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Indo-Chinese Water Relations: Issues and Concerns

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ABSTRACT

Since water shortage in both the countries deteriorates, the rivalry over shared water assets in their cross-border rivers, predominantly the River Brahmaputra is set to exaggerate. Exclusive of effectual working machinery between the two states, water disputes could potentially become a grave test to Indo-Chinese relations. However, the water wars tale, which is gaining popularity in India, is being vulgar. At the same time it is being assumed that Water uncertainty itself will not possible guide to armed clash. But when tied with other global and domestic aspects, it could boost the possibility of war. The water shortage of China and its expanding north-south water gap have amplified force to accomplish notorious water distraction plans. These plans will intimidate India, particularly since the River Brahmaputra flows through a doubtful region. All These factors and the changing domestic circumstances in China may boost the possibility of war. The need of the hour is to tackle rising water disputes and control the possible water disputes between India and China, there is an imperative need for a healthier understanding of the intent of china and India-China issues needs to be re-examined.

1. Introduction

For quite a few years, World Economic Forum (WEF) Global Risk Reports have recognized water as main of the three most imperative challenges to the world. During 2015, water was stirred to the peak as the major social and financial hazard to the globe for the coming ten years (South China Morning Post report, May 5, 2015).Whereas the globe as a whole has rich fresh-water assets, spatial discrepancy and serial insufficiency of fresh-water, compounded by environmental change, is rising as a sensitive risk to several parts of the globe. Possibly, the chief latent position from where water issues might explode is in the Himalaya region, amid the two mainly packed and thirsty countries in the globe, the India and the China, as both the countries distribute numerous trans-boundary rivers, counting the mainly controversial, the Brahmaputra.

The Brahmaputra River is one of the prime rivers on the planet, flows out from the Tibetan Plateau. It flows through southern Tibet in China passing through the grand Himalayas into India and Bangladesh prior to integration with the Ganges, lastly enters into the Bay of Bengal. With swift financial expansion and growing populace, every riparian state is torment from water scarcity. In late 2014 the achievement of the Zangmu dam by China, the prime hydro-power dam on the Brahmaputra River, several Indian and global defense observers have been cautioning of upcoming of 'water wars' between China and India, complicating the two Asian Giants lasting in boundary disputes (India today, June 1, 2015).Although water problems might appear as a main danger in India-China affairs set the swiftly growing water claim, challenging water usage and fear from environmental change, the water wars story appears to be impulsive and at hand is a call to re-examine the admired Indian-Chinese water wars tale supported by in-depth study and observed facts.

2. The shared waters

China and India share the water of four foremost rivers, but not entirely among them. The River Indus or Shiquan is shared by India, China and Pakistan. The River Brahmaputra is shared by China, India, Bhutan and Bangladesh. The Ghaghara and Kosi rivers are shared by India, China, and Nepal. Visibly, China and India do not share any rivers exclusively. All trans-boundary rivers of India and China are also shared with other neighbors. In this sharing relation of River waters, China happens to be the upper riparian country. India is the middle riparian country in the Sutlej, Brahmaputra and Indus rivers, but a lower riparian country in the other two river systems. Amongst the shared rivers, most issues prevail over the Brahmaputra River. All is because of fallowing three reasons.

Firstly, China being the upper riparian country for all the four trans-boundary rivers, it absorbs only a substantial part of the River Brahmaputra. Hence over 50% of the Brahmaputra River basin area is occupied by China. As a result, the possible impact of the activities of China on the River Brahmaputra is greatly superior as in comparison to other rivers.

Secondly, River Brahmaputra is of immense significance to both China and India. To India, it accounts for almost 30% of the fresh-water resources and about 40% of total hydro-power potential of the state (Xinhuanet, June 1, 2015). To China at nationwide level, the Brahmaputra's position in total fresh-water supply is relatively limited, but is of immense substantial to Tibet. The River Brahmaputra is considered the source to the civilization of Tibet and has an important role in the agricultural and energy sectors of Tibet.

