Geopolitics of India-China Water Issues: A Study of Brahmaputra

A Dissertation Submitted

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Degree of Master of Philosophy

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Declaration

I, **Ujjal Das**, do hereby declare that the subject matter of this dissertation is the record of work done by me, that the content of this dissertation did not form basis of the award of any previous degree to me or to the best of my knowledge to anybody else, and the dissertation has not been submitted by me for any research degree in any other University/Institution.

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This is to certify that the dissertation entitled **"Geopolitics of India-China Water Issues: A Study of Brahmaputra"** submitted to Sikkim University in partial fulfillment of the requirements for the degree of Master of Philosophy in the Department of Political Science, embodies the result of bonafide research work carried out by Mr. **Ujjal Das** under my guidance and supervision. No part of the dissertation has been submitted for any other degree, diploma, associateship and fellowship.

All the assistance and help received during the course of the investigation have been duly acknowledged by him.

We recommend this dissertation to be placed before the examiners for evaluation.

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"Geopolitics of India-China Water Issues: A Study of Brahmaputra"

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Vetted by Librarian

Dedicated to my Maa and Baba

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Abbreviation

ASEAN: Association of Southeast Asian Nations.

BRICS: Brazil, Russia, India, China and South Africa

BBC: British Broadcasting Corporation

BRO: Border Roads Organization

BCM: Billion Cubic Meters

BCIM: Bangladesh-China-India-Myanmar

CWC: Central Water Commission

CGWB: Central Ground Water Board

DPR: Detail Project Report

ELM: Expert Level Mechanism

FYP: Five Year Plan

GBM: Ganga Brahmaputra Meghna

GDP: Gross Domestic Product

GW: Gigawatt

ILR: Interlinking of River

IHA: International Hydropower Association

IIT: Indian Institute of Technology

LAC: Line of Actual Control

MOU: Memorandum of Understanding

MW: Megawatt

NHPC: National Hydro Electric Power Corporation Private Limited

NEEPCO: North Eastern Electric Power Cooperation Limited

NPC: National Power Corporation of India

NWC: National Water Commission

ORF: Observer Research Foundation

PLA: People's Liberation Army

PRC: People's Republic of China

SNWDP: South-to-North Water Diversion Project

TAR: Tibetan Autonomous Region

UN: United Nation

US: United State of America

UNGA: United Nation General Assembly

UNWC: United Nation Watercourses Convention

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Chapter 1: Introduction

1.1 Introduction

Geopolitics of late has attracted the attention of academicians and thinkers alike as it helps in relating public opinion to foreign policy, national interest, and internal territorial management. The significance of geopolitics can be analyzed from the fact that today every new political crisis or even global economic activities and strategies is explained through its lens (Mallinson, 2016).

The term geopolitics was first coined in 1899 by a Swedish scientist named Rudolf Kjellen, who defined it as 'the doctrine of the state as a geographical organism or a spatial phenomenon, i.e., the state as a land, territory, and region or, more precisely, as a Reich' (Steinmetz, 2012). British historian H.B George argues that "the destinies of man are very largely determined by their environment," especially climate and the "physical features of the Earth" (George, 1907). In geopolitical thinking, the influence of the environment over the actions of men is considered to be a natural rather than a historical relationship. The doctrine of environmental geographical determinism argues that the environment, in particular the physical environment, is the primary causal or determining factor in human activity.

If we analyze the beginning of geopolitics, it is concerned with a view of the state, as 'a living organism 'whose territory is not 'fixed 'and 'contained within rigid limits '(Ratzel, 1896). Hence, it is bound to change and, therefore, nations engage in the struggle for space. It became all the more complex during the first decades of the twentieth century, when geopolitical thinking moved away from environmental determinism and organized metaphors and towards an understanding of how politics shapes landscape and territory. Weber has analyzed the spatial layout of roads and properties in the Roman Empire, showing that they followed a primarily political and

military logic rather than a natural or economic one.

The treatment of geopolitics in modern times frequently contains vestiges of its ecologically determinist origins. Similar to Kjellen, Heinz Brill defined geopolitics as the "doctrine of the influence of geographic space on the politics of a state." It is defined as "the analysis of the influence of a state's geographic conditions on its national and international policies" by a recent dictionary of security studies (Meier, 2005). Today, the concept of geopolitics encompasses a broad semantic landscape ranging from geo-determinist to political extremes.

At the other end of the spectrum, geopolitics is defined as "the study of links between the conduct of a power-oriented toward the international level and the geographic frame in which it is carried out" (Gallios, 1990). Indeed, the study of the relationship between geography and political power extends back to Plato, Aristotle, Herodotus, Tacitus, Strabo, and others in the ancient Greek and Roman empires (Hartog, 1978; Gallois, 1990). As a result, the concept can be traced back to prehistoric times.

This conception of geopolitics can also be traced in the writings of Marxist and post-structuralist thinkers like David Harvey (1985), who while referring to the 'geopolitics of capitalism' developed a partially geopolitical explanation of contemporary American imperialism. Similarly, Yves Lacoste promoted a critical analysis of geography as a language and form of power/knowledge which was intended to rule (O Tuathail, 1996). Geopolitical writers influenced by them on the other hand have analyzed the geopolitical assumptions and 'mental maps 'of foreign policymaking (Henrickson, 1980).

Similarly, the Penguin Dictionary of International Relations defines geopolitics as a method of foreign policy analysis which seeks to understand, explain, and predict international political behavior primarily in terms of geographical variables, such as location, size, climate, topography, demography, natural resources, technological development, and potential. The term geopolitics reflects the connection between power and interests, strategic decision-making, and geographic space as modified by technology and economics.

Geopolitics is thus viewed as the art and practice of wielding political power over a specific territory. Traditionally, the phrase referred to the impact of geography on politics, but its meaning has grown over the last century to include a broader sense. In academic circles, geopolitics is defined as the study of geography, history, and social science in relation to spatial politics and patterns of various sizes, ranging from the state to the international.

Geopolitics and Transboundary Waters

The concept of geopolitics includes three spheres, namely political, military, and economic, and the common ground is security. It includes the notion of geopolitical pivots, as indicated by Brzezinski (1997).

> *These pivots, according to him, are determined by their very geography, in some cases having a special role in giving access to important areas or in denying access to resources to another significant player, and in other cases, they can also play a defensive shield. The very existence of these pivots can have political as well as cultural implications for the neighbors.* (Costa, 2018)

Talking about security, Buzan (1991) points out that in classical international relations

terminology, high-politics[1] refers to issues critical to the survival of the nation-state, often military in nature, and corresponds to what are considered to be 'traditional'security issues. On the other hand, low-politics refers to non-military issues relating to daily human survival and livelihood and are termed as 'non-traditional' security issues, which do not directly pose a threat to the survival of the nation-state (ibid). As a result, water has been identified as an essential driver of non-traditional forms of security and is thus linked to geopolitics, as access to and control over water is a strategic imperative that frequently leads to conflicts and confrontations between states and can also be a source of geopolitical power in terms of state relations. Water is a determinant factor in geopolitics because most state borders are formed along rivers, lakes, and bridge lines that separate different water basins. A river or a bridge line is often considered a community's natural frontier, and as such, they take on symbolic value and affect geopolitical conceptions and rivalries (Gnerre, 2020). Therefore, geopolitics in terms of transboundary waters is mostly visible.

Water has rarely been cited as a cause of conflict throughout history, despite the fact that there is no evidence of official water wars, but a confrontation over water and the exploitation of water resources can be used as a coercive strategy, which can lead to conflicts more broadly. Consequently, water has the potential to be one of the century's key issues. There is a rapidly growing public awareness that water interdependence is already, or soon will become, an important factor of life and livelihood in many countries in the world. According to UN estimates, more than half the global population will live in water-stressed or water-scarce countries by 2025.

[1] Issue areas that are of primary importance, usually taken to refer to defense and foreign policy generally, and particularly to matters of state self-preservation.

In this case we can refer to South Asia because of its unique hydrology as on one hand, the region is home to the mighty Ganges-Brahmaputra-Meghna Basin, yet, on the other hand, it is regarded as the ‘driest region of the worldwhere except for Bhutan and Nepal, the availability of freshwater per capita is less than any other continent (Chellaney, 2011). For instance, the river Brahmaputra has the highest per capita renewable water availability (to the tune of 17,500m3/person) across all Indian rivers, but hardly 12 percent of the renewable quantity could be developed and utilized for economic purposes (Ghosh, 2020).

The major South Asian river basins originate in the Himalayas and support biodiversity and provide water supply to agricultural lands in the region. It is recorded that the region consists of a total of 38 river basins, including three in Bangladesh, nineteen in India, five in Nepal, six in Pakistan, and six in Sri Lanka. South Asian hydrology became an interesting fact due to the inclusion of China, which is physically not a part of South Asia but still hydrologically due to its control over the Tibetan Autonomous Region (TAR), which is known as the ‘Water Tower’ it automatically becomes a part of the region. China has asserted and expressed full control of Tibet’s waterways; including the Indus, Ganges, Brahmaputra, Irrawaddy, Salween, Yangtze, and Mekong, which are the seven of South Asia’s most important rivers. This river runs towards Pakistan, India, Bangladesh, Myanmar, Laos, and Vietnam, and together they comprise the world’s greatest river. Hence, due to China’s hegemon on the transboundary river, the region faces water issues that may lead to water conflict. In fact, water has become part of intense international suspicions and disputes and is vulnerable to water-related conflicts in the Himalayan range. Some of these water issues include those concerned with India-Pakistan; India-

Nepal; India-Bangladesh and even India-China (the latter by default is included within the South Asian hydrology).

In South Asia, in the coming years, water will be one of the most important determining factors of peace and security. If terrorist activity dominated the first decade of the twenty-first century, it has been predicted that in the next 20 years, (2010–2030), it has been predicted that water will rise as a challenging factor and may dominate countriesinternal and foreign policies, particularly in South Asia, where a severe freshwater water shortage is emerging (John, 2011). To substantiate it we can refer to table 1.1 below, which indicates the availability of per capita renewable water resources in South Asia from 1955 onwards. It shows a decline in freshwater resources over the years and, based on it predicts that many South Asian nations will face issues of water scarcity in the near future**.**

Table 1.1 South Asia's Per Capita Renewable Water Resources (m3/person)

Country	1955	1990	1995	2025	2050
Afghanistan	5137	3020	2543	1091	815
Bangladesh	56,411	_	19936	14153	10,803
Bhutan	12,9428	_	53,672	26,056	18,326
India	5227	2464	2244	1496	1360
Nepal	19,596	8686	7923	4244	3170
Pakistan	10,590	3962	3435	1803	1310
Sri Lanka	4930	2498	2410	1738	1600

Source: Srinivas, 2017

Various factors can be attributed to water scarcity, but the most important is its uneven topography, which makes it difficult to equally distribute the water resources in every part of the region like China or even India. Both countries have plenty of water resources, but at the same time, there are also regions within the country where water scarcity occurs. Another factor happens to be increased population growth, which in turn affects the food and water security in the region as the region is agrarian and is becoming the fastest growing economy in the world. In this region, nine out of every ten litter is used for farming or farming-related activities (Sbhatti, 2017). The region also has the largest rural population in the world, with about one billion people living in the countryside. As the population increases, so does the demand for water and food supply, and hence it will further increase pressure on the existing water resources as more water is needed to increase productivity and household activities. Further, it has been estimated that by 2050, almost 1.5 billion to 1.7 billion people in South Asia will be exposed to water scarcity (World Bank, 2020), which in turn will have implications on the GDP and living standards of the people.

The loss of water availability in South Asia is also attributed to climate change and also inappropriate management of water in the region. Environmental deterioration has put the most basic feature of human security in jeopardy in this region, undermining the natural support system provided by water, on which all human activity is predicated. Environmental change is widely considered the region's most ubiquitous source of insecurity and conflict. As a result, it is one of the ten hazardous regions that the United Nations High-Level Threat Panel has formally warned about in the region (Mastoor, 2009).

The decreasing score level of water in some countries in South Asia is also indicative of the reason why the region is considered the 'hotbed of water conflicts', as the scarcity of water can undermine security to the same extent as any external threat as a result. These forms of politics are expected to triumph over power politics (Chaarles, 2004).

Water is considered a weapon to influence global politics. Transboundary river water sharing has become a strategic issue in almost every region of the world. To generate electricity, the importance of water is extreme. With the due competition for economic growth in every country, the amount of energy necessary is lacking. Countries are searching for different ways to produce energy, and the most popular method to generate energy through water. Therefore, every country appears to extend its authority over shared rivers both through legitimate and illegitimate methods. The conflict over water is a contemporary phenomenon and it eventuates almost in every transboundary river where it can be seen. If we contemplate all the transboundary river conflicts in the world, we may find a common aspiration, i.e., the power to apprehend the energy to boost the economy of the country. Nevertheless, the same condition is also present in South Asia where all the nations are struggling with a water crisis and eventually trying to control the flows of water of a shared river by applying any tactics.

Water scarcity has weakened the political landscape in the South Asian subcontinent, and while no wars have indeed been fought for water yet, there is a possibility of one in the near future. The Global Water Security report published by the United States National Intelligence Council in 2012 stresses that present water

supplies cannot handle the demand of the people and the risk of conflict erupting due to the shortage of water in the South Asian region (Subramanian, 2019).

Similar conditions occur with regard to the sharing of the waters of the river Yarlung-Tsangpo/Brahmaputra[2] between India, China, and Bangladesh. The scarcity of water has indeed compelled these countries to manage water resources and plan for the development and sustainability of this shared natural asset. The pressure on water has shown a new dimension to South Asian politics, the politics of scarcity, which has introduced both cooperation and conflict in the region. However, there is a possibility of conflict which is greater than that of cooperation. The India-China water issues deserve mention here because of the factor of geopolitics, especially the issue related to the sharing of the Brahmaputra, which is one of the most significant rivers for both. The river is vital as it is considered the lifeline of millions of people downstream who are directly and indirectly dependent on the river for their very livelihoods, like in the states of Assam and Arunachal Pradesh. Apart from the significance of the river in the region, northeast India is concerned as a security frontier. The government of India has been investing in various projects for the development of the region, especially in Arunachal Pradesh on which China lays its claim as its territory. The state has abundant hydropower potential and can become the fastest growing and generating energy in the Brahmaputra basin. In this case, China gets the leverage of using the river for constructing dams due to provisions under international law as 'first user's right on the basin's water and established and planned hydropower and water diversion projects along the Brahmaputra, which is a security concern that has the

[2]Brahmaputra river which is also known as Yarlung-Tsangpo in Tibet and China, as the the river enters into the territory of India it is known as Brahmaputra. Therefore in the whole dissertation the term Brahmaputra is used.

potential to impact on India-China relations. China's control over the Tibet region is a diplomatic maneuver to retain regional predominance. China intends to harness the lower portions of the Brahmaputra rivers. Under China's new fourteen-five-year plans (2021–2025), several of these water-related projects would be erected dangerously near India's border.

