8. VOICE

Perspectives

Nitin Desai

Shafi Sami

Runa Khan

Yang Yi

Ravindra Kumar Sinha

Yu Hongyuan

Ma Jun

Sanjoy Hazarika

M Panging Pao

Ainun Nishat

Yumiko Yasuda

Qazi Kholiquzzaman Ahmad

Imtiaz Ahmed

Bibhab Talukdar

Karma Chopel Gongsar

सिआंग
雅鲁藏布江

Mutual learning between different civilizations

YANG YI

THE "Yarlung-Tsangpo-Siang-Brahmaputra-Jamuna" River, which finds its origin in the northern foothills of the Himalayas, as a trans-boundary river and one of the major rivers of Asia, it nourishes the fertile land on both sides of the river, feeds hard working people and splendid cultures since ancient times.

"The rational and sustainable development and utilization of cross-border river water resources calls for our wisdom and cooperation."

The upper reaches basically belong to nomadic areas, the vast grasslands on the Tibetan antelope, Yak and other wild animals' paradise. The lower reaches benefits for irrigation and transportation from the water. It's the cradle of the birth and development of many civilizations, also a witness to inter-civilizational communication and cultural exchanges among the people, which have their own characteristics and influence each other. This civilizational and cultural blend runs through the river basin. The riparian countries are linked by mountains and rivers, and have similar historical circumstances and the same pursuit of dreams. From the high altitude Tibet Autonomous Region, deep mountains area, the valley stream side, to the cross-cultural tea county Assam, and the Ganges Delta, you can hear the sound of bells from representative temples and palaces, you may meet the cultural relics created by different ethnic groups, they are the products of cultural exchanges, representing the prosperity and glory of the past and human history's quest, also the common heritage of mankind.

Civilizations have been enriched and become more colorful through exchange and mutual learning. The exchange and mutual learning serve as important drivers of human progress and global peace and development. At a crossroads in world history, all countries look forward to peace and tranquility, common prosperity, openness and integration in face of a profound unprecedented change in a century. Great hopes go hand in hand with great challenges. How can riparian countries jointly meet the challenges and move towards a better future? The Chinese President Xi Jinping proposed to consolidate the "cultural foundation" of jointly building a community with a shared future for Asia and humanity. Specifically, treating each other with respect and as equals; appreciating the beauty of all civilizations; adhering to openness, inclusiveness, mutual learning; and keeping pace with the times.

The fast-changing international and regional landscapes request all of us to follow the trend of our times, jointly enhance international cooperation in the field of cultural governance and sustainable development and build a more favorable environment and better life to all riparian people in the coming days. The rational and sustainable development and utilization of cross-border river water resources calls for our wisdom and cooperation.

Spanning thousands of miles and years, the river plays an important economic, social, cultural role for riparian countries with great potential for growth now. With the progress of the times, we need inject new impetus into river for sustainable development, to realize civilization connectivity. The river brings not only the past to the people along the river, but also a glorious future.

যমুনা

Bangladesh: a land of thousand rivers!

RUNA KHAN

AWE INSPIRING in its resilience, overpowering in its strength and a feeling of continuity between the river and its communities is possibly what struck me when, 20 years ago, I first came face to face with the mighty River Jamuna and the chars (river islands), along it's multiple banks, the people, the communities and life. So broad was the Jumna that one could fit the city of Paris between its two shores!

During the Summer, the river is in spate, and can flow at 10, even 12 knots. As you watch it move at a speed and with a volume incomprehensible to those who have never seen a river of 25 km in breadth, you are filled with astonishment and fear, at this sight. One is often overwhelmed with emotions and helplessness, as you witness the chars breaking and disappearing with the current. Washed away in front of your eyes as you watch from your boat, meter by meter the very land where you had seen the children play, where crops were growing and men came home to their wives, just a month ago. The river carrying away in its might, livelihoods, lives and

hope of all those who live on them.

These are nomadic islands, like the nomadic people who live on them. Migrant climate refugees. Families, persons, moving up to 48 times in their lives, island to island, year after year – daring not even to hope.

"Nowhere else in the world do you see the variety and the technical skills which are used in these smooth skinned boats of Bangladesh."

This river is staggering in its wondrous might. Bangladesh is built on the silt brought down by the Rivers Brahmaputra, Ganges and the Meghna. The names of the first two rivers, are famous all over the world as two of the world's greatest rivers. Yet as they journey down from the Himalayas, down the deltaic plains, the Brahmaputra changes its name to Jamuna and the Ganges to Padma and together they meet the Meghna and as the Meghna, they flow into the sea. Ironically, neither the mighty Brahmaputra nor the mighty Ganges, enters the Bay of Bengal with their famous names.