Thirdly, the India-China border problems are linked to the River Brahmaputra. Both the countries have made disputing

claims in the Eastern Himalayas, the t-junction between China, India and Bhutan from the west to the River Brahmaputra in the east, mostly alongside the crown of the Himalayas. This undecided region is called South Tibet in China and Arunachal Pradesh State in India. These undecided regions absorb about an area of 90,000km^2 and inhabit the populace of over one million people (Zhang HZ, Li MJ, 2013).

Issues: - The approach of China is multi-mutual planning unlike India which favors bilateral affairs with its riparian countries. As In 2015, China signed the Lancang-Mekong Cooperation (LMC) agenda alongside with five other nations as a substitute to the Asian Development Bank-led Mekong River Commission, which China by no means signed. Secondly, presently China only shares hydrological information on the Satluj and Brahmaputra during the monsoon period. Thirdly, In South Asia, China is concerned in launching better ties with Bangladesh on inundation forecasting and water administration.

Water cooperation: - In this regard, there is no institutionalized apparatus on water cooperation involving China and India, as both the nations has signed only;

1. In 2002, MoU for Hydrological Information of the Brahmaputra River and MoU on Hydrological information sharing on River Sutlej / Langqen Zangbo in 2010 (improved in 2015).
2. In 2006, both the countries signed ELM (Expert Level Mechanism) to assist in tragedy administration (e.g. flood), trans-border Rivers issues etc.

3. The Tale of Water Wars

Since past decade, several political analysts and scholars have contemplated about the chances of China-India war over water. Others maintain a future "water war" will occur and few call such fears overblown (Sudha Ramachandran, 03 April, 2015).All such opinions spotlighted on how water is unfairly distributed and how the upstream practices of China, such as its damming practices, could prompt disagreement with its downstream neighbor countries. To decide if water shortage could source armed conflict between India and China, a general investigation of factors affecting the affairs between these two countries, as well as domestic circumstances within China are required. The studies to such extend advocate water dearth itself will not possibly guide to conflict. But, attached with other causes such as mounting water dearth in China, connections between water shortage and countrywide autonomy, and declining diplomatic strength in the upstream country, war may become more possible (J.H. Pak, 2016).In 2013,Christopher Mark wrote an article entitled 'Water wars: the Brahmaputra River and Sino-Indian relations' published by the Naval War College. In the article, Mark emphasize that 'China's commitment to construct ever larger upriver dams reflect a zero-sum mentality on water use that has the potential to bring it directly into conflicts with India (Christopher, 2013).In 2008, Elizabeth Economy published a paper entitled 'Asia's water security Crisis: China, India and the United States' discussed the growing conflicts between India and China over Brahmaputra River (Elizabeth, 2008). Matthew French believes that 'China has turned to the Tibetan Plateau as an answer to its internal water security problems, which risks enflaming neighboring countries and damming in the region may trigger a deadly water race to control the remaining rivers (French, 2014).In December 2014, Wasbir Hussain, Executive Director at the CDPS in India, published a piece entitled 'India-China: Securitising Water' he argued that 'a war over the border disputes may look remote, but that cannot be said about escalation of tensions over the securitisation of water (Hongzhou Zhang, 2016). Rebecca Lowe and Emily Silvester's statement on water scarcities menacing universal defense argues water can flash conflict when other destabilizing causes already subsist: "combine water scarcity with political instability, increasing resource demands and climate change, and the 'perfect storm' for conflict can be created (Rebecca Lowe and Emily Silvester, 2014). Though water can facilitate war, but it is certainly not the only cause for a war: "when territorial disputes overlap with water wrangles as has been the case in a number of prominent post-World War II feuds water is usually an underlying driver, rather than an overt instigator of conflicts (J.H. Pak, 2016).

