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Water and Climate Data in the Ganges Basin: Assessing Access to Information Regimes and Implications for Cooperation on Transboundary Rivers

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ABSTRACT: Public access to government-maintained water and climate data in the three major co-riparian countries of the Ganges Basin – Nepal, India and Bangladesh – has been either inadequately granted or formally restricted. This paper examines the effects of newly enacted Right to Information (RTI) laws in these three countries to assess changes in the information access regimes as they relate to hydrological data. We find that neither the RTI laws nor the internal and external demand for increased transparency in governments have affected access to information regimes on water at a fundamental level. In India, the RTI laws have not eased public access to data on its transboundary rivers including in the Ganges Basin and in Nepal and Bangladesh, while data can be legally accessed using RTI laws, the administrative procedures for such an access are not developed enough to make a tangible difference on the ground. We then discuss the implications of our findings on the continuing impasse on regional collaboration on water in South Asia and point to rapid advancements in technology as an emerging pathway to greater data democracy.

KEYWORDS: Transboundary water governance, Ganges Basin, right to information, regional cooperation, policy contestation, data-sharing, data democracy

INTRODUCTION

Internationally, access to information has been recognised as a fundamental human right¹ that is critical to good governance, participation, and democratic deliberation (Article 19 and ADC, 2007). There is a substantive body of empirical literature which argues that with access to information, citizens are better placed to make informed decisions, assess government policies, and demand greater accountability from governments and service providers (Besley and Burgess, 2002; Islam, 2003; World Bank, 2003; Reinikka and Svensson, 2004; Krishna, 2007). International recognition has led to the incorporation of the right to access information in a range of international and human rights charters including Article 19 of the Universal Declaration of Human Rights, the International Covenant on Civil and Political Rights (ICCPR) as well as the regional charters of the African Union, Organisation of American States, the Council of the Europe and European Union (CHRI, 2007).

¹ The United Nations has described freedom of information as "the touchstone for all freedoms to which the UN is consecrated". UN General Assembly Resolution 59, 14 December 1946.

In recent years, the need for greater transparency and access to information specifically on water, climate and environmental issues has also been internationally recognised. Principle 10 of the Rio Declaration on Environment and Development 1992, advocates for greater citizen access to information on environmental issues at a national level, and greater civic participation in decision-making processes. It further advocates for governments to facilitate and encourage public awareness and participation by making information widely available.² Subsequently, the 1998 Access to Information, Public Participation and Access to Justice in Environmental Matters or Aarhus Convention – formally recognises the rights of the public to environmental information, to participate in environmental decision-making and to review procedures to challenge public decisions made with regard to environmental matters.³ A number of international conventions on bio-diversity, wetlands and international trade in wild species, flora and fauna as well as the UN Convention on Climate Change and Kyoto Protocol to varying degrees also recognise the importance of providing public access to environmental information.

While these conventions set important international standards, it is really the proliferation of freedom of information (FOI) or right to information (RTI) laws that has also internationally opened up new opportunities for citizens to access a greater volume of data and information from their governments on a range of issues including environmental information. Globally, 100 countries have enacted FOI or RTI laws guaranteeing citizens the right to information. Within the South Asia region, Pakistan (Freedom of Information Ordinance, 2002), India (Right to Information Act, 2005), Nepal (Right to Information Act, 2007), Bangladesh (Right to Information Act, 2009) and the Maldives (Right to Information Act, 2014) have enacted RTI laws, while bills guaranteeing access are currently pending in Afghanistan and Bhutan.⁴ At a regional level, the Secretariat of the South Asian Association for Regional Cooperation (SAARC) supports the adoption of RTI legislation by member states as a means to promote good governance and transparency at the country and regional level.⁵

Drawing on international best practice, these laws broadly guarantee citizens the right to access information held by the government, place a duty on governments to provide information proactively (*suo moto*) and on request, obligate governments to set in place mechanisms to receive, process and respond to requests, and establish grievance and redressal mechanisms to respond to appeals and complaints related to the denial of information. The laws also specify the kind of information that can be requested as well as grounds on which information can be legitimately denied to requesters. Such exemptions are typically related to concerns over national sovereignty, international relations, commercial and trade secrets, etc. However, in most instances, the exemptions are designed to be applied as an exception rather than a rule, with the law balanced in favour of information disclosure.

While the laws in the region vary in terms strength, levels of awareness, implementation, and demand-led use, civil society organisations (CSOs) and ordinary citizens have innovatively used RTI laws to access a range of government information. RTI laws have been used for example as a tool to demand improvements in public service delivery, access basic entitlements, investigate government policies and decisions and expose corruption and maladministration (The Asia Foundation, 2014). The laws have also been used by environmental activists, CSOs, scientists and academics to access a range of

² Rio Declaration on Environment and Development 1992, www.unep.org/Documents/Multilingual/Default.asp?documentid=78&articleid=1163

³ Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (Aarhus Convention) 1998, <http://ec.europa.eu/environment/aarhus/>

⁴ For more information about the right to information in these countries or globally visit www.freedominfo.org.