1.2 Statement of the Problem

Transboundary water-sharing involves the riparian states in a complex web of interrelationships based on dependency and interdependency, which often culminates in cooperation as well as confrontation and conflicts, and hence is viewed as affecting the bilateral or multilateral riparian relations. Water, therefore, forms an important aspect of human security and is considered vital for economic growth and development as well as linked to the stability of a nation.

With just one-third of the world's water resources, India and China are confronted with various water difficulties and are thus on the edge of becoming water-stressed nations. There are several contentious problems between India and China, especially water sharing, of which the Brahmaputra water sharing is significant.

First, there is the factor of Tibet as the river Brahmaputra originates from it. The region is viewed as the 'Roof of the world'and even though China is not a part of South Asia its control of the Tibetan Autonomous Region makes it hydrologically a part of the region, and therefore its dominance in the Tibetan region is seen as a diplomatic action to maintain the hegemon in the entire region.

Second, security concerns occur as a result of China's assertion of Arunachal

Pradesh, which is a part of the northeastern state of India and considered a portion of South Tibet. China bases its claim on historical links between the Tawang monastery in Arunachal Pradesh and the Lhasa monastery (Goswami, 2012). In the year 2019, China enacted a new policy requiring all maps to be published and sold in countries where the government edition of Chinese maps is integrated. China's assertion covers Arunachal Pradesh, Taiwan, and the South China Sea.

Arunachal Pradesh is considered a strategic location for India, where the Brahmaputra river enters India as Siang, and adds a strategic advantage to the Brahmaputra Valley making geopolitics a critical element. Furthermore, the dread of unpredictable floods causes a significant loss of downstream riverside inhabitants, particularly in Assam and Arunachal Pradesh, and massive erosion of the soil and a rise in the quantity of silt in the water and contaminates the river water. Concerns have also been raised about the drying up of the Brahmaputra River in the northern part of Arunachal Pradesh as a result of China's efforts upstream, which had an impact on the river's environment and also the livelihoods of people downstream.

Furthermore, it should also be noted that China has not yet signed any multilateral treaties or the 1997 UN Watercourses Convention that set the legal framework for rules and cooperation between more than 100 nations and their relevant international watercourses.

India and China signed anMoU in 2002 during the flood season, on the exchange of hydrological information on the Yarlung-Tsangpo/Brahmaputra River. A Memorandum of Understanding was signed in 2005 regarding the sharing of hydrological data on Langqen Zangbo/Sultlej throughout the flood season. Though both countries agreed to share the hydrological data, China suspended even this

minimal cooperation after the Doklam Standoff in 2017 and withheld data for almost a year. Similarly, the very control of the TAR (Tibet Autonomous Region) that originates in the country's southwest, known as Asia's 'Water Tower', gives an upper hand to China to install its water hegemony in the region.

Considering the above concerns, China's dam-building along the Tsangpo Great Bend area is viewed as a security risk for India's northeast. First, some of these are constructed near the border area; secondly, due to the riparian position, there is a greater dependence on India than on China for the hydrological data; and thirdly, there is an absence of a water-sharing mechanism between both the countries. Further, China's growing assertiveness in the region, coupled with the fact that it does not have any water-sharing agreements to date with any transboundary water-sharing nations, makes the issue more complicated. Thus, China's action along the Brahmaputra is viewed as having the potential to use the water as a political maneuver by China as an upper riparian against India.

Therefore, transboundary water issues related to access to and control are a strategic imperative, often leading to conflicts and confrontations between the two, and can also be a source of geopolitical power in terms of relations between the states.

1.3 Review of Literature

Muhammad Imran Mehsud and Tariq Anwar Khan(2019) in their article '*Water War Thesis: Perspective from South Asia'. Here*they argue that water scarcity due to climate change and population surge has resulted in water disputes in different arid regions of the world. The absence of water treaties amongst co-riparian

states of a river, the stress in the treaties, hydro-hegemonic behavior, and deviation from international water law on the part of regional power, domestic water disputes, and the subsequent pressures for more water could snowball the water disputes into water wars. They further analyze the basic premises of the water war thesis in the context of the regional hydro politics of South Asia. Their article further offers a critical analysis on each premise of the water war thesis in the context of South Asian hydro-politics. It also viewed a few additional regional hydro-political dynamics that are relevant to the water war thesis. They argue that the region of South Asia is equally vulnerable to the water war thesis. The region is in the grip of a water demand-supply gap due to climate change and population increase. Owing to the water crisis, old water disputes are spiraling out of the dispute resolution capacity of the already installed water treaties, and new water disputes are emerging. The article mostly focused on climate change and its effects on the water and environment. Although the authors have focused on the South Asian water war but did not mention any bilateral relations between the countries within South Asia.

Uttam Kumar Sinha (2011) *'China: Geopolitics of a Thirsty Nation'* discussed the China's energy and water requirements, that would be the country's biggest issue, were discussed in his work. Aside from that, he addressed the significance of electric power requirements for China's economic development, and how China has expanded its policy to clean and renewable sources of power energy as an outcome. China already boasts 50% of the nation's biggest dams, such as the Three Gorges Dams, in their region. Furthermore, the article covered the country's geopolitical component in his piece. The scholar addressed the potential of energy for China in

his research, and how the country is now attempting to seize the water and play hegemony over it. Although the author could disagree on how the Indian perspective will affect the numerous projects built by China in the later part of his work.

Robert G. Wirsing (2007) in his work *'Hydro-Politics in South Asia: The Domestic Roots of Interstate River Rivatry'* investigates intrastate river resource management, which is as essential as interstate river water sharing in South Asia The author also explored the water problem for a variety of reasons, including irrigation, agricultural, household needs, and so on. He also emphasized the management issue of water distribution among neighboring states. The article went on to discuss India's energy needs, with the country set to surpass South Korea as the world's fourth-largest energy consumer behind the United States, China, and Japan.

Jagannath P. Panda and Yanbin Zhang (2017) in their significant work '*Mismatches Diplomacy: China-India Water Relations over The Ganga, Brahmaputra,Meghna River Basin*'in which the speaker provides insight on the nature, form, and outcomes of China's transboundary water resource diplomacy Water diplomacy has distinct and complicated characteristics and ways for creating cooperative partnerships in the contexts in which it is formed. They examined the evolution and effectiveness of water diplomacy, arguing that it is unlikely to succeed under unstable power relations or among countries experiencing low economic growth. The Ganges–Brahmaputra–Meghna (GBM) River Basin was also referenced by the author as a case study. The author observed that distrust has led to the emergence of complex dynamics in Sino–Indian water disputes. China's water diplomacy has revealed vested interests. Therefore the article did not emphasize the Tibet issues and China's hydro hegemony over the region in South Asia.

Mirza Zulfiqur Rahaman(2017) in his work '*Geopolitics of Sino-Indian Transboundary Water Management in the Yarlung Tsangpo and the Brahmaputra*' Sino-Indian transboundary water management geopolitics and prospective future scenario were explored, with strong attention on alternative collaborative involvement methods and mutual advantages via efficient leadership of transboundary water resource developmental goals in the region. Furthermore, the paper outlines China-India bilateral cooperation on water-sharing concerns involving the Tsangpo/Brahmaputra river system. The paper's second part seeks to convey the geopolitical dimensions of Sino-Indian bilateral involvement on shared rivers, specifically the Tsangpo/Brahmaputra river system.

Nilanajn Ghosh (2021) in her article 'India's Enduring War of Water Governance Paradigm' in which the author discussed the continuing silent water battle in India The country made considerable attempts to effective water administration under Prime Minister Narendra Modi's administration. The paper also discusses the findings of the Central Water Commission (CWC), Central Ground Water Board (CGWB), and National Water Commission (NWC), which advocated for an interdisciplinary method for water governance by involving social scientists, natural scientists, management professionals, and other specialised fields of study. Finally, the report discussed and finished with an insight into the development of the Himalayan hydropower project and its impact on the surrounding environment.

John Agnew (2010) in his work '*Emerging China and Critical Geopolitics: Between World Politics and Chinese Particularity*'claim that a well-known political & human geographer examines contemporary China's ascent through the prism of analytical

geopolitics In doing as such, China issues all conventional global political views of China as merely the most recent world power to emerge through a natural process of linear succession and conceptions of the country as a distinct phenomenon molded by a different historical experience and cultural peculiarity (Sino-centrism). The study advances the thesis that China's growth is driven by a conflicting combination of Western-style nationalism and a traditional holistic understanding of world order that is reactive to and dependent on contemporary global politics. This article focused mostly on the Chinese viewpoint and the essential issues of geopolitics.

Robert G. Wirsing (2007) in his article '*Hydro-Politics in South Asia: The Domestic Roots of Interstate River Rivalry'*investigates the role of the inter-state cooperative river resource management concept in South Asia. In his article, he discussed three significant cooperative models for resolving the inter-state conflict. The essay contends that the South Asian region has some shortcomings in resource management, poor governance at the regional level, and insufficient cooperation among co-riparian governments such as India, Pakistan, Afghanistan, Nepal, Bhutan, and Bangladesh. The author supplied data on India's energy requirements as well as the requirements for future hydropower generation.

Japungsar Basumatry (2021) in his article '*Geopolitics of Water and Security Implications: Understanding of India-China Transboundary water Disputes*' the author discussed security challenges, including various non-traditional security risks, and how they relate to water security. Later, the author concentrated on India-China water issues, a case of transboundary river water, where he addressed water sharing relationships and illustrated the threat viewpoint for both countries. Finally, the article discusses the Bangladesh threat as a downstream country and the different

obstacles that must be overcome. Though the essay discusses many essential problems, it fails to highlight the difficulties of Tibet, which are particularly important in the water-sharing relationship between India and China.

Brahma Chellaney (2010) in his book '*Water: Asia's new Battleground* 'this book provides an in-depth examination of the global political and environmental ramifications of China's ambitions to redirect Brahmaputra river water, such as the construction of the world's largest dam along a controversial, heavily fortified border neighboring India. The burden of such a diversion will fall primarily on India and Bangladesh. Several factors, including an officially drawn relationship between water and national security, have aided China's drive to increasingly access the resources of the Brahmaputra and other fast-flowing international rivers like the Mekong and Salween. This book additionally explores the growth of water nationalism in China during a period of rising water stress, as well as the implications on China's nearest neighbors.

Doshi, Navin, (2008) in the work 'The Water War of China against India' The Tibetan Plateau is Asia's primary watershed and the headwaters of more than ten main rivers, such as the Brahmaputra, Ganga, and Indus. Almost, ninety percent of the runoff from the Tibetan River goes downstream to India, Bangladesh, China, and other nearby countries. Asia is a water-stressed continent that is home to about half of the world's population. China's great strategy, which appears to challenge India's aim to connect all of its old rivers, is divided into two halves. One example is the construction of the world's largest hydroelectric facility on the Great Bend, which dwarfs all previous comparable projects.

Research Gap

Despite the fact that the concepts of geopolitics and transboundary water sharing between India and China are covered, the above study of the literature reveals certain inadequacies. The preceding research fails to explain how geopolitics related to transboundary waters can impact bilateral relations between nations. The majority of the articles did not delve into the relevance of geopolitics and its relationship with the Brahmaputra, a transboundary river shared by the two countries. One of the most important components of the study that is lacking from the majority of the article is Tibet's function as a 'roof of the world', which is critical in the study of India-China water concerns.

1.4 Scope of the Study

Given the importance of transboundary water sharing and the role of geopolitics in modern times, the proposed study aimed to comprehend the role of geopolitics in transboundary water sharing between India and China. As a result, the study placed greater emphasis on the role of Tibet in the formulation of India-China ties. Furthermore, the study examined the significance of water issues in India-China relations.

The study is thus an attempt to identify the link between transboundary water sharing concerns between India and China, with particular reference to the Brahmaputra, and the aspect of geopolitics, as it tends to affect the diplomatic and security interests of the riparian states, including India.

1.5 Objectives of the Study

The objectives of the study are-

1. To examine the factor of geopolitics in terms of transboundary river water sharing with special emphasis on the Brahmaputra.
2. To understand how the issue of water sharing can affect the bilateral relations between India and China.
3. To explore the possibilities of diplomatic solutions in the absence of a mutually agreed settlement mechanism on water sharing between the two countries.

1.6 Research Questions

The research questions are-

1. What is the role of geopolitics in terms of transboundary water sharing with reference to the Brahmaputra?
2. How does sharing of the waters of the Brahmaputra River can affect the bilateral relations between India and China?
3. How can both countries, in the absence of a mutually agreed settlement mechanism on water sharing, proceed towards an amicable diplomatic solution?

1.7 Research Methodology

The methodology employed for this research is qualitative. According to Tracy (2013), a qualitative research method explores the purpose and the driving force of a phenomenon in which the research is based on an in-depth explanation of the context that emerges from the in-field problems. The qualitative research method

is undertaken due to its nature of flexibility and to explore the purpose of the study, which will be based on secondary data. A thorough literature survey was carried out to conduct this study. After the collection of literature, information was segregated into different sections for analysis.

The analytical, descriptive, and exploratory research design methods were therefore used to help with the qualitative methodological approach for the study. The descriptive design helped to meaningfully explain the various aspects of the proposed study in a detailed manner and to identify the research questions of the proposed study. Hence, studies of previous reports, documents, and other records were undertaken for the study. Similarly, the analytical research design was also used with the help of facts and information gathered from the earlier research studies. Further since the study aimed at exploring the avenues of possible cooperation between the two over the Brahmaputra hence the study is Exploratory in nature.

Fisher (2010) has argued for the collection of several types of data in research work, as it can increase the accuracy of information. Therefore, for this study, both primary and secondary data were collected.The primary data includes government reports and documents; joint statements published by the governments of the respective countries, and Indian official data. The secondary data included in this study are books, articles, news reports, magazines, working papers of various educational and research institutions, etc.

1.8 Chapterisation

The study is divided into the following chapters

Chapter One: Introduction

This chapter introduces the topic of the study and presents an overview of the issues in question holistically, thereby setting the tone for the research work with research questions, the research gaps in the literature, and discussing the scope of the research, including the methodology part.