Bangladesh is 'the land of a thousand rivers.' The rivers are as important to Bangladesh as veins are to our body and laces through as intrinsically. The Jamuna brings with it life, mobility, food, water, cultures, proximity and distance. It also encompasses our fears.

It is on these seemingly unnavigable, unpredictable waters, where foreign marine influence could not reach, that the largest fleet of inland wooden boats came into existence. Their unique crafts remained unmatched for millennia. These boats with their ochre sails are a heritage of humanity. Nowhere else in the world do you see the variety and the technical skills which are used in these smooth skinned boats of Bangladesh. Twenty years ago, the rivers were filled with the ochre sails, of the malar, panshis, baich, balar. Today these are reminiscences of the past, except for the B613 and the Fleche d'Or which we built, to preserve their technology and save some of the last carpenters from an untimely extinction.

The Jamuna teaches us much. Humility if we are ever tempted to control it and understanding and respect if we ever try to work without taking into consideration its capricious nature.

ব্রহ্মপুত্র ব্রহ্মপুত্র

Water of despair, waters of hope

SANJOY HAZARIKA

THE RIVERS of Northeast India leap and bound over hills; they do not flow. There are not less than 33 major rivers which in turn flow into that greatest of all Indian rivers, the Brahmaputra; there are 22 which have already fallen upstream in Tibet and in Bangladesh three more join it, including the Ganga.

One is not reflecting on the power of these rivers, which is immense. Others see that power differently: mention the scale and fall from the Himalayan heights to a civil or electric engineer and his or her eyes will probably light up at the thought of dams and projects that will create a surge of energy. One is not talking about that either.

Who realizes that in the cacophony about dialogue and development and Look East policies, we seem to have forgotten the persistent and critical challenge before us: how do we enable a minimum of 3-5 million an opportunity to cope with floods. Because unless we do that none of our policies or talk is going to work.

I am always stunned at the lackadaisical way we approach this problem, showing concern only when urban conglomerates like Guwahati are affected by ingress of high water. I think places like Guwahati deserve to be flooded because its residents, contractors and politicians as well as bureaucrats, have destroyed the land below their feet – they have emptied out wetlands and built high rises. When the next earthquake hits, don't be surprised by high casualties and no amount of disaster preparedness or firefighting exercises will help.

And that is the point: the floods delineate a political process as much as an environmental and economic one. It is the story of the strong and the weak, of the poor and the underprivileged on the one hand and lawmakers and policy-makers on the other, with business in between. In some cases civil society is stepping in to fill the breach. But is anyone talking about dialogue; a dialogue which includes debate and discussion on many issues, not just one or two that come to mind. One can only see enormous gaps of communication and comprehension. A dialogue to be true must involve all principal stakeholders – the people who are most affected by the strife and consequent problems, not just those who see themselves as stakeholders: government and its agencies as well as business.

Talk about water in India and these are the last groups in the government's mind. Water policy and water flows are classified information even though with GIS any decent researcher can get the information he or she wants without going on bended knees to the government. In our case, the task force was not even prepared to look at the issue of watershed management and problems upstream until one of the region's most prominent geographers questioned and challenged its members.

"Unless the most marginalized of our people, those who are river-dependent among other groups, are represented at the dialogue table, conditions will not change."

Again, where is the dialogue? For true dialogue to take place one must have the other prerequisites in place – information and transparency, not rhetoric or 'facts' as paraded by one side or another.

So, unless the most marginalized of our people, those who are river-dependent among other groups, are represented at the dialogue table, conditions will not change except through growing pressure and violence. Come floods and overnight people lose homes and farms, livestock and life savings, forced to live without the basics of human dignity on embankments and roads for weeks and months without food security and a change of clothes. And people talk about freedom? Where is the freedom from indignity for the most vulnerable?

Let that be first addressed by those who claim to speak in our name. Let them participate in efforts to save our people and improve their economic conditions, instead of hectoring foreign countries and abusing those who disagree.

Our own group, the Centre for North East Studies and Policy Research, although small, works in some 25 research sites and has a basic interactive rural group of not less than 2,000 persons ranging across seven districts of Assam. One demand that we have been pressing for some time is the urgency of building high-rise platforms where people can take shelter in times of flood, with a separate area for livestock. We must restore dignity and basic rights. Surely that is the essence of conversation, understanding and dialogue? If we are not bothered about how people live in conditions which defy the very basic definition of human rights – including safety, the right to clean water, food and shelter – then our policies and projects and programmes.

The GOI's Look East policy is extremely commendable and worthy of support. However, the policy and a lot of the thinking around it – connecting to Southeast Asia and our neighbours – overlooks one basic point. Without a water transport policy capable of moving large volumes of goods by river, the Look East policy will run into the sandbanks of the Brahmaputra. For it does not even consider the most basic of problems: when the region and its main road and rail corridor are under water or affected by water (either hit by it or recovering from it) for anything between five to eight months of the year, how can we have an economic policy that does not consider this very basic factor?

Massive interventions are being planned, proposed and implemented across the rivers of the Northeast. But has anyone studied the impact on aquatic life, on the endemic fish species of the region, on the dolphins, one of the most endangered fresh water mammals in South Asia, of which there are only some 200 left? We need to script another success story with the dolphin like that of the rhino – how can there be Bihu without the xixu?

Let me share one small experience where we are developing a physical intervention which could, we believe, make a difference to river dependent communities. I call this the boat of hope, because with limited funds and a team of boat builders, traditional builders, with new designs and a more powerful engine, we are building a boat that will take health services to people in time of need – especially during floods. Why hasn't this been thought of earlier? Because there's no money to be made, perhaps, if I am permitted to be cynical

But there are reasons for hope: they lie in addressing issues head on. They lie in thinking innovatively and out of the box but with our feet on the ground and with commitment as well as by bringing in people-centric, people-consulting policies which can be implemented simply and with the involvement of those they seek to benefit.

"By bringing in people-centric, people-consulting policies which can be implemented simply and with the involvement of those they seek to benefit."

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ब्रह्मपुत्र

Integrated approach to governance of a transboundary river

YUMIKO YASUDA

THE YARLUNG-Tsangpo-Brahmaputra river originates in the Himalayas and flows through China, India, and Bangladesh to the Bay of Bengal with some tributaries flowing from Bhutan. It supports life and livelihoods for approximately 130 million people

It also causes floods, sedimentation, riverbank erosion, and water pollution. Real time data sharing among the riparian countries in recent years supported flood risk management, which was possible due to political commitments of the riparian countries. In order to maximize benefits from the river and minimize risks, it is critical to take an integrated basin management approach at two levels. The first level of integration is to ensure multi-sectoral integration. River basin management requires engagement of various sectors: for example, industrial and household activities, which increase sedimentation and may therefore lead to increased flood levels. Industrial and household pollution and waste management impact negatively on water quality, affecting coastal and terrestrial ecosystems. The Integrated Water Resources Management (IWRM) approach aims to ensure cross-sectoral coordination. Currently, all countries are engaged in reporting on the degree of IWRM implementation (SDG 6.5.target). Sharing experiences among riparian countries can create an opportunity to bring stakeholders together to discuss this common approach and find better management approaches. GWP is working in many countries to support the process of achieving SDG targets, including its reporting process through UN custodian agencies.

The second level involves ensuring integrated management of the river from its source to sea, requiring enhanced cooperation among riparian countries and stakeholders. At this level of integration, it is important to engage multiple levels of stakeholders who play different roles in making integration happen at the basin-level. In this context, the multi-track water diplomacy approach can be effective in achieving healthy management of the Yarlung-Tsangpo-Brahmaputra

"It is important to engage multiple levels of stakeholders who play different roles in making integration happen at the basin-level."

ब्रह्मपुत्र

सिआंग

Ané Siang or Mother Siang

M PANGING PAO

THE MIGHTY Brahmaputra has different names in different nations and regions. In Tibet, where it has the longest stretch of about 1625 km, it is called as the Yarlung Tsangpo. The river carries out a massive U-Turn at Namcha Barwa and enters India near Gelling in Arunachal Pradesh. In Arunachal it flows for about 260 km and is called as the Siang. The Siang river enters Assam south of Pasighat, where it is joined by the Dibang river and the Lohit rivers. After flowing through Assam, the river flows into Bangladesh as the Jamuna.

The Brahmaputra's upper course was long unknown in India; its identity with the Yarlung Tsangpo was only established by British led explorations in 1884-86. Before this discovery, in the plains of Assam the Lohit river was mistaken as the Brahmaputra for ages.

The Siang river is revered in Arunachal Pradesh and local people call the river as 'Ané Siang' or Mother Siang. From about 300-700 metres width all along its flow in Arunachal, the river widens beyond Pasighat in the foothills to a width of about 10-15 km reaching the plains of Assam. The Siang and its tributaries support livelihood of lakhs of people in Arunachal Pradesh. The mighty river supports a vibrant eco-system with a wide variety of flora and fauna and a diverse, rich aquatic & animal life. In fact there are five districts in Arunachal Pradesh bearing the name Siang.

Some recent events on the river in Tibet have caused some serious downstream affects in Arunachal. There was a massive flood caused by the river in year 2000 causing massive devastation to downstream areas damaging life and property. It is alleged that water surge and flooding was caused by sudden breaching of a massive river blockade due to landslide in Tibet.

Subsequent to the China floods of 2000, India & China signed a MoU in 2002 with follow up MoUs in 2013 & 2018 on sharing flow information of the Yarlung Tsangpo. However, till date there is no water sharing treaty with China.

Recently in 2018 the Yarlung Tsangpo was again blocked due to landslides in Tibet twice causing much concern to downstream areas of Arunachal leading to evacuation of people to safer zones and deployment of emergency response teams. Another event occurred on the Siang which created much concern to downstream people. There was sudden darkening and contamination of the Siang with oily, dark patches all along the river due to mysterious reasons. Suspected reasons included series of earthquakes in Tibet, massive construction work in Tibet, increased mining activities in Tibet etc. This contamination and darkening of the Siang affected aquatic life and livelihood of many people.

During 2018-19, many areas of East Siang District in Arunachal Pradesh have been devastated by the rampaging Siang river. The rampaging Siang River is threatening many villages of Mebo and Pasighat area due to massive soil erosion by rising levels of the Siang river despite deficient rainfall. Many villagers are unable to sleep peacefully and many have shifted their houses to better locations. It is estimated that about 10,000 Hectares of forested land, plantations, irrigated fields, community burial grounds, schools etc have been washed away. In fact vital roads and bridges are on the verge of being washed away. It seems that the continuing contamination of the Siang river originating in Tibet has led to rise in the river bed leading to this dangerous and rampaging Siang river. It is estimated that the river bed of the Siang river has been raised by several feet leading to the river spreading sideways and causing massive soil erosion. The most probable reason for this increase in the river bed is the prolonged deposits of cement/oil mix caused by massive construction/mining

"The mighty river supports a vibrant eco-system with a wide variety of flora and fauna and a diverse, rich aquatic & animal life."

activities along the Tibetan side of the river.

Towards preventing further damage by the rampaging Siang, affected villagers of the area created a group called SEEANG (Siang Eco-System Environment Protection and Nurture Group) to create awareness and mobilise the affected villages. Under the aegis of SEEANG, affected villages carried out multiple crash programs on self help basis without Govt support to create flood protection measures with local resources like Bamboo/Wood Porcupines, Stone/Net/Sand Bag spurs & bandhs etc. Entire villages including men, women & youth worked in these crash programs voluntarily. Recently a plantation program was also held which was attended by Forest Man of India Jadav Payeng and Forest Man of Arunachal Indi Glow. This volunteering work and plantation is planned to continue to prevent further damage.

The mighty Siang supports, sustains lives and a diverse, vibrant ecosystem; Siang also destroys and uproots life & property. Events upstream of the river in Tibet have a cascading effect on lakhs of downstream people living along the river. Local people are carrying out traditional rituals, shamans are offering prayers for Ané Siang to show mercy and protect their villages, fields and community burial grounds! Is the local and neighbouring govts listening?

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Bhutan: A land rich with water resources

KARMA CHOPEL GONGSAR

BHUTAN IS endowed with rich water resources with long term average annual flows of 73,000 million m3/year giving rise to one of the highest per capita mean annual flow availability of over 100,000 m3. However, being landlocked, its water resources are mainly in the form of rivers. There are four major river basins, viz. the Amo Chhu (Toorsa), the Wang Chhu (Raidak), the Punatsang Chhu (Sunkosh) and the Drangme Chhu (Manas), all of which empties into the Brahmaputra in the Indian plains. The "Chhu" in its local dialect refers to river and by extension also means water. All the river systems originate within the country except three rivers viz. Amo Chhu in western part of the country, Gongri and Kuri Chhu in the eastern, all of which originate in the southern part of the Tibetan Plateau.

Water plays a pivotal role in all four of Bhutan's major economic drivers, viz. agriculture, hydropower, tourism and small-scale industry. Agriculture consumes over 90% of water resources used in Bhutan where 60% its population are engaged in subsistence farming. Agriculture contributes over 15% to the country's GDP.

The energy sector in Bhutan comprises almost wholly of hydropower, accounts 25% of its domestic revenue. Bhutan's accelerated development of hydropower projects has set a target of 10,000 MW by 2020; and in actual we were able to develop only 2,335 MW till date.

Bhutan's transition from a Least Developed Country (LDC) to an upper middle-income country rests almost entirely to the revenues earned through hydropower export. Tourism is an important source of employment and an estimated 20% of non-hydropower revenues are also to a large extent dependent on the pristine natural landscapes maintained in their lush and verdant state with the natural flow of pristine river systems.

The 2,674 glacial lakes perching on the northern high-altitude alpine areas are mostly small, yet serve as important headwater sources of the riverine systems. The outburst of some of these lakes from time to time has resulted in enormous flash floods and damages downstream.

The current scenario of abundant water resource might be challenged by the new, complex and pervasive dynamics caused by population growth and socio-economic development. These challenges will have to be effectively addressed through appropriate Policies, Acts and Regulations. Further public education and awareness, stakeholder participation and well-designed developmental programs with efficient and coordinated management institutions are important. These are all envisaged and carried out under Integrated Water Resources Management (IWRM), which is a systematic process for the sustainable development, allocation and monitoring of water resource use in the context of social, economic and environmental objectives.

Bearing in mind the impacts that could be visible from rapid hydropower development, it is imperative to ensure the sanctity of the riverine ecosystems through enforcement of minimum ecological flow reserve and the mandatory provisions on the migratory pathways for aquatic fauna such as fish ladders.

The Water Act, its Regulation and the standards are strictly enforced within the country through regular monitoring of the ambient and industrial samples. Any likely hazards such as flash floods in the basin adjoining the downstream Indian territories are intimated through the hydro met stations. A regular biannual meeting is held between the experts of Bhutan and India on issues of trans-boundary flooding and hydro-meteorological data exchanges.

"Water plays a pivotal role in all four of Bhutan's major economic drivers, viz. agriculture, hydropower, tourism and small-scale industry."

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雅鲁藏布江

Where is the river born?

IMTIAZ AHMED

THERE IS a general perception that a river is born from its sources, the place of its origin. But the Yarlung Tsangpo-Siang-Brahmaputra-Jamuna gets re-born at every stage of its long, tumultuous journey. Throughout its journey to destination, it grows to maturity and at one point dies out of aging. The 'birth' of the Tsangpo-Brahmaputra-Jamuna-Meghna is seen in every point of the river, indeed, not only with respect to its geo-territorial naming, that is, within China, India and Bangladesh, but also with respect to its transformation, for instance, from a male deity called the Brahmaputra to a female deity called the Jamuna. And in this region, the rivers are Gods and Goddesses.

"The Yarlung Tsangpo-Siang-Brahmaputra-Jamuna gets re-born at every stage of its long, tumultuous journey."

In Sanskrit, river is nadi, nadi denotes shakti (power), prana (life) and atman (soul). The river is both life-giver and life-eliminator. The flow of water could create both pain and pleasures in the life and living of the people. If the river causes normal floods, as it is the case with the river almost every year, then it enriches the soil and helps to produce bumper crops in the surrounding region. But then the same river could be the cause of 'big floods' and could end up creating havoc in the life of the people in the same region. But the course of the river is not dictated by nature alone. Human intervention in the name of development has transformed the course of the river in a significant way. In fact, the craze for development has allowed for a precise 'mentality' to emerge, which cannot help thinking and eventually building bridges, canals and dams when confronted by a river. Development mentality otherwise has not only concretized, indeed, with cement and iron rods, the respective segments of the river and tributaries in China, India, Bhutan and Bangladesh but also distorted the natural flow of the river often to the detriment of the river itself. Rivers also have their rights, including the right to be relatively pollution free, to be a safe habitat for riverine forms of life and, within limits, to flow freely. It is precisely this 'right' and the sanctity that we need to ensure with respect to this formidable river and there lies the challenge!

Need for co-operation

YU HONGYUAN

TO ACHIEVE the SDGs in Yarlung Tsangpo-Brahmaputra-Jamuna River Basin, we need to reorganize the regional cooperation model, consolidate the cohesion between energy-food-water development, strengthen urban-rural water infrastructure, restore public health-clean water co-developemnt system, alleviate poverty and inequalities, upgrade sustainable development governance capacity, as well as enhance capacity of addressing climate change and various disasters.

China can also reinforce the cooperation with developing countries, help with each other and enhance mutual understanding and trust. In the developing world, water, energy and food formed a security nexus with great sensitivity and vulnerability. Security nexus provides a new explanation for resources competition, cooperation and conflicts, and promotes water – food – energy research shift from the technical aspects to foreign policy level, and finally provides new international political ideas for resource and environmental solutions. In the security nexus perspective, as through international cooperation to solve ecological problems is not a simple technical issue, but an international political and economic issue. Based on the special political and economic advantages that China owns, China and developing countries should jointly cope with the challenges of security nexus is an important opportunity for deepening of friendly and cooperative relation.

"We need to reorganize the regional cooperation model, consolidate the cohesion between energy-food-water development."

雅鲁藏布江

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The River: A precious Heritage

MA JUN

THE YARLUNG TSANGPO River is a magnificent river, although so few of us really know about it. Originating from the glaciers at the northern foot of the Himalayas, the Yarlung Tsangpo runs through the south of Tibet from west to East, with an average elevation of more than 3000 meters above the sea level. It is one of the highest rivers in the world. What's more, the silver ribbon on the plateau also has an amazing amount of water. The annual runoff is three times that of the Yellow River.

At the source of the Yarlung

"Most of the political, economic and cultural centers in Tibet are located in the Yarlung Tsangpo valley."

Tsangpo River and its many tributaries, alpine glaciers bring stable water supply. But the more important reason is that the Grand Canyon cut by the Yarlung Tsangpo River, which suddenly turns to the south, enables the warm and humid air flow from the Indian Ocean to penetrate into the hinterland of Qinghai Tibet, so that the input water vapor is equal to the total water vapor flowing to the north of the Yangtze River in China. The unique topography and landforms endow the Yarlung Tsangpo River with extremely high ecological value. In the upper reaches, there is a unique plateau ecosystem; at the big turning point, the Indian Ocean water vapor channel pushes the tropical boundary northward for six latitudes (550 kilometers), and within a vertical height of 5000 meters, it contains all the natural landscapes from alpine ice and snow to tropical seasonal rain forest, forming a rich biodiversity, and also conserving the largest forest area in Tibet.

The river, more than 2000 kilometers long, moistens the land on both sides and breeds ancient and splendid culture. Most of the political, economic and cultural centers in Tibet are located in the Yarlung Tsangpo valley.

The huge elevation drop concentrated in the middle and lower reaches of the River, coupled with the substantial discharge, makes the Yarlung Tsangpo River rich in hydropower potentials. As a geosyncline between Indian Ocean plate and Eurasian plate, the Yarlung Tsangpo River Basin is also rich in mineral resources.

At the same time, the ecological environment of the Yarlung Tsangpo River Basin is very fragile. The interference of human activities, coupled with global climate change, may cause ecological degradation that is difficult to restore and aggravate geological disasters.

In recent years, in order to construct an ecological civilization, China has vigorously strengthened environmental protection. Up to now, the Yarlung Tsangpo River is still one of the cleanest rivers in China. The water quality of the main rivers in the basin is above class III, including the main stream of the Yarlung Tsangpo River and many main tributaries such as the Palong Tsangpo River and the Niyang River, which maintain class II water quality all the year round.

The Yarlung Tsangpo River, together with the Brahmaputra River and Jamuna river at its lower reaches, and even the flat and wide Ganges River delta formed by the confluence of the Ganges River, jointly supports the ecological environment and social and economic development in the basin.

I hope the publication of this book can enhance the common and mutual understandings of the whole river basin, promote more exchanges and cooperation among relevant parties in the river basin, jointly care for this pure and precious water resources, protect this rich and diverse home, and pass it on to future generations forever.

सिआंग ব্রহ্মপুত্র

Brahmaputra flood plains without Rhino seems an incomplete proposition

BIBHAB KUMAR TALUKDAR

"Rhino is a living legend of the flood plains of Brahmaputra."

TO ME, the rhino is the symbol of Assam, it reflects the conservation commitment of Assam and its people and as such rhino has to be conserved for our future generations with support from all section of the society. While rhino poaching is visibly being seen as the major threat to future of the rhinos, but change in grassland and wetland habitats in rhino bearing areas, emergence of invasive plant species, occupying key grassland patches in rhino bearing areas and diseases like Anthrax could also pose serious threats to future of rhinos in Assam. As such we need to keep our ears and eyes open to periodically assess the threats rhino are facing and initiate timely intervention to reverse the threats to secure the future of greater one horned rhino – the pride of Assam. I am sure, we can save the species in years to come to showcase our rhino as living legend of flood plains Brahmaputra ecosystems.

Ganges River dolphin from a trans-boundary perspective

RAVINDRA KUMAR SINHA

THE GANGES River dolphin, Platanista gangetica gangetica, commonly known as susu, is an obligatory freshwater dolphin which never enters sea; and is probably the most ancient living cetacean as it has many ancient and vestigial organs not found in any other cetaceans of today. It is known as blind dolphin as its pin-hole eyes without crystalline lens and with meagre vestigial retina cannot form image. It is distributed in Ganga-Brahmaputra-

"The Ganges River dolphin is a flagship species in all its range countries. It can be used as a tool for trans-boundary river cooperation."

Meghna (GBM) river systems from tidal zone to as far up as rivers are navigable in India, Nepal and Bangladesh; and Karnaphuli-Sangu river system in South-East Bangladesh. It is solitary in nature unlike other cetaceans. Combining current knowledge on abundance from the entire distribution range an educated guess is that the entire species numbers is about 3700 individuals of all ages. A total of 197 individuals were counted in River Brahmaputra in India

The species has been classified by IUCN as endangered in 1996. The main threats are: directed and incidental killings as fishery by-catches, habitat degradation/loss due to indiscriminate water abstraction/diversion by construction of dams and barrages leading to declining and regulated flows in rivers, besides creating physical barriers for dispersal of dolphins, intense river pollution, loss of forests in catchment areas resulting in heavy siltation, river traffic using mechanized boats/ vessels, heavy sand mining, lack of awareness among common mass, etc. There has been an age-old practice of using the dolphin oil as fish attractant for some commercially important fishes.

There was a great passion in me to learn and save this species since my school days in 1960s. I have devoted almost four decades learning, studying and conducting surveys in the entire length of the Ganges and parts of most of its tributaries in India and Nepal since early 1980s using oar driven small boats to assess its status and distribution range, and threats the species was facing. At the behest of Cetacean Specialist Group of IUCN, I discovered an alternative to dolphin oil as fish attractant from fish scraps freely available at the door steps of fishers (Sinha 2002). Later on, I undertook extension program to popularize this alternative among the fishers of Bihar and Assam where oil fishing was rampant. On my initiatives, the Prime Minister of India declared the dolphin as National Aquatic Animal on 5th October, 2009 which was formally notified on May10, 2010. Thus India became first country in the world to have a dolphin as its National Aquatic Animal.

The Ganges River dolphin as a flagship species for trans-boundary river cooperation. Water scarcity has resulted in geopolitical tension and stunted development throughout the world. There is a need for 'hydro-diplomacy' – making scarce water a reason for cooperation, rather than a reason for conflict. There is a serious need for greater international cooperation based on the growing communal urgency and need for water around the world in general and in Indian subcontinent in particular. Hydro-diplomacy is a critical tool to ensure that shared water resources are managed efficiently, sustainably and equitably.

The Ganges River dolphin is a flagship species in all its range countries. It can be used as a tool for trans-boundary river cooperation.

सिआंग ब्रह्मपुत्र

The complexity of managing a trans-boundary river

AINUN NISHAT

IT IS very important to remember that the Brahmaputra-Jamuna not only carry a huge discharge, it also carries a large volume of sediment load. The flow of water and sediment load influence the landscape through which it flows; protects and nourishes the ecosystem of the surrounding landscape. People's livelihoods are built around the river. To manage a river, does not mean only managing the flow. We have to take into account the sediments, the aquatic biodiversity, the surrounding ecosystem and communities living along the river. Now we have modern tools like numerical models, GIS and remote sensing technologies to better understand the river and how it will behave, more importantly we have instruments like environmental flows to ensure that the needs of the river and surrounding ecosystems are taken care of. Armed with this knowledge and understanding, it should be easier to manage a river, even as mighty as the Brahmaputra.

When a river and its catchment is confined within the borders of one country, the task is simpler. Complications arise when a river flows through two or more countries. Like we see in the case of the Jamuna. To this end, the Convention on the Law of Non-Navigational Uses of International Watercourses, adopted by the United Nations in 1997, states that there are three parties to trans-boundary river management—the riparian countries and the river itself. In case of any need to control the flow of water, we have to consider the needs of the river and we need to ensure that ambient environment is not disrupted; it is not harmed. For supporting development, if the flow regime has to be altered, then how much water can be withdrawn from river should be determined by reserving ecological flow. As population is increasing, it will not be prudent to demand that nature must not be left untouched.

Management of trans-boundary rivers is made complex from political consideration of the riparian countries. But the approach has to be scientific but political decisions must guide the process and, as may be necessary, be able to over-ride technical as well so called legal arguments.

"In case of any need to control the flow of water, we have to consider the needs of the river and we need to ensure that ambient environment is not disrupted."

ཡར་ཀླུངས་གཙང་པོ།

यमुना

Managing a shared resource

NITIN DESAI

FRESH WATER, on which all life depends, is a shared resource, whether it is a village pond, a large lake, an underground aquifer or a river. The central issue for water management at all geographical levels from the village or town, to the regional, national or global level is the adequacy of the governance arrangements to allow all who share the resource a say in the decisions about its development and use.

A river poses a truly complex challenge for governance because of the multiple uses it serves. It provides water for household, agricultural and industrial use. It can be a major source of hydroelectric power when it descends from the hills to the plains. It may be used for water transport in barges and boats. It can be a source of fish for consumption. It has to be managed to contain flood risks, control pollution and protect biodiversity. All this requires a shared understanding of the hydrology of the river and relevant data exchange between the multiple political jurisdictions through which river passes, within or between countries. A further source of complexity that is becoming more important now is the potential impact of climate change on the hydrology of the river.

These multiple uses of a river interact with each other. When waste from human settlements and industrial plants pollutes the river, its potential as a source of household water may be compromised. When a river is used extensively for navigation or hydro power, it may interfere so much with fish spawning grounds that fishery prospects may be adversely affected. When the quantity of water withdrawn from the river goes beyond a limit it may reduce flows to a point at which river species are threatened with extinction. Population pressures and changing patterns of land use, particularly those that encroach on flood plains, can increase the threat of floods. Hence separating the different uses of the river under different governance arrangements may not be appropriate.

All of these threats are becoming more acute and may become unmanageable if climate change leads to radical shifts in the quantum and timing of water flows. Hence the need for cooperation between the political jurisdictions is now even more necessary than in the past when demands for water and other services that a river provides were lower and less threatened by demographic, economic and ecological changes. When these jurisdictions are within a country the political framework for strengthening cooperation is available, though, the experience of countries like India shows that the entrenched views about rights make this quite difficult. At the international level the framework for cooperation is even weaker and is often locked in a stalemate because of sharp differences between upstream and downstream countries on their respective rights.

The way ahead requires a dilution of the distinction between the rights of upstream and downstream states. A shared resource is not owned by any one party, not even the flows that traverse through its territory. The river bed may lie in one jurisdiction; but the water travels from one jurisdiction to another. This emphasis on shared ownership and shared responsibility is reflected in the available international guidelines like the Berlin Rules on Water Resources, adopted by the International Law Association in 2004, which are more comprehensive than the earlier Helsinki Rules on the Uses of Waters of International Rivers. These guidelines may not have the force of law but are valuable as a starting point for organised cooperation as they reflect a consensus between legal specialists from upstream and downstream states.

The challenge of international cooperation in the management of international rivers is particularly acute in Asia where a large number of rivers, many originating in the Tibetan plateau, like the Yarlung-Tsangpo-Siang-Brahmaputra-Jamune River. Today, what we need are more complete agreements that deal with all possible uses of the river and that bring together all the jurisdictions through which the river passes. This book about one such shared river, written by many specialists from the region is a valuable first step in this direction.

"Today, what we need are more complete agreements that deal with all possible uses of the river and that bring together all the jurisdictions through which the river passes."

ব্রহ্মপুত্র सिआंग

The urgent need for regional river-based cooperation

QAZI KHOLIQUZZAMAN AHMAD

WHEN, thousands of years ago, humans moved out of caves and took up agricultural activities, they had to organize their lives in conducive locations. One consideration was surely proximity to sources of water needed for farming, in addition to water for life. Up to the beginning of the first Industrial Revolution (circa 1870), human

"Given the fast worsening climate change impacts in the basin, a regional river-based cooperation becomes even more urgent."

settlements, by and large, grew alongside rivers.

Currently, road, rail and air transportation along with ground water extraction, water diversion methods, water purification and transporting of water long distances are so developed that proximity to rivers is not as important as it used to be - generally speaking that is.

But in certain parts of the world, rivers still define the way of life. The catchment area of the Yarlung Tsangpo-Brahmaputra-Jamuna Rivers, running across China, India and Bangladesh, is one such region. Millions of people of the countries through which these rivers and their tributaries flow through remain crucially dependent on them for water for life and water for livelihood including irrigation, transportation, hydroelectricity, water for industrial and other economic systems and natural systems. Employment and income earning opportunities, particularly of the rural people, of the basin still largely evolve around these rivers.

While these rivers are a boon for the people, they also bring sorrow due to frequent floods and river erosion. Moreover, downstream countries often suffer from very low flows due to excessive upstream extraction of water during the dry season. There is therefore this double jeopardy for the people living in the downstream regions of this basin.

But, international rules, Helsinki Rules for example, provide for equitable share of transboundary rivers to be available to all co-riparians. Indeed, it is now generally accepted that a transboundary river is best managed by co-riparians together under an agreed cooperative framework for larger benefits. But politics, diplomacy and, not infrequently, bureaucratic tangles often prevent cooperation among the co-riparians.

In the wake of global climate change, which is fast worsening, major floods are occurring more frequently and devastatingly. The changing and shifting pattern of rainfall also introduces variations in the water flow levels and patterns, thereby disturbing crop cycle and other economic activities.

Given the fast worsening climate change impacts in the basin, a regional river-based cooperation becomes even more urgent also to address climate change impacts together, while at the same time tackling basin-wide river development issues. That is, the cooperation framework has to cover the basin all the way from the origins of the three rivers, their joining one another at places and eventually flowing down to the sea. The purpose is to benefit all the peoples of all co-riparians in terms of access to water for various purposes including irrigation, timely information sharing with lower riparian countries as flood water rises upstream, cooperative generation and equitable sharing of hydro-electricity, excavation and river training, addressing climate change adaptation, and cleaning up the water of the rivers as required all along the course across the countries the river runs through.

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