Even with significant substantiation of collaboration over water utilization, a good number of influences link water shortages and armed divergence are being witnessed. Even as the countries had not been in front entirely over access to water, amplified water shortage, when pooled with other factors such as downstream-upstream positioning, self-government relations, and diplomatic unsteadiness, may guide to war. All the below factors offer the basis for groping the motivating factors linking water safekeeping to the chance of war between India and China:

1. **The Growing Water Shortage of China: -**The Tibetan plateau of China, lies in the Great Himalayas, is the basis of the 10 major rivers of Asia, including the rivers of the Indus and the Brahmaputra and due to its position of being upstream state; China relishes a budding domination over the supply of fresh water for most of South and Southeast Asia. Regardless of the affluence of water in Tibet, China faces a promising water emergency further provoked by overuse and pollution. In 2004, China witnesses the lowest available water per capita, measuring just one-third of the average for developing countries, one-fourth of the world average, and one-fifth of the US average. Over the past 20 years, this comparison reflects a 23 percent decline in China's available water per capita. Meanwhile, the demand forwater is growing more than 10 percent annually in Chinese cities—and more than five percent annually for its industries (Elizabeth, 2007). This decline in available water has deteriorated an already grave scarcity in drinking water for the massive population of China and more than one-fourth of the total population of China is without access to drinking water. This deteriorating water scarcity of China is intensified by amplified pollution on a remarkable scale. This water crisis of China has a severe regional aspect as well; the south has the prevalence of water while the north has the elevated require. This has fashioned a momentous regional difference that is getting worse with time.

2. **The Upcoming upstream Action of China: -**The Grand Western Water Diversion plan is an extremist water stimulation project projected by Guo Kai; the water proficient of China. It proposes to deflect water from the upstream divisions of six rivers in the south-western China, counting the River Brahmaputra River as well (which flows into India) to the parchedregions of northern China. It is alleged that if the water is sidetracked, the water depths of the River Brahmaputra will drop extensively, disturbing millions of populace in the north-eastern region of India. India concerns that it would affect the downstream course of water as the RiverBrahmaputraholds a unique magnitude for India. Primarily, it accounts for approximately 29 percent of all surface water in the rivers of India. Next, it includes almost 44 percent of the total hydro-power prospective of India. Of course, the upstream actions of India will diminish mutually the run-off and hydropower potential, what India could anticipate from the River Brahmaputra. Considering India's population is expected to grow by another 500 million by 2050, it is no surprise water diversion is a serious issue (Upali A, 2007). At the same time, scores of experts from china have disproved the practical possibility of the Grand Western Water Diversion Plan. The China's Engineering Academy declared that the GWWDP (Grand Western Water Diversion Plan) is not precisely practical in the predictable prospect, and given the development course of China, it is neither realistic nor obligatory. Although it does not materialize likely China will go through with its water diversion plan owing to expenditure and manufacturing issues, there is mounting anxiety, Beijing will modify course if its existing water-diversion plans do not determine its increasing water shortage crisis. Should China carry on, it would boost tensions with India. This dynamic is all the new worrying when one scrutinizes the connection between the River Brahmaputra and the national sovereignty.

3. **The Problem of Arunachal Pradesh: -** Arunachal Pradesh is the area where the River Yarlung Tsangpo of China becomes the River Brahmaputra of India and both the countries claims the region. This geographical issue is all the most receptive as it is coupled to the sovereignty of both India and China. China cannot give up its claim as itall together abating its claim of dominion over Tibet. The Arunachal Pradesh for India is the spot of an embarrassing conquer by the Chinese in 1962.In calculation to the military build-up on equal sides of the boundary, incursions into doubtful regions are familiar. The Indian government reported, from 2012-2015, Chinese soldiers conducted 600 incursions into disputed areas along the India-China border. In recent years, the Chinese-Indian border has become an increasingly dangerous hotspot, the net result of this military build-up, aggressive patrolling and border incursions (J.H. Pak, 2016).

4. **The escalating Diplomatic volatility in China: -** China is facing emergent domestic Diplomatic volatility owing to a financial decelerate and growing admired patriotism, making it ever more complex for the CCP(Chinese Communist Party) to chase nationalized interests impartially in a non-confrontational approach, particularly with concerns coupled to national sovereignty and excellence of life. In the case of water dearth, and particularly with the case of the River Brahmaputra, both of these dimensions are evident. As water shortage grows in China, the CCP will find it more complex to overlook the demands for more extreme solutions, such as diverting the River Brahmaputra and other trans-national rivers, to ease the pains of its populace and as the River Brahmaputra flows through a doubtful region, the CCP's capability to make judgments in a shared behavior with its neighbors will become even more significant.