Chapter Two: Geopolitics and Transboundary Water Sharing: A Theoretical Framework

This chapter primarily deals with the theoretical understanding of the concept of geopolitics and transboundary water sharing.

Chapter Three: Brahmaputra Water Sharing Between India and China

The chapter briefly discusses the overview of the water issues between the two countries and primarily focuses on the case of the Brahmaputra. The chapter also deals with the factor of Geopolitics focussing on the factor of Tibet and Arunachal Pradesh and how it affects the course of development of relations between the riparian states.

Chapter Four: Prospects of Cooperation between India and China

The chapter aimed at exploring the possibilities of diplomatic solutions in the absence of a mutually agreed settlement mechanism on water sharing between the two countries.

Chapter Five: Conclusion

The last chapter is based on major findings and suggestions.

Chapter 2: Geopolitics And Transboundary Water Sharing: A Theoretical Framework

2.1 Introduction

The concept of geopolitics is as old as the study of politics itself. Aristotle, Plato, and other ancient political thinkers clearly understood that politics is shaped and constrained by nature (Zhengyu 2017).In fact, the concept is said to have evolved with human society and the subsequent political-economic changes in the human consciousness, and therefore Geopolitics as such involved the 'study of the influence of geography on the behavior of states and international relations'. The prominent figure in the field of geopolitics was the American Naval historian Alfred Thayer Mahan, the British political geographer Halford Mackinder, and the American political scientist Nicholas John Skyman. They laid the most significant foundations in the geopolitical analysis and theory elaborating on the realist theoretical assumptions concerning international anarchy, units of analysis, and power politics. The limited meaning in which geopolitics was used by Mackinder and his immediate fellows have, however, long since been overtaken by the present-day use of the term to mean the study of the long-term drivers and factors that influence state behavior (Menon, 2021).

Therefore, geopolitics involves an analysis of geographical settings and how they relate to political power, and also the creation of spatial contexts that incorporate political power elements such as hemispheres, oceans, land, maritime borders, natural resources, and culture (Cohen, 1973). It has grown into a broad subject that is crucial to understanding how geography and human nature have shaped and continues to shape global political and security concerns in the past, present, and future (Hepple,

1986). It is for these reasons that Rudolf Kjellen, and Karl Haushofer were viewed as being realists, as they linked geography with the political relationship aimed at providing tools and guidance for political action.

Geopolitics is not determinism solely on geography, but it is founded on the premise that geography sets boundaries and possibilities in global politics. Countries can take advantage of geopolitical features and also sometimes become oblations of their geopolitical circumstances. One of the main goals of geopolitical aspects is to take advantage of one's innate geographical advantages on one hand and, on the other hand, take the benefits of countries with weak geographical positions (Owens, 2015). However, the concept of Geopolitics is also said to be moving beyond space, area, territory, or region to a multi-dimensional concept of a 'field of force' which includes the political organization and their structures where instead of mere spaces it is seen as a growing area where political units grow (Cahnman, 1943). This has been explicitly explained by Ratzel. Further, it has also been stated that as the area grows, changes will be witnessed. Hence, adjusting to these changes is important in geopolitics.

The concepts of geopolitics formulate the scientific foundation of the art of political transactions in the struggle for the existence of political living forms on the earth (ibid). On the other hand, geopolitics studies and speculates on the impact of geographical contraints on political developments and the evolution of state political systems (Henning, 1936). Further, Spykman (1938) has linked the geographical location with the security of a nation. A nation based on its geographical setting determines its national security in terms of defense mechanisms, whether it is landlocked, island, or both. This inturn is depended on technology, which helps

nations overcome geographical barriers and use geographical opportunities (Scholvin, 2016). Therefore, it determines to a large extent the outcomes like national power, security threats, national expansions, and international cooperation.

2.2. Realism as a Theoretical Framework

The politics of power, often referred to as political realism, is among the first ideas in international relations (Smith, 1986). The theory of political power postulates that there is always a power struggle in international politics and that the basis is human selfishness, which was popularized after World War Two. Similarly, in the work 'The Prince,' Machiavelli, an ancient thinker, and traditional realist defined political realism as recognizing that principles are subordinate to policies and that the final skill of a state leader is to accept and adapt to changing political and power layouts in world politics.

The main assumption of the theory is that states are rational actors who seek, above everything else, to maximize their relative power vis-a-vis all other states in an endless struggle for survival (Koehane& Nye, 1973). Human nature has created laws that govern politics. The concept of interests, defined in terms of power, is used to understand international politics (Morgenthau, 1948). Morgenthau further argued that the state fights for power in three basic patterns, i.e., to keep power (status quo), to increase power (imperialism), and to demonstrate power (prestige), where the entire root is caused by humankind's lust for power.Waltz (1979), in his text 'Theory of International Politics'argued that anarchy leads to the logic of self-help in which states seek to maximize their security. On the other hand, neo-realists argue that states have only themselves to rely on for their survival, a situation that fosters fear, jealousy, suspicion, and insecurity amongst the system's actors.

The realist contends that, in a context of uncertainty and bounded rationality, perceived external threats (real or imagined) generate a sense of insecurity, particularly in nation-states that are the targets of such threats. Such a nation-state takes steps to increase its power and capability to counter insecurity, such as by forming alliances and stockpiling weapons (Collins, 1996).

The assertion of international anarchy, which implies conflict or disorder, is central to realist theories. For realists, international relations, like the Hobbesian state of nature, represent a never-ending conflict between states and resemble a completely zero-sum game; and the international system is actually a chaotic arena of all-versus-all warfare (Milner, 1991). By assumption and by nature, states in classical geopolitics, like those in realist theories, are egoistic and self-help actors. Similarly, according to realist theories, the state is the most important actor, and territorial size and natural resources are important in gaining power, which is also contended by Geopolitics. In the realist approach to studying international politics, the premise of national interest is crucial. One of the major principles of realist thinkers who are concerned with a country's national interest is the struggle for power.

Dahl (1957), defined power as the capacity of a particular actor (nation-state) to make the other actor do something which the other actor would otherwise not do. In his text Politics Among Nations: The Struggle for Power and Peace, Morgenthau explained that countries always fight for power to maintain and increase their dominant role over other countries and to reduce others' national power. In a realist framework, power is viewed as zero-sum, which means that one country gains more power than another one loses power. Thus, realists tend to separate the use of political

power and see the state as a rational actor who has to survive in an anarchic condition and has to follow the principle of self-help to protect itself from the world.

According to Charles W. Freeman, Jr., ‘power’is the ability to control the actions and decisions of others. Power comes from strength and self-discipline. Strength results from the transition of assets into capabilities. Strategy gathers resources and directs them with pinpoint accuracy. Through strategy marshals, statecraft seeks to magnify the magnitude, significance, impact, and irresistibility of power. It directs how the state uses and deploys its power in the international arena. Warfare, espionage, and diplomacy are examples of these methods. The paladins of statecraft practice these three arts (Gabriel, 2004).

The core notion of realism is human selfishness (egoism) and the absence of international government (anarchy), which requires the primary in all political life of power and security. Hans Morgenthau, a prominent realist thinker, argued that ‘international politics is governed by objective and universal laws based on national interests which are defined in terms of power’. He further argued that the motive to gain power and the willingness to control the state or nation are the fundamental nature of human beings, and the motives of competition, war, and fear are common in international politics. One of the most relevant concepts in both geopolitics and realism is the concept of national interest, which emerged after the evolution of new nation-states in world history. It is the components that nation-states seek to protect their own interest in international politics which make the country more powerful and can apply it in formulating its foreign policy. According to Joseph Frankel (1969), national interest ‘amounts to the sum total of all the national values both pertaining to

the nation and to the state'. Hence nations always emphasize on maximizing its national interest which happens to be its ends.

The notions of national interest indicate that there can be a coherent foreign policy representing interconnected national concerns (Cantor, 1986). These national interest concerns represent the broad interests of the nation's people as a whole, rather than the ruler'snarrow interests. The basic premise of realism is that nation-states are rational actors and the high prominence that they accord to military force as an instrument to enforce power and secure national interests, towards their survival within an anarchical international system, depends on how nation-states engage in the act of agenda-setting (Waltz, 1979). Therefore, to fulfill national interests, power is the main proponent in determining cooperation among nation-states in international relations. In international relations, the concept of power has been divided into two forms: 'hard'and 'soft' power. The term soft power was introduced by Nye (1990) to denote what he terms the power of 'attraction' (Nye, 2011). Soft power does not use the means of coercion and use of weapons; it is basically using culture, values, and other national properties. Nye further mentions and elaborates on the concept of soft power in his work, *Soft Power: The Means to Success in World Politics* (2004). Then there is the hard power, which was referred to by Morgenthau, and as already pointed out above, the lust for power is rooted in human beings (egoism), and this human nature forces them to gain more power and increase their capacity to formulate a nation's foreign policy. In realist assumptions, hard power, which is the use of coercion or military force, is an effective instrument to gain power.

From the above discussion, it is clear that power plays a key role in international relations, and how this power varies among the countries in the world. It

is very important to identify the nature of power relations practices between countries in world politics. Power plays a predominant role in the study of geopolitics and the realist approach to geopolitics. It basically focuses on political power linked with geographic space, i.e., territorial water, land, mountains, forest, roads, rivers, etc. Hence, it is regarded as an integral branch of realism (Wu, 2018), which also sets its premises based on international anarchy, the unit of analysis, and power politics. In fact, the important proponents of geopolitics like Alfred, MacKinder, and Skyman are seen as realists as they talk about states being in constant competition with one another, ultimately resulting in conflicts, and for the realists, the states are in a constant struggle for power.

While illustrating the meaning of power defined by various thinkers, it is very important to look into the different form of power which is oriented in international relations. Political power is not only confined to analysis of the realm of world politics, economic and ideological power are also relevant to discuss and should be considered as these forms of power play a vital role in formulating political power. The economic strength of any country could easily try to dominate world affairs, in contemporary periods. From the realist perspective, the nation-state is a rational actor, and they always prefer coercive power as a tool to formulate any foreign policy and to satisfy their own national interests under an anarchic world system. From the realist view, water was always regarded as a low-level political issue due to the sole focus on maximizing national security. However, because water is both scarce and essential to for human survival, water security is quickly becoming a top national security priority in many arid and semiarid regions (Naff, 1992). When water is viewed as a strategic and finite resource that sustains wealth and relative political power, continued access to water resources becomes a zero-sum game in which shared water becomes the

object of competition. It becomes all the more complex due to the power asymmetry in International Politics which determines to a large extent the nature as well as strategies and prospects of water use and allocation. The following section, therefore, deals with the power dynamics in transboundary water sharing.

2.2.1 Power Dynamics in Transboundary Water Sharing

Transboundary water interplay is essentially politically influenced by the riparian countriesbroader political setting. Water is frequently used as a conduit for politics in transboundary interactions (Mirumachi, 2015). All the riparian countries want to ensure a consistent supply of water to meet their different social, environmental, and economic interests, elevating water from a national to an international issue involving sovereignty (Alam, 2009). Each and every water-related incident in one state is likely to impact the water problem in another, causing tension, wariness, and, in some cases, a dispute between riparian states. Power dynamics between riparians are also important for determining who prevails in the sovereignty bargain, as it is frequently tried to argue that power differences are the principal drivers of the level of control over water resources that every sovereign state achieves (Zeitoun, 2008; Zeitoun & Allan, 2008; Zeitoun 2017). Water, according to Donahue (1997), is understood in three main ways: as an economic benefit (in the marketplace), a political good (in bureaucracy), and a cultural use (in kinship). Various actors interfere with each other using different viewpoints on water, resulting in water conflicts and differing interests. In each scenario, power is extremely important. Transboundary water relations are deeply political, and influenced by the wider socio-political setting of the river basin's member nations (Barua et al., 2018; Warner et al., 2017). Water, on the

other hand, has played an increasingly important role in deciding whether the country is moving toward cooperation or conflict.

The interlinking of water management with power and how power dynamics play a determining factor has been portrayed by Rahman (2017), Fredrick Frey (1993), Peter Gleick (1993), and Miriam Lowi (1993).Gleick used the Euphrates River basin and Lowi used the Jordan Basin to demonstrate how power is being used in transboundary bargaining to achieve political gains (Menga, 2016). Frey tried to theorize violent disputes over shared water resources by taking scarce and power divergences between states, as well as their riparian positioning, into account (Mirumachi, 2015). Marwa Daoudy was the first to apply different theoretical forms of power in a transboundary context to the particular instance of the Euphrates and Tigris Rivers in 2005. Her research revealed that Turkey and Syria used structural and bargaining power in their negotiations.

Similarly, in the context of power dynamics, the riparian physical position of a country plays an important role in controlling the water flow of a shared river, and geography deals with it in different ways in different countries, some using it as the power of a method. Thus, the upstream country has a distinct advantage because it can manipulate the flow of water to the downstream countries (Casco &Zeitoun, 2010). Upstream countries use their geographical platform to make independent decisions to collect water in most transboundary river basins.

In the case of hydro-political relations, Dinar noted a similar argument, that riparian position plays a role in defining a state's relative power in its relations with co-riparian's, also noting that 'the weakest party, militarily and economically, may be in control of the origins of the source or encompass the majority of the waterway in its

territory (Jagerskog, 2001). The realist insight of conflict and cooperation in the transboundary river stems from the hydro-hegemony framework, which underscores how conflict, even if not clear and observable, can be structurally presented between riparian stakeholders. Brahma Chellaney correctly points out in his work "The Water War ''that the increasing geopolitical contest over natural resources has transformed some strategic resources into engines of the fight for power. This argument attributes that transboundary water resources became such a source of power conflict among nations, and the factor of geopolitics played a key role in controlling transboundary water sharing and getting the absolute leverage to the upper riparian state to regulate the flow of water to the lower riparian state.

The upstream countries always aim to command more and access the water by claiming territorial sovereignty, which allows them a fair share of water in a transboundary river. The 'Harmon Doctrine,'which states that even a country has a complete sovereign territory over the water of an international watercourse inside its borders and is often preferred by upstream countries, was proclaimed around a hundred years ago. This indicates that the riparian state is allowed to do anything it wants with the waterways within its borders (McCaffrey, 1996). In this regard, the doctrine provides more autonomy to the territorial sovereignty of a state and liberates more resources to utilize the water, but this may lead to water conflict in many riparian states. Similarly, the UN Watercourses Convention 1997 (UNWC), which also talks about restricted territorial sovereignty, provides that almost all riparian states have an absolute opportunity to use a shared water resource and that each watercourse country must protect the sovereignty and correlative rights of other watercourse states (Clarke, 2005). Considering this, China gets the opportunity to

divert the flow of water and use it for its own national interest. However, water brings people and communities from different riparian states together, creating new kinds of interdependence and competitiveness. In fact, disputes over water resources are one of the oldest causes of intercommunal conflict, and they continue to produce serious conflicts between states (Homer-Dixon, 1994).

In the case of the Brahmaputra River, Power dynamics shapes the transboundary water sharing be it with regard to the upper riparian state China and the lower riparian India, particularly in the India-China case, or if we look at India and Bangladesh. Here in the former China has an upper hand whereas in the latter India.

Power asymmetry does influences and shapes the course of water sharing where mostly the more powerful country tend to dictate the negotiation and terms of the trade as pointed out by Zeitoun and Warner (2006). In fact, the factors mentioned above leads to the development of a hydro-hegemon, and as such, the treaties and agreements usually tend to benefit the powerful states because the stronger state always tries to maintain hegemony in the entire region and has very strong support from the international communities of a powerful group. As a result, the weaker states have to suffer due to the inequalities of the balance of power and unfavorable riparian position.

According to Zeitoun and Warner (2006), hydro-hegemony is hegemony at the river-basin level attained by the hegemonic riparian nation-state in a specific river basin through water resource control methods such as coercion pressure in the realist view, which is further facilitated by the explanation of existing power asymmetries within such a poor international context and use of water resources management strategies such as resource acquisition, integration, and containment to achieve this

form of power in the water. The strategies which are used include coercion-pressure, treaties, knowledge production, and so on; all of them are made possible by the use of existing power imbalances within a constrained legal institutional structure.

Here, Paula Hanasz in his article *Power Flows: Hydro-hegemony and Water Conflicts in South Asia* argues that only riparian position alone cannot use the power asymmetric in controlling water, there is also other factor which is equally responsible in the case of water conflicts. The economic power, political power and military power is the other dimension of power which helps the country to gain more power and use it in terms of controlling the water (Hanasz, 2014). These three aspects of power are considered as the main pillar according to the author. In the case of India and China water issues, we can see that the above three important pillar works and thus China getting more advantage due to its power asymmetric and use the hydro-hegemony on the Brahmaputra River.

In the hydro-hegemony the another important aspects is using the strategies of bargaining where countries can influence the negotiation process by the capability to dominance the weaker country in formulating any treaties and agreements. The another strategies which is also used in hydro-hegemony that is the ideational power which is basically consider the forms of idea that the riparian countries. The ideational power enables the river basin hegemon to influence conceptions of the social structures both within and outside of its own nation. Riparian country may utilize a variety of tactics to influence interactions with neighboring riparian countries, such lack of information and sharing of information.

Therefore, the same incident is taking place between India and China where India is to depend on the hydrological data on water sharing and the power dynamic here plays a crucial role in the case of India and China water issues.

The power dynamics between India and China are such that China, being an upper riparian state, applies hegemony to control the flow of the water from the Brahmaputra, also known as the Yarlung Tsangpo. However, there are very limited institutions for riparian cooperation. Between these states, neither water-sharing agreements, common river commissions, nor conflict resolution processes or mechanisms exist between the countries. Existing procedures mostly consist of a series of Memorandums of Understanding. These (MoUs) on the sharing of hydrological data and a group of technical experts are nonbinding, and there is no oversight authority to verify that they are followed between them or not (Ho, 2017).

Similar action was taken in the water dispute between India and China when the two countries' power dynamics caused disparities in attitudes and priorities. China, being the more powerful of the two countries in terms of geographical advantage and being an upper riparian, does not regard India as a significant threat, and pays India less concern than the latter. China sees India as a regional state with limited global influence, whereas China sees itself as a global force (Ho, 2017). Hence, China uses its hegemonic power to influence the riparian relations between India and China by evaluating the power interactions between the riparian nations through different forms of power with a special notion of hydro-hegemony. It will then be feasible to identify the river basin's hydro-hegemons and non-hegemons, as well as their power disparities. Several researchers have referred to China as the hydro hegemon, and it is clear that China holds a dominant role in the region. Hence, in the

transboundary river water sharing power, asymmetrical plays a vital role among the riparian nations and may create mistrust, which may lead to water conflict in the region.

2.3 Conclusion

Realist theory stresses power politics and national interests in international relations, and the same notion of theoretical knowledge came to be associated with geopolitics, as both focuses on power orientation. As a result, the study used a comparable theoretical framework in order to gain a thorough understanding of the subject. Geopolitics helps in understanding the dynamics of power relations in international politics and is subsequently linked with the foreign policy and domestic politics of a nation. It helps a state in determining its power position or achieving its objectives and is categorically viewed as a science employing geography in the service of political end'(Huzen, 2019). Given the significance of power positions and linkages with strategies and policies, the theory of realism has been found suitable and relatable, though it is not free from its own limitations. It is the power that helps in determining who gets what? and that in turn is largely dependent upon geography. Thus, politics and geography get intertwined. Not only that, even in terms of transboundary water sharing, geopolitical understanding is seen as highly important because it plays a determining role in shaping the policies and strategies of a riparian

nation vis-a-vis others, as the very geographical position helps a nation in controlling the waters. Therefore, power dynamics are also found to play a determining role here.

In this regard, the dominant country may employ a variety of strategies to exert control over the behavior of the other riparian states. A similar scenario occurred in the case of India-China water disputes, in which China exploited its hegemon status in the region. China is more powerful than India in every way, including political, economic, and military, and it uses its massive resources to control relationships on all fronts, including border and water disputes.

Chapter 3: Brahmaputra Water Sharing Between India and China

3.1 Introduction

Water happens to be an important driver of development and stability in a region. The very fact that water resources are linked with the various aspects of life, and society makes it irreplaceable. Almost 71% of the earth's surface is covered with water and an estimated 326 million cubic miles of water on the planet, but out of that only 3% of the earth's water is found to be fresh (Bhattacharya, 2018). Though there is an enormous water resource, there is a daunting water scarcity on the planet due to various factors like population explosion, uneven topography, unequal distribution, and rapid economic development. Hence, proper management of the water resources is important as the scarcity of water can lead to conflicts between and amongst the states and also lead to regional instability in any region of the world.

3.2 Brahmaputra River Water Issue between India and China

India and China bilateral relations have undergone significant changes since Panchsheel; the 1962 war; from being pitted against one another politically as well as

economically; to the recent Dokhlam incident. China's policy of encirclement has had great implications for India. The major issue between them has been mainly revolved around the boundary disputes. But apart from that if there is any other issue which of late has been emerging as an irritant in India-China relations are the water issues.

India and China shares four important rivers between them. First, the Indus River is shared by India, China, and Pakistan, second, the Sutlej River is shared by India, China, and Pakistan; thirdly, the Kosi and Ghaghara rivers are shared by India, China, and Nepal; and finally, the Brahmaputra River is shared by India, China, and Bangladesh, which is cited in table 3.1. It has been noted here that India and China are not the only riparian states here, but both countries shares this river with another country also (Zhang, 2016). The geopolitical position of China as an upper riparian country gives it an edge over the other riparian countries to utilize the water resources to its optimum beneficial use and hence can propose several projects upstream which might affect the water flows of the downstream countries

Table: 3.1: Major Transboundary Rivers Between India and China

River Name	**Countries**
Indus/ (Shiquan)	China, India and Pakistan
Sutlej/(LangqenZangbo)	China, India and Pakistan
Kosi and Ghaghara (Arun and Kongque)	China, India, and Nepal
Brahmaputra/ (Yarlung-Tsangpo)	China, India, Bangladesh

Source: Xinhuanet and Ministry of Water Resources India.

Amongst these water issues, the one that has been a matter of debate and discussion of late is the sharing of the Brahmaputra River between India and China. The issue becomes all the more pertinent to discuss here considering the water scarcity level that is rising in both the countries, together with an increased demand for the water resources coming from all the sectors and also the fact that both the nations are arch rivals with no history of formal water agreements. Furthermore, since water is linked with the security and stability of a nation, the Brahmaputra river water sharing issue between India and China needs focus.

3.2.1 Overview of the River Brahmaputra

The Brahmaputra River originates within the Angshi Glacier on the Tibetan Plateau and flows east for almost 700 miles between both the main Himalayan range towards the south and the Kailas Range to the north. The river travels via Tibet at a fair elevation of more than 12,000 feet, creating the world's largest flowing river system (Christoper, 2013). The total length of the river is (2840 km), of which it flows through China (1700 km), India (760 km), and Bangladesh (337 km) before reaching Bhutan via tributaries (Varis, 2009). The total drainage area of the river is 712,035 sq. km, covering the four countries, with China accounting for 50.5 percent, India at 33.6 percent, Bangladesh at 8.1 percent, and Bhutan at 7.8 percent (Hangzo, 2021). It is one of the major rivers in Asia and is also called the YarlungTsangpo in Tibet, the Brahmaputra in India, and the Padma in Bangladesh.

Map 3.1: Map of the Brahmaputra Basin

Source: Institute of Water Modelling, Bangladesh.

The river enters India into Arunachal Pradesh as Siang with a total drainage area of 41.88 percent, passes through Assam as the Brahmaputra with 36.33 percent, and enters Bangladesh where the river is called the Jamuna and unites with the Padma River, before draining into the Bay of Bengal in the huge Ganges Delta (Ratha, 2015). But before entering Arunachal Pradesh, the river forms the world's deepest gorge when it plunges some 2700 meters on its way between the GyalaPeri and Namcha Barwa. The river is 124 feet (38 meters) deep on average and 380 feet deep at its deepest point. When the Himalayan snows melt in the spring, the river is at risk of flooding. The river's average discharge is about 19,300 cubic meters per second with floods exceeding 100,000 cubic meters per second and 3,500,000 cubic feet per second (Ratha, 2015). The RangoTsangpo happens to be the major right-bank tributary of the river in Tibet. The major tributaries of the Brahmaputra in India

happen to be from the North bank the Jiadhal, Subansiri, Siang, Kameng, Dhansiri, Champamati, Saralbhanga, Aie, and Sankosh while those from the South bank include the NoaDehing, Buridehing, Debang, Dikhow, Dhansiri (S), Kopili, Digaru, Dudhnai, Krishnai (Anwar, 2018).

The Brahmaputra river basin is rich in biodiversity and offers enormous opportunities for irrigated areas, economic scope, and physical infrastructure services like navigation and inland water transportation. The river has vast hydroelectric capability and water flows promote the economic prosperity of its riparian states, but they also cause conflict and tensions amongst them (Liu, 2015). As China and India's water constraints increase, rivalry for transboundary water, especially the Brahmaputra, is expected to heat up and, in the absence of an appropriate operating mechanism except (MoU), water could pose a severe threat to the relationship between China and India (Zhang, 2016). China is the source of the majority of Asia's transboundary waterways (approximately 40 rivers). Moreover, half of the world's population is fed by these basins. China's minimal vulnerability, combined with its hydro-geographical advantage, gives it tremendous political and economic clout. Apart from it, numerous researchers have underlined the relationship between water and war in recent times. Many researchers have listed a number of reasons that could harm water and cause tension among riparian nations. Some scholars have examined the causal link between water and conflict (Dixon, 1994). For instance, Chellaney in his work recently looked into the building of several dams as well as other infrastructure works, waste damping, overexploitation, and extreme river accretion, all of which are major causes of water conflict among riparian nations (Chellaney, 2013).

Mark Christopher, in his article Water Wars: The Brahmaputra River and Sino-Indian Relations, argued that China's drive to construct ever-larger upriver dams and establish a zero-sum approach to water consumption might put Beijing in close conflict with India. Bangladesh is impacted by both countries' operations further downstream.The river's control is essential since it touches on a lot of significant and difficult subjects, such as territorial sovereignty, food production, international norms, the interconnection of domestic and foreign policy, and the asymmetric power of neighboring states with large populations and high aspirations (Palmo, 2020).

But above all, what makes the water issue between the two Asian giants more complex is the factor of Tibet. China, by virtually controlling the TAR, is strategically also controlling the lifeline of South Asian countries, and since water is linked with the security aspects, it gives a geopolitical angle to the entire water issue. Therefore, one needs to take into consideration the Tibetan factor whenever the discussions on water issues between India and China in the case of the Brahmaputra or any other water issue concerning China crops up.

3.2.2 Factor of Tibet

Tibet is a region in Asia located northwest of the Himalayas on the Tibetan plateau. It runs from the Himalayas to the northern plains of Janthang, covering a total area of 2.5 million square kilometers. It is the world's largest and tallest plateau, with an average altitude of 4,900 meters. At an elevation of 8,848 meters, Mount Everest, which borders Nepal, is the world's highest mountain (Sanchez, 2019).

Due to the large freshwater reserves and glacial expanses, the Tibetan plateau is commonly referred to as the Third Pole. The state of rivers emerging from the

plateau is a major problem for as many as nine countries in the surrounding region (Tembey, 2020). China may utilize Tibet, dubbed the water tower of Asia, to bargain with or threaten numerous Asian countries. The Indus, Sutlej, Brahmaputra, Irrawady, Salween, Yellow, Yangtze, and Mekong are ten major Asian rivers that start in Tibet and run through China, India, and Bangladesh, Nepal, Bhutan, Pakistan, Vietnam, Thailand, Burma, Cambodia, and Laos. Around two billion people in South and Southeast Asia rely on these rivers for survival (Chaubey, 2021).

China's political dominance over Tibet, gives it complete upper riparian authority over all major rivers flowing out of the Tibetan plateau. Tibet is still virgin territory in comparison to China, with less than 0.6 percent of its hydropower resources being used for development. However, China will have to harness much more hydropower in order to achieve its renewable energy ambitions. It is a geologically unstable region (14,800 feet). Despite the critical state of the Tibetan plateau, which is still ecologically sensitive and seismically active, China is pressing ahead with its ambitious plan to expand hydropower generation on the headwaters of Asia's major rivers, including the Yangtze, Yellow, Brahmaputra, Indus, Mekong, and Salween (Palmo, 2020).

Maintaining Tibet's territorial integrity, on the other hand, goes beyond the already vital strategic goal of maintaining the PRC's territorial integrity. Tibet is the region's hydrological lynchpin. Control of the Tibetan Plateau enables China to remain a water-independent country, with all of its major rivers originating within its borders, allowing it to wield hegemonic hydrological leverage over its neighbors, especially India, the region's sole possible rival competitor. And the future

construction of ever-larger dams on those rivers will give China the capacity to cut off or threaten to cut off those neighbors 'freshwater supplies (Rahman, 2021).

Nevertheless, Tibet has significant geopolitical and environmental significance for the continent, which is home to roughly half of the world's population. This acknowledgment is underscored by China's spectacular economic progress over the last three decades. It is no coincidence that China's explosive economic expansion coincided with Beijing's discovery of Tibet as a massive, previously untapped supply of minerals, water, and energy. The newfound prominence of the Tibetan plateau stems from Chinese scientists conclusion that it is the world's third pole and the 'Water Tower of Asia.'Furthermore, Chinese scientists have discovered more than 130 minerals in Tibet, including "important reserves of the world's supplies of uranium, chromite, boron, lithium, borax, and iron" (Samphel, 2012).

Recent discoveries highlight Tibet's environmental significance as the source of the Asian monsoon and the keeper of the highest concentration of glaciers outside of the two poles, which feed the life-giving waters of the ten major river systems that sustain millions downstream. Tibet's geopolitical importance, on the other hand, was emphasized during the British Raj. Its geopolitical significance is predicated on its size and weight, and it is the very reason China is in Tibet in the first place (ibid).

Further, Brahma Chellaney, a famous Indian strategic thinker and analyst, clearly put his arguments that the Tibet issue is considerably wider and more fundamental as it concerns Asia's water and climatic security, as well as its ecological interests. It is also regarded as a key resource. It all boils down to protecting Asia's future (Chellaney, 2011).

China’s dominance of Tibet gives them a commanding position over Asia’s water resources. Rapidly declining sources of water in the Tibetan Plateau’s transboundary rivers undermine water security and raise the risk of geopolitical strife in the region. Dam construction, on the other hand, has had and will continue to have a detrimental impact on downstream countries due to altered water flow and increased sedimentation.

Recently, China and India have emerged as the two biggest geopolitical forces in the region. Both countries are going ahead with their emerging economies with huge populations. Both are constructing hydro-power dams and diversion projects to meet their increasing demand for energy. It looks like China and India have engaged themselves in a hydro-power race which could be disastrous for ecology, fishing, and farming, above all for indigenous people living downstream as they think it will largely affect their lives and livelihoods (Shanta, 2018).

3.2.3 Chinese Projects Upstream of the River

China’s hydrological position due to the control of Tibet gives it an edge over India as an upper riparian state. Being an upper riparian, it can emphasize the Absolute Territorial Sovereignty Principle of International Water Law and hence can utilize the waters for its benefits. The construction of large dams has already sparked controversy and discourse for years due to their unpreventable social and environmental consequences (World Commission on Dams, 2000). China is one of the biggest dam constructors and is at the frontline of the reformation of huge hydropower stations. Nationally and globally, Chinese involvement in the hydropower sector is noted to be mainly through Chinese government companies

like Sino Hydro (also known as Power China or Power China Resources Limited), a company that leads the international hydropower sector in dam size and number, capital amount, and global coverage (Frauke, 2018). In the last several years, Chinese dam construction companies and stockholders have already been active in bordering nations along with transboundary rivers, e.g., the Mekong Region, with enhanced Chinese funds and dam construction, particularly in Cambodia, Myanmar, and Laos (ibid).

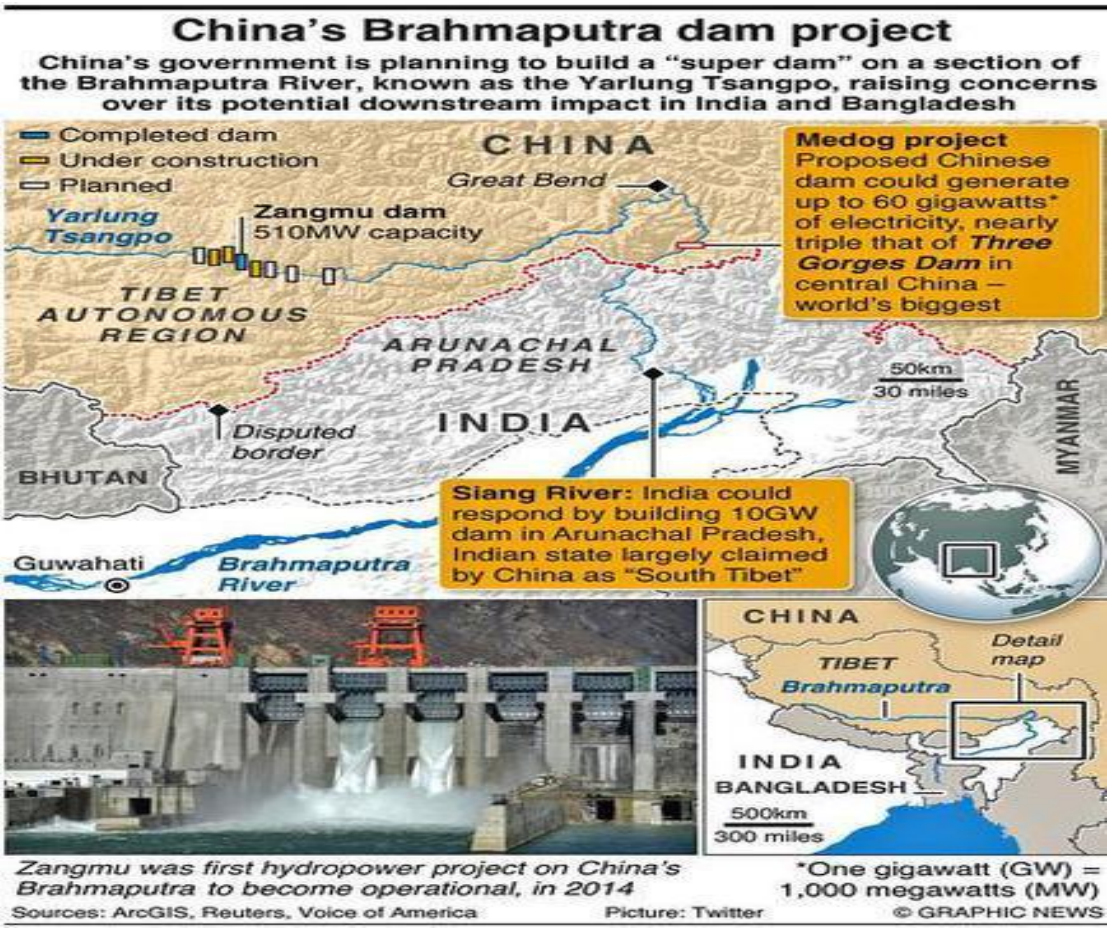
China has already built several mega-dams just on the Mekong River, and without informing the lower riparian countries that the level of water is going to fluctuate widely, not even warning the countries (ANI, 2021).China has followed similar patterns even in the case of Brahmaputra where it has constructed several dams namely Yamdrok Hydropower Station completed in 1998, Pangduo Hydropower Station 2013 is impounded on the river Lhasa which is a tributary of Yarlung-Tsangpo, Zhikong Hydropower Station 2007 is also located on the similar river Lhasa, Zangmu Dam construction started on 2009 and the first commissioned on 2014 and second on 2015, Jiacha Hydropower Station has a capacity to generate electricity annually 1.705 billion kWh[3] and on 2020 its first operation was started, Lalho Hydroelectric Project which is impounded on the river Xiabuqu a tributary of Yarlung-Tsangpo located in the Tibet Autonomous Region (TAR), and the South-North Water Transfer Project (SNWTP), which was started in 2002 and is still under construction. In fact, as early as 2010, it was estimated that China planned on constructing more than 28 dams along the river.

[3]Visit for more information: https://en.wikipedia.org/wiki/Jiacha Hydropower Station.

According to the 12th Five Year Plan (12th FYP), hydropower construction is being promoted as the center of China's strategy to increase green energy by 2020. Hydropower already provides 6% of the country's electricity. China plans to increase its hydropower capacity to 300 gigawatts (GW). China's 12th Five-Year Plan also calls for greater use of hydroelectricity, as just two-thirds of hydropower dams could be built under the previous plan. Therefore, in 2021, the 14th Five-Year Plan was also adopted which amongst other developmental projects emphasized the construction of more dams on the lower reaches of the river Tsangpo (Hangs, 2021). This Plan is estimated for the year (2021-2025) for the economic growth and social development, as well as long-term targets for every sector of the economy by 2035, enacted by China's parliament, the (NPC) National People's Congress (NDTV, 2021). The dam is being constructed on the lower part of the Yarlung-Tsangpo/Brahmaputra river.

As a result, China is increasingly damming Transboundary Rivers in order to meet its hydropower goals. The YarlungTsangpo Dam project is starting to move forward despite China's refusal to discuss and join the water-sharing treaties with the lower riparian states of India or Bangladesh (ANI, 2021).China's hydroelectric power projects and water-division strategies along with the Brahmaputra are a source of contention between the two neighboring countries. India's relations with other Southeast Asian countries are directly affected by China's inadequacy of dialogue with riparian states, which has sparked controversy among them.

Map 3.2: China's Brahmaputra Dam Projects

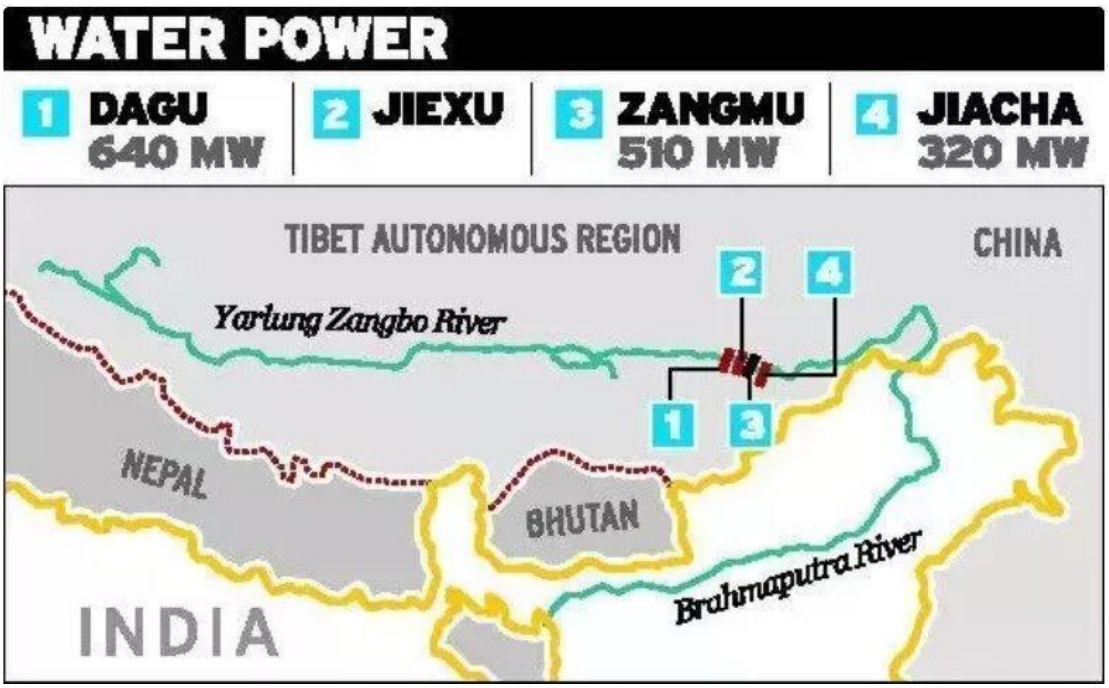


Source: Keerthana, 2021

China constructed a number of dams on the river Brahmaputra in order to capture the power of moving water to generate energy, but the dams are also seen by many as an to control India's water supply which has long been a legitimate concern for India. If a dam controls a river, it may cause flash floods or the water may be purposely diverted, causing rivers to be drawn throughout North-Eastern India. The Zangmu dam, which is located in the Gyaca region of Tibet, is very close to the Bhutan and Indian borders. It is part of the Zangmu Hydropower project and has a 510 MW power station. Construction began in 2009, and the first generator was commissioned in November 2014, with the last generator installed in 2015. The Chinese government

approved the construction of three new dams on the Brahmaputra River in 2016. These dams will be constructed in Dagu, Jiacha, and Jiexu.

Map 3.3: Location of the New Dams



Source: Sentinel, 2021

Among these dams one is larger than the Zangmu project. Dagu is a 640 MW dam that will be built in Dagu, which is 18 kilometers upstream of Zangmu; the second dam Jiexu, which is located between Dagu and Zangmu dam, has a capacity of 560 MW; and the third dam, which will be built in Jiacha, is a 320 MW dam that will be built in the downstream region of the Zangmu dam. The Chinese government claims that these dams are run-of-river projects, which do not require large storage or reservoirs. Although these three dams are only a short distance apart, it is highly suspicious, which is why India is concerned, and it strongly believes that the Chinese are using the water supply as a weapon against India. Three further dams are being built on the river Nyang, which is also a tributary of the Brahmaputra River, in the

vicinity of Nyingchi in Tibet. The dams at Pagsum, Langsai, and Nyang are smaller, but they contain enough water to contribute to the Brahmaputra River's flow.

Apart from the construction of a series of dams, there is also the South-North Water Diversion Project (SNWDP), which is a major issue of concern downstream.

The South-North Water Diversion Project

This project in China has sparked substantial debate and interest in the scientific community. It is a massive 50-year project that attempts to relieve the country's rising drought woes by diverting a portion of the Yangtze River to the Yellow River's thirsty cities and industries surrounding Beijing. The construction will also include the installation of an underground pipeline. The "middle course" aqueduct, which will take six years to build as well, will deliver enough water to irrigate an area the size of South Carolina (Hays, 2014). Engineers from the China Railway Construction Group's 16th Bureau are cutting a 130ft-wide canal through the red earth near Jiaozuo, a 40-minute drive north of Zhengzhou. Once completed, it will convey 9.5 billion cubic meters of water from the Han River, which feeds the Yangtze, to Beijing (Watts, 2009). The diversion project consists of three different routes to divert the water, which are mentioned in the map 3.4 and finally proposed to the reach the Southern region of China which are:

Eastern Route: The eastern route, which was supposed to feed Shandong Province as well as the northern region of Jiangsu, by connecting Shandong to the Yangtze River and sending water north to the Huang-Huai-Hai Plain via the Beijing-Hangzhou Grand Canal. The water will be diverted from a main branch of the Yangtze River

near Yangzhou and will flow through existing river systems to the Weishan Mountains in Shandong before crossing the Yellow River via a tunnel and flowing to Tianjin. The completed diversion will be slightly more than 1,155 kilometers long, with the first stage alone involving the building of 23 pumping stations with a total installed capacity of 453.7 megawatts to supplement the seven existing ones, which will be restored and upgraded (Limited, 2017).

Middle Route: The Grand Aqueduct, also known as the Middle Route, is built on and over the North China Plain. The canal was built with gravity as the driving force, allowing water to flow freely from the Danjiangkou Reservoir to Beijing without the use of pumping stations, which is a 1,267-kilometer diversion track (South-to-North Water Diversion, 2022). The project has a major impact on the livelihood of the native people of the project site. Around 300,000 people have to be displaced from the site and suffer to resettle in another place.

Western Route: Development of the western line, which would take place at approximately 3,000 and 5,000 feet above sea level. The construction, which is expected to be finished in 2050, will transport four billion cubic meters from three Yangtze tributaries approximately 500 kilometers across the Bayankala Mountains and into north-western China. This will be extremely costly in terms of both money and time and the environment. Furthermore, the proposed route is located in an earthquake zone, which adds to the difficulties of the entire process of construction.

The western route is expected to carry 8 billion cubic meters per year across the three Yangtze River tributaries in China. The Tongtian, Yalong, and Dadu rivers flow from Tibet to northwest China. It will be used to restore the Yellow River. This

path, on the other hand, is not recommended as it is regarded as the most divisive and technically challenging of the three routes (Hangzo, 2021).

The project aims to tackle the issue of water problems in the northern part of China. Due to topographical constraints, China has an inadequate distribution of water resources. Hence, the region north of the country has more people but fewer water resources, while the region south has more water resources. Hence, it aims at diverting the waters from the Brahmaputra to provide water to the parched region of the North and is estimated to carry almost ten billion tons of water from the Brahmaputra to solve the problem of desertification in the region (Shanta, 2018).

Map 3.4: The South to North Water Diversion

Source: Shanta, 2018

Despite the worries arising from China regarding the construction of dams and other projects, Nevertheless, India also seems to have tremendous hydroelectric potential and has started to build its developmental projects, particularly in the North Eastern

Region of Arunachal Pradesh, as noted by the Centre for Science and Environment (Shrivastav, 2021). Thus, India also does not hesitate to stop its developmental project and proposed several constructions of dams in the tributaries of the Brahmaputra in the state of Arunachal Pradesh and also in the state of Assam.

3.2.4 India's Projects Downstream of the River

The Indian government's Ministry of Power had recognized possible locations for huge multi-purpose projects and dams on northeastern India's rivers, the majority of which are in the Brahmaputra basin. The northeastern rivers of India are predicted to create roughly 99,256 MW of electricity over the next 50 years (Board, 2016).

As we know, the Brahmaputra river enters India through Arunachal Pradesh, which is a Himalayan state of India, in the north eastern part of the country, was about to carry on its hydropower project building which was halted due to a recent pandemic where the whole country was under full lockdown. Therefore, now after a long period of time when the country is opening into various phases PemaKhandu the Chief Minister of Arunachal Pradesh is issuing to start the undergoing construction of a dam in the state (Pardikar, 2020).

The nation's northeastern area is among the nation's significant parts for constructing large hydropower stations, and the region consists of eight states, namely, Assam, Arunachal Pradesh, Tripura, Meghalaya, Nagaland, Mizoram, Manipur, and Sikkim. This state has a high capacity to generate power energy through dams and consequently the country can fulfill its ambition of becoming self-reliant in the energy sector here the north eastern state will perform its best and thus the region is considered as the '*Power House of India'* (Das, 2013).

The Brahmaputra River accounts for nearly 30 percent of the total water resource and 40 percent of the total hydropower potential of the country. Since water is viewed as essential for economic development and the generation of energy via the construction of hydropower stations, therefore India too like China is emphasizing the construction of dams along the river. It is also stated that one of the reasons for doing so is also to counter the policies and actions of China along the upper reaches of the river Brahmaputra known as Tsangpo and to assert its 'first user right'principle of International Water Law which gives the riparian state the legal right to continue to receive that quality and quantity of water in future and cannot be deprived of it without its consent.

Table. 3.2: Construction of Dams on the river Brahmaputra and its tributaries by India

Project Name	**Location**	**Capacity**	**Status**
Ranganadi Hydropower Station	Yazali, Arunachal Pradesh	405 MW	Completed
Pare Hydro Power Station	Papum Pare, Arunachal Pradesh	110 MW	Completed
Kameng Hydro Power Station	West Kameng, Arunachal Pradesh	600 MW	Completed
Subansiri Dam	Arunachal Pradesh	2000 MW (expected)	Under Construction
Upper Siang Hydroelectric	Arunachal Pradesh	9750MW (expected)	Under Construction
Dibang Dam	Arunachal Pradesh	3000 MW (expected)	Under Construction

Source: Based on the study

It is reported by an Indian government official that the country intends to construct more than fifteen dams on the river Brahmaputra in Arunachal Pradesh and the Upper

Assam region, which have already started the construction process (Limaye, 2016). As a part of the country's largest-ever hydropower adventure, 169 projects are being proposed as a part of Arunachal Pradesh alone.

Some of the important hydropower projects are proposed and some are under construction, which is demonstrated in table 3.2, like Subansiri Lower Dam, which is located on the river Subansiri, a tributary of Brahmaputra, and is expected to produce 2000 MW of power after the completion of the project and which is developed by the (NHPC) National Hydro Power Corporation. Another important project is the Ranganadi Hydro Power Station, which is present in the district of Lower Subansiri in the state of Arunachal Pradesh. It is a run-of-river project and the work is being done by the (NEEPCO) North Eastern Electric Power Corporation Limited. Another dam is located in the state of Arunachal Pradesh, called the Dibang dam. It has a capacity of 2280 MW to generate electricity and is owned by NHPC. Apart from these, there is also the Kameng Project, 600 MW, which is also a major project which has been completed. Therefore, if China is successful in completing the water diversion project, then it will be a great burden for India and those mentioned hydro projects will have trouble generating electricity. India has expressed grave concerns, assuming that its northeastern states may be vulnerable as a result of the development, which may result in both untimely flooding and a lack of water. In India, economic expansion and population growth are driving up the demand for power generation. To meet rising energy demand, India has constructed eight hydropower stations on the Brahmaputra River, two of which are in Arunachal Pradesh, which China refers to as Southern Tibet and claims as its own. India intends to construct a further 19 hydroelectric units,

14 of which will be located in Arunachal Pradesh. All of them are expected to play a critical role in resolving India's energy crisis (Luthra, 2022).

To oppose China's planned water diversion strategy of the river that flows downstream into the Brahmaputra, India wants to build the country's second-largest dam at Yingkiong in Arunachal Pradesh. The upcoming dam, which will be a part of the projected Upper Siang project that will also generate hydropower, is expected to cost approximately 50,000 crores (Luthra, 2022) and is expected to store around 10 billion cubic meters of water.

Apart from that, the government of India is also spearheading the interlinking of the river project, because during the floods a huge number of people suffer and lose their properties. A special committee has encouraged the government to reach out to the states to approve an agreement on the execution of a large-scale river-linking plan. The Standing Committee on Water Resources is urging the government to make serious efforts to complete the Inter-Linking of Rivers (ILR) program, which it believes will benefit the country in numerous ways (Bhattacharayya, 2021).

The Inter-link project is divided into three sections: a northern Himalayan rivers inter-link component, a southern peninsular component, and an intrastate rivers linking component, which began in 2005 by India's National Water Development Agency, under the Ministry of Jal Shakti.

3.5 Implications for downstream India

As seen above there are projects undertaken by China upstream of the river Brahmaputra. These projects are said to have implications for downstream countries

like India as well as Bangladesh. The implications of these projects on India are discussed below:

- First and foremost, the implications are related to water security. India is facing drastic water security issues and that has propelled the nation to also undertake measures related to the storage of water resources to meet the various demands. China's project upstream is viewed as a matter of great concern for India's water security as there are fears of China using water as a political tool by controlling the country's water supply. China has an advantage due to its geographical position, being an upper riparian state, and its control of TAR. Therefore, it controls the flows of the various rivers originating there, including the Brahmaputra. This will have serious implications downstream for India as well as Bangladesh. For India's agriculture sector, freshwater is a crucial component in addressing the concerns of food security, health security, and economic stability. The construction of a series of dams upstream of the river will lead to a decrease in the flow of the waters downstream, which in turn would hamper India's various sectors of the economy, like fishing and the boating community, as well as livelihood.

In the given table below, the availability of renewable water is presented for India, China, and Bangladesh. Here we can see that China, in the case of external water, is less dependent than India and Bangladesh, with a total availability of water resources of 2,840,000 million m^3.

Table 3.3: Available Renewable Water in India, China, and Bangladesh

Water Resources in Million m^3	**CHINA**	**INDIA**	**BANGLADESH**
External Water Resources (Million m^3)	17,169	647,220	1,105,644
Total Water Resources (Million m^3)	2,840,000	1,907,760	1,210,644
External Water Dependency	9%	33%	91%

Source: AQUASTAT database, 2011

- The Brahmaputra Basin has the potential to generate hydropower of around 40,550 MW (Megawatts), which is still underdeveloped as compared to other river basins in the world (Mahanta, 2014). China has 23,841 major dams by 2020, making it the world's largest dam-building country (CIGB, 2016). The main reasons for building such a large number of dams are that Beijing, the capital city of China, is establishing aggressive carbon reduction objectives and aims to become carbon neutral within 2060 (McGrath, 2020). Furthermore, it also has come up with the 14th Five-Year Plan which also emphasized on the construction of more dams in the lower reaches of the YarlungTsangpo, including the one planned by Mr. Yan (Hangzo, 2021). According to claims in the media, it has the potential to deliver 300 billion kWh of clean, renewable, and carbon-free electricity per year (Deka, 2020).

Due to the large dams being constructed there may be a shortage of water flow in the downstream countries. Similarly, if China releases the water suddenly, then the entire

downstream countries will be submerged especially the plains of Arunachal Pradesh and Assam. But China claims to be constructing a run-of-the-river hydroelectric plant that does not include the storage or diversion of Brahmaputra water. However, various analysts believe it could still restrict downstream water flow, particularly during the dry season. India is especially concerned about the discharge of water during the monsoon season when floods occur in north-eastern areas such as Assam. Local residents of Dibrugarh, Assam, where the river is broadest in size, have stated that they have seen the Brahmaputra's water level rise and fall substantially in a short period of time (Khadka, 2017). For example, in the year 2000, a major flood occurred due to the broken of a dam which was located on the tributaries of the Brahmaputra in Tibet and killing more than 30 people and making homeless and displacing around 50000 people in Arunachal Pradesh. In the year 2017 also, more than three million people have been affected across twenty-four districts of Assam due to floods that have killed over 130 people in the state due to water that has been released from the upstream country. This demonstrates that China utilizes its water as a weapon against India, and it may have had a significant impact on Assam's low-lying districts. To counter China, India is also proposing a 10 billion cubic meters (BCM) water and hydropower project in the northeastern state of Arunachal Pradesh to combat Chinese conduct. T.S. Mehra, a top official in India's federal water the ministry said the necessity of the hour is to build a huge dam in Arunachal Pradesh to offset the negative impact of the Chinese dam developments.

- Another concern is related to the location of dams near the border. Some dams are planned close to the Indian border in the northeastern state of Arunachal Pradesh as seen in map 3.2 and 3.3. It has brought in the national security

> aspect and has been a matter of concern for India. Here, the construction of these dams near Arunachal Pradesh is linked with the geopolitical interest of China in the region, as the latter claims Arunachal Pradesh as a part of South Tibet, and thus a territorial conflict arises between India and China. This geographical conflict is arguably the most delicate since it involves both countries' territorial sovereignty (Pak, 2016).

It is a matter of great concern for India as it involves the state of Arunachal Pradesh. The claim on the territory of Arunachal Pradesh by China was a matter of concern for India and its foreign policy making. The basis of the claim was that the monastery, which is located at Tawang, and the monastery of Lhasa, existed on similar historical bonds, and therefore, Arunachal Pradesh should be a part of Tibet. Furthermore, they also indicate the existence of a clandestine Pan-Tibetan Movement near the Indo-China border, which has a clear and significant Tibetan influence in Tawang, which is located in the Upper Siang district of Arunachal Pradesh. Furthermore, from the Chinese perspective, Arunachal Pradesh, especially the Tawang region, occupies a key strategic position. Local residents from Arunachal Pradesh see China's claims to Arunachal Pradesh as a historical clash between two Asian emerging nations. They are also concerned about China's fast military modernization across the border in Tibet (Goswami, 2012).

The region also holds grave geopolitical and strategic significance for India. The state has the potential, in terms of geo-economic perspectives and forming an economic corridor, to extend its trade with the neighboring countries and promote its national interests with Myanmar, Bhutan, and China (Pattnaik, 2021). A strategic location in Arunachal Pradesh called Nampong, which is located in the district of

Changlang, plays a major role in connecting with the Association of Southeast Asian Nations (ASEAN) and falls under the geo-economic importance and stands to have a trade relationship with those ASEAN countries. The map below shows that India has started to construct a two-lane highway to enter Myanmar, Thailand, Malaysia, and Singapore (ibid).

Map 3.5 Strategic Route to enter ASEAN nations

Sources: Pattnaik, 2021

Since the 1950s, China has been making claims and counterclaims in the region. The Mac Mohan line, which serves as a border between Tibet and India in the Eastern Sector, which was established in 1914 through an agreement, is not accepted by China but rather views it as a British imposition and thereby claims that Arunachal Pradesh was granted to India incorrectly as a result of that demarcation. On December 29, 2021, China declared its intention to "standardize" the names of 15 locations in Arunachal Pradesh, which are depicted on a Chinese map as "Zangnan," or South Tibet (Panda, 2022). Arunachal Pradesh has significant geographical and strategic

benefits for China. It has the possibility to fulfill its entry into the South Eastern countries as the northeastern state of India acts as an “eastern gateway” for China.

- To add to these above concerns, China has also developed its infrastructure, including roads, railways, and airways along with the border areas where the dams are built, including stockpiling of arms and ammunition along the border. The Chinese also have constructed border villages near the LAC which can be utilized for both military and civilian reasons.

China has strengthened its military posture in Tibet, which is located extremely near the border of Arunachal Pradesh, which is considered the Line of Actual Control (LAC), by upgrading its aging liquid-fueled, nuclear-capable CSS-3 intermediate-range ballistic missiles with more modern CSS-5 MRBMs. China recently deployed thirteen border defense regiments on the Indian border near Arunachal Pradesh, totaling roughly 300,000 People's Liberation Army (PLA) soldiers. Not just that, but by expanding to the TAR region and present six airfields, which have been built at Hoping, Pangta, and Kong Ka to enable fighter aircraft missions and strengthen the PLA’s airlift strength (Goswami, 2012).

On the other hand, India has also massively increased its surveillance along the Line of Actual Control (LAC) in the Arunachal Pradesh region, using a broader strategy to ultimately improve the armed services and also deploy a large number of Indian Army personnel to Arunachal Pradesh. There are a large number of army camps located in Assam, near the Assam-Arunachal Pradesh border, along with air force stations. One of the biggest air force stations is situated at Salonibari near

Tezpur town, Assam. From that station, there are day and night air fighters flying around on patrol and monitoring the region.

The modernized L70 cannons were installed in numerous key places in Arunachal Pradesh, as well as other critical sites along the whole LAC (Bhuyan, 2021). Nevertheless, on the various sides of Arunachal Pradesh, the Border Roads Organization (BRO) is building six-foot roadways to increase access to the state's remote areas and has also built highways to move military vehicles to the strategic location. To oppose China's aggressive infrastructure, India is beefing up its transportation system in Arunachal Pradesh by constructing new road access, bridges, helipads, and tunnels that provide all-weather communication links to important border areas (Philip, 2021). Thus, it is not only that China is trying to build infrastructure near the border, but India is also ready to counter the Chinese activities through India's military personnel.

The Arunachal factor, therefore, is emerging here as an important determinant in India-China water issues, first due to the claims and counter claims by the latter on the region; and secondly, due to the fact that the region acts as a shield for India as well as Bhutan. Arunachal Pradesh also indirectly provides protection to Bhutan's entire eastern flank due to its geographical proximity. If China absorbs Tawang, Bhutan will be bordered on all sides by China, which will be dangerous for India's security. Another critical issue is that if China succeeds in expanding its claim and encroaching on Tawang, it will gain better access to the Siliguri Corridor, often known as the Chicken's Neck of India, which is a key site to entering the northeastern state of India (Stratcore, 2022). Therefore, the construction of dams along the border

of Arunachal Pradesh is seen as China's strategy to encroach upon Indian territory and thereby gets linked with the security aspects.

- Further, like the other South Asian countries water politics, the water issues between India and China are also interlinked with the political issues. History shows that whenever there is a border conflict between the two, its implications are seen in the water sharing and thereby in the water relations. After the troops of the two nations went eye to eye over a boundary dispute in Doklam, near the frontiers of Bhutan, China, and India, China stopped providing Brahmaputra water flow statistics in 2017. This caused substantial concern in India. The hydrological data block was widely interpreted in India as a result of the 73-day Doklam impasse, but China has stated that it was caused by the upgrade of the flow of water measurement stations in Tibet (Gupta, 2018). According to bilateral MoUs signed between the two countries, China is expected to share data with India in order for the latter to keep a watch on water levels and prepare themselves to combat floods. It has come to light that China has also not exchanged hydrological data with India throughout the monsoon season, though China agreed to share hydrological data for the Brahmaputra Rivers under 2006 MoU.

But on the other hand, Bangladesh's water resources minister, Anisul Islam Mohammad, confirmed to the BBC (Broadcasting Company) that his country was receiving hydrological data from China. However, China has expressed doubts over the restart of hydrological data sharing with India.

Bangladesh

When we are dealing with Brahmaputra River water sharing, it also becomes important to discuss Bangladesh's downstream as it is also one of the major stakeholders in transboundary water sharing. Besides the fact that it is vulnerable like India when it comes to China's being an upper riparian and being confronted with extreme water scarcity issues, it unlike India is dependent upon not one but two riparian states for the flow of water downstream, i.e., both China and India. So, the vulnerability level of Bangladesh is extreme as compared to India. Not only that if we look at the FAO, but Aquastat data Bangladesh is also 90 percent dependent upon the flow of the waters from outside bringing in more complexities. Therefore, the decisions and strategies of India and China affect the countries' policies to a large extent. Furthermore, the country holds significance for both India and China strategically and regionally as it is emerging as a regional player.

Already India has suffered a setback due to the inability to conclude the Teesta water-sharing agreement and the mismanagement and India's hesitation to establish a multilateral agreement on water sharing involving Nepal can cause great loss for India as China is fast-tracking on luring Bangladesh on its side.

The geography of Bangladesh plays a vital role, and the geopolitical aspects are very crucial for India as Bangladesh is a lower riparian country. Due to its geopolitical features, China gives more importance to Bangladesh. It provides various aid and financial support to fulfill China's diplomatic interest against India. Besides the hydrological data shared with Bangladesh, China had informed the representatives of the state that it will assist Bangladesh in improving its technical capability to deliver early severe flooding warnings (Pole, 2015). Not only that China has a strategic interest with Bangladesh where China spends a huge amount on

infrastructure development and is also becoming its larger import partner of textiles. The partnerships between Bangladesh and China develop a collaboration that turns into a crucial component. Just in the last several years, Chinese investments in Bangladesh increased dramatically. In recent decades, the power industry has attracted the most Chinese funding in Bangladesh China has recently implemented a series of power-related developments, the majority of which are coal-fired power plants. China is investing in green energy, with numerous developments that are already in the process, including one with a 310-megawatt solar power plant project in Bangladesh (Sansani, 2021). The combined transmission and distribution network, which is known as the power grid, is yet another significant strategic area in which China is engaged with Bangladesh. China is investing US $1.32 billion in the power sector as well as the US $2.044 billion in an extension and improvement of the power grid, which is expected to aid in the smart functioning of the electricity system in Bangladesh. Considering this, China maintains a substantial strategic involvement in Bangladesh. In 2017, Chinese businesses purchased three natural gas fields in Bangladesh (ibid). In turn, China is also attracting huge benefits from the country in getting access to its ports.

3.5 Conclusion

While the entire world is concerned about global water scarcity and considering specific measures to address it, China and India garner international attention due to their huge dam and diversion projects on the Brahmaputra without regard for the lower riparian countries. This might also become a huge problem and a source of regional strife. According to UN predictions, more than half of the world's population will live in cities by 2050.

The interests of the lower riparian states should not be underestimated by the upper riparian states. India and China are in desperate need of water as the two Asian giants accelerate their development. The demand for the freshwater has risen dramatically in recent years. Both rely on the Brahmaputra River to supply their fresh water needs.

While China's reliance on the Brahmaputra River is limited because China hosts numerous other transboundary rivers that meander through its territory, the Brahmaputra River meets 30% of India's freshwater demand. Furthermore, Bangladesh's reliance on the river is in disarray. As a result, any mismanagement of water in the upper parts of the river is extremely harmful to the lower riparian states.

The river also consider as the lifeline for the people of downstream countries. As China construct large dams which can affect the flow of the water level and does concern arise from the Indian side. To counter the incident India also constructing large dams in its territory and preserve water for future use. China not only trying to affect the flow of water but also tried to enter in the Indian territory through large militarization near the border area and constructing various developmental projects which creates a serious threat to the Indian sovereignty.

There are various implications relating to the construction of the projects upstream for India as seen above like Water scarcity, dependency, livelihood, economy, and even national security. However, one can draw conclusion that based on the arguments stated above there are implications but we cannot link a direct implications on bilateral relations. Water issues can lead to conflicts and even force nations to wage war against one another but similar possibilities does not exist as of now between the two. Indirect implications are visible but extreme direct impact on

the bilateral relations is negative. Water is related with security, stability and development of a nation therefore the scarcity of it due to various reasons including the developmental projects by China upstream can impact the flow and thereby the water level. In such a scenario, lack of water availability can impact the livelihood and economy of a country and that can have a bearing also on the bilateral relations. So, in case of India and China we also cannot rule out the possibilities in the near future.

Chapter 4: Prospects of Potential Cooperation Between India and China on Brahmaputra

4.1 Introduction

Water sharing in terms of transboundary waters is affected due to the very question of how much water is to be shared? And who gets what? It becomes complicated due to the growing significance of water, which in turn is linked with the very development of a nation. Since each and every nation aspires to get more and fulfill their national interest hence they compete with one another for the natural resources. This can lead to conflicts as well as cooperation between the states. Water has the potential of either triggering a war or being used as a weapon of conflict or as a casualty of the conflict. Conflicts over water have taken place in the Nile basin, theTigris-Euphratesbasin, and even the Indus Basin. Water is essential and therefore is equally critical for a country's population and economic growth. Whenever there is a shortage or the demand for water rises, conflicts between countries or groups competing for water almost always grow.

Water can also lead to cooperation. In fact, cooperation and conflict coexist in transboundary water issues. Nevertheless, minimization of conflicts can lead to the components of cooperation through various modes such as agreements, river basin organization, or regimes that can strengthen riparian relations. We have seen in the cases of India and China, India and Bangladesh, and India and Pakistan, that there is a level of cooperation that takes place among the countries through water treaties. Cooperation and management of water resources, in essence, play a form of dispute resolution in transboundary water disputes. Unlike some other limited resources, water is being utilized as a means of power in all aspects of life, from daily use to

economics, aesthetics, and cultural activity. Furthermore, it varies greatly in place and time, and sometimes due to inconsequential in its management process, and is frequently governed by unclear, archaic, and non-binding principles there is a chance of water conflict arising in any region of the world (Wolf, 2006). Not only that, but there are some other factors that are also equally considered for any transboundary water issues, like the regional power of a riparian state, which basically reflects power asymmetry, political sovereignty, political division, or mismatch of political ideology between the riparian states that can also sometimes lead to water conflict, geopolitical framework, institutional control of water resources.

Strong institutions and proper management are required to balance competing interests in water allocation and manage water cooperation in any transboundary river basin. Therefore, on any water-sharing issue, there is a possibility of cooperation as well. In fact, nations sharing water resources aim at greater cooperation rather than conflict.

The course of past records may appear to show that disputes over the river Brahmaputra are a minor component of the India-China political relationship. However, negligence and mishandling of water governance would have more serious geopolitical consequences for both countries in the future (ibid). But both countries'water issues are a critical test of whether Asia's two juggernauts can manage competing interests and avoid a downward spiral of rivalry that may destabilize the entire region (Holslag, 2011).

Several analysts and intellectuals have theorized over the last decade about the possibility of India and China going to war over water. Some believe a future "water war" will occur, while others believe such fears are exaggerated. These arguments

center on how water is unfairly distributed and how China's upstream actions, such as damming, may cause conflict with its downstream neighbor (Pak, 2016).

Using water as a strategic framework begins with a grasp of the laws and international rules on how to use transboundary rivers water and administer it among the shared countries. The authority to utilize a transboundary river's water requires both enforcement and legal recognition. As a result, while transboundary river law has space to expand in range and relevance, the challenge confronting the Brahmaputra River does not lack precedence for reaching equitable water-sharing agreements.

The case of Brahmaputra holds significance here due to the absence of a water sharing agreement. Secondly, because it involves China which has a record of not entering into any water sharing agreement with any of its neighbours. Third, both India and China is not a signatory of the 1997 UN Watercourses Convention. In such a situation navigating possibilities of cooperation between the two becomes essential for transboundary water management. Therefore, the section below deals with the cooperative mechanisms on Brahmaputra water sharing.

4.2 Co-operative Mechanisms

Historically, if we look at the process of bilateral development in the Brahmaputra river basin, it has been undertaken piecemeal. Insufficient water management in the river basin among the riparian countries and the role of the power dynamic and power asymmetry around the riparian countries make it less possible to have proper collaboration on transboundary water sharing. As a result, there is a low chance of economic growth, particularly in agriculture and hydropower, as well as via disaster prevention (Henshaw, 2018). Therefore, we can say that in the case of India and

China, the challenges to water cooperation are seen as a new obstacle for other bilateral development.

But though there is a lack of mutual understanding between India and China, both countries still try to have formal and informal cooperation through various modes. Yasuda (2017) in "Transboundary Water Cooperation over the Brahmaputra River" states that any form of cooperation in the transboundary river may take place in different forms. It could be conducted between localities and civil society groups, to national level cooperative mechanisms, and finally national to national mechanisms which are the important tools to have an effective bilateral relation on water issues.

There are presently two Memorandums of Understanding signed between the Chinese and Indian governments on the Brahmaputra River. One of them is the Memorandum of Understanding Regarding the Provision of Hydrological Information on the Brahmaputra Riverduring the flood season. This MoU was signed between China's Ministry of Water Resources and India's Ministry of Water Resources, and it concerned China's provision to share hydrological data on the Brahmaputra River during the flood season with India. The MoU also allows China to send hydrological data during the annual flood season, which runs from May 15 to October 15.

Another Memorandum of Understanding was signed in 2013 with the goal of boosting bilateral collaboration on transboundary rivers through an Expert Level Mechanism (MoU) on Strengthening Cooperation on Transboundary Rivers (2013). The main themes of discussion included the challenges among specialists, including technical challenges such as how to monitor and share data as well as how to construct hydrological models (Amano, 2015).

If we go back to the early period, the cooperation on transboundary water sharing, especially on the Brahmaputra, between India and China, also existed in 1950. The event on diplomatic relations was held in 1950, but the discharge of hydrological data was provided in 1955, and the discharge, rainfall, and water level were provided in 1957. The hydrological data for India was halted from 1963 to 2001 as a result of border conflicts between India and China in 1962. A similar incident took place after the standoff of the 73 days on Doklam between China and India, China's transfer of hydrological data to India, as well as the annual conference of the Expert Level Mechanism, were all discontinued in 2017. Since the Doklam crisis, India and China have conducted expert-level talks. Top leaders from each country engaged in discussion on transboundary rivers on the Brahmaputra River (Lei Xie, 2017).

Therefore, various perspectives came on India-China water issues that have been articulated by government agencies in the mass media via other channels. China expressed the concern that came from India as a serious matter and decided to take a special look at the scientific planning and proper research on the upstream river for large development projects (Yan Feng, 2019).

In the below table 4.1, some of the important Memorandums of Understanding are mentioned to indicate the information sharing on the transboundary river between India and China. The hydrological stations, which are located in various places in Assam and Arunachal Pradesh, and the Chinese government must verify with the station personnel only for the aim of assessing hydrological data and transmission to India or not.

Table 4.1: MoU's between India and China on Transdboundary Rivers

Year	Sharing of Information
2002	MoU between India's Ministry of Water and China's Ministry of Water Resources on the distribution of Brahmaputra River hydrological information to India during the monsoon period.
2005	The MoU between India's and China's Ministries of Water Resources on China's Sharing of Sutlej River Hydrological Data During the Monsoon Period
2006	Development of a specialist framework to explore collaboration and engagement on exchanging flood season hydrological data, disaster response, as well as other trans-border river problems. (2007, 2008, and 2009 meetings).
2008	A Memorandum of Understanding between India and China for the provision of hydrologic information on the Yaluzangbu/Brahmaputra River during the flood season from 2008 to 2012.

Source: Jonathan, 2011

Apart from MoUs an Expert-Level Mechanism took place to discuss, interact, and cooperate on flood season to provide hydrological data, emergency management, and other transborder river issues as agreed between both countries. In November 2006, it was agreed to establish an Expert-Level Mechanism. As a result, the two countries have established the Joint Expert Level Mechanism through a Joint Declaration. Every year, the ELM meetings alternate between India and China at the ministerial level.

The Brahmaputra River Symposium, which is one of the important conferences, that took place in New Delhi in 2017, attempted to make a little effort to alleviate the transboundary water management. Its goal is to deconstruct the developmental difficulties and opportunities in the Brahmaputra basin. Stakeholders across the countries are working to discover transboundary river common issues among the riparian countries.

The government of India builds additional measures to watch Chinese activities on the Brahmaputra River. A bilateral meeting between India and China held at the BRICS summit in 2013, where India's Prime Minister Indian Prime Minister suggested to the Chinese Prime Minister the creation of a combined framework to evaluate the type of development activity occurring in the Tibet which would be a security threat to India.

Apart from all the bilateral talks and agreements signed, in the case of India-China transboundary water issues, a large number of important institutions and government agencies have been established which works for the policy formation, recommendation including the role of the think tanks. In India, a renowned institution known as the Observer Research Foundation (ORF)works as an international and domestic think tank located in Delhi. The foundation has worked with regard to transboundary water issues, especially in the case of the river Brahmaputra.The Transnational Policy Dialogue for Improvement of Water Governance of Brahmaputra River is a dialogue that is driven by the South Asian Consortium for

Interdisciplinary Water Resources Studies (Saci Waters) [4] and also works in association with IIT (Indian Institution of Technology) Guwahati. These organizations mainly focus on the dialogue between the riparian countries of the river Brahmaputra, i.e. India, China, and Bangladesh.The Asia Foundationis a non-global development organization devoted to making people's lives better in a rapidly changing Asia. This foundation has worked on various transboundary water issues in South Asia and also extends its knowledge to make policy for both the national and sub-national regions. The Third Poleis a global forum committed to distributing information and stimulating discussion about the Himalayan water basin and the rivers that flow from it. It is a non-profit with offices in New Delhi and London. This is primarily a web-based network that connects with a global network of specialists, scientists, journalists, and politicians to disseminate knowledge and perspectives around the region. Their role is important here as they can facilitate dialogue on Brahmaputra water management and cooperation.

In fact in recent times their significance have increased and now they are seen as a medium, a platform bringing the experts on the field along with the government officials concerned, the stakeholders, to engage them within a framework of negotiation and dialogue so as to find a possible solution to proper water management. And the same applies in the case of Brahmaputra water sharing.

The Brahmaputra Board,works for the selection, compendium, and evaluation of basin-level information to prepare a Master Plan for flood control, bank erosion,

[4] The South Asia Consortium for Interdisciplinary Water Resources Studies (SaciWATERs), situated in Hyderabad, India, is a policy research institute. It has focused on crucial challenges relating to water resource management in South Asia since its foundation in 2001. For more details visit the link http://www.saciwaters.org/

and drain development in the Brahmaputra Valley, as well as the development and utilization of the Brahmaputra Valley's water management for agriculture, hydro energy, connectivity, and other useful applications, Development and performance of Detailed Project Reports (DPR) for Multi-Purpose Projects defined in the Master Plan Development and execution of DPRs for drainage development schemes indicated in the Master Plan Support governments in the Brahmaputra and Barak Basins with the production of estimates/DPRs for flood control and to control erosion, as well as other water management projects, covering their implementation and monitoring.

Apart from the ones mentioned above People to People contact is also another avenue that can facilitate cooperation on the Brahmaputra Water. It is a measure to understand the issues at hand at the ground level and to incorporate the local people within the framework of transboundary water management, to incorporate them within the decision making process. Here the academics, research institutes, non-governmental organizations, and other organizations work to collect a sample of the public's view regarding any issues, may it be transboundary or other water-related issues helps on formulation policy.

Therefore, the above important institutes and dialogue are crucial for any bilateral relations because dialogues on water issues are regarded as effective methods for enabling the proper management of water, disaster mitigation, and growth and development on the livelihood of the basin people. An inclusive discussion strategy can aid in the capacity building of diverse stakeholders by exchanging facts and knowledge about different elements of transboundary water management. Dialogues must be diverse stakeholder, multidisciplinary, and gender inclusive in order to convey the opinions of all keyplayers (Brouwer, 2016).

Integrated Water Management on River Brahmaputra is another avenue of Cooperation between India and China as that would further help both the countries to collaborate on managing the quality, quantity and various ecological concerns of the river.

The increasing relevance of transboundary water cooperation is playing a crucial role throughout the world which is supported by International communities and organisation to reflects two important facts: first, to extent the countries needs on transboundary waters to satisfy their national water requirements, and second, the various number of rivers, lakes, are needed to governance and proper management among the shared countries which is still lacking among the countries (Houngbo, 2018).

For both India and Bangladesh, cooperation over transboundary river water sharing with China on the Brahmaputra River is very important. The Brahmaputra river basin countries like China, India, and Bangladesh can cooperate only on the grounds of equality of water sharing, territorial integrity, mutual interest benefit, and trustworthiness in order to achieve optimal utilization of water and protection of the Brahmaputra River Basin, as well as to encourage joint initiatives to accomplish social and economic development among the riparian countries (Hussain, 2014). Therefore, not just India and China but also Bangladesh can go for a multilateral collaboration focusing on hydrology, hydrological data sharing, flood management, ecology of the river, benefit sharing etc. Bangladesh-China-India-Myanmar (BCIM) which is existent can be used as a potential ground for furthering multilateral collaboration.

It should also be remembered that for proper management of the water resources especially transboundary in nature is depended on effective water diplomacy. How good a nation can formulate its policies, negotiations is determined by it Water Diplomacy. So, both the nations need to focus of developing its water diplomacy according to the various aspects mentioned above.

4.4 Conclusion

The problem of riparian countries sharing transboundary waters has indeed been debated for decades, and coordination with other institutions has considerably assisted it. International collaboration on shared water resources is vital, particularly in water-scarce areas where overconsumption and polluting water are wreaking disasters. Since river basins are transboundary, the states must consult, coordinate, and cooperate on a frequent and systematic basis.

The international rules and legislation in resolving a disagreement over an international river as a roadmap for future work are very important. In this regard, the applicability of the Convention on the Law of Non-Navigational Uses of International Watercourses, which entered into force in August 2014, was crucial, but unfortunately, none of the South Asian countries signed, including India and China. It is fractured because there is no organization with the unquestionable capacity to enforce its regulations (Katta, 2021). The United Nations General Assembly (UNGA) passed the Convention on the Law of the Non-Navigational Uses of International Watercourses in May, an agreement that formalizes the fundamental rules of

international water law. It aims to serve as a solid foundation for effectively managing transboundary watercourses. But for a variety of reasons, China voted against the Convention. One is that it fails to take into account the interests of upstream states. The list of considerations to evaluate for evaluating fair usage is insufficient, and the duty not to cause considerable harm implies that upstream states carry a heavier burden. As a result, the majorities of ratifying nations is downstream or have no international waterways. Second, the Convention compels countries to consult and negotiate with other countries on "planned measures" that may jeopardize national sovereignty. Third, the tools for dispute resolution include granting fact-finding commission access to the relevant territory. This, too, may jeopardize national sovereignty and violates China's long-held ideal of not allowing outside parties to intervene in conflicts (ibid). Due to such an obligation, China did not sign the convention, which may affect its desire to build huge dams on the river Brahmaputra.

Other riparian countries apart from China, India, and Bangladesh have inked an agreement on water issues. But on the other hand, India and China are attempting to create a cooperative partnership, as evident above. In recent years, the dispute between China and India over water resources in the Brahmaputra River has intensified. Diplomatic talks have also taken place between the two countries to resolve the water issues.

Therefore, the water issue is considered very complicated and needs a proper diplomatic understanding. There should be high-level talks to unravel the conflict and disputes between the countries and have cooperative tactics to achieve a better relationship between the countries especially in the case of India and China.

Further, because there is possibilities of conflicts between the two riparian states India and China on sharing of the Brahmaputra River in the absence of mutually agreed agreement on water sharing, it makes cooperation all the more inevitable. It is the potential of conflict that makes nations to opt even more for Cooperative mechanism.

Chapter 5: Conclusion

5.1 Introduction

Human survival depends on the availability of water. This is a crucial component of a nation's economic growth and strategy. Environmental and economic security is linked with the aspects of water security objectives within a geographical region of nations. The important factors of food security, health security, and economic security are all dependent on water security. As a result, freshwater resources such as river courses have become a key component of any country's multipurpose development. strategy. However, a large demand for irrigation and agricultural production, as well as urbanization and industrialization, population growth, and climate change, have all become significant challenges due to the shortage of water. As a result, transboundary rivers have become a source of political debate and a source of conflict (Basumatary, 2021).

The Realist theory stresses power politics and national interests in international relations, and the same notion of theoretical knowledge came to be

associated with geopolitics. It is an important theory linked with geopolitics because both theories talk about the similar idea that power is the element, and to gain power, a country can move to conquer features of geography like water, mountains, rivers, and many more. It is power which helps in determining who gets what? and that in turn is largely dependent upon Geography. Thus, politics and geography gets intertwined. The geopolitics of India-China water issues plays a vital role in the bilateral relation of the countries. As both, countries shared four important rivers and Brahmaputra is one of the major rivers where there is water issues arise. The geopolitical factor here becomes a crucial aspect as the river originates from Tibet and runs towards India after entering Arunachal Pradesh and flow from Assam and lastly flow toward Bangladesh. Thus, the river becomes a transboundary in its nature as it crosses three nations. Here the upper riparian country is China which gets the larger advantage to use the water due to its geographical feature and being an upstream nation. On the other hand, the middle and the lower riparian countries are the most vulnerable due to their riparian position. Thus, China uses its riparian position to use the water of Brahmaputra and construct a number of dams in the upper reach of the river which diversely affect the water flow and can lead to water scarcity in the downstream countries.

Apart from that water issues gets linked with politics hence whenever there have been causalities occurring near the border between the soldiers of both the countries, it had its impact on water sharing as China suddenly stopped its hydrological data to India, despite the fact a MoU was signed between them. Not only that, China is expanding its military force near the border and claims Arunachal Pradesh as a part of South Tibet. As a result, India also deploys its military near the border, and the security of the nation may be threatened.

Conflict and cooperation on transboundary water issues are interchangeable actions. We have seen that if there is a conflict occurs on water issues there is a possibility to have cooperation between the countries.

5.2 Major Findings

The major findings of the study are as follows:

- Geopolitics plays an important factor in shaping foreign policy and domestic politics, and the same can be applied even in the case of the Transboundary River sharing including Brahmaputra.

- It is the very geographical conditions that facilitate our understanding of a nation's strategies and policies like in the case of India and China water issues related with Brahmaputra. The geographical location of China being an upper riparian state, the very factor of Tibet and its occupation by China, the location of Arunachal Pradesh and Chinese claims on it plays a decisive role in our understanding of the Brahmaputra water issue. It to a large extent determines the strategies and foreign policy choices of India as well as China.

- Politics over the natural resources, Water particularly here can lead to conflicts as well as cooperation. The competition over using the waters of the Brahmaputra between India and China has been a source of tension as it is linked with the politics. Hence, decisions and strategies related to its use is mainly driven by the political situation. It is the interlinking of water issues with politics that has brought complexities and hence difficulties in resolving the water issues.

- Interlinking of the water issue with the Border issues is turning out to be a major challenge. So whenever tension arises in the border it had its implications on the water sharing data.

- The factor of Tibet holds significance in the case of Brahmaputra River Sharing as it gives China an advantage of being an upper riparian and controlling the water flow going downstream including India.

- The factor of Arunachal Pradesh cannot be ignored as the water enters the state as Siang and the region holds geo-political significance for India. But the claims and counter claims by China on the region brings in the security aspect.
- Construction of dams near the border by China on the river has brought in concerns related with security for India. As not only the flow of the water will be affected but it also will foster infrastructural development by China along the border where dams are constructed making the region easily accessible which inturn is a threat to India.

- Water released from the dams by China will impact the downstream countries India and Bangladesh because that water can lead to floods and submerge the large plain areas of both the downstream countries.

- The Bangladesh perspective is very important in India-China water issues as China can use Bangladesh and manipulate the country against India and can affect the bilateral relations between India and Bangladesh.

- In the absence of a bilateral agreement on water sharing in River Brahmaputra there has been cooperation between the two in the form of MoUs, Expert level mechanism and visits.

- Both the countries can collaborate on integrated water management of the river Brahmaputra which inturn would address the issues related to the ecology of the river. This can resolve the issues related with the flow of the downstream nation.

- Water politics can lead to conflict as well as cooperation between the riparian states and the same can be stated for the India-China water issues related to Brahmaputra but the implications it can have on the bilateral relations cannot be manifested directly and considerably. But we cannot also overrule the possibilities of direct implications on bilateral relations over water especially in the case of India and China in the near future. As there are arguments where given the significance of water and taken the case of India and China unresolved border issues, a possible war over water is predicated in the near future.

- Both countries should try to resolve the border conflict and come up with a better resolution to deal with the border issues between India and China.

- Desecuritization of water is very essential for every riparian country, until and unless the country sees water as an issue of security and it can affect the country's national interest. Then there will always be a competition for water and, as a result, there will be a water conflict arising among the riparian countries.

- Multilateral collaboration through BCIM can provide prospects for Brahmaputra water sharing.

- A multilateral agreement is very important in the case of Brahmaputra water-sharing involving India, China, and Bangladesh. For India and Bangladesh, this multilateral agreement may help more as both countries are downstream countries and more vulnerable due to their plain region. Further both the nation can collectively counter the hegemonic ambition of upstream China.

- People's to People's contact is important and country should give more significance to this track of diplomacy as the concern arises from the local people who are the more suffer rather than the other groups.

- Joining the collaboration mechanism can lead to a lower chance of a water conflict, and both countries will come forward for cooperation.

India and China's diplomatic talks on water sharing have not always matched the lines of their existing geopolitical partnership. In an ideal world, friendly ties among riparian states would be directly proportionