, field work and research were conducted by Ritwick Datta, Dr. Partha J. Das, Rahul Choudhary, and Lekha Sridhar.

In Bangladesh, field work and research were conducted by Syeda Rizwana Hasan, Dr. A.K Enamul Haque, Tanmay Sanyal, and Rezwana Islam.

The Asia Foundation would like to thank partners LIFE and BELA for leading the in-country field research and providing valuable on-the-ground insights and perspectives on water governance issues in the Teesta River Basin.

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## EXECUTIVE SUMMARY

Water governance throughout South Asia has long been dominated by technical perspectives from civil engineering, economics, and international law. Across the region, state actors, scientists, and technocrats have monopolized policy formulation and implementation providing limited space for the expression of legitimate civil society voices and stakeholder interests. In this largely state driven discourse, broader social and ecological perspectives have been underrepresented. Despite the existence of numerous bilateral treaties and agreements, the lack of regional cooperation and the absence of local and sub-national perspectives continue to prevent sustainable development and management of transboundary water resources for livelihood improvement, food security, poverty reduction, and effective adaptation to climate change. Consideration of broader stakeholder perspectives is vital to effective transboundary water governance in South Asia, and particularly to addressing its social and ecological dimensions. Bringing the discourse on water use, sharing, and management closer to affected communities and stakeholders can also help to reduce environmental degradation and thereby the potential for conflict.

In May 2012, with support from the Skoll Global Threats Fund, The Asia Foundation (TAF) in partnership with civil society organizations in India and Bangladesh began a political economy analysis of the Teesta River Basin. The Teesta River originates in the northeast Indian state of Sikkim and flows through the state of West Bengal before entering Bangladesh. The river has long been a bone of contention between co-riparians India and Bangladesh. Both countries have extensive plans to utilize the river for hydro-power generation and irrigation, and consequently the availability of water, particularly in the dry or lean season, has been at the crux of the longstanding dispute between the two neighbors. To try and unpack the interests around water governance in the Teesta Basin, the analysis sought to identify and map key actors and stakeholders in the basin, their incentives, relative stakes, and their ability to influence water governance decisions in the basin. Based on field work on either side of the India-Bangladesh border, the analysis sought to identify the drivers of change for reforming state-centered approaches to water governance in the Teesta Basin, and provide recommendations to inform future actions of the governments of India and Bangladesh, civil society actors in both countries, and donors.

The analysis highlights five distinct political economy features of water negotiations and governance in the Teesta River Basin:

- **Seeing like a state:** Bilateral negotiations between India and Bangladesh have to date been dominated by state actors that have exercised dominant control over policy and governance issues concerning the river and its management.
- **Legitimate stakeholders and actors excluded from the table:** Legitimate stakeholders and powerful actors and their concerns have largely been neglected and have found little voice in formal negotiation processes.
- **Legitimate interests excluded from the table:** Bilateral negotiations are reductionist in nature, centered on arriving at a technical formula to determine the quantum of water that

both countries can claim. This narrow approach has excluded a range of economic, social, and cultural interests from bilateral discussions and prevented the development of a basin-wide integrated approach to planning, management, and conservation of the Teesta River Basin.

- **Weak articulation of stakeholder interests:** The space for the articulation of legitimate stakeholder interests by communities in the Teesta Basin is weak, with limited opportunities for local perspectives and knowledge to trickle up to influence the formal negotiation process.
- **State control of data and information:** The state in both countries exercises dominant control over data and information related to the river and its management. Local communities have limited and extremely localized knowledge of factors affecting the river regime. Such a compartmentalized understanding of the basin's ecology has made it difficult for communities to articulate a common platform of action or develop a counter narrative to the state's dominant discourse.

Each of these factors present a window of opportunity for reform and further action on the part of the governments of India and Bangladesh, civil society actors in both countries, and donors.

## **Recommendations**

### *Governments of India and Bangladesh*

- Enhance public access to information and data on transboundary water issues
- Treat the entire river basin as a unit of analysis
- Expand track-two processes to seek a new entry-point for negotiations
- Bring other tradable benefits besides water to the negotiating table

### *CSOs in India and Bangladesh*

- Adopt intermediary roles by building trust with governments, on one hand, and relationships and networks with key actors, opinion makers, grassroots organizations, and other CSOs, on the other
- Develop strong grassroots linkages to help channel these concerns into the national discourse
- Unbundle the state by engaging with a range of state actors including the courts, parliaments, commissions, and political parties
- Mobilize grassroots coalitions around common interests

### *Donors*

- Promote open access to data and information on transboundary water issues in South Asia
- Invest in building and supporting transboundary CSO coalitions
- Prepare for longer-term engagement on the issue: As illustrated in this report, a basic roadmap towards achieving more holistic transboundary water management in South Asia consists of the following steps:

1. Ease statist control over policy processes and negotiations
2. Build capacity and networks of non-state actors to provide support to the negotiation process
3. Define the agenda in more holistic terms
4. Expand tradable benefits at the negotiating table
5. Support negotiations through dialogue processes
6. Ensure broad ownership of agreements
7. Support rapid implementation of agreements

To materialize, these processes require proactive support from multi-lateral, bilateral, and private donors over an extended period of time.

## INTRODUCTION

Water governance policies in South Asia tend to be state-centric, technocratic, exclusionary, nationalistic, and very often do not adequately recognize human, ecological, and social costs and their implications. Governments in South Asia have traditionally endowed themselves with the exclusive right to articulate public interests on water resources and have continued to show a deep resistance to parting with that tradition. In recent years, the situation has been exacerbated by collusion among politicians and domestic and foreign investors involved in water-related infrastructure projects. Water is a contested resource that draws multiple and unmediated economic, ecological, and political claims on its usage, distribution, conservation, and management. As a result, the use of water resources within and among South Asian countries has always been contentious and often politically resisted by excluded stakeholders.

Until governments in South Asia begin to fully recognize the diversity of interests around water, cooperation between countries and communities on gainful, sustainable, and equitable use of water resources cannot materialize in earnest. With water issues now part of larger ecological concerns in the context of climate change, there is an opening for greater cooperation on transboundary water governance. In that respect, the demand for more inclusive and democratic deliberation on water governance is not only a moral appeal, but an ecological and economic necessity.

In order to reform state-centric policy practices and to include civil society actors, voices, and interests in policy deliberations, targeted reform strategies that gradually chip away at entrenched exclusionary tendencies in state institutions are required. Such strategies have to be mindful of the potential resistance to reform within state institutions and the private sector, and be able to effectively mobilize political, legal, and knowledge tools for change. To get to that end, it is necessary to identify the stakeholders that are directly and indirectly involved or affected by water policy and governance, understand their interests and concerns, and determine their relative political positions in the policy hierarchy. More importantly, stakeholders need to be supported in creating spaces for dialogue to moderate and negotiate their claims and to cultivate functional relationships with each other. This report intends to pursue the broader goal of improved transboundary water governance in South Asia through an improved understanding of the political dynamics, stakeholder interests, and depth of resistance in reforming water governance regimes.

To begin to unpack the politics around transboundary water governance in South Asia, in May 2012, The Asia Foundation (TAF) in partnership with civil society organizations in India and Bangladesh began a political economy analysis in one of South Asia's most contentious sub-basins, the Teesta River Basin. Funded by the Skoll Global Threats Fund, the analysis sought to: i) gain a grounded understanding of the social, political, economic, and institutional factors that influence transboundary water governance in the Teesta River Basin; ii) identify and map key actors and stakeholders, their incentives, relative stakes, and their ability to influence water governance decisions; iii) illustrate the power dynamics in the basin and identify the potential drivers of change necessary to bring about reforms; and iv) identify recommendations to help inform further actions by governments, civil society actors, and donors. This report captures the salient findings of that analysis.



## Political Economy of Water Governance in South Asia

South Asia is one of the most densely populated regions of the world and also one of the most water scarce. With access to only 8.3 percent of the world's water resources, the region supports more than 21 percent of the world's population.<sup>1</sup> Despite registering impressive growth over the past decade, countries in the region continue to struggle with high rates of poverty and low levels of human development. By 2005 estimates, close to 595 million people in South Asia lived on less than \$1.25 a day.<sup>2</sup> In recent decades, population expansion, urbanization, and changes in production and consumption patterns in the region have increased the demand for water, food, and energy. Simultaneously, variations in rainfall patterns and weather systems due to climate change have made the region highly susceptible to floods, droughts, and natural disasters.

The Himalayas, known as the “water tower” of Asia or “third pole”, supply the three major transboundary river systems of the Indus, Ganges, and Brahmaputra that collectively support an estimated 700 million people. In addition, the annual southwest monsoons supply 70-90 percent of annual rainfall in the region.<sup>3</sup> The majority of countries in South Asia rely on transboundary water flows to meet their domestic water needs.<sup>4</sup> Bangladesh, for example, draws an estimated 91.3 percent of its water from transboundary river systems such as the Brahmaputra and Ganges. Similarly, Pakistan relies on the Indus river system to meet its agricultural and industrial needs and has a high water dependency ratio of 75.6 percent.<sup>5</sup>

Meanwhile, water availability per capita in South Asia has declined by a staggering 70 percent since 1950.<sup>6</sup> In addition, climate change studies on South Asia increasingly suggest that the effects of glacial melt and erratic monsoon patterns will significantly reduce the availability of water in river basins in the region. As the demand for water for agriculture, industries, and hydro-power generation in these countries grows, water is increasingly a driver of tension and potential conflict in the region.

Relations among countries in South Asia, in particular India, Bangladesh, and Pakistan, have historically been difficult, marred by deep-seated distrust, political tensions, and histories of armed conflict. Although numerous bilateral treaties and agreements<sup>7</sup> regulate regional water sharing and related infrastructure projects (e.g., hydropower, large dams), water is an “emotive and politically charged”<sup>8</sup> issue in the sub-continent. Countries in the region have regularly accused each other of controlling and damming transboundary rivers without regard for international principles of water sharing or downstream impacts. India and Pakistan have had a long running and much publicized dispute on the Indus river waters.<sup>9</sup> While the Indus Water

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<sup>1</sup> Aquastat online database, 2010 as quoted in Chellaney 2011: 277

<sup>2</sup> See <http://blogs.worldbank.org/developmenttalk/the-poor-half-billion-what-is-holding-back-lagging-regions-in-south-asia>

<sup>3</sup> Jaitley 2009: 20

<sup>4</sup> With the exception of Sri Lanka and the Maldives, countries in South Asia including Bangladesh, Bhutan, India, Nepal and Pakistan, significantly rely on transboundary rivers to meet their national water needs.

<sup>5</sup> Food and Agriculture Organization (FAO), Aquastat online database, 2011 as cited in Chellaney 2011: 244-245

<sup>6</sup> Food and Agriculture Organization (FAO), Aquastat online database, as cited in Jaitley 2009: 17

<sup>7</sup> For example, the Indus River Treaty between India and Pakistan (1960), the treaties between India and Nepal on the Kosi (1954), Gandaki (1959), Mahakali (1996), and the Ganges Water Sharing Treaty (1996) between India and Bangladesh.

<sup>8</sup> Chellaney 2011: 278

<sup>9</sup> The Indus River Basin has the largest contiguous irrigation system in the world.

Treaty of 1960<sup>10</sup> is internationally regarded as a landmark treaty on water governance in the region, the river continues to be a source of tension between the two nuclear powers.<sup>11</sup> In particular, India's construction of dams and other projects on the tributaries of the Indus within its territory has been a sore point with Pakistan. In 2010, Pakistan filed a case in the International Court of Arbitration (ICA), The Hague, alleging that India's Kishanganga hydropower project on the Kishanganga/Neelum River in Kashmir of violating the Indus Water Treaty.<sup>12</sup> Pakistan has also raised concerns over the Baglihar dam and Tulbul Navigation Project/Wular Barrage. These on-going disputes have served to increase tensions between the two countries.

It has similarly been argued that "raspy hydro-politics"<sup>13</sup> between Bangladesh and India regarding the sharing of transboundary rivers such as the Ganges, Brahmaputra, and Teesta, has soured relations between the two countries. Water disputes between Nepal and India relate largely to the upstream storage and control of flood waters from rivers originating in the Nepal Himalayas. In this complex geo-political scenario, efforts at transboundary cooperation have largely been stymied, even as the growing scarcity of water in the region and effects of climate change necessitate shared approaches to the management and utilization of transboundary water resources.

According to the United Nations, transboundary water governance in the 21<sup>st</sup> century is confronted by two key challenges: 1) the ability to move away from "inward-looking national strategies and unilateral action to shared strategies for multi-lateral cooperation" and, 2) "to put human development at the center of transboundary cooperation and governance."<sup>14</sup> This holds true for South Asia where conventional approaches to water governance<sup>15</sup> have prioritized the role of the state and its agencies in decision making and management of water resources. Such approaches have been characterized by the dominance of technical experts and hydrocrats, low levels of transparency and accountability, and limited opportunities for civil society engagement or participation.<sup>16</sup> Factors such as basin-wide ecosystem services, social inclusion, and institutional and human behavior have largely remained peripheral in this state-driven discourse.