⁵ Specifically, in 2008 delegates at a SAARC ministerial meeting in New Delhi committed to adopt "...appropriate legislation conferring the right to information for all citizens from governments and public authorities, to eliminate arbitrariness and corrupt practices and improve governance at the regional, national and local level" (The Asia Foundation, 2014: 1).

environmental data and information in different countries in the region. In India, for example, CSOs such as Kalpavriksh have effectively used India's RTI Act, 2005 to access information related to the disposal of hazardous waste, forest and environmental clearances, water policy, and hydropower projects and dams, etc. (Singh and Singh, 2006).⁶ In Bangladesh, the country's RTI Act, 2009 has been used by environmental law groups such as the Bangladesh Environmental Lawyers Association (BELA) to investigate and expose violations of environmental laws and regulations in different sectors such as construction, mining, and ship breaking, etc. At a regional level, a coalition of civil society groups from Bangladesh, India, and Nepal have used RTI laws in these countries to access information and documents on joint river commissions and bilateral treaties in the region.⁷ The information gathered has been made available to the public through a website that hosts copies of agreements, treaties, important administrative and judicial decisions, and minutes of meetings of different joint committees between Bangladesh, India and Nepal.⁸

While these developments are encouraging and have allowed some water and climate-related documents and analyses to be brought into the public domain, the real test of openness and the willingness to promote wider public engagement on water governance lies in the treatment of hydrological data. In the following section we examine the impact of these new developments on South Asian information regimes at the 'rubber meets the road' level to see if the recent reforms are deep enough to avail adequate access to water and climate data to interested stakeholders.

ASSESSING ACCESS TO INFORMATION REGIMES ON WATER

We present here the findings of a study⁹ conducted in Bangladesh, India and Nepal from June 2013 to August 2014 to assess the availability and accessibility of data and information on transboundary rivers in these three countries. The fieldwork was conducted in four transboundary river stretches of the Ganges River System – the Kosi River (Nepal), Kosi and Sharda rivers (India), and the Padma River (Bangladesh) (see Figure 1 for a map and Table 1 for a description of each of the rivers). We used a research methodology derived from action research practices in social interventions (Blakie, 2010) and deployed field researchers to file 59 live right to information request applications in three countries in various government departments at the national and subnational levels. The researchers documented responses on the applications and tracked executive action taken on the application down the administrative chain. These data were then analysed along with key informant interviews¹⁰ and media reports surfacing on the issue in the three countries during the research period.

⁶ As early as 1984, well before India had a right to information law, Kalpavriksh filed a case in the Supreme Court demanding a legal right to information in a case related to the storage of harmful chemicals (Singh and Singh, 2006). Since the RTI Act was enacted in India in 2005, Kalpavriksh has also gone on to file a number of right to information requests seeking information on environmental impact assessment reports and other documentation on dams and other hydrological structures in the country. More information is available at www.kalpavriksh.org.

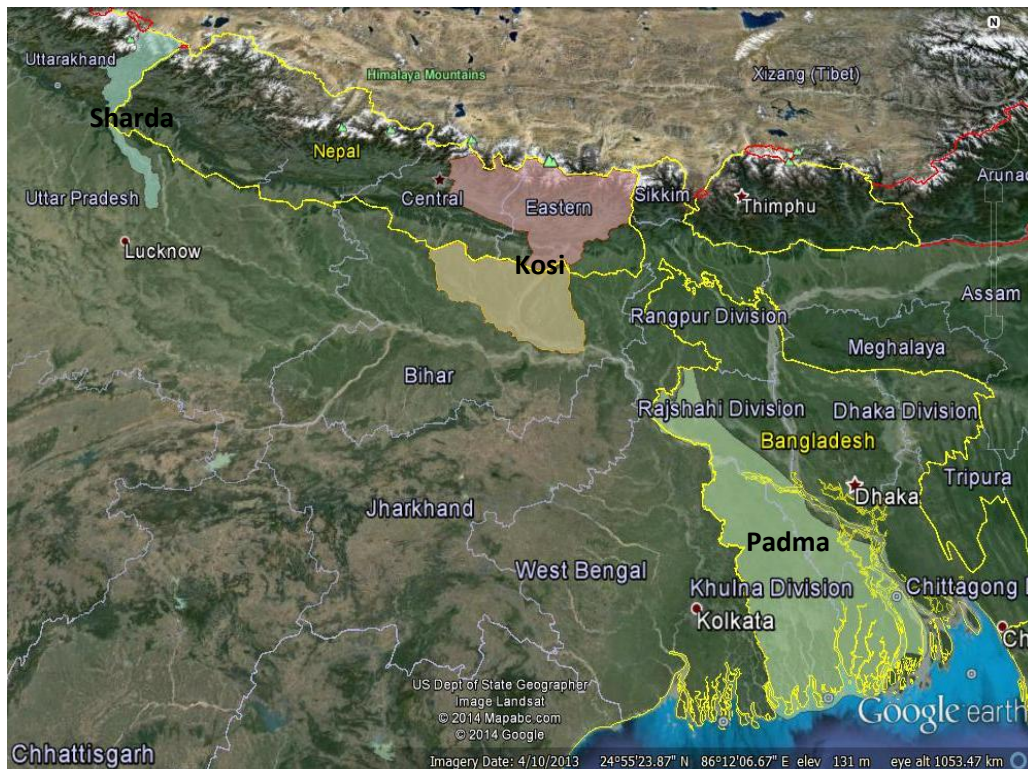
⁷ Since January 2011, The Asia Foundation has supported a coalition of NGOs from Bangladesh (Bangladesh Environmental Lawyers Association - BELA), India (Legal Initiative for Forests and Environment – LIFE), and Nepal (Forum for Protection of Public Interest – ProPublic) to work jointly in analysing treaties and commissions governing water-sharing in the region from the perspective of Principle 10 of the Rio Declaration on Environment and Development that advocates for public participation, access to information, and access to justice in environmental matters. More details about the project are available at www.waterbeyondborders.net, October 10, 2014.

⁸ For more information log on to Water Beyond Borders at www.waterbeyondborders.net/index.php/en, October 10, 2014.

⁹ The study was conducted by The Asia Foundation in partnership with World Resources Institute (WRI), Bangladesh Centre for Advanced Studies (BCAS), Institute for Social and Environmental Transition - Nepal (ISET-N) and the Legal Initiative for Forest and Environment (LIFE) with funds from the Skoll Global Threats Fund.

¹⁰ In Nepal, researchers conducted fieldwork in Sunsari District of Nepal where they organised an interaction meeting in Itahari with approximately 10-12 local stakeholders that included representatives from Kusaha, Prakashpur, Mahendranagar and the Barahachhetra Village Development Committee (VDCs) of the district, farmers and local CSOs such as the Kosi Victim Society

Figure 1. Map of transboundary river segments.



The study revealed the following key features of data access regimes as they relate to transboundary water issues in the countries studied:

Fragmented Availability of Data and Information: At the national level, the governments of Bangladesh, India and Nepal recognise the importance of public access to environmental information and have introduced legislation that specifically acknowledges the importance of sharing hydrological information with the public. The Bangladesh Water Act 2013, for example, states that the government may exchange data and information on common water resources with any foreign country,

and Aviyani Nepal. Subsequently, researchers visited Mahendranagar, Barahachhetra, Prakashpur and Narsingh VDCs. Researchers also observed flood-affected areas, interacted with local stakeholders and visited the Kosi Barrage and Chatara Canal.

In India, researchers conducted fieldwork on the Sharda River in Tanakpur and Champawat in the state of Uttarakhand and Pilibhit, Lakhimpur Khiri and Lucknow in the state of Uttar Pradesh. In these locations, altogether approximately 40 interviews were conducted with officials (including state and local-level authorities at irrigation and flood-control divisions as well as project offices). Additionally, researchers visited 12 villages and held discussions with approximately 30-40 local stakeholders. Notably, some of these were not formal interviews, but focus group discussions at the location. On the Kosi River, researchers conducted fieldwork in Bhimnagar and Patna in the state of Bihar. In total 12 interviews were conducted – seven interviews with the local-level irrigation and flood-control divisions and the project office of the Kosi Barrage, and five interviews with state-level officials in the state capital of Patna. Additionally, researchers visited three villages where discussions were held with approximately 20-30 local stakeholders. Researchers also interacted with civil society organisations working on issues related to the Kosi River, people displaced by floods and embankments, retired officials and academics.

In Bangladesh, fieldwork was conducted in Godagari sub-district of Rajshahi District and Ishwardi sub-district of Pabna District. Altogether, researchers met with 33 local community stakeholders including 20 farmers and 13 fishermen. Information was collected from stakeholders mainly through focus group discussions at the site and in-depth interviews with selected stakeholders. Altogether four focus group discussions and eight in-depth interviews were held.

government, regional or international organisation.¹¹ Similarly, India's National Water Policy 2012 and Hydro-meteorological Data Dissemination Policy 2013, emphasise the importance of public disclosure of hydrological information and the need for better data and information management practices.

Table 1. Transboundary river stretches.

The **Kosi** River is one of the largest tributaries of the Ganges, draining 71,500 kilometres (km) in Tibet, Nepal and North Bihar in India. In Nepal, the study focused on the stretch of the river from the Arun, where it enters Nepal, till the Saptakoshi at the Kosi barrage at Bhimnagar, where it exits Nepal. In India, the study focused on the stretch of the river downstream of the Kosi barrage where it enters India till it joins the main stream of the Ganges.

The **Sharda** River (also known as the Mahakali) forms the international boundary between India (forming the eastern boundary of the Indian state of Uttarakhand) and Nepal for a stretch before entering India at Lakhimpur Khiri in Uttar Pradesh. The Sharda flows for a length of 323.5 km in India up to its confluence with the Ghagra River in the Bahraich District in Uttar Pradesh. The study focused on the stretch of the river from its point of origin (in Pithoragarh, Uttarakhand) to where the river meets the Ghagra (near Bahraich, Uttar Pradesh).

The **Padma** River (as the Ganges is known in Bangladesh) is one of three main transboundary rivers in Bangladesh that include the Brahmaputra and Meghna rivers. The Padma flows from India into Bangladesh at Shibganj Upazila of Chapai Nawabganj District. The river is approximately 100 km long and 4-8 km wide. The study focused on the stretch of the river from the India-Bangladesh border till it meets the Jamuna (known as the Brahmaputra in India).

The specific research objectives of the study were to test i) the availability of accurate data and information on selected transboundary rivers in the region; ii) the extent to which governments collect, retain and publicly disseminate relevant and accurate hydrological data and information; and iii) the efficacy of RTI as a tool to assess hydrological data and information. The data documentation was conducted based on a modified version of The Access Initiative's (TAI) Water Governance Assessment Toolkit.¹² Based on the water governance toolkit, over a 6-8 month period, research partners conducted in-depth country level assessments on the availability of data and information on the selected transboundary rivers. Specifically, the study examined the nature of existing laws, institutions, mechanisms and practices that enable or hamper access to data and government responses on the right to information application files on the selected river segments. Field-level observations were recorded to document the operational efficacy of the right to information laws and institutions, proactive disclosure practices and responses to RTI requests filed at different government ministries, agencies and departments in each country (see Table 2 below) on three core parameters – streamflow, sediment flow, and information on dams and hydrological structures.¹³

¹¹ Section 7, Bangladesh Water Act 2013, www.warpo.gov.bd/pdf/WaterActEnglish.pdf, November 10, 2014.

¹² The Access Initiative (TAI) has developed a comprehensive Water Governance Assessment Toolkit that examines a country's status with regard to laws, institutions, and practices around access to information, public participation, and access to justice on water. The TAI Water Governance Assessment Toolkit provides for i) a national TAI water overview survey; ii) criteria for case study selection on access to information, participation and justice, and iii) research guidance with 148 indicators on the evaluation of laws, institutions, and practice, including capacity building. <http://research.accessinitiative.org>.

¹³ As discussed in Footnote 10, as a part of the assessment, fieldwork was conducted by partners in each country. Specifically, in Bangladesh, fieldwork was conducted in Godagari sub-district of Rajshahi District and Ishwardi sub-district of Pabna District; in India, in Tanakpur and Champawat in the state of Uttarakhand; Pilibhit, Lakhimpur Kheri and Lucknow in Uttar Pradesh; and Hanuman Nagar, Bhimnagar and Patna in the state of Bihar. Similarly, in Nepal, fieldwork was conducted in Sunsari District.

Table 2. List of government institutions/agencies assessed.

Nepal	India		Bangladesh
	National Government	State Government	
Department of Hydrology and Meteorology	Ministry of Water Resources, River Development and Ganga Rejuvenation	Irrigation Department and Environment Directorate, Uttar Pradesh	Ministry of Water Resources
Department of Electricity Development	Central Water Commission	Irrigation Department, Uttarakhand	Bangladesh Meteorological Department
Water and Energy Commission Secretariat	Ministry of Environment, Forests and Climate Change	Environment Protection and Pollution Control Board, Uttarakhand	Water Resources and Planning Organization
Department of Roads	Ministry of Power	Watershed Management Directorate, Uttarakhand	Flood Forecasting and Warning Centre
Department of Irrigation	Ministry of External Affairs	Water Resources Department, Bihar	Roads and Highways Department
Upper Tamakoshi Hydropower Limited	National Hydroelectric Power Corporation	Environment and Forest Department, Bihar	
Melamchi Water Supply Development Board	Central Electricity Authority	Bihar State Hydroelectric Power Corporation Ltd.	
Bhote Koshi Power Company Pvt. Ltd.			
Project Directorate of Asian Development Bank			
Himal Hydro and General Construction Limited			
Nepal Electricity Authority			

But the indications on the ground are that data and information on the selected transboundary rivers are not being collected, maintained and/or published by governments in a systematic manner. Instead information is gathered in a piecemeal form by different departments at various levels of government (national, federal, district, etc). This makes it difficult to get a complete hydrological picture of the rivers under study. In India, for example, information on rivers such as the Kosi and the Sharda is collected and retained by government agencies at the central level (Ministry of Water Resources and the Central

Water Commission) as well as by water, irrigation and flood departments at the federal level in states such as Bihar, Uttar Pradesh, and Uttarakhand.¹⁴ Ironically, while the Indian government has a very sophisticated satellite-based water resources information system (India-WRIS), this database restricts public access to all hydrological data and information for India's northern transboundary rivers i.e. the Indus, Ganges and the Brahmaputra, on the grounds that it is classified.¹⁵ The government's Hydro-meteorological Data Dissemination Policy 2013, which outlines a procedure for public access to hydrological information on India's river systems, also defines this information classified on national security grounds (Government of India, 2013). While the policy does spell out a procedure through which classified information can be requested, disclosure or use of this information in its original format is strictly prohibited.¹⁶ Thus while formally, there is a commitment to greater information disclosure on paper, there is, on the one hand, weak compliance with the letter of law at a departmental/bureaucratic level and, on the other, particularly in the case of India, a strong regime of secrecy that precludes access to information on transboundary water issues.

Poor Data and Records Management Practices: Across all three countries, data and records management practices were found to be poor. In many instances, while departments appeared willing to provide information, the data/information could either not be traced or were not always held by the department mandated to collect them. It is worth noting that the poor state of record keeping is not unique to the retention of water- and climate-related information alone but speaks generally to poor data-management practices within governments in the region. Where information was available i.e. either proactively disclosed by a government department or supplied via RTI – it was often found to be incomplete, difficult to interpret and/or provided in a format that was not very user-friendly. For instance, in many cases, older records could not be made available because they were available only in the paper format. In others, the information was available in the form of scanned PDFs which are not machine-readable. The lack of standardisation in terms of the means and format for disclosure of government data and information makes it difficult for anyone on the outside to use the data/information for further analysis.

Limited proactive disclosure of information: The RTI laws of Bangladesh, India and Nepal require governments to proactively disclose a range of information through websites and other means, and update it periodically. In essence, this 'duty to publish' encapsulates the idea of open data and encourages governments to move from reactive responses to requests for information to more purposeful and regular disclosure of information. To assess the extent to which departments proactively disclose hydrological information related to stream flow, sediment flow and dams and hydrological structures, research teams trawled government websites and conducted on-site inspections of office premises. Our findings again indicate that at a departmental level there appear to be no clear institutional norms determining the kinds of hydrological data and information that should routinely be published by government agencies. Disclosure by and large is ad hoc. Across government departments in each country, information on the identified parameters where available was disclosed in a very patchy manner. Much of the information was incomplete or out of date. This made it quite difficult to get a comprehensive sense of what is and is not available. There are also variations in

¹⁴ As mentioned previously, water is a federal or state subject under the Indian constitution.

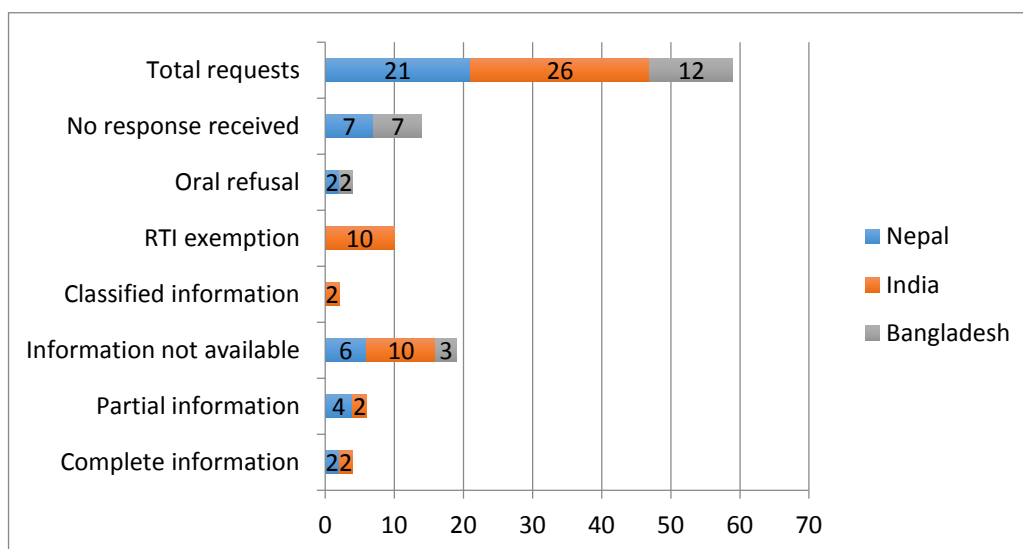
¹⁵ The India - Water Resources Information System or India-WRIS, is the product of a joint collaboration between the Central Water Commission (CWC), Ministry of Water Resources, and Indian Space Research Organization (ISRO), Government of India. It seeks to be a "'single window' solution for comprehensive, authoritative and consistent data and information of India's water resources along with allied natural resources in a standardized national GIS framework". More information is available at www.india-wris.nrsc.gov.in.

¹⁶ To obtain access to classified data, a special request can be made to the Ministry of Water Resources; however, the requester must sign a secrecy undertaking and is prohibited from transferring, publishing, disclosing or disseminating any of the classified information provided in its pure form. Doing so invites the risk of civil liability against the requester.

information disclosure between countries. In Nepal for example, while the Department of Hydrology and Meteorology publishes water-level data on its website, streamflow information is only available on request. In Bangladesh, streamflow data, basin-wide rainfall data and real time/forecast data on water levels and floods are available on the website of the Flood Forecasting and Warning Centre. In contrast, streamflow data in India that is gathered by the Central Water Commission is classified and not publicly accessible. Sediment flow information was also made available on the basis of written requests in Bangladesh and Nepal, whereas this information could not be accessed in India.

Weak Implementation of the Right to Information: Altogether, 59 RTI requests were filed as a part of the study (12 in Bangladesh, 26 in India and 21 in Nepal). However, out of the 59 requests, information was received only in the case of 9 requests. Specifically, in Nepal, out of 21 requests, complete information was provided for only 2 requests and partial information for 4 requests. In India, out of 26 requests, complete information was provided for 2 requests and partial information was received for two requests. In Bangladesh, information was not provided in response to any of the 12 requests. In analysing the poor response to RTI requests in all three countries, it is worth noting some of the differences in the government response in each country. See Figure 2 for a comparative overview of responses to RTI requests filed in all three countries.

Figure 2. Comparative overview of RTI responses.



In general, the requests for information received three kinds of responses: i) mute refusal – where the department did not respond at all; ii) the information requested was not held by the department (there were instances of this in all three countries), and iii) information was classified/exempt from disclosure and therefore could not be provided. RTI requests in Bangladesh and Nepal received the maximum number of mute refusals i.e. the department did not respond to the request at all. This is reflective of the fact that in both countries, the implementation of the RTI laws is still at an early stage. Interactions with government officials revealed their lack of knowledge and understanding of the law, their roles and responsibilities and the procedures for responding to requests. In India, none of the requests filed received a mute or oral refusal. This is because India has had an RTI law and history of civic activism around its use for a much longer time. Consequently, government departments are much more attuned and experienced at responding to requests for information.

In all three countries, departments frequently responded that the information requested was not held by them. In India, each of the requests filed at the central Ministry of Water Resources for

example, was transferred to another government department on average at least three times. This seems to indicate one of two things. First that government departments are not routinely collecting and retaining this information as they are mandated to, or that these data are not accessible to them. Interestingly, in Bangladesh and Nepal, no request for information was denied on the grounds that it was classified or exempt, whereas in India, requests for information on streamflow and sediment flow data on the Kosi River were denied by the Central Water Commission as classified. Similarly, information on the Kosi Barrage and other structures on the river was also denied on the grounds that it pertained to national security and sovereignty. This illustrates the highly securitised approach towards water and climate data in India, as compared to Bangladesh and Nepal where general information pertaining to transboundary rivers is not considered classified or secret, but rather this information is not collected, retained or disseminated in a sustained manner.

Informal vs. formal disclosure of information: In Bangladesh and Nepal, government departments appeared more willing to provide information 'informally' i.e. in response to a request in writing or via the telephone rather than a 'formal' legally binding request for information under the RTI. This points to bureaucratic uneasiness with implementing the RTI (the laws prescribe personal penalties on officials for non-compliance) as well as their lack of knowledge and training on the same. In India, the reluctance to share information has less to do with implementation of the RTI law itself and more to do with the fact that information and data on transboundary water issues is regarded as secret and classified.

The study also found that data can be sporadically accessed at the local level and it is here that the restrictions on data-sharing that exist at the national level, tend to occasionally fail. In India and Nepal, researchers were able to obtain some information and data through informal interactions with officials at the local level. For example, in India, researchers were able to inspect the Kosi Barrage and eastern and western Kosi canals in the state of Bihar, while in Nepal, researchers were able to get access to documents, and other data about the Sapta Koshi High Dam project, Sunsari Morang Irrigation Canal, Kosi Bridge, and information on the 2008 floods. However, it is worth mentioning that the information maintained at the local level is very limited and fragmented. Basin-wide hydrological information is maintained largely at the national and state level and as highlighted above is not available publicly for northern transboundary rivers in India.

Access to information is a tangible need on the ground: Fieldwork and stakeholder interviews conducted as a part of the study in all three countries indicate the lack of access to information about the selected rivers at the local level. Much of the governance and decision-making authority over the Kosi, Sharda and Padma rivers is concentrated at the national and state level in all three countries. Local officials and communities have little knowledge of the institutions that govern these rivers. In the case of the Kosi River, for example, interviews with stakeholders affected by the 2008 Kosi floods in Hanuman Nagar and Birpur, Bihar and Sunsari districts in Nepal revealed that stakeholders on the ground are largely unaware of ongoing bilateral negotiations between India and Nepal on the Kosi. Additionally, stakeholders pointed to the lack of an early warning system in the Kosi Basin, the lack of coordination and cooperation between governments on either side of the border, and the limited public sharing of information by local governments on incidents such as the 2008 floods. This paucity of information on the ground is paralleled by the fact that even in the aftermath of the 2008 floods, government agencies on either side of the border have made limited efforts to purposefully disclose relevant information to local communities on critical issues such as relief and rehabilitation efforts.

These findings indicate that the internal and external clamouring for increased transparency in governments has not affected access to information regimes on water at a fundamental level. The willingness to become more open in other sectors of government such as health, education and service delivery has not percolated to the water sector and definitely not so when it comes to transboundary rivers. There is some degree of cross-sectoral parity emerging when it comes to government-produced research and policy documents but with primary data the governments still remain extremely guarded. The ability of the governments to retrieve, use and manage data as well as to administer regulated

access also remains weak. In that respect, the preference for imposing a blanket restriction on access is easy to understand: governments in the three countries either lack the political will or have not developed the capability to administer managed or regulated access to hydrological data. Subsequently, the essential choice is between open access and blanket restriction and governments appear to find the latter approach easier to adopt.

IMPLICATIONS FOR TRANSBOUNDARY WATER COOPERATION IN SOUTH ASIA

While our study was limited to three co-riparian countries in the Ganges Basin, data and information access accorded to the public under right to information or equivalent laws in other South Asian countries are not significantly different. In Pakistan, the Freedom of Information Ordinance 2002 can be considered an equivalent law, whereas in Bhutan¹⁷ and in Afghanistan an equivalent law does not exist. In an earlier work (The Asia Foundation, 2014), we tested the scope of FOI laws in Pakistan in granting access to governance data to citizens and found impediments similar to those we came across in Bangladesh and Nepal under the current study. What we are able to generalise in the case of the three countries we studied, in that limited sense, is similarly applicable across contiguous South Asia.

All countries in contiguous South Asia – Afghanistan, Bangladesh, Bhutan, India, Nepal and Pakistan – also depend heavily on transboundary water resources to meet their domestic water and energy needs. The headwaters of the region's major river systems – the Indus, the Ganges and the Brahmaputra – originate in the arid Tibetan plateau in China and criss-cross several countries before meeting the sea. As rivers cross borders, their flows are diverted, dammed or stored by national governments for multiple purposes. It is estimated, for example, that Pakistan annually withdraws nearly three quarters of available water from the Indus River into irrigation canals to support the country's agrarian economy (Stimpson Centre et al., 2013: 14). Similarly, approximately 92.5% of Bangladesh's freshwater comes from upstream transboundary rivers, making it highly vulnerable and dependent on the actions of its upstream neighbours, India and China (Kolås et al., 2013: 11).

Despite these natural 'water co-dependencies' (Kugelman, 2011: 2), regional cooperation on water remains contentious. While on paper, bilateral treaties and agreements govern water sharing and infrastructural development between India and Pakistan (Indus Water Treaty, 1960), India and Nepal (Kosi Agreement, 1954; Gandak Agreement, 1959, and Mahakali Treaty, 1996), and Bangladesh and India (Ganges Water Sharing Treaty, 1996), in practice, deep mistrust and chronic political tensions surround their implementation. The agreements have been criticised for adopting a piecemeal approach focused on particular rivers and designed to address specific country concerns such as water sharing (Indus Water Treaty, 1960 and Ganges Water Sharing Treaty), flood control (Kosi Treaty, 1954, revised in 1966) or the construction of specific dams and projects (Gandak Agreement, 1959, and Mahakali Treaty, 1996), rather than providing a broad framework or blueprint for cooperation and joint-management based on principles of equity, justice, mutual benefit, and sustainable use (Siwakoti, 2011; Uprety, 2012). They have also lacked the necessary norms and mechanisms to deal with and adapt to variability in water flows and other environmental changes over time (Uprety, 2012).

Meanwhile, water is increasingly becoming a driver of political tension within and among countries in the region. The number of intra-country water disputes between states or provinces particularly in India and Pakistan have been increasing.¹⁸ The United Nations Educational Scientific and Cultural

¹⁷ Bhutan's parliament passed the Right to Information Bill in February, 2015 but the bill is yet to be enacted.

¹⁸ In India, constitutionally water is a federal or state subject. There have been a number of disputes between states in India on shared rivers, most notably the Ravi-Beas (Punjab, Haryana and Rajasthan), Narmada (Gujarat, Madhya Pradesh, Rajasthan and Maharashtra), Cauvery (Karnataka and Tamil Nadu), Godavari (Maharashtra, Andhra Pradesh, Karnataka, Madhya Pradesh and Odisha); and Krishna (Maharashtra, Andhra Pradesh and Karnataka) rivers (Chokkakula, 2012).

Organization (UNESCO) has identified the Ganges-Brahmaputra Basin as one of 17 basins worldwide with a high potential for dispute in the next decade (Wolf et al., 2003). On the ground, protests in Pakistan against the lack of access to water and electricity in cities such as Karachi have put pressure on the government to seek a redefinition of the Indus Water Treaty with India (PTI, 2013). Pakistan has consistently argued that India's construction of hydro-engineering structures such as the Baghlihar and Kishenganga projects on tributaries of the river that originate in India, will substantially reduce the availability of water downstream. In Bangladesh, a country that depends almost entirely on transboundary river flows for its freshwater, the reduced availability of water from the Ganges and Teesta rivers, particularly in the lean season, has been a sore point in relations with India. Despite being the upper riparian, a history of political instability in Nepal and asymmetric power relations with lower riparian India have made flood control, irrigation and hydropower development on shared rivers such as the Kosi, Gandak and Mahakali a source of discord between the two countries (Condon et al., 2009).

The lack of any new agreements on water since the signing of the Ganges Treaty between India and Bangladesh in 1996 and the growing national and subnational discontent over existing accords indicate that transboundary cooperation on water in South Asia is at an impasse, stuck with the problems of the past and unable to meet the challenges of the future. While countries in South Asia share a common historical legacy, cultural ties and natural geography, they have been unable to rise up from their geopolitical tangles to meaningfully engage and produce tangible results on water cooperation or, for that matter, in any other aspect of regional cooperation. This is most easily demonstrated by the fact that South Asia is one of the least integrated regions in the world with intra-regional trade accounting for less than 5% of the total trade (Chatterjee and George, 2012). Land, air, sea and telecom connectivity is poorly developed even as the mobility of goods and people is heavily restricted through complex customs, visa and transit regulations. Given the current impasse on South Asian regional cooperation in general, and on transboundary water issues specifically, unless something changes, it is difficult to be optimistic about the region's ability to secure its water future effectively.

Einstein is said to have defined insanity as 'doing the same thing over and over again and expecting different results'. If progress matters in South Asian water cooperation, changing the approach to transboundary cooperation matters too. In that respect, rather than pursuing elusive agreements locked in a zero-sum negotiation year after year¹⁹ some of the institutional approaches to cooperation could be revisited. Improving information and data-sharing between co-riparians is one of the ways in which this could be achieved (Babel and Wahid, 2008; Price et al., 2014). At a minimum, the sharing of information related to the construction of hydropower and infrastructural projects, irrigational and navigational use of rivers, as well as information on pollution, natural disasters, such as floods and droughts has been described by the United Nations as key to "building trust and a shared vision among riparian countries" (UN-Water, 2008: 8). Such a data-sharing arrangement can be constructed inside or outside of the purview of the existing treaties. The Indus Water Treaty already mandates some information exchange between the signatories; although in much more limited ways, other South Asian treaties as well call for information exchange.²⁰ Governments in South Asia have also resorted to sporadic sharing of flow data when 'triggered' by extreme events such as the Bhote Kosi landslide and

¹⁹ See Prasai and Surie (2013). The India-Bangladesh negotiations on Teesta have been going on for over three decades and still have not resulted in an agreement.

²⁰ Under the Ganges Water Sharing Agreement, 1996, the Joint Committee established under the agreement is to set up teams to observe and record daily flows below Farakka Barrage and at Hardinge Bridge [Article 4, Ganges Treaty], and submit an annual report of the data it has collected to the Governments of Bangladesh and India [Article 5, Ganges Treaty]. Under the Mahakali Treaty, 1996, the Mahakali River Commission can inspect or seek information about all of the proposed structures included in the treaty [Article 9 (3) (a), Mahakali Treaty]. Likewise, under the Kosi Agreement, there are provisions of mutual exchange of data, reports and results of surveys and investigations carried out in respect of the Kosi River [Article 2(iv), Kosi Agreement].

subsequent impounding in Nepal that threatened to flood the Kosi River downstream in India in August 2014. As Gerlak et al. (2014) point out, 80% of data-sharing around the world actually occurs outside the purview of international water treaties. In South Asia, however, the gap in both formal and informal domains of data-sharing appears wide. Open data regimes also help to build certain other conditions that make transboundary cooperation more possible. We identify below four such conditions:

Lowering nationalistic fervour on water. Water is an emotive subject and the notion of excessive nationalism on water undermining the scope of reasonable compromises is not unique to South Asia. Drumming up of nationalistic fervour on water is politically expedient, particularly when securitising water becomes a strategic intent and governments in South Asia (as elsewhere) routinely indulge in that enterprise (see Fischhendler, 2008 for further discussion). The 'impasse' on South Asian water cooperation, however, cannot be broken by maintaining and nourishing such practices, and something else needs to be tried. As Warner et al. (2013) have argued, shifting to non-coercive or persuasive power sometimes helps. Soft-power is drawn from informal, non-state domains of interactions rather than from formal, bureaucratic mobilisations. If the power of persuasion and the space for reasoning are what we are after, open access to information, transparency in transactions and the freedom to contest ideas harboured by the state are preconditions of that process.

In the absence of accurate, verifiable data that are shared across borders, co-riparian constituencies including the media, civil society organisations and communities frequently end up using dubious information to accuse one another of diverting or exploiting transboundary water sources to the detriment of others. For example, the Bangladeshi press has long accused India of diverting more than its fair share of water from the Ganges River through the Farakka Barrage and Bangladeshi political parties have expressed similar concerns over India's proposed diversion of Teesta River waters. Similar contentions have arisen frequently around implementation of Indus, Kosi and Mahakali treaties in the Pakistani, Nepali and Indian media. In our own efforts to verify these claims, including in the course of our current research, we have encountered severe paucity of reliable data. Even to tone the antagonistic rhetoric down, one needs access to data.

Promoting policy contestations in agenda-framing. All of South Asia's existing international treaties on shared rivers have been negotiated on a bilateral basis. While the approach has kept the politics of shared rivers more tractable, it has also limited the scope of cooperation (Crow and Singh, 2000). A basin-wide approach to planning, management, and conservation of shared river systems, for instance, has never been formally admitted in international negotiations in South Asia. The content of the treaties as well has been very parsimonious, focusing largely on the quantum of water to be allocated to each country around a specific diversion structure. As a result, when the respective claims on shares of water are eventually agreed upon, other problems related to upstream-downstream rights, ecological management, and local livelihood concerns tend to crop up and delay implementation of the agreement. The Mahakali Treaty between India and Nepal, for instance, has not been meaningfully implemented even 18 years after it was signed.

What we describe above resembles what Stone (2002) calls a 'framing' problem of public policy, where for the sake of political expediency or other bureaucratic considerations, policy problems are oversimplified and contestations over the framing of the policy problem are avoided by maintaining an information asymmetry between policy-makers and stakeholders. It appears that to do a better job of ensuring that the agreements that take decades to negotiate eventually deliver acceptable outcomes, some moderation in both these tendencies are needed: i) the framing of a future cooperation agenda needs to be open enough to admit the most visible of the existing problems around treaty implementation and ii) as we have argued throughout the paper, the information asymmetries between the agenda framers and the stakeholders need to be reduced. These shifts cannot be driven by denying access to data and information to legitimate stakeholders of the process.

Promoting alternative imaginations in transboundary water cooperation. Ideas such as those posited by Sadoff and Grey (2002), where the benefits of cooperating on the governance of international rivers are extended well beyond immediate calculations of allocated flows to include other ecological, geopolitical and economic benefits, are potentially good examples of what can constitute an alternative imagination on water cooperation. Similarly, Ahmed et al. (1997), for example, have called for devolution of negotiating authority to the local level where stakes are real and the prospects of making reasonable compromises on cooperation frameworks are greater. For such ideas to capture the popular imagination, a persistent level of advocacy, engagement and informed debate is required within multiple social, scientific and political constituencies. The credibility of such a discourse has to be based on reliable research and analyses that will not materialise until data and information on water flow openly into the public domain.

Responding to the promise of technology. Collecting water and climate data through non-state efforts has been historically difficult due to the scale and costs associated with such an operation. Where data and information are collected through non-governmental organisations, the coverage is often limited and the quality difficult to verify. The advancement in telemetry and remote-sensing technologies and continued improvements in their accuracy, reliability and cost-effectiveness is rapidly changing the ways in which data are collected, stored and used. As modelling techniques such as Water Accounting + have demonstrated, approximate knowledge of how the flow is being affected upstream or downstream of a particular hydro-engineering structure governed by a transboundary agreement can be obtained outside of the formal information-sharing channels, if necessary. Developments such as these open up a new challenge to governments inclined to maintain data secrecy and, with time, make such information more reliable and easier to access. On the other hand, these very tools, together with ever-expanding growth of Information and Communication Technologies (ICT), can help governments to communicate with constituencies within and outside of their borders better, which in turn may make it easier for them to navigate political choices more deftly. As time progresses, the rapid advancement in technology may just be able to neutralise the information asymmetries between stakeholders, discourage secrecy regimes and allow articulation of broadly acceptable goals on transboundary water management.

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CONCLUSION

Public access to government-maintained water and climate data in the three major co-riparian countries of the Ganges Basin – India, Bangladesh and Nepal – is either formally restricted or inadequately granted. We have argued that, to an extent, the state of information access in other countries in contiguous South Asia – Pakistan, Afghanistan and Bhutan – is not remarkably different. Since the 2000s, countries in South Asia have either already enacted or are in the process of enacting RTI or equivalent laws. We have tested the effects of these laws on water governance as they relate to transboundary rivers. What we have found is that despite the enactments of RTI laws and a general clamouring for openness in government, access to information regimes on transboundary rivers has not changed at a fundamental level. In India, the RTI laws have not eased public access to data on its

transboundary rivers including in the Ganges Basin and in Nepal and Bangladesh, while data can be legally accessed using RTI laws, the administrative procedures for such an access are not developed enough to make a tangible difference on the ground.

While countries in South Asia share a common historical legacy, cultural ties and natural geography, they have been unable to rise up from their geopolitical tangles to meaningfully engage and produce tangible results on water cooperation. The region has not produced a transboundary water treaty for nearly two decades now and, looking at the intensifying national and subnational discontent over existing accords, transboundary cooperation on water in South Asia appears an impasse, stuck with the problems of the past and unable to meet the challenges of the future. We point to four specific factors that contribute to the impasse; each relates, in some measure, to the state of access to information regimes in the region: i) under-informed and highly nationalistic constituencies affecting political choices; ii) reduced scope of informed policy contestations in agenda setting; iii) poor recognition of alternative pathways to agreements; and iv) inability to utilise the power of technology in overcoming political impediments to cooperation.

The proliferation of right to information laws in the region, on the other hand, provides a window of opportunity to rapidly pursue transparency in water governance. The laws provide a normative and legal framework within which governments can legitimately start opening up their data and information on water. The proactive disclosure requirements of the RTI laws in Bangladesh, India and Nepal enable governments to disclose a range of information to the public through different means. The advent of information and communication technologies (ICTs) also provides governments with an opportunity to disclose information more easily and to a broader audience. The political will to do so, however, bears no timeline.

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