4. The Chinese Stand

To be confident, the concerns of India are not entirely groundless. But China is also one of the most water-stressed nations in the globe and water shortage is possibly to worsen given hastily growing requirement driven by urbanization and industrialization as well as contamination. China does have a track documentation of relying on huge-infrastructure projects to pact with its water confronts. There have been internal negotiations about diverting waters to the dry north of China from Brahmaputra. Last but not least, in relation to trans-boundary river cooperation with neighboring countries, China is one of the three countries (the others are Turkey and Burundi) that voted against the 1997 UN Convention on the Law of the Non-Navigational Use of International Watercourses (UNWC), and remains absent from the Mekong River Commission (Hongzhou Zhang, 2016).

According to the Chinese, the Indians protest China in the case of building dam projects on the Brahmaputra to gain sympathy and support from the international community. The Chinese development projects do not impede the flow of river. India prevents China from developing Tibetan water resources (Zhifei, 2013). At the same time, the water wars storyline, as pointed out by Jonathan Holslag, appears to be premature. China has not approved any major water diversion project in Tibet, and while Indian security analysts, media, and politician are overly worried about the Sino-Indian water conflicts, their Chinese counterparts show little interest in the topic (J. Holslag, 2011). However, the rising 'water wars' tale in India has strained China to react and made water concerns one of the main mutual issues to being discussed between two nations. Including that the defense worries of India are overstated misinformation. China also wants to share its water, hydroelectricity with its neighbours. The construction of dams are meant for downstream countries also as they will be benefitted out of it. In order to bolster its control over the disputed Arunachal Pradesh, India is building reservoirs on the Brahmaputra River. It has already set up dozens of hydro power stations to reinforce its actual control and occupation in the disputed area (Patranobis, 2013). The Chinese scholars believe that India is greedy and water from the tributary rivers

on its side of Himalaya frontier should be adequate. India wants deliberately to make China a water security threat .It has been asserted that Delhi has no legitimacy to demand China's restraint as it used large volumes of water (Holslag, 2011). China sees hydropower as a key resource for responding to energy shortages which is an impediment to economic growth (Rosenfield, 2010).

Even there are ciphers of rising desertification of Northern China. Around 500 million people living in northern region get access to only one fifth of total fresh water in China whereas Southern part gets four fifth of fresh water with a population of 700 million. To set this imbalance right, China needs to bring in sufficient water to its northern region from all possible sources (Mishra, 2010). China has assured India that it would ensure protection and rational use of water resources in the trans-Himalayan Rivers that flow to India from the upper reaches of Himalayas on the Chinese side. With an average elevation of about 4000 meters, the system will provide electricity and prove to be a useful mechanism in flood control methods. China upholds the principle of "Prior Appropriation" (S.K. Mahapatra and K.C. Ratha, 2016). For China, the building of the dam is merely a run-of-the river water project aimed at generating power that will not hold the water of the lower riparian states. This hydro project "is not of a big capacity and has no need for storage of water and it will not affect the ecology and environment" (S.K. Mahapatra and K.C. Ratha, 2016). The Chinese government always adheres to the principle of fairness, reasonableness and equal attention to development and protection of the interests of the lower stream regions (The Economics Times, 2012).

It is also being said that, a few in China have even stressed that India is intentionally playing up the water wars plot to validate its own dam building policy beside the section of the River Brahmaputra, predominantly in the undecided Arunachal Pradesh (Hongzhou Zhang, 2016). In recent years, India has built power utilities in Arunachal Pradesh, a part of its efforts to make the region India's 'Power Plant.' It is reported in October 2014 that India approved building the 3000-MW Dibang multipurpose dam project Dibang River-a tributary of the Brahmaputra River, in the disputed Arunachal Pradesh (South Tibet in China) (Sinha, 2011). China logically believes that the dam building plans of India a peril to the state's water rights and a calculated effort to reinforce actual occupation of the doubtful Arunachal Pradesh.

5. The Indian Stand

Within the days of India publicizing policy to declare its right regarding the Indus Water Treaty with Pakistan, China said it was constructing a dam on a stream of the Yarlung Zangbo(Brahmaputra)a 'most expensive hydel project'. India fears about the plan largely because;

1. The Brahmaputra waters witnesses no bilateral or multilateral treaties.
2. China considers dam constructing on the River Brahmaputra helps it affirm claim over Arunachal Pradesh.
3. India considers the projects of China in the Tibetan plateau intimidate to lessen river flow into India.
4. Canals, Dams and irrigation schemes can make water a diplomatic weapon to be used in war, or during harmony to signal irritation with a co-riparian country.
5. Refutation of hydrological records turns grave when the flow in the river is extremely elevated.
6. China is pondering northward re-routing of the Yarlung Zangbo (Brahmaputra).
7. Distraction of the River Brahmaputra is a plan China forbids to converse in open, as it involves overwhelming northeastern plains of India and Bangladesh, both with floods or condensed water run.
8. Both China and India signed dual treaties in 2008 and 2010 which eased India with records on water levels and precipitation two times a day at three hydrological stations in Tibet.
10. In 2001, an artificial dam in Tibet collapsed and killed 26 people and damaged property of Rs 140 crore along the river Siang in Arunachal Pradesh (Prachi Bhucher, 2011).

At the same time, India concerns that water is the salvation for a billion more people residing downstream. The distraction of water deeply causes ecological destruction to the northeastern plains of India. India also concerns that China has used water as a diplomatic weapon against India. The projects of China compose a looming danger to the water security of India. The supervision of water through river schemes was not water storage, but fatal explode floods. A water war could result, as China is a country which is not interested in addressing the water issue faced by India (Arpi, 2003). It thinks that it is not a problem at all. It hardly considers the ecology and economic future of northeastern states of India. China's discrete water utilization and water committal approaches are equally provocative. China's thirst for water is so intense that it will leave other lower riparian states thirsty (Sinha, 2012).People of Northeast are depending on the waters of River Brahmaputra for farming. Currently by this project, Indian agriculture became susceptible along with repeated ecological hazards. Reduction in water discharge of Brahmaputra has added to the problems of poverty, migration, violence and social instability. It could give more strategic leverage to China than India (Chellaney, 2009).

Sharing of the trans-boundary water assets is a gigantic challenge to the pleasant Indo-Chinese Relations. The building of dams is a planned policy by China to wield control over its resources at the expenses of other riparian states. China tries to control water for guaranteeing continued financial escalation, diplomatic and social solidity. One-sided Chinese exploiting of assets causes a diplomatic conflict between India and China, and water has become a budding cause of continuing conflict. China does not represent a single water agreement with any of co-riparian state and also discards the very idea of water distribution. It puts up water distraction structures in its border areas, prompting agitation and anxiety in downriver states. Now China is facing political confronts in an area where it had worked to venture an image of compassion and brotherhood. China is always solid in its hydro-engineering tactics, declining to share information. The Indians government has frequently been insisting China to share hydrological information, transparency and not to

redirect the natural flow of water, but it has proved of little value (Chellaney, 2009). China plan is to acquire great power leverage over India, worsening the tension between two Asian giants (Gordon, 2009).

6. The Possible Impacts on Other Riparian States

In accordance to the latent impacts of the plan of China on River Brahmaputra, several think that the dam building behavior of China and its water distraction plans will have disturbing impacts on downriver states. Keeping in viewthe position of China as the upper riparian country, it is quit clear that downstream states are concerned about the water projects of China. The potential impacts of China's water projects, be it 'run of the river' dams, dams with storage capabilities, or even the 'imaginary water diversion plan,' however, are being over exaggerated (Hongzhou Zhang, 2016). As per official sources of China and already confirmed by the Government of India, Zangmu Dam and other hydro dams premeditated by China on the River Brahmaputra and its tributaries are run-of-river dams, which tend to have smaller environmental impact than big reservoirs as these dams create only a small reservoir and do not have enough capacity to effectively regulate the downstream flows (J. Kleinman and P. McCully, 2008). What really fears India and downstream countries the most is not building of hydropower dams by China on the River Brahmaputra, but the water diversion plan by China at the Great Bend, which could make the River Brahmaputra run dry, hence intimidating the endurance of hundreds of millions in the downriver. However, it is simple to arrive at a ending that the budding impacts of the flow distraction of China might be massive taking in view the fact that half of the river basin of the River Brahmaputra is in the territory of China. Yet, river basin region information can be misleading as basin region figure is not alike to water ejection information, which is comparatively an improved sign on the possible impacts any water plans beside the river.

Finally, we say that the consumption rate of water in the River Brahmaputra is extremely stumpy. According to Professor Pranab Kumar Ray, Director of the Centre for Hydro-Meteorological Research in Kolkata, the utilizable water of the Brahmaputra system is estimated to be a mere 4% of the total discharge due to very flow rate and sheer volume. That is to say, a 10 or 20% reduction in the water flows of Brahmaputra River would be unlikely to cause water scarcity of any nature in the Indian part of the basin (J. Lu, 2001).

7. Challenges for India

In pursuit of International law of 'Prior Appropriation' India being the first user have rights to use equal capacity of water for hydro-power projects on Brahmaputra against the dam-building actions of China. However India requires:

1. To envisage preferred planned outcomes while dealing with awaiting water issues.
2. To re-fortify its association with lower riparian states plus Bangladesh and re-establish its image as an accountable Upper Riparian state.
3. To elevate the concern proactively in familiar meets like Wuhan Summit with its determination in dialogue with China on water issues, as it did in the problem of the Doklam stand-off.
4. To extend mutual cooperation through Himalayan Council and Himalayan Charter for the future of the Himalayas as conversed in third Himalayan Consensus Summit in Nepal.
5. To advance political communiqué by sharing hydrological information, barter of information concerning infrastructural growth, etc.

At the same time global pressure needs to be increased on China to desist from actions that cause "decline to the natural resources of Tibet" and "ecological destruction" and to esteem global ecological standards as the ecological interests of Asia cannot be protected unless China is forced.

8. Conclusion

Water-concerning conflicts have an elongated past and will prolong to be a universal and regional predicament. Since water dearth in both of the countries of India and China deteriorates with swift financial growth and populace increase, the rivalry over the shared water assets in trans-boundary Rivers, predominantly the River Brahmaputra will exaggerate. However, water shortages, by itself, will most probable not guide to war. But, water timidity when tied with other factors, such as rising water shortage at the basis of global rivers, aggressive activities by the upstream countries, overlapping connections between water timidity and nationwide sovereignty, and declining diplomatic solidity in the upstream countries, will boost the possibility of war. In the line of India and China, all these circumstances subsist. It is to say that without effectual functioning machinery between the two states and with persistent boundary disagreements, water issues could evidently turn into a stern challenge to the Indo-Chinese relations. Somewhat has to prepared prior to the misfortune of conflicts clutches the striking creation. Efforts must be sustained to soak the divergence before it takes the severe appearance. The magnitude of lucidity is a directing code for both India and China that can hoard time without slaying on assurance and catastrophe supervision. It is right occasion to dedicate hard work for developing benevolence and peaceful relations required to put up combined systematic research projects in the Himalayan area, and all-embracing hydro-data and information sharing medians. Water should turn into a source of collaboration, not of divergence. It is time to have a water contract between these two countries based on sharing of information, contemplation, reciprocated indulgent that will scatter the mistrust and build upfaith and entente between the two these two Asian Giants. Political channels and mutual planning will dish up the principle in the due course. In case, the dialogue for friendly decision falls even, the problem should be raised at UN Security Council as the lives of hundreds of millions of populace are in threat. But unfortunately, India, China and their neighbours are so far to concur on a synchronized approach so far. There is neither two-sided accord on water allocation nor any supervening international law to adjust such action. In this state of affairs, both countries are required to converse the problem in order to arrive at a satisfactory accord. The call for discussion and agreement on specific projects has become more imperative on water sharing.

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