The lack of regional cooperation in South Asia and the absence of local and sub-national perspectives continue to prevent sustainable development and management of transboundary

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<sup>10</sup> Under the Indus Water Treaty (1960), negotiated by the World Bank, India was granted exclusive usage rights over the three eastern rivers of the Indus i.e. Ravi, Beas, Sutlej and their tributaries; while Pakistan was granted exclusive rights to the waters of the three western rivers i.e. Indus, Jhelum, Chenab and their tributaries. Under certain circumstances the two countries may use water from each others' rivers. Under the agreement, India has access to less than one fifth of the total waters of the Indus River System.

<sup>11</sup> See Condon, E & P. Hillman et al. 2009

<sup>12</sup> *The Indian Express*. 2010. "Pak Sues India over Dam". May 20. <http://www.indianexpress.com/news/pak-sues-india-over-dam/621380/>. In 2011, the ICA issued a stay order preventing India from constructing permanent structures on the Kishanganga/Neelum River that would obstruct downstream flows. In July 2012, the ICA conducted a two week hearing on the case. In February 2013, the ICA upheld India's right to continue with construction of the Kishanganga hydroelectric project and divert river water from the project. See: *The Indian Express*. 2013. "India Wins Kishanganga Case at the Hague Court". February 19. <http://www.indianexpress.com/news/india-wins-kishanganga-case-at-the-hague-court/1076239/0>

<sup>13</sup> Chellaney 2011: 278

<sup>14</sup> UNDP 2006: 204

<sup>15</sup> UNDP defines "water governance" as the range of political, social, economic, and administrative systems that are in place to regulate the development and management of water resources and provision of water services at different levels of society. See: <http://www.watergovernance.org/aboutwatergovernance>.

<sup>16</sup> Vivekananda and Nair 2009: 8-9.

water resources for livelihood improvement, food security, poverty reduction, and effective adaptation to climate change. A more nuanced understanding of the political economy of transboundary water governance in South Asia, including the “winners” and “losers” in any transboundary agreement, is critical to identifying opportunities for greater regional cooperation in the region.

## **Methodology**

This study was conducted by TAF in partnership with the Lawyers Initiative for Forest and Environment (LIFE), India and the Bangladesh Environmental Lawyers Association (BELA), Bangladesh.<sup>17</sup> To map stakeholders and their interests within the Teesta basin, the study utilized a combination of primary and secondary research methodologies. These included information gathered through: i) a literature review and analysis of secondary data and sources; ii) data collected through primary field research; iii) stakeholder interviews/consultations; iv) country-specific case studies; and v) expert interviews.

To begin with, background papers commissioned from local experts provided insights into key issues in the Teesta basin from upper and lower riparian perspectives.<sup>18</sup> Specifically, the papers illustrated the geography and demography of the basin; highlighted hydrological and ecological concerns; inventoried national and local-level policies affecting basin development; and identified existing and proposed projects on the river.

LIFE and BELA conducted stakeholder mapping in India and Bangladesh, respectively. LIFE conducted field research in three locations in India: Singtham (Sikkim), Siliguri (North Bengal), and Gazaldoba (West Bengal). BELA conducted field research in four districts in Rangpur Division in northern Bangladesh: Nilphamari, Lalmonirhat, Rangpur, and Gaibandha. In each location, LIFE and BELA worked with local civil society partners to administer a stakeholder mapping questionnaire developed by TAF and conducted stakeholder interviews and focus group discussions (FGDs). Data and findings from the stakeholder mapping exercise were subsequently utilized to develop a GIS-based stakeholder map. The interactive map (available at <http://www.waterbeyondborders.net/waterasia/>) hosts information regarding the geography, hydro-meteorology, existing usage, and proposed usage in the sub-basin. In addition, it identifies the location, interests, and relative political positions of stakeholders on policy issues.

Drawing on the field research, country-specific case studies developed by partners illustrated key issues, stakeholders, and interests involved in debates on the governance and management of the Teesta River. Finally, expert interviews were conducted with bureaucrats, civil society experts, and academics in Delhi, Kolkata, and Dhaka to illustrate the interests of stakeholder groups beyond the immediate confines of the basin. The findings and recommendations of the study were discussed at a partners’ review meeting held in Dhaka, Bangladesh on October 12, 2012.

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<sup>17</sup> LIFE is a public interest environmental law firm based in New Delhi that utilizes the existing legal framework and institutions to protect areas of vital ecological importance in India. BELA is a non-profit and non-governmental organization of lawyers that supports sound environmental law and order in Bangladesh.

<sup>18</sup> The background papers were prepared by Dr. Partha J. Das, Program Head, Water Climate and Hazard Program, Aaranyak and Dr. A.K Enamul Haque, Professor of Economics, United International University, Bangladesh.

## Baseline Description of the Teesta River Basin

### Geography

The Teesta River originates as Chhombu Chhu from a glacial lake, Khangchung Chho, in the northeast Indian state of Sikkim, at an elevation of 5,280 meters. The glacial lake is located at the tip of the Teesta Khangse glacier which descends from Pauhunri peak. The Chhombu Chhu, the headstream of the Teesta, flows eastwards joining the Zemu Chhu to become the Lachen Chhu. At Chungthang, the Lachen Chhu is joined by the Lachung Chhu to become the Teesta.

The Teesta drains nearly 95 percent of the mountainous state of Sikkim.<sup>19</sup> Throughout its course in Sikkim, the river is turbulent, flowing with high velocity through narrow and deep valleys.<sup>20</sup> Within a distance of 100 kilometers, the elevation of the Teesta basin varies from 8,598 meters to 213 meters.<sup>21</sup> It has been argued that the rapid descent of the river from high elevations make it ideally suited for hydropower development.<sup>22</sup> Notably, the Sikkim stretches of the Teesta are prone to earthquakes, landslides, and frequent floods. As it travels towards the plains, the Teesta is joined by a number of tributaries, including the Lachung Chhu, Dikchu, Chakung Chhu, Rani Khola, Rangpo (left bank) and Zemu, Rangyong, Rongli, and Rangit (right bank).<sup>23</sup>

In the sub-Himalayan plains, the Teesta is joined by tributaries such as the Leesh, Geesh, Chel, Neora, and the Karala. From Melli Bazar in downstream Sikkim, the river leaves the hills and enters the plains of West Bengal at Sevoke near Siliguri. In West Bengal, the Teesta covers 3,225 square kilometers through the districts of Darjeeling and Jalpaiguri before entering Bangladesh in Dimla upazila of Nilphamari district.

The Teesta is the fourth largest transboundary river in Bangladesh.<sup>24</sup> The river flows through five northern districts of Bangladesh, i.e. Gaibandha, Kurigram, Lalmonirhat, Nilphamari, and Rangpur (Rangpur Division), comprising an area of 9,667 square kilometers, 35 upazilas/thanas, and 5,427 villages with an estimated population in 2011 of 9.15 million.<sup>25</sup> According to one estimate, 21 million people in Bangladesh are directly or indirectly dependent on the river for their livelihoods. In total, the Teesta flood plain covers nearly 14 percent of the total cropped area of Bangladesh and provides livelihood opportunities directly to approximately 7.3 percent of the population, or 9.15 million people, in five districts of Rangpur Division.<sup>26</sup>

After traveling a length of approximately 414 kilometers through India and Bangladesh, the Teesta merges with the Brahmaputra (Jamuna) at an elevation of 23 meters at Teestamukh Ghat (Kamarjani-Bahadurabad) in Rangpur District in Bangladesh. Of its total length, the river

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<sup>19</sup> The Teesta is classified as a high altitude basin in the state of Sikkim with nearly one-fourth of the basin area at an elevation of 4,000 to 5,000 metres and more than 59 percent of the catchment area above 3,000 metres. As cited in CISMHE 2006: 9

<sup>20</sup> CISHME and Water and Power Consultancy Services Limited 2006: 23

<sup>21</sup> CISMHE 2006: 8

<sup>22</sup> CISHME and Water and Power Consultancy Services Limited 2006: 42

<sup>23</sup> *ibid.*: 12-13

<sup>24</sup> The three largest transboundary rivers are the Ganges, Brahmaputra and the Meghna.

<sup>25</sup> Bangladesh Bureau of Statistics 2011

<sup>26</sup> Bangladesh Bureau of Statistics 2012

traverses 151 kilometers in Sikkim, 142 kilometers along the Sikkim-West Bengal boundary and through West Bengal, and 121 kilometers in Bangladesh.<sup>27</sup>

The transboundary basin of the Teesta River covers 12,159 square kilometers of which 10,155 square kilometers is in India and 2,004 square kilometers is in Bangladesh. Approximately 8,051 square kilometers of the river basin runs through hilly parts of Sikkim (6,930 square kilometers) and West Bengal (1,121 square kilometers). Approximately 4,108 square kilometers of the basin lies in the plains of West Bengal (2,104 square kilometers) and Bangladesh (2,004 square kilometers).<sup>28</sup>

Historically, the Teesta was part of the Ganges river system, flowing south from Jalpaiguri in West Bengal in three separate channels, i.e., the Karatoya, Purnabhaba, and Atrai. It is speculated that the three channels led to the name “Trisrota” (possessed of three streams) and subsequently the “Teesta”. Following a flood in 1787, the Teesta changed its course southeast to join the Brahmaputra.

### Hydro-meteorology and Climate Change

The Teesta is a perennial rain and snow-fed river. A number of glaciers and glacial lakes in the upper reaches of the basin in Sikkim supply the headwaters of the Teesta. The largest glacier in the basin is the Zemu glacier, covering an area of 107.3 square kilometers, and the largest glacial lake is the Khangchung Chho, with coverage of approximately 1.6 square kilometers. It is estimated that there are over 300 glacial lakes dotting the Teesta Basin in the Sikkim Himalayas.<sup>29</sup> In addition to glacial melt water, the Teesta is also drained by a number of tributaries as it journeys towards the plains. The tributaries of the Teesta are considered “flashy mountain” rivers that travel at high velocities with large quantities of debris and sediment.<sup>30</sup>

The upper catchment of the Teesta Basin in Sikkim is prone to sudden variations in rainfall and temperature due to the high altitude and mountainous topography. The average annual rainfall received in Sikkim is 2,534 millimeters with the maximum rainfall received during the month of July and the minimum in December.<sup>31</sup> Climatic conditions in the basin range from extremely cold and alpine conditions in the north to humid and sub-tropical conditions in the south, west, and east. The Sikkim region has been declared a global biodiversity hotspot with a rich variety of endemic flora and fauna. An estimated 4,000 varieties of flowering plants and a number of endangered species such as the Red Panda, Himalayan Marmot, and Marbled Cat are found in the region. Notably, the Sikkim region is geologically fragile and prone to frequent high intensity earthquakes and landslides.

In recent years, Sikkim has experienced a number of sudden and devastating glacial lake outburst floods (GLOFs). Several small and medium sized potentially dangerous glacial lakes have been identified in the upper catchment of the Sikkim region.<sup>32</sup> These lakes are evidence of increasing glacial retreat and melting in upper reaches of the basin due to climate change. It is predicted that

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<sup>27</sup> CISHME and Water and Power Consultancy Services 2006: 14

<sup>28</sup> *ibid*: 15

<sup>29</sup> CISMHE 2006: 39

<sup>30</sup> *ibid*: 6

<sup>31</sup> CISHME Water and Power Consultancy Services Limited 2006: 33

<sup>32</sup> CISMHE 2006: 37-40

the Himalayan river catchments will experience more extreme weather events (e.g., heavy rainfall and cloud bursts) increasing the rate of soil erosion, landslides, and flash floods.<sup>33</sup> The general pattern of hydrological impact of climate change in the Brahmaputra river basin can be extended to the Teesta to foresee a future where accelerated melting of glaciers feeding the rivers will lead to more frequent and intense flooding initially, but subsequently the average flow of water will start decreasing with the further retreat of glaciers causing a drastic reduction in the Teesta's flow.<sup>34</sup>

### Existing and Proposed Hydrological Structures in the Basin

In India, the most significant development activity on the Teesta is the construction of a series of cascade dams for hydropower generation in the state of Sikkim. Approximately 30 major hydropower projects have been planned on the river with a planned capacity of over 5,000 megawatts of electricity. The rapid construction of mega power projects in Sikkim and large parts of India's northeast comes in the wake of the liberalization of India's power sector in 2003 and a significant drive by the Indian government to meet the country's energy needs through hydro-power generation.<sup>35</sup> Some of the major hydropower projects in Sikkim include Teesta Stage-II (330 megawatts), Teesta Stage-III (1200 megawatts), Teesta Stage-IV (520 megawatts), Teesta Stage-V (510 megawatts), Teesta Stage-VI (500 megawatts), and Panan HEP (300 megawatts). A map of the proposed projects appears in Figure 1 below.

These projects are "run of the river" hydroelectric projects, which involve the construction of large dams to divert river water through tunnels and a powerhouse before the river water is deposited downstream. The large scale construction of dams in the region has been controversial with local communities, civil society groups, academics, and environmentalists raising concerns about the ecological, environmental, and socio-cultural impact of run of the river projects in the region. Groups and communities in the state of West Bengal have also raised concerns about the downstream impacts of these projects on agriculture, navigation, fishing, and other livelihoods.

In West Bengal, the Teesta Barrage Project (TBP) is one of the largest irrigation projects in eastern India with a planned target to irrigate 922,000 hectares in six districts of north Bengal and develop 67.50 megawatts of hydropower on completion.<sup>36</sup> The three-phase project seeks to utilize Teesta River waters for "irrigation, hydropower generation, navigation, and flood control" through a network of barrages and canals on the river.<sup>37</sup> While the project was initiated in 1976, to date only certain stages of the project have been completed, including construction of the Teesta Barrage at Galzaldoba in Jalpaiguri District of West Bengal and barrages on the Mahananda and

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<sup>33</sup> IPCC 2007

<sup>34</sup> Immerzeel, W.W et al. 2010:1382-1385.

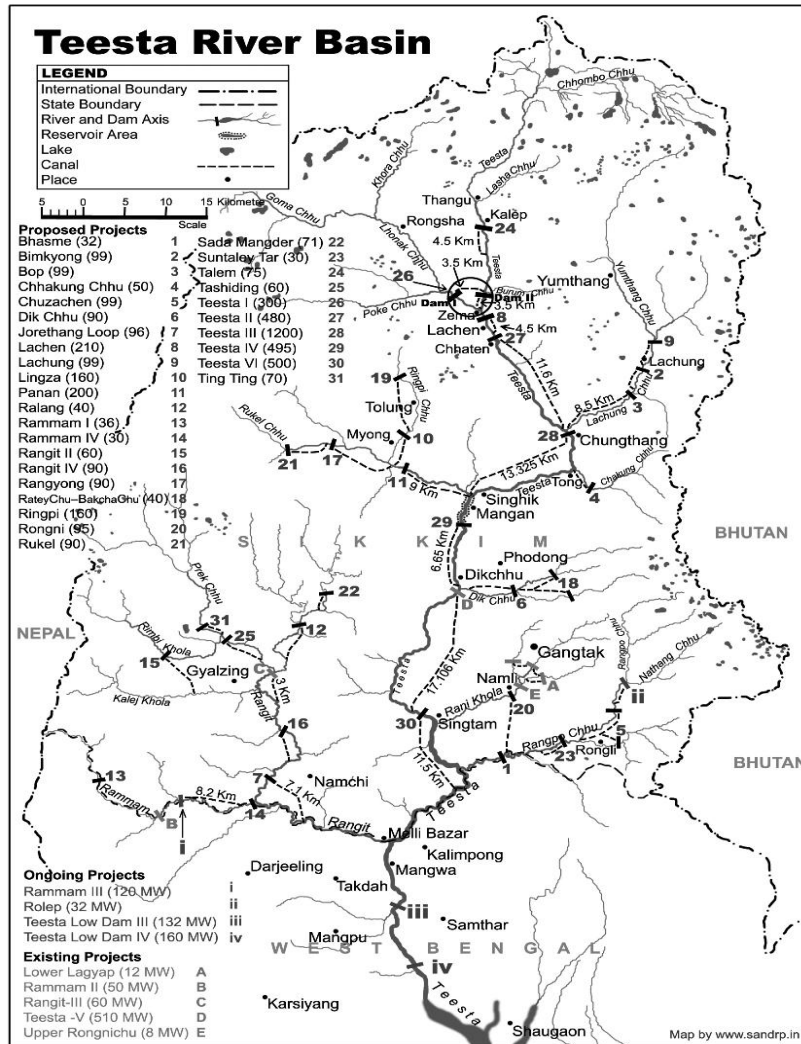
<sup>35</sup> The Government of India has referred to India's northeastern region as the "future powerhouse" of the country. 168 potential large dams have been identified in the Brahmaputra river basin region with the capacity to generate 63,328 megawatts. In addition the Government of India's ambitious "Hydro Power Initiative" also focuses on the northeast. The northeastern region comprises eight states of Arunachal Pradesh, Assam, Meghalaya, Manipur, Mizoram, Nagaland, Sikkim and Tripura. See: [http://www.internationalrivers.org/files/attached-files/damsandcdm\\_ne\\_india\\_april\\_2012.pdf](http://www.internationalrivers.org/files/attached-files/damsandcdm_ne_india_april_2012.pdf)

<sup>36</sup> Irrigation and Waterways Department, Government of West Bengal, [http://wbiwd.gov.in/irrigation\\_sector/major/teesta.htm](http://wbiwd.gov.in/irrigation_sector/major/teesta.htm)

<sup>37</sup> Irrigation and Waterways Department, Government of West Bengal. [http://wbiwd.gov.in/irrigation\\_sector/major/teesta.htm](http://wbiwd.gov.in/irrigation_sector/major/teesta.htm)

Dauk rivers.<sup>38</sup> In addition to the ambitious TBP, NHPC Limited is in the process of developing two “low dams” in Darjeeling District of West Bengal, i.e. Teesta Low Dam III (132 megawatts) and Teesta Low Dam IV (160 megawatts).<sup>39</sup>

**Figure 1: Proposed Projects in the Teesta River Basin<sup>40</sup>**



The Government of India’s controversial Inter-Linking of Rivers Program (ILR) also involves utilization of the Teesta River. Under the plan, water from India’s Himalayan and peninsular rivers would be diverted through a series of inter-basin canals (30 in total) and dams to water scarce and drought prone areas of Southern India. The project is estimated to eventually irrigate

<sup>38</sup> In 2009, the TBP was declared a national project with the Government of India agreeing to fund the project with the Government of West Bengal at a cost share of 90:10, on the condition that it is completed by 2015. However, the project continues to be delayed due to an on-going dispute within West Bengal over the acquisition of land for the project. See: *Tehelka*. 2011. “Barrage Locked in Land Dilemma”. September 9. [http://www.telegraphindia.com/1110909/jsp/siliguri/story\\_14483682.jsp](http://www.telegraphindia.com/1110909/jsp/siliguri/story_14483682.jsp)

<sup>39</sup> NHPC Limited, <http://www.nhpcindia.com/index.htm>

<sup>40</sup> South Asia Network on Rivers, Dams and People ([http://www.sandrp.in/basin\\_maps/Teesta%20150411.jpg](http://www.sandrp.in/basin_maps/Teesta%20150411.jpg))

30 million hectares and generate 20,000-25,000 megawatts of power.<sup>41</sup> The project has been criticized by groups in both India and Bangladesh. Officials in Bangladesh fear that it will increase flooding in the country and reduce the availability of water in the dry season. They have also argued that the project violates the 1996 Helsinki Rules on Water Resources and subsequent 2004 Berlin Rules on Water Resources on equitable sharing of river waters between co-riparians.<sup>42</sup> Notably, in February 2012 the Supreme Court of India ordered the setting up of a special committee to expedite implementation of the project.<sup>43</sup>

In Bangladesh, the Teesta is critical to meeting the agriculture and irrigation needs of northern parts of the country that are water scarce and drought prone. Initiated in the 1970s, the Teesta Barrage Irrigation Project (TBIP) aims to increase agricultural production, food security, and employment opportunities in the country's northern districts. The two phase project covers 12 upazilas/thanas and has a total planned command area of 750,000 hectares and irrigable area of 540,000 hectares. Phase 1 of the project with a command area of 154,250 hectares and a net irrigable area of 111,406 hectares was completed in 1998. It covers the districts of Nilphamari, Dinajpur, and Rangpur (Rangpur Division), and consists of a barrage at Dalia in Lalmonirhat District, a canal head regulator, flood embankment, irrigation canal networks, and drainage channels.<sup>44</sup>

Bangladesh has long argued that India's construction of the Gazaldoba Barrage upstream of Dalia has significantly reduced the availability of water in the dry season. Furthermore, the release of water during the monsoon season is also a cause of flooding and bank erosion downstream.<sup>45</sup> The availability of water for irrigation, particularly in the lean or dry season, has been at the crux of the longstanding dispute between the two countries.

### **Basin Governance and the State of Bilateral Negotiations**

India and Bangladesh share as many as 54 transboundary rivers, including the three major rivers systems of the Ganges, Brahmaputra, and Meghna. The majority of these rivers originate from the Himalayas and travel through India and Bangladesh to meet the Bay of Bengal. As the upper riparian, India has traditionally staked a prior claim on rivers flowing through its territory and in so doing has controlled the quantity of water flowing into Bangladesh. Due to its unique topography, lower riparian Bangladesh is prone to seasonal variations in river flows and scarcity of water in the dry season. Consequently, Bangladesh relies heavily on transboundary river flows from India. Given this scenario, water sharing has frequently been a source of tension between the two South Asian neighbors.

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<sup>41</sup> National Council for Applied Economic Research. 2008. Economic Impact of Interlinking of Rivers Program, NCAER: New Delhi. <http://nwda.gov.in/writereaddata/mainlinkfile/File277.pdf>,

<sup>42</sup> Condon, E and P. Hillman et al 2009: 8

<sup>43</sup> Parsai, Gargi. 2012. "Water Ministry Mulls Review". *The Hindu*. March 29. <http://www.thehindu.com/news/national/water-ministry-mulls-review-of-court-order-on-linking-of-rivers/article3259040.ece>

<sup>44</sup> Bangladesh Water Development Board, [http://www.bwdb.gov.bd/index.php?option=com\\_content&view=article&id=132&Itemid=119](http://www.bwdb.gov.bd/index.php?option=com_content&view=article&id=132&Itemid=119)

<sup>45</sup> *The Daily Star*. 2012. "Steep Decline in Teesta Water Flow". February 23. <http://www.thedailystar.net/newDesign/news-details.php?nid=223577>



The two countries have a long history of water disputes, notably on the sharing of Ganges river waters. India's diversion of the Ganges from Farrakka Barrage to the Bhagirathi-Hoogli river system was for decades a major source of discord between the two countries. While the Ganges Water Treaty of 1996<sup>46</sup> signaled a shift in bilateral relations, in recent years, disagreements over India's construction of the Tipaimukh dam in the Indian state of Manipur, upstream of the Bangladesh border; India's Inter-Linking of Rivers Program, and the sharing of other transboundary rivers such as the Teesta, Feni, Manu, Muhuri, Dharla, and Dudhkumar, have continued to flare up.<sup>47</sup>

Negotiations between India and Bangladesh on the Teesta can be traced back to the 1950s-60s when authorities in former East Pakistan and India began discussions on proposed projects on the river. While the negotiations proved inconclusive, both sides agreed to share technical data and information. Following the independence of Bangladesh in 1971, the Indo-Bangladesh Joint River Commission was set up to anchor talks on the sharing of river waters. In 1983, India and Bangladesh agreed to an ad hoc arrangement to share 75 percent of the Teesta waters, with India using 39 percent and Bangladesh 36 percent, and the remaining 25 percent to be allocated following further study.

As the upper riparian country, India controls the flow of water into Bangladesh from the Teesta barrage at Gazaldoba, constructed to provide water to northern parts of West Bengal. Bangladesh has also constructed a barrage downstream, at Dalia in Lalmonirhat District, which supplies water for agriculture and irrigation to drought prone areas of northern Bangladesh. It is argued by Bangladesh that the construction and diversion of water from the Gazaldoba Barrage has drastically reduced water availability at the Dalia Barrage, particularly in the dry season.<sup>48</sup>

In 1997, a Joint Committee of Experts was formed to examine the sharing of the river. Although a series of meetings were held between 1997 and 2004, little progress was made. Subsequently, a Joint Technical Group (JTG) was formed in 2004 to develop recommendations on the draft terms of reference for a joint-scientific assessment of the Teesta as well as on the draft interim agreement on sharing of lean season flows between the two countries.<sup>49</sup> In 2005, in its fourth meeting, the JTG recorded its inability to come up with a solution. In the same year, the Joint River Commission, in its 36<sup>th</sup> meeting, recognized that "the lean season flows in [the] Teesta will not meet the needs of both the countries and hence any sharing formula for the lean season flows should be based on shared sacrifices".<sup>50</sup> In 2010, the Prime Ministers of India and Bangladesh issued a Joint Communiqué calling for the Teesta issue to be resolved expeditiously. Subsequently, a draft agreement on the Teesta as well as a statement of principles for sharing of river waters in the lean season was prepared by Bangladesh and India respectively. These were to form the basis of an interim agreement on the Teesta between both countries.

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<sup>46</sup> The Ganges Treaty guarantees Bangladesh a minimum share of Ganges river waters throughout the year especially in the lean/dry season. The agreement builds on the concept of joint-oversight of river flows to build mutual trust between both countries. While the Ganges River Treaty has been criticized by groups on either side of the border, some argue that it has opened up the possibility of similar water sharing treaties on other contentious river basins such as the Teesta. See Chellaney 2011: 278-279

<sup>47</sup> Chellaney 2011: 278-281. See also Condon, E and P.Hillman et al 2009: 8-11

<sup>48</sup> Water Beyond Borders 2012. See also Higano and Islam 2002

<sup>49</sup> Water Beyond Borders 2012: 2

<sup>50</sup> *ibid*: 3

In September 2011, during Indian Prime Minister Manmohan Singh's visit to Dhaka, the two countries were poised to sign a new agreement on the Teesta. However, the agreement fell through when West Bengal Chief Minister Mamata Banerjee protested against the proposed allocation of 50 percent of the river's water to Bangladesh. As water is a state subject in India,<sup>51</sup> the Indian government could not proceed without further consultations with the West Bengal government. Notably, during the Indian Prime Minister's visit, India and Bangladesh signed a broad framework agreement on bilateral cooperation emphasizing, among other issues, the need to explore the possibility of "common basin management of common rivers."<sup>52</sup> However, India's failure to sign the Teesta agreement in 2011 has continued to be a sore point between both countries, and has slowed bilateral discussions on other issues, including transit facilities for India through Bangladesh and discussions on the sharing of other transboundary rivers such as the Feni, Manu, Muhuri, Khowai, Gumti, Dharla, and Dudhkumar.<sup>53</sup>

To date, bilateral discussions between India and Bangladesh on the Teesta have proved intractable. Despite several meetings of the Joint River Commission, Joint Committee of Experts, and Joint Technical Group, little progress has been made on critical issues such as lean season flow. Discussions between the two countries have largely been technical in nature with little discussion of social and ecological issues or stakeholder concerns. Spaces for civil society engagement or public participation have also been extremely limited.<sup>54</sup> West Bengal Chief Minister Mamata Banerjee's refusal to endorse the proposed Teesta agreement on the grounds that her government had not been adequately consulted demonstrates the exclusive nature of the discourse even at the national level. Notably, in May 2012 then External Affairs Minister S. M Krishna announced that the Government of India was working "... to develop a political consensus in India" on the Teesta and was in the process of consulting the state government of West Bengal.<sup>55</sup> More recently, in March 2013, on an official visit to Bangladesh, President of India, Pranab Mukherjee assured Bangladesh of its commitment to "a fair, reasonable solution" on the Teesta, and that consultations with stakeholders in India, including the government of West Bengal, would be concluded at the earliest.<sup>56</sup> While progress on these consultations is unclear, the government's statement reflects the growing recognition that broader stakeholder concerns and interests on the Teesta have largely been neglected in mainstream bilateral discussions.

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<sup>51</sup> India is a federal union of 28 states and 7 union territories. Constitutionally, legislative and administrative powers are divided between the central and the state governments such that each state government has the exclusive authority to legislate on certain key subjects. These subjects include: public order, police, prisons, local government, public health and sanitation, water supplies and irrigation etc.

<sup>52</sup> *The Daily Star*. 2012. "Indo-Bangladesh Framework Agreement". July 18.

<http://www.thedailystar.net/newDesign/news-details.php?nid=242489>

<sup>53</sup> Ahmed. Imtiaz. 2012. "Teesta Tipaimukh and River Linking: Danger to Bangladesh-India Relations". *Economic and Political Weekly*, Vol. XLVII No. 16, April 21.

[http://www.indiawaterportal.org/sites/indiawaterportal.org/files/teesta\\_tipaimukh\\_riverlinking\\_imtiaz\\_ahmed\\_epw\\_2012.pdf](http://www.indiawaterportal.org/sites/indiawaterportal.org/files/teesta_tipaimukh_riverlinking_imtiaz_ahmed_epw_2012.pdf)

<sup>54</sup> Water Beyond Borders 2012: 7-8

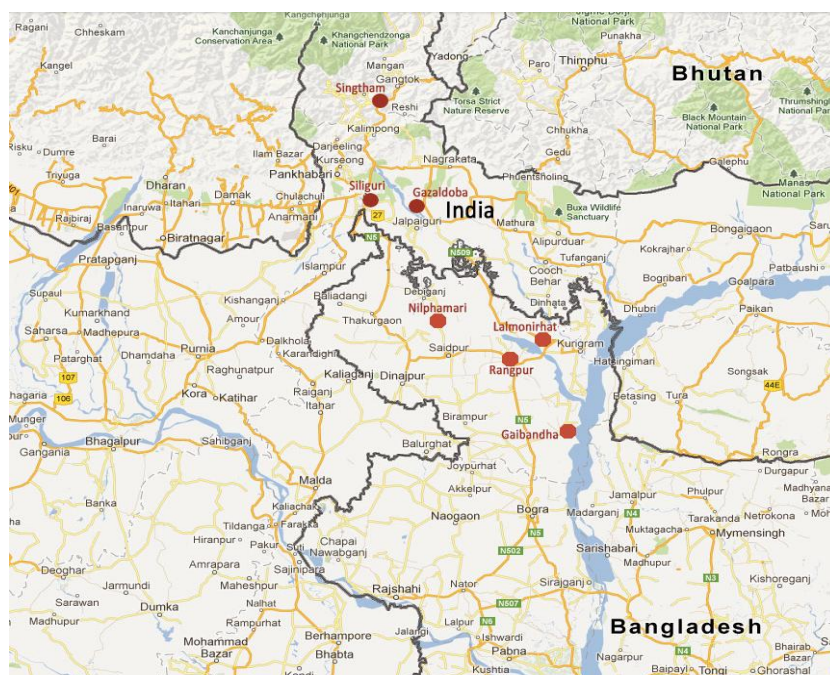
<sup>55</sup> Chaudhury, Dipanjay Roy. 2012. "Trying to Build Political Consensus on Teesta Deal: Krishna to Bangladesh Foreign Minister". *India Today*. May 5. <http://indiatoday.intoday.in/story/teesta-water-deal-krishna-bangladesh-mamata-banerjee/1/187920.html>

<sup>56</sup> *The Deccan Herald*. 2013. "Pranab Assures Bangladesh of Early Conclusion of Teesta Deal". March 3. <http://www.deccanherald.com/content/316230/pranab-assures-bangladesh-early-conclusion.html>

## STAKEHOLDER MAPPING OF THE TEESTA BASIN

As part of the study, partner organizations LIFE and BELA conducted field research on either side of the India and Bangladesh border. LIFE conducted research in three locations in India: Singtham (Sikkim), Siliguri (North Bengal), and Gazaldoba (West Bengal). BELA conducted research in four districts in Rangpur Division in northern Bangladesh: Nilphamari, Lalmonirhat, Rangpur, and Gaibandha. A GIS map of fieldwork locations is presented in Figure 2 below. In each location, LIFE and BELA worked with local civil society partners to administer a stakeholder mapping questionnaire developed by TAF and conducted stakeholder interviews and focus group discussions (FGDs). Data and findings from the stakeholder mapping exercise were utilized to develop a GIS-based stakeholder map. The interactive map (available at <http://www.waterbeyondborders.net/waterasia/>) hosts information regarding the geography, hydro-meteorology, existing usage, and proposed usage in the sub-basin. In addition, it identifies the location, interests, and relative political positions of stakeholders on policy issues.

**Figure 2: GIS Map of Fieldwork Locations**



### **Mapping Stakeholder Interests in Upper Riparian Areas of the Basin**

The Teesta drains nearly 95 percent of the state of Sikkim and is consequently of great social, cultural, and economic importance in the region. The economy of Sikkim is largely agriculture and forest based. Industrial development in the region has been limited due to poor connectivity, communication, and infrastructure facilities. The state has a low density of population and is ethnically and religiously diverse.<sup>57</sup> The rapid descent of the Teesta and other perennial rivers such as the Rangit from high elevations over short distances in Sikkim has attracted considerable

<sup>57</sup> The four major ethnic groups in Sikkim are the Lepchas, Bhutias, Limbus and Nepalese.

interest from hydropower developers. In 2003, the Government of India liberalized the power sector and launched an ambitious Hydro Electric Initiative to generate 50,000 megawatts of electricity through the development of 162 schemes in 16 states by 2017.<sup>58</sup> The Initiative paved the way for the development of hydropower projects in a number of northeastern states including Sikkim. The Central Water Commission, Government of India, estimates Sikkim has the hydropower potential to generate 8,000 megawatts (peak) and 3,000 megawatts (firm).<sup>59</sup>

Sikkim has tremendous scope for the development of tourism, horticulture, and floriculture, however, the state government has actively been promoting hydropower generation as a revenue generating strategy. Its vision is to generate 5,000 megawatts<sup>60</sup> of power in the state by 2015, earning annual revenues of up to Rs. 1.5 billion per annum.<sup>61</sup> The Sikkim government has signed memoranda of understanding or agreement (MoUs/MoAs) with independent power producers for 32 power projects in the region, with a total installed capacity of approximately 4,300 megawatts. Of these, two projects have already been commissioned and 18 projects, with an installed capacity of 3774.50 megawatts, are under development.<sup>62</sup> In addition to meeting the electricity needs of Sikkim, the power surplus generated from these projects will likely be supplied to other parts of the country.

The rapid development of hydropower projects in Sikkim, and indeed large parts of the northeast, has been a growing cause of concern in India. Scientists, civil society activists, and local communities have cautioned against the construction of mega projects in a region that is geologically and ecologically fragile.<sup>63</sup> Their concerns center on the social and environmental impacts of “run of the river” projects that re-route the river through tunnels bypassing long stretches of the natural river course. For example, the “head race tunnel” of the Teesta V project bypasses a 23-kilometer stretch of the Teesta. While these projects are described as “environmentally benign”, as submergence areas and water regulation are lower than conventional storage dams, in practice it has been argued that the diversion of water, extensive tunneling into the hillsides, and dumping of debris in surrounding areas threaten the river’s ecology and livelihoods that depend on it.<sup>64</sup> The proliferation of MoUs and MoAs with private sector developers in Sikkim has also raised red flags for many civil society activists and even the central government. Notably, in a performance audit for the state of Sikkim in 2008-2009, the Comptroller and Auditor General of India (CAG) raised concerns over the manner in which power projects had been granted to private hydropower developers in the state.<sup>65</sup> More recently,

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<sup>58</sup> The Hydro Power Initiative was launched by former Indian Prime Minister Atal Bihari Vajpayee in May, 2003. See Press Trust of India. 2003. “PM Launches 50,000 MW Hydro Power Initiative”. *The Economic Times*. May 24. [http://articles.economictimes.indiatimes.com/2003-05-24/news/27537712\\_1\\_hydro-power-power-sector-mw-additional-capacity](http://articles.economictimes.indiatimes.com/2003-05-24/news/27537712_1_hydro-power-power-sector-mw-additional-capacity)

<sup>59</sup> Government of Sikkim, Energy and Power Department, [http://www.sikkimpower.org/power/about\\_us.aspx](http://www.sikkimpower.org/power/about_us.aspx)

<sup>60</sup> Government of Sikkim, <http://www.sikkim.gov.in/MISC/EXTRAS/MISSION2015.html>

<sup>61</sup> Government of Sikkim, Budget Speech by Chief Minister and Minister in Charge of Finance, Revenue and Expenditure Department. June 26. [http://sikkimfred.gov.in/Budget\\_2012-13/Documents/BUDGET%20SPEECH.pdf](http://sikkimfred.gov.in/Budget_2012-13/Documents/BUDGET%20SPEECH.pdf)

<sup>62</sup> Notably, out of the original 32 agreements signed by the Government of Sikkim with private developers, 16 projects have been cancelled to date, due to local resistance and protests over the environmental and socio-cultural impacts of the projects. See Government of Sikkim, Budget Speech 2012-2013 *ibid*.

<sup>63</sup> A 6.9 magnitude earthquake in Sikkim in September, 2011 caused extensive damage to human life and property throughout the state. See Bhaskar, Utpal. 2011. “Sikkim Earthquake Casts Shadow on Hydro Projects”. *Live Mint*. September 27. <http://www.livemint.com/2011/09/27222835/Sikkim-earthquake-casts--shado.html>

<sup>64</sup> Vagholikar, Neeraj and Partha J. Das 2010

<sup>65</sup> *ibid*: 3

media reports have alleged corruption and collusion between the state government and private sector players in the state resulting in the approval of projects without adequate clearances, environmental impact assessments, or public consultations.<sup>66</sup>



*Teesta V Dam in Sikkim<sup>67</sup>*

There is a strong civil society led anti-dam movement in Sikkim spearheaded by the region's ethnic and religious communities. These include groups such as the Affected Citizens of Teesta (ACT), Save the Teesta Campaign (SCT), Concerned Lepchas of Sikkim (CLOS), and Citizens Forum for Sikkim (CFS). Using non-violent methods such as hunger strikes, these groups have highlighted the plight of the region's indigenous communities that have been adversely affected by development in the region. Their concerns center on mitigating the social, cultural, and environmental impacts of mega projects planned in the region and specifically protecting the Dongzu area, which is considered holy and sacred to the indigenous Lepcha community.

To gain a better sense of stakeholder interests and concerns in the state, the study team conducted a focus group discussion in Singtham, a town located in eastern Sikkim, 30 kilometers from the state capital of Gangtok.<sup>68</sup> The discussion was attended by local civil society groups, residents, academics, researchers, project affected people from different parts of Sikkim, local government officials, and a representative of a private hydropower company. Stakeholders expressed concerns over the environmental

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*"I have been living here, near the river, since 1965... We have given everything, our river, our environment, but [are] not getting anything in return, not even power supply."*

*R. L Lwame, local resident of Singtham, Sikkim*

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<sup>66</sup> *First Post*. 2012. "Teesta Urja: How Sikkim Bent Norms to Favor the Powerful". May 14.

<http://www.firstpost.com/india/teesta-urja-how-sikkim-bent-norms-to-favour-the-powerful-308729.html>

<sup>67</sup> International Rivers, <http://www.flickr.com/photos/internationalrivers/7742639254/in/set-72157630976689724>

<sup>68</sup> The FGD in Singtham, Sikkim was conducted by LIFE on June 25, 2012 in collaboration with The Mountain Institute (TMI), Gangtok.

and socio-cultural impacts of the Teesta V project and other hydropower projects in the state. Specifically, they discussed the reduced availability of ground water due to underground tunneling, which has adversely affected agricultural production (particularly cardamom, which is a major cash crop), and livelihoods in the region. Participants also highlighted the growing scarcity of drinking water due to the drying up of natural springs and local water sources.

The region has witnessed an increasing number of landslides. The reduced flow of the river, particularly in the lean season, has made performing river based rites and rituals difficult for local communities. Some participants also expressed their dissatisfaction with hydropower developers in the state due to the loss of land and livelihoods and the failure to provide adequate compensation to project affected people. However, some argued that the projects contributed to the overall economic development of the region and its people. A representative of a local NGO and employee of a private hydropower developer in the area argued that hydropower generation in the state should proceed, but that communities should be compensated for the negative impacts of such projects. Stakeholders and interests in Singtham, Sikkim are summarized in Figure 3.

**Figure 3: Stakeholders and interests in Singtham, Sikkim**

<b>Stakeholders</b>	<b>Interests</b>
Project Affected People	Mitigation of the detrimental impacts of hydropower projects, and receiving adequate compensation from project developers and the State Government.
Local Civil Society/NGO	Mitigation of the detrimental impacts of hydropower projects, and receiving compensation for project affected people.
Activists	Legal action against hydropower companies for non-compliance with environmental and ecological norms/standards, and the preservation of local religious and cultural traditions.
Academics/ Researchers	Conservation of the region’s biodiversity and natural ecosystems, research on the Teesta river system, and impact assessment of development projects.
Hydro-power Developer	Development of hydroelectricity in the region and corporate social responsibility (CSR).
Local Government Officials	Facilitate both developers and project affected people and intervening NGOs, and conflict resolution.

Stakeholders in Sikkim expressed conflicting views on the existing and proposed development of the Teesta. On the one hand, the government and a section of the public and civil society are keen to enjoy the benefits of economic development (e.g., revenue, employment, and energy sufficiency) that is expected from the hydropower industry. On the other, a small but vocal community of civil society actors, including scientists, environmentalists, and human and social rights activists, are extremely concerned about the environmental, social, and cultural impacts of projects and are opposed to the damming of the river without careful consideration of its carrying capacity and the fragile ecosystems it supports.

Public protests led by environmental and social interest groups in the state and other parts of the country have significantly influenced the discourse on damming of rivers for hydropower in the Himalayan region of India. In many instances, civic protests have forced the government to

withdraw/cancel planned projects.<sup>69</sup> Interestingly, awareness and documented scientific knowledge about the downstream effects of upstream hydraulic interventions on the Teesta are poor. Communities in Sikkim have little idea of the implications of upstream dams on the flood plains in West Bengal.

### **Mapping Stakeholder Interests in Lower Riparian Areas of the Basin**

The Teesta River enters the plains of West Bengal at Sevoke, located north of the city of Siliguri. The Coronation Bridge at Sevoke marks the confluence of the Teesta and Rangit Rivers. From Sevoke, the Teesta travels through the districts of Darjeeling and Jalpaiguri in West Bengal before entering Bangladesh. As a part of this study, stakeholder consultations were held in two locations, i.e. Siliguri (Darjeeling District, North Bengal) and Gazaldoba (Jalpaiguri, District).

Siliguri is the largest city in North Bengal, located at the foothills of the Sikkim Himalayas in the flood plains of the Teesta River. The city is of strategic importance as it connects mainland India to other parts of northeastern India as well as the neighboring countries of Bangladesh, Bhutan, and Nepal.<sup>70</sup> The focus group discussion in Siliguri was attended by a range of stakeholders, including villagers living downstream of the Teesta Barrage at Gazaldoba, those affected by the Teesta low dam projects, local civil society organizations, river researchers, and academicians from local colleges and universities.<sup>71</sup> Participants discussed a broad range of issues, including the impact of the Teesta V project on upstream and downstream areas in Sikkim and West Bengal, the Teesta Barrage, the irrigation needs of North Bengal, and the non-compliance of hydropower companies with environmental norms and the failure to recognize the rights of project affected people.

Participants discussed the impact of the Teesta low dam projects<sup>72</sup> in Darjeeling District and the failure of the NHPC Limited to take into consideration the impact of the projects on local communities and the environment. The NHPC has been criticized by groups such as the North Eastern Society for the Protection of Nature (NESPON) for failure to conduct proper Environmental Impact Assessments (EIA) or provide adequate compensation and rehabilitation for project affected people. Communities in the region have started to see changes in the river, including high rates of siltation, delta formation, frequent changes in the river course, increase in erosion, and siltation of agricultural land in areas where the river debouches into the plains. These changes have largely been attributed to dams being constructed on the Teesta.

The availability of water for irrigation was highlighted by stakeholders as a key issue. Irrigation is critical to the development and food security of five districts in North Bengal, which are some of the poorest areas in the state. According to a local researcher, existing irrigation practices in the region have largely failed. In addition, the proliferation of tea gardens, often at the cost of

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<sup>69</sup> For example, in the state of Uttarakhand, protests by civil society groups, religious leaders and activists led to cancellation of the Loharinag-Pala and Pala Maneri hydel power projects on the Bhagirathi River, a key tributary of the Ganges. See *The Economic Times*. 2010. "GoM Decides to Scrap NTPC Hydel Project on Bhagirathi". August 20, [http://articles.economictimes.indiatimes.com/2010-08-20/news/27599592\\_1\\_hydel-project-bhagirathi-river-loharinag-pala](http://articles.economictimes.indiatimes.com/2010-08-20/news/27599592_1_hydel-project-bhagirathi-river-loharinag-pala)

<sup>70</sup> Also referred to as the "Siliguri Corridor" or "Chicken's Neck".

<sup>71</sup> The FGD in Siliguri was conducted by LIFE on June 23, 2012 in collaboration the North East Society for Protection of Nature and Wildlife (NESPON), a Siliguri based voluntary organization that has been working with forest communities in North Bengal, since 1992.

<sup>72</sup> Teesta Low Dam III and Teesta Low Dam IV.

agricultural land, has increased the local demand for irrigation. It was stated that most of the beneficiaries of the Teesta Barrage command area have been tea estate owners in North Bengal. With sufficient irrigation, the region has the potential to produce three crops in a season as opposed to a single crop. Despite initiatives to produce electricity and irrigation using the surface water of rivers, the region lacks access to water for irrigation.

On the Teesta, it was argued that the water and irrigation needs of North Bengal must be satisfied before India could consider sharing additional water with Bangladesh. At the same time, it was recognized that the wellbeing of people in India and Bangladesh is equally important and consequently an equitable solution is ultimately desirable. Participants raised concerns over the upstream construction of dams in Sikkim that are likely to cause changes in the daily and lean season flows of the river. Participants questioned whether there were reliable estimates on spatial and temporal scales for the entire Teesta basin on the basis of which a water sharing formula could be evolved.

The availability and access to data and information on the hydrological regime of the Teesta was raised as a key issue. For the most part, datasets are not available to the public and are difficult to access. It is therefore important to examine whether the planned hydropower and irrigation projects on the river are based on a sound scientific understanding of the river. For example, an understanding of the upper catchments of the Teesta and its tributaries, which are highly degraded and prone to landslides, as well as of the seasonal fluctuation of discharge in the river in both its hilly and plain sections, are crucial to management of the river. Participants agreed that any agreement of water sharing should be based on reliable and scientifically valid estimates of water availability in the present and projected into the future.

The participants emphasized the importance of assessing impacts of existing and proposed projects on the Teesta. A number of villages were destroyed after construction of an embankment on the Teesta in 1972 in the east of Jalpaiguri due to fragmentation and annihilation of chars (sandbars). More intense erosion was experienced on the side of Mekhliganj after the embankment was built. In addition, the broadening of the river beyond the embankments has also led to the formation of chars. The assessment of the environmental impacts of irrigation projects both within West Bengal as well as North Bengal is therefore vital.

Stakeholders unanimously agreed that the North Bengal region has been historically neglected by policy makers resulting in its poor economic and industrial development. Most of the power produced in the region is transmitted out through the national grid to other states. They emphasized that it is important to reassess power availability in the region, and ensure that the needs for the region’s agricultural and industrial development are met. Stakeholders and interests in Siliguri are summarized in Figure 4.

**Figure 4: Stakeholders and interests in Siliguri, North Bengal**

<b>Stakeholders</b>	<b>Interests</b>
Villagers Affected by Flood and Erosion	Structural protection of villages from floods and river erosion.
Anti-dam Lobby	Objection to hydropower projects upstream of the Teesta, based on observed impacts and noncompliance with environmental norms by companies.



Social Activists	Meeting local irrigation needs while ensuring an equitable water sharing agreement between India and Bangladesh.
Forest Rights Group	Ensuring the rights of project affected people on forests and livelihoods and ensuring compensation to project affected people from project developers.
Civil Society Workers/NGOs	Mitigating the environmental impacts of hydropower projects. Ensuring there this sufficient water to meet the irrigation and agricultural needs of North Bengal.
Academicians/Researchers	Access to reliable data, information, and knowledge, proper environmental impact assessment (EIA) of projects, and decision making based on sound scientific studies.
Media	Getting information and perspectives from all stakeholders and reflecting public views.

To gain a better sense of the perspectives of downstream communities, LIFE conducted a focused group discussion in Gazaldoba, Jalpaiguri District, West Bengal.<sup>73</sup> Gazaldoba is significant as the site of the Teesta Barrage, which has been a point of contention between India and Bangladesh ever since its construction began in 1975. As discussed previously, the three-phased Teesta Barrage Project is one of the largest irrigation projects in eastern India, supplying water to six districts in northern West Bengal.<sup>74</sup> To date, only certain sections of the project have been completed. The Teesta Barrage Project has been criticized as overly ambitious in its irrigation targets as the project does not have storage capacity and depends on barrages to divert water. The project has also been plagued by delays and cost overruns.<sup>75</sup> Recently, the newly elected Trinamool Congress government has promised to expedite and prioritize completion of the project.<sup>76</sup>

The Gazaldoba area is largely inhabited by communities that depend on farming and fishing for their livelihoods. In the focus group discussion, representatives of these communities described changes in the river and its regime over the last 20 years. These include increased sedimentation and siltation of the river, braiding, and growth of chars (sandbars) in the river bed, which have had a significant impact on local flora and fauna, and caused flooding and river bank erosion. Many villages in the area have been acutely affected by river erosion, forcing local communities to relocate to other areas. According to locals, large boulders carried down by the river from the mountains used to act as barriers to bank erosion and maintained the depth of the river; however, in recent years the quantity of silt and sand has increased, burying the boulders.

<sup>73</sup> The FGD was conducted by LIFE in collaboration with NESPON, in a small village (No.12 Shanti Colony) below the barrage at Gazaldoba (about 25 km South-East of Siliguri) on June 24, 2012. The village is located in the Maal Development Block in Jalpaiguri District. In addition, people were also interviewed in Rang Dhamali (Jalpaiguri District), Basuniyapara Jalpaiguri District), Dhalu Char (Jalpaiguri District), and Mekhliganj (Mekhliganj Block in Koch Behar District).

<sup>74</sup> The project has the ambitious target of creating 9.22 lakh hectares of irrigation potential and 67.50 megawatts of hydropower from canal falls.

<sup>75</sup> Rudra, Kalyan 2003: 82.

<sup>76</sup> Press Trust of India. 2012. "Teesta Barrage Project to be Commissioned as per Schedule". *The Hindustan Times*. September 11. <http://www.hindustantimes.com/StoryPage/Print/743309.aspx>



*Teesta Barrage, Gazaldoba, West Bengal<sup>77</sup>*

Villagers reported a visible reduction in the lean season flow of the Teesta. An elderly villager, Sachin Das, observed that: “The river now carries only one fourth of the flow it used to carry about thirty years back.” Other villagers near Gazaldoba agreed that the river runs almost dry in the winter and navigation is difficult due to fragmentation of the river caused by siltation. It was also observed that rainfall in the region has decreased

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*“The river now carries only one fourth of the flow it used to carry about thirty years back”.*

*Sachin Das, villager  
Gazaldoba, West Bengal*

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even as temperatures have increased. The ongoing construction of the series of dams on the river can be held partly responsible for a reduction of flow in the winter season when the base flow of the river is not augmented by rainfall. The series of proposed dams in the upper reaches is speculated to reduce the available discharge for irrigation as each hydro-power project is expected to consume at least five percent of the running water in the river.<sup>78</sup> The receding of glaciers from the headstreams of the Teesta and many of its tributaries, as well as erratic rainfall, also partly account for diminishing discharge. It was also alleged that some tea gardens are directly pumping water out of the Teesta, thus violating norms.

Changes in the river hydrology and morphology have resulted in the depletion of fish stock and species. While fish species like *Boreli* and *Mohasol* (hill stream fish) and local varieties such as *Bagar*, *Piyali*, and *Darengi* were once plentiful, these have become increasingly rare. As a consequence, many fishermen have had to shift to farming. However, as landholdings among these groups are small, their livelihoods have been jeopardized.

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<sup>77</sup> Lawyers Initiative for Forest and Environment

<sup>78</sup> Rudra, Kalyan 2003: 82



Villagers from Randhamali affected by river erosion



River erosion near Basunyapara village, Jalpaiguri District<sup>79</sup>

Villagers also discussed the impact of the Teesta Barrage Project. While the water from the Teesta is diverted through canals towards the Mahananda and Jaldhaka basins in both western and eastern directions, communities living close to the barrage rely on sub-canals to get irrigation. These communities have been affected by the reduced flow in the river and have largely not benefited from the irrigation project. Villagers also complained about the erratic operation of barrage gates and the sudden release of large quantities of water, which has contributed to flooding, riverbank erosion, and the creation of sand bars in the river. According to Girish Rai, a resident of Randhamali village, 20 kilometers from Gazaldoba: “The waves of the water released from the barrage hit our area...causing floods on the western bank since it is on a low lying area...” Protests by villagers to Barrage authorities have largely been ignored. Figure 5 illustrates the range of stakeholders and interests gleaned from FGDs in Gazaldoba, West Bengal.

**Figure 5: Stakeholder and interests in Gazaldoba, West Bengal**

Stakeholder	Interests
Farmers	Structural protection from erosion, compensation for flood damage, and improved irrigation.
Fishermen	Fishing rights, dredging of the river, and maintenance of fish stock.
Anti-large Dam Activists	Organization and mobilization of people to resist dam construction, and unobstructed flow of water in the river.
NGOs	Advocacy for forest and water rights of local people, and maintaining the ecological health of the river basin.
Political Parties	Fulfilling the interests of local farmers (largest voting bloc in the area), drawing kickbacks from developers, and justifying party positions.

Overall, it was observed that local communities have limited knowledge or understanding of the factors responsible for the changes in the river regime. While there is a vague perception that development activity has increased the quantity of silt in the region, communities are not aware of downstream impacts of the cascade dams in the Sikkim and West Bengal stretches of the Teesta. Villagers were of the view that the water needs of communities in Bengal must be met before any decisions on the volume of water to be shared with Bangladesh can be made.

<sup>79</sup> Lawyers Initiative for Forest and Environment

In **Bangladesh**, the Teesta is the main source of water for northern parts of the country that are drought prone. The river plays a key role in flushing silt and sediment deposited during the dry season and is a lifeline for irrigation, agriculture, farming, fishing, and navigation in the region. To map stakeholder interests and concerns in Bangladesh, BELA conducted stakeholder mapping and field research in four districts in Rangpur Division, i.e. Nilphamari, Lalmonirhat, Rangpur, and Gaibandha.

The Teesta is a critical source of water for the drought prone Rangpur region, which is also one of the poorest parts of Bangladesh.<sup>80</sup> BELA conducted a series of stakeholder interviews and focus group discussions in each location with the assistance of local partners.<sup>81</sup> In total, BELA conducted 12 focus group discussions in different field locations. The discussions involved a range of stakeholders, including government officials, local government representatives, political leaders, media, NGOs, farmers, fishermen, boatmen, small traders, and villagers affected by erosion and flash floods.

Irrespective of their location, stakeholders universally referred to the poor state of the Teesta and the reduced flow of water particularly in the lean/dry season. In many places, it was reported that it is now possible to cross the river on foot. Communities that depend on the river for irrigation reported a lack of access to water in the dry season and increasing vulnerability of the region from river erosion and flooding during the monsoon season. Due to the changes in the river regime, local communities reported the increased use of shallow tube wells for dry season irrigation. This has significantly increased the costs of agriculture. For example, for irrigating one acre of land, a reported Taka 15,000 (roughly US \$180) is needed for irrigation.



*Crossing the Teesta River on foot in Bangladesh*<sup>82</sup>

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<sup>80</sup> According to the Bangladesh Bureau of Statistics, nearly 30.8 percent of the population in the region lives below the poverty line.

<sup>81</sup> The FGD locations were selected on the basis of the initial stakeholder mapping. The FGDs were conducted by BELA with the assistance of local partners Own Village Advancement (OVA), Rural Planning and Development Organization (RPDO) and Samadhan Sangstha.

<sup>82</sup> Bangladesh Environmental Lawyers Association

Stakeholders within the command area of the Teesta Barrage Irrigation Project (TBIP) described the beneficial impacts of the project in maximizing the utilization of the reduced water flows of the river. The project was initiated by the government in the 1970s to provide agricultural and employment opportunities in three drought prone districts: Nilphamari, Rangpur, and Dinajpur in Rangpur Division. The canal system built under the project ensures that water is available in the



*Farming in the TBIP command area*<sup>83</sup>

dry season. Beneficiaries of the TBIP have to pay approximately Taka 480 (roughly US \$5) to irrigate a single acre of land. Water from the canals is distributed either through water user groups or is leased to individuals by the Bangladesh Water Development Board (BWDB) for further distribution to farmers.

Farmers in Nilphamari district<sup>84</sup> reported an increase in agricultural production following the implementation of the TBIP. Farmers of these areas claimed they can now produce up to three crops a year (such as paddy, vegetable, jute, corn, tobacco) where previously they could only cultivate one crop (either jute or tobacco). However, they expressed concern over the gradual reduction in the water flow in the canals and the consequent impact on agriculture. Due to the gravity irrigation method of the TBIP, the reduced flows have made irrigation difficult in higher elevation areas such as Munia Balapara of Nilphamari district. Farmers in these areas have had to switch to using tube wells to pump ground water. This has increased the cost of production and consequently reduced areas under cultivation.<sup>85</sup>

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<sup>83</sup> Bangladesh Environmental Lawyers Association

<sup>84</sup> FGDs were conducted in Munia Balapara, Kishoreganj and Horishchandra Path Purbapara, Jaldhaka. Both areas are irrigation sites under the Teesta Irrigation Barrage Project and are served by the canals.

<sup>85</sup> BELA interviewed farmers from 12 villages within and outside the TBIP command area. Villages inside the command area included Horishchandra Path Purbapara and Munia Balapara in Nilphamari district. Villages outside the TBIP included Rajpur Purbapara, Char Gobardhan, Daspara in Lalmonirhat District, Binbinia Majher Char and Panjarvanga, Char Chawla in Rangpur District; and Gongarhat, Purba Belka, Ghagoa Tarapur in Gaibandha District.

In addition to farming communities, the Teesta is also critical to the livelihoods of traditional fishing and boatmen communities in the region. Focus group discussions conducted in Daspara, Aditmari upazila/thana (Lalmonirhat district), and Gongar Hat, Sundarganj upazila/thana (Gaibandha district) highlighted the interests and concerns of these groups. Fishermen interviewed in these areas reported a sharp decline in the fish population of the river. A number of previously common species such as the *Chitol* (*Chitala chitala*), *Boal*, *Shol*, *Gojar*, *Pabda* (Ompok pabo), and *Aaier* (Long-whiskered Catfish) are no longer available.

Fishermen reported being able to catch fish only for a period of five months from June to October. According to Dinesh Das, a 52-year-old fisherman from Gongar Hat, “Ten or fifteen years back, nobody would return from the fishers community empty handed. Fishing for one week would bring in the money needed for the whole month. Now, with what we get on a monsoon day is not enough even for that day.”

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*Ten or fifteen years back nobody would return from the fisher’s community empty handed. Fishing for one week would bring in the money needed for the whole month. Now, with what we get on a monsoon day, is not enough even for that day.*

*Dinesh Das, Fisherman  
Gongar Hat, Sundarganj*

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In the dry season, fishermen are forced to seek livelihood opportunities elsewhere, moving to Munshiganj and Sylhet to work as day laborers in potato or paddy fields, while female members of households seek employment as housemaids. Some who have tried to move away to other areas along the Teesta have faced resistance from local communities and are also denied access to other water bodies in the area. Fishermen complained about the lack of government interest or attention to their plight. In particular, they complained that while the government has taken measures to improve agricultural production in the region through the TBIP, there has been limited development of the fishery sector. Boatmen in the region reported a similar impact on their livelihoods from reduced flows of the river. In Gangachara, in Rangpur District, boatmen reported the reduced navigability of the river and the need to seek out alternative livelihood opportunities in non-monsoon months.



*Fishing along the Teesta River<sup>86</sup>*



*River bank erosion<sup>87</sup>*

In many places, increasing siltation of the river bed has caused the river to widen, leading to bank erosion and flooding. In Purba Belka, Sundarganj upazila/thana, in Gaibanda district, it was

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<sup>86</sup> Bangladesh Environmental Lawyers Association

<sup>87</sup> Bangladesh Environmental Lawyers Association

reported that the depth of the river has decreased from 32 feet to 15 feet in the last 20 years. This was attributed to the upstream withdrawal of water, reduced flow in the river, and increased sedimentation. Respondents also attributed increased river erosion to the unplanned construction of barrages and the arbitrary operation of the Teesta Barrage by authorities. River erosion has had an adverse impact on local livelihoods resulting in a loss of agricultural land and fostering out-migration to neighboring areas and even across the border to India. Flash floods due to the sudden upstream release of water from India reportedly have caused considerable damage to local households and livestock. Villagers complained of the lack of early warning systems and shelter homes to protect local communities from flash floods. Officials of the Bangladesh Water Development Board (BWDB) meanwhile contend that inhabitants of flood prone areas are provided with adequate warning and notification.

In addition to floods and erosion, the erratic flow of the river has also caused water logging in some areas. Frequent changes in the river course have led to the submergence of many households. Participants in the focus group discussions conducted in Lalmonirhat and Gaibandha districts blamed barrages and embankments for the river's behavior. As with the communities affected by river erosion, they demanded that embankments be extended on both sides of the river from the Teesta barrage up to be Kapasia-Sundarganj (where the Teesta meets the Brahmaputra) to confine the river and prevent any further shifts in the river course.

Stakeholders in most focus group discussions were aware of the BWDB and its role in river training, flood control, prevention of river erosion, and facilitation of irrigation. Participants of the command areas were largely satisfied with the performance of BWDB. On the contrary, people living in the char areas and outside the command areas rarely referred to BWDB and appeared dissatisfied with their elected representatives and local government agencies.

Interviews and discussions with stakeholders revealed the limited involvement of local communities in the river's management. Most decisions regarding the construction of embankments and roads are made by representatives of local government agencies who view these activities as profitable. As a consequence, the interests of local farmers, fishermen, and other groups have been neglected. While communities have repeatedly demanded dredging of the river to increase its carrying capacity and flow, and the construction of embankments on both sides of the river, these demands have largely been ignored. Inhabitants of the char areas and the fishermen community felt the most marginalized in the decision making process relating the management of the river.

Perspectives on the sharing of the river between India and Bangladesh among those interviewed were of a highly nationalistic nature. Many participants blamed India for arbitrarily withholding water from Bangladesh. In the words of school teacher, Md. Moninul Islam, a teacher from Lal Chamar, Sundarganj, "If India recognizes the rights of the people of Sikkim and West Bengal over Teesta because the river has a flow there, how can they deny the rights of the Bangladeshis over the river? If they use their might to regulate the river flow, they will also not be escaped as nature forgives none." At the same time, the view was expressed that the Teesta dispute should be resolved amicably keeping in mind the ecology of the river and the needs and interests of both nations. According to Md. Abdul Hossain,

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*If India recognizes the rights of the people of Sikkim and West Bengal over Teesta because the river has a flow there, how can they deny the rights of Bangladeshis over the river?*

*Md. Moninul Islam, Teacher  
Lal Chamar, Sundarganj*

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a teacher from Ghagoa Tarapur, Sundarganj, “It is only natural that large fishes will eat up the small fishes. India is a large country and has the might to regulate flow [of the Teesta] although it is not only their river. Bangladesh should work to get Teesta recognized as an international river. We, however, do not want to see any hostility with our neighbors.” The need to ensure guaranteed minimum flow of the river was also highlighted in addition to a greater need for data and information to be exchanged regarding the release of water in the monsoon season.

From the perspective of civil society groups in the Teesta region, there is a need to engage people in decision making at the local, national, and international levels. For example, within Bangladesh, while the government’s policies stipulate public participation in water management, there has been limited public consultation on issues related to the Teesta, notably on the second phase of the TBIP. On the Teesta, civil society concerns also center around protecting the river, its ecology, and the rights of communities that depend on the river for their livelihoods. Figure 6 illustrates the range of stakeholders and interests in Rangpur Division in Bangladesh.

**Figure 6: Stakeholders and interests in Rangpur Division, Bangladesh**

Stakeholder Groups	Interests
Government Agencies	Management and operation of the Teesta Barrage Irrigation Project (TBIP), and protection of fisheries and agriculture.
Local Government Representatives	Representation of local concerns, ensuring that the economic benefits from development and irrigation are drawn to the locality.
Political Activists	Enlarging political constituencies, mobilizing public opinion, and positioning for leadership on basin management issues.
Farmers	Securing adequate water for irrigation and livelihood purposes.
Fishermen	Improved flow of water and river bed nutrients, and unrestricted access to the river.
Boatmen	Managing floods and minimum flow for transit purposes.
Civil Society, Movements, Rights Activists	Organizing communities for improved policy response on ecological and economic concerns of the people.
Media	Dissemination of opinions and information, enhancing influence of media outlets in politics and the market.

In general, stakeholder interests in the Teesta River Basin bear testimony to a river system that, on one hand, is central to the lives and livelihoods of the people residing in the basin and, on the other hand, suffers from poor governance, environmental threats, over-development, and unregulated and unfair water-sharing regimes. More crucially, the mechanisms to cope with the politics and management challenges of the Teesta remain almost exclusively with the governments of the two nations whose bilateral relations, when it comes to water governance, remain dysfunctional. Any change on the ground will only follow from changes in the structure and quality of water governance in the basin, which requires an easing of political resistance.



# POLITICAL ECONOMY OF STAKEHOLDER INTERESTS IN THE TEESTA BASIN

## Seeing like a State<sup>88</sup>

As discussed in the opening chapter of this report, water governance policies in South Asia are characterized by three features. They are: 1) statist in terms of decision-making, 2) nationalistic in terms of discourse, and 3) reductionist in terms of scope. In the Teesta Basin, for instance, one of the main points of discord between the governments of India and Bangladesh is the quantity of water to be allocated to each country during the lean season. The bilateral agreement on the Teesta that is currently being negotiated is largely focused on fixing the lean season share of the river water and the hydrological structures required to regulate the sharing. The politics around the agreement, on the other hand, extend far beyond the waters of the Teesta.

In September 2011, the Teesta agreement failed to materialize between India and Bangladesh due to objections raised by the Chief Minister of West Bengal, Mamata Banerjee. It is speculated that had the agreement been signed, the political implications in northern areas of West Bengal, which stood to lose its share of lean season flow to Bangladesh, would not have been positive for the incumbent West Bengal government. When TAF and its partners surveyed residents in the basin, 78 percent of the Indian respondents felt that the state government should be doing more to protect their interests. It may be argued that endorsement of the agreement by the government of West Bengal in 2011 would have further enabled such a perception with potentially damaging political implications.

A similar story is echoed on the Bangladesh side of the border. Negotiating from the weaker position of a lower-riparian state, compounded by asymmetric power relations between the two countries, the Teesta issue generates immense nationalistic fervor in Bangladesh. Even the country's two main political parties—the Bangladesh Nationalist Party (BNP) and the Awami League—are united in their views on this issue. For both parties, championing Bangladeshi national interests on the Teesta issue remains a key electoral strategy. When the September 2011 negotiations collapsed, the Awami League was intensely criticized by the opposition, large sections of the media, and civil society for too easily giving into India's demands on issues such as transit.<sup>89</sup> Subsequently, in a move intended to register a diplomatic protest with India, Bangladesh stalled the transit agreement that would have allowed India the use of a relatively shorter transit route through Bangladesh to some of its northeastern states. As this demonstrates, the Teesta negotiations are first and foremost about politics, yet rarely about the politics of the basin alone.

States tend to work with a reductionist and manageable set of issues as a way of keeping the politics around any agenda simple and controllable. In the process, they may methodically ignore knowledge, undermine dissent, and marginalize people that remain outside of their control.<sup>90</sup> Unfortunately, the unfolding natural processes, political claims, and voting constituencies around transboundary rivers are so complex that seeing a problem merely "like a state" often results in a

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<sup>88</sup> Also a book title by Scott, James C. 1998. *Seeing Like a State: How Certain Schemes to Improve the Human Conditions Have Failed*. The Institution for Social and Policy Studies, Yale University. Yale University Press.

<sup>89</sup> Ahmed, Imtiaz 2012

<sup>90</sup> See Scott 1998

failure to confront the problem effectively. This failure is clearly evident in the Teesta where, even after four decades of trying, India and Bangladesh have not been able to reach a meaningful agreement.

The rationale for conducting a political economy analysis of the Teesta River Basin was to reveal the interplay of diverse knowledge, claims, constituencies, and interests that shape the basin's politics. Without adequately understanding this subtext, the more manifest contestations around water sharing cannot be adequately understood. Reform is required in the way both India and Bangladesh "see" the problems as well as the opportunities in the Teesta. As long as the content of negotiation remains exclusively controlled by the two countries' state actors, and the process of negotiation remains affected by politics beyond the basin, a framework for holistic governance of the basin is not likely to materialize.

### **Powerful Actors Excluded from the Table**

Bilateral negotiations are extremely scripted and highly cordial events. Bottom-line positions are not revealed easily and burning issues do not get resolved urgently. Recent Right to Information (RTI) activism in India has made it easier to access agendas, minutes of meetings, and briefs from bilateral negotiations on water, including those on the Teesta. These documents reveal the narrow purview of negotiations, and also how key actors are excluded. In theory, negotiators carry consensus positions from their respective countries and are, therefore, able to arrive at politically acceptable outcomes when an agreement is eventually reached. When it comes to complex resources such as transboundary rivers, this theory has evident shortcomings. In South Asia, agreements on transboundary rivers such as those governing the Indus, Kosi, Mahakali, and Ganges took years to negotiate and have deep-rooted political problems in implementation. At the core of this problem is the exclusion of actual stakeholders in negotiations, especially when forming bottom-line positions.

The Teesta River Basin presents a quintessential case. Negotiations are centered on the quantity of water that the two countries can claim, particularly during the lean season when the flow is significantly reduced. Crucial to the flow and quantity are planned and existing usage of water in the upper-riparian areas of Northern West Bengal and Sikkim. Approximately 30 run-of-river hydropower plants are planned in Sikkim and the Teesta Barrage at Gazaldoba in West Bengal also has elaborate plans to utilize Teesta waters for irrigation and hydropower. There are traditional diversion structures that feed irrigation canals and fisheries all along the river. In addition, the Teesta is included in India's ambitious Inter-Linking of Rivers Project that is meant to transport water from high-flow basins in the east to drier basins in the west and the south. In the lower-riparian areas of Bangladesh, there are flow-dependent investments such as the Dalia Barrage designed to support agriculture and fisheries in five northern districts where more than nine million people live with an above-average incidence of poverty, and in areas that are prone to frequent floods and drought.

In this context, a range of powerful interests become visible. In Sikkim, the 30 hydro-projects estimated to generate up to 5,000 megawatts of electricity stand to bring in billions of dollars in new investment, thousands of man-days of jobs (during the construction of projects), much-needed energy for the electricity-starved parts of the country, and the prospect of kick-backs from contracts and licenses. In Northern West Bengal, there is a sizable Hindu population that settled there after migrating from former East Pakistan during Partition in 1947, that does not view

Bangladesh favorably. In North Bengal, historically a communist stronghold, the current Chief Minister, who is not communist, is keen to cultivate new political alliances with farmers and the working class to strengthen her political base. Promising more water to neighboring Bangladesh does not sit well with this political agenda. In Bangladesh, voting blocs in the poorer north are highly prized by political parties. In addition, the issue of the Teesta has been elevated to one of Bangladeshi nationalism. Neither the Awami League nor BNP want to be seen as weak on the Teesta issue. In New Delhi, there are lobbies actively promoting the river linking project, while hydro-power development in Sikkim has drawn engineering firms and banking interests from as far afield as the southern state of Andhra Pradesh.

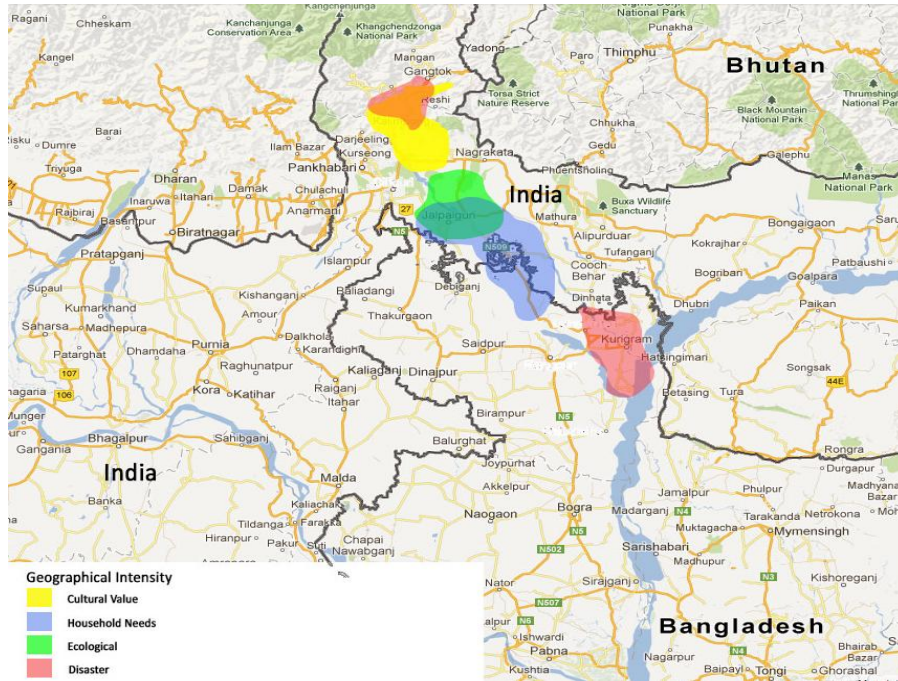
There is no easy way for technocrats from water resources ministries or diplomats from foreign ministries of the two countries to arbitrate over these complex and contested interests and arrive at politically viable bottom-line positions on the Teesta. In turn, there is no way that negotiations on the Teesta which exclude the political and financial interests of Kolkata, Gangtok, or Rangpur can find common ground between India and Bangladesh. Even if an agreement were to be reached out of geopolitical necessity, its implementation would be resisted politically in both countries.

### **Legitimate Interests Excluded from the Table**

There is no jurisdictionally-integrated, basin-wide approach to conservation and management of the Teesta River Basin. In Sikkim, the state government plans to put the river as well as its significant tributaries through tunnels and turbines to produce 5,000 megawatts of electricity through a series of power plants. As the river enters the plains of West Bengal, there are barrages and canals planned to irrigate agricultural lands. Once the river crosses the border with Bangladesh, there are other irrigation and flood control structures in various stages of planning and construction. The basin as a unit of analysis rarely surfaces in bilateral negotiations. Sustainability of the river ecology is nominally recognized in the form of minimum flow or environmental flow. However, the content of negotiations is largely centered on technical discussions around the volume of water shared between both countries. This highly reductionist approach to negotiations has excluded a range of economic, cultural, and ecological interests from the discussion.

The study team's survey asked respondents within the basin to assign values to their concerns regarding the river. When the team isolated locations where 50 percent or more of respondents assigned "high" ratings to a particular value or concern, it found that: 61 percent of respondents in Gangtok and Kalimpong assigned "high" ratings for the cultural value of the river; in Rangpur (Bangladesh) and Jalpaiguri (India), 59 and 54 percent valued the river for fulfilling their household needs; in the same locations, 52 and 51 percent expressed "high" ecological concerns for the river; and, in Gangtok and Kalimpong (India) and Chilmari (Bangladesh), 58 percent rated disaster as a "high" concern (See Figure 7 for a GIS map of the intensity of stakeholder interests).

**Figure 7: Intensity of Stakeholder Interests in the Teesta River Basin**



Although the survey had a small sample of only 79 respondents and cannot be considered conclusive, it does indicate that the focus of the government interlocutors at the negotiating table is on different issues than those valued by people living in the basin. Figure 8 corroborates this claim.

**Figure 8: Level of Grassroots Public Consultation in the Teesta Basin**

<b>Has the community been consulted or invited to share their views before the start of a development project?</b>	<b>Responses (n=79)</b>
Never happened so far	78%
Once or twice in the last two years	18%
More than twice in the last two years	2%

While the question does not directly refer to bilateral negotiations (the meaning of which is difficult to establish coherently in rural India and Bangladesh), state-society relations in the basin appear weak. State institutions demonstrate little propensity to conduct public consultations on issues that directly affect the local people. This brings us to the next question: How, and how effectively, can residents of the Teesta Basin articulate their interests in the face of state apathy?

## Weak Articulation of Stakeholder Interests

As in other areas, policies related to water governance generate wider acceptability and conformity when representation is broad, inclusive, and democratic.<sup>91</sup> In negotiations on the Teesta, the agenda remains reductionist and the process reclusive, both tightly controlled by states from the start. The space for legitimate stakeholder interests to enter the decision-making process is narrow, and the scope for transforming the bilateral negotiation process through external appeals is limited. Articulation of stakeholder interests is too weak to trickle up through the state apparatus to affect change. However, there are variations in how this situation is played out in India and Bangladesh.

In India, civil society activism is more pronounced in Sikkim than in North Bengal. This may be expected, as the Sikkim government is more aggressively intervening in issues regarding the Teesta than the West Bengal government in North Bengal. The Sikkim government is also reportedly sensitive to opposition or criticism to its hydropower development plans. In northern Bangladesh, while there are some grassroots movements emerging, much of the discourse on the Teesta is shaped by the media in Dhaka. However, stakeholders in northern Bangladesh are more effective than their Indian counterparts in attracting national attention. India's size and the breadth of issues competing for public attention are factors.

**Figure 9: Community activism in India and Bangladesh**

<b>On your own behalf, what have you done to be heard?</b>	<b>India</b>	<b>Bangladesh</b>
Informed the media	31%	43%
Informed local politicians	33%	47%
Given petitions to government officials	31%	6%
Gone to the court	13%	1%
Staged protests/dharnas/strikes	23%	2%
Organized groups	23%	0%

As shown by Figure 9 above, the action of first resort for residents of the Teesta Basin is to voice their concerns to local politicians or the media. Still, in a negotiation process that formally excludes even senior politicians such as the Chief Minister of West Bengal, locals have no choice but to use informal influence on negotiating agencies. The intermediary capacity of the local politician cannot be relied on for effective articulation of local interests. Since the Teesta issue has more resonance among the general public in Bangladesh than in India, the role of the media in augmenting stakeholder voices is central in Bangladesh. The broader point remains that the negotiation process has no downward outreach mechanism built into it, and stakeholder interests have no means of trickling up to the negotiating table. In these circumstances, the likelihood of a Teesta agreement concluding with a broadly agreeable outcome is weak.

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<sup>91</sup> See Niti Foundation 2012

## **State Control of Data and Information**

In the course of this study, the study team found that local communities harbor an understanding of the ecology of the basin only in reference to the events and processes that occur within their immediate environs. Focus group discussions in six different locations along the river revealed that people downstream had no way of knowing whether a recent flood was caused by excessive rain upstream, a glacial outburst, or human action at a particular barrage. This compartmentalized understanding of the basin's ecology makes it difficult for communities to generate a common platform of action or to propose solutions that have broad acceptability across the basin. In other words, people living in the basin, do not have a holistic and coherent "counter narrative" to propose to the state for inclusion in bilateral negotiations.

To produce a viable and reliable alternative response to the problems of the basin, people require data and information. Communities do not produce data, especially scientific data that require specialized skill, resources, or methods to generate. States produce some data, but public access to this data is very limited, in part because controlling access provides them a monopoly over policy knowledge. This is where the most pronounced component of power asymmetry develops between communities and the state. On transboundary rivers, the rationale for information control extends to the states in negotiation. The upper-riparian state has no particular incentive to share data with the lower-riparian state and vice-a-versa, especially when each is trying to "protect" its own interest. In Bangladesh, for instance, while political intervention by the West Bengal Chief Minister in the Teesta negotiations was widely reported in the media, the impact of some 30 hydropower plants planned in the upper catchments of the basin remains poorly understood. Environmental Impact Assessments (EIAs) of some of the larger hydro-electric projects are not accessible even to the people of Sikkim. Consequently, Bangladeshi technocrats are not aware of their impacts or able to raise them with India.

The other undesirable effect of absolute control of data and information is the space that it creates for myths to spread. In downstream focus group discussions, for instance, India's River Linking Project was frequently cited as the reason for the drastic reduction of Teesta flows during the dry season even though the river-linking project has yet to be implemented. Perception matters in politics, and conflict often intensifies when one side poorly understands the other. The proactive release of information can help to moderate the positions of both parties, since finding common ground starts with having a common understanding of the situation. As the Teesta situation illustrates, the advantages of more open information-sharing can be ignored when negotiating parties are focused on the narrow objective of securing immediate benefits.

## **Drivers of Change**

In the preceding sections, this report discussed five distinct political economy features of water negotiations and governance of the Teesta Basin: 1) the dominant player in the political economy landscape is the state with authoritarian control over policy and governance issues; 2) actual stakeholders and powerful actors are forced to sit outside formal negotiations; 3) the content of the negotiations is reductionist in construct and fails to capture actual concerns of basin residents; 4) the space for legitimate stakeholder interests to enter the discussion is kept narrow and the scope of transforming the negotiation process through external appeals is limited; and, 5) state monopoly over information, while helpful in retaining absolute control over the negotiation process, prevents the emergence of a common ground.

In each of the features described above, there are windows of opportunity for reform. Described below are some of the key drivers of change that could address one or more aspects of the problems identified above:

Working with an unbundled state. The state is not a monolithic entity. Actors and agencies within the state compete with each other over ideas, resources, and authority. In addition, by design, the state is not allowed to trust itself—there are institutions and processes that provide checks and balances on the system. This complexity of the state can be utilized in penetrating and changing what otherwise seems an impervious system. The last minute withdrawal from a possible Teesta agreement in September 2011 was devised through informal means by West Bengal's powerful Chief Minister even though she was not a part of the formal negotiation team. Her position as a key coalition partner in the union government at the time was instrumental in providing her the scope to intervene. What is important is to bear in mind is that powerful actors from within or outside of government are willing to pursue change and promote reform. The courts or the parliament can also promote reforms. Political parties have varying degrees of influence in different agencies, and can sometimes become key partners in reform efforts. Large grassroots coalitions and social movements can also exercise influence on the state. The point is that the current state monopoly on water can be challenged through a range of avenues.

Dialogue first, negotiations second. Dialogue and negotiations are distinctly different processes. During dialogue, parties try to explore the other's situation and develop an appreciation of it. During negotiations, parties acknowledge the other's position, but work to make their own position prevail. The problem on the Teesta is that negotiations have continued for a long time with a very reductionist agenda. There is nothing on the table besides water to take home, making the negotiations a zero-sum game. To change this situation, the benefit basket must be widened so that parties can engage in "give and take" compromises instead of "give or take" contestations. What communities actually receive and value from the Teesta should be included. This report discusses how the negotiations have largely ignored the ecological and cultural value of the river—the non-extractive economic uses that are not part of the negotiations. To validate what elements of the river are valued by the people and to understand why they consider them valuable, a multi-stakeholder dialogue process needs to under-gird the negotiation process. Without a reversal of order—dialogue first, negotiations second—it is unlikely that negotiations will succeed any time soon.

Alignment of stakeholder interests. Stakeholders are situated actors embedded in particular contexts, aware of their situation and seeking solutions to their problems. Very often, they are unable to understand broader linkages between their situation and that of others. In the Teesta, for instance, people living downstream have no way of telling whether a recent flood was due to excessive precipitation upstream or other causes. At the same time, their inherent interests may find resonance with other stakeholders. For instance, civil society activists in Sikkim seeking to protect the ecological health of the river by limiting development on the Teesta want an enlarged minimum flow in the river. Their interest matches that of boatmen and fishermen in Rangpur, where reduced lean season flow is affecting transit and fishing activities. Similarly, the same interest would resonate with farmers in Jalpaiguri suffering from a reduction in the water table due to reduced flows in the Teesta. Such alignments can be used to build grassroots coalitions around shared objectives and create more inclusive agenda-setting.

Transboundary CSO coalitions. Negotiations on transboundary rivers sometimes encounter intractable impasses and, less frequently, degenerate into conflict. In such instances, trusted interlocutors can maintain engagement at different levels, softening positions of the parties that are failing to see an entry point to renewed negotiations. Additionally, CSOs by nature operate at a level between the highly organized and assertive state and the atomistic stakeholders at the grassroots. This makes them an important conduit in bridging gaps in the dialogue process and linking grassroots issues to the negotiation process. In particular: 1) CSOs can work outside of the confines of foreign policy mandates of the government; 2) they are mobile and can develop relationships with key actors in each other's countries in a way that state actors cannot; 3) compared to the state, their access to the grassroots is often deeper; 4) their network can gather and validate information in each other's countries more reliably and efficiently than the states; and 5) during an impasse they can support informal engagements that lead to formal negotiations. CSO roles in transboundary water issues are often relegated to track-two processes. However, the approach can be strengthened by incorporating track-one elements, i.e. including government bureaucrats and politicians. This approach can moderate the statist and reclusive character of negotiations and help to bring solutions that have broader acceptance in civil society as well as the grassroots.

Open access to information. For the most part, democratic deliberations depend on equal access to information. The acute information asymmetry between state and non-state actors creates a number of problems in finding broadly acceptable solutions on key issues. In particular: 1) in transboundary negotiations, non-state actors have limited means of producing informed counter narratives that can challenge positions taken by the state; 2) monopolized access to data prevents an appreciation of the positions taken by the other party, thereby limiting the scope of meaningful dialogue; 3) in the absence of reliable information and data, discourse on water gets distorted by rhetorical myths, further narrowing the scope of negotiations; and 4) technical data is difficult to generate from alternative means, which allows the state to exercise monopoly control over water policies. All of these problems stand to dissipate significantly if access to information on water is made more open. While recent Right to Information (RTI) activism in South Asia has helped, more needs to be done to bring information into the public domain at a faster pace.



## RECOMMENDATIONS

Through this study, TAF and its partners have methodically attempted to capture the most pressing problems in policy, the negotiation process, and state-society relationships around the Teesta River Basin. Although the Teesta is a relatively small river basin in terms of area, population, and size, it reveals a number of insights into the problems of South Asia's transboundary rivers more generally. The following recommendations are based on these insights.

### **Governments of India and Bangladesh**

Enhance access to information: Enhanced public access to information helps negotiations. Informed public discourse reduces the scope of rhetorical interpretations of facts and serves to de-escalate the political stakes around negotiations. For both the Teesta and other disputed basins, this can assist all sides to find workable compromises and strengthen the legitimacy and ultimate viability of the negotiation process.

Treat the entire basin as a unit of analysis: Taking a basin-wide approach is ecologically as well as economically more effective than negotiating water-sharing from a particular point along the river. In the case of the Teesta, because it falls under multiple political jurisdictions in India, reaching a "consensus" position even within India is difficult. As direct stakeholders, the state governments of Sikkim and West Bengal should be given a seat at the negotiation table along with the national governments of India and Bangladesh.

Expand track-two processes to seek a new entry-point for negotiations: Fixated on a zero-sum game that reduces the discussion to "how many cusecs to whom", a broadly acceptable solution to current Teesta negotiations is no longer imaginable. The impasse can only be eased if informal dialogue is expanded to multiple levels, including civil society organizations, politicians along either side of the border, and private sector representatives.

Bring other tradable benefits to the table: Acute reductionism has depleted "things to take home" for negotiators, with water the only game left. It is time to bring other tradable benefits to the table. This requires that: 1) a basin-wide view is adopted; 2) river ecology is put firmly on the agenda; and, 3) stakeholders who value other benefits (besides the extractive use of water) are included in agenda-setting.

### **CSOs in India and Bangladesh**

Adopt intermediary roles: CSOs tend to be most comfortable in advocacy roles, but to be effective on transboundary issues must also assume intermediary roles. In practice this means: 1) gaining a better and more nuanced understanding of transboundary water issues; 2) gaining trust from governments on both sides of the border; 3) building working relationships with key actors and opinion makers on the "other" side; 4) expanding grassroots linkages to build legitimacy on issues; and 5) actively pursuing trans-border dialogue with other CSOs to develop horizontal solidarities.

Develop stronger grassroots linkages: One of the key issues raised by this report is the weak articulation of grassroots interests in policy deliberations and bilateral negotiations. CSOs are well-placed to address this problem. This study shows that CSOs currently fall behind the media

and local politicians as actors that communities seek out in order to get themselves heard. CSOs active on water issues should help to channel grassroots concerns and narrative into the national discourse in both countries. This would also help to promote a basin-wide approach to water issues.

Unbundle state counterparts: CSOs display a tendency to see themselves away from and, at times, in opposition to the state. The wholesale categorization of "all things state" is counter-productive to the politics of reform. As discussed in the section on Drivers of Change above, CSOs should adopt more goal-centric strategies that draw on a wider range of state actors. Beyond the government bureaucracy, these could include the courts, parliaments, commissions, and political parties.

Mobilize grass-roots coalitions around common interests: Interest alignment is a useful strategy in building grassroots coalitions that provide political weight to reform ideas. Although the legitimacy of CSOs to represent mass interests may be questioned, their ability to mobilize coalitions around shared interests is useful for reform movements, particularly on water-related issues where the state remains a dominant monopoly actor.

## **Donors**

Promote open access to data and information: With recent advancements in information technology, relatively inexpensive satellite imagery and remote sensing, and the proliferation of connectivity, data and actionable intelligence on water is shifting to the public domain. Most state-guarded data can now be remotely gathered and made public at a modest cost. In South Asia, there is a need to accelerate this process, and to demonstrate the futility of physical control of data. When coupled with programs that support Right to Information (RTI)<sup>92</sup> and other transparency enhancing activism, state control of data will gradually cease to be a major impediment to effective transboundary water management.

Invest in transboundary CSO coalitions: For too many years, multilateral and bilateral donors have assisted state agencies in consolidating their control over data, analysis, and the policy agenda. This has served to undermine the ability of non-state actors to engage effectively, or to provide a viable alternative to the highly reductionist constructs of water sharing that guide the governance of transboundary rivers. There is a distinct opportunity to test a new approach on the Teesta, because: 1) its size is manageable; 2) the formal bilateral process has failed to yield results; and 3) the network and information needed to design and conduct a program have already been generated through this study.

Prepare for longer-term engagement: The ultimate outcomes of more holistic transboundary water management are sustainable, equitable, and enhanced availability of water. An innovative intervention that achieves these goals, even at a modest scale, would be considered a significant

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<sup>92</sup> In recent years, the proliferation of access to information or Right to Information (RTI) laws throughout South Asia has provided citizens and civil society groups with new means by which to access government data and information. In the region, India (Right to Information Act 2005); Bangladesh (Right to information Act 2009); Nepal (Right to Information Act 2007 and Rules 2009) and Pakistan (Freedom of Information Ordinance 2002 and a new Right to Information Bill currently pending) have right to information laws. Bhutan and the Maldives also have draft bills on the right to information.

breakthrough. As illustrated in this study, a basic roadmap would consist of the following steps: 1) ease statist control over policy processes and negotiations; 2) build capacity and networks of non-state actors to provide support to the negotiation process; 3) define the agenda in more holistic terms; 4) expand tradable benefits at the negotiating table; 5) support negotiations through dialogue processes; 6) ensure broad ownership of agreements; and, 7) support rapid implementation of agreements. To materialize, these processes require proactive support over an extended period of time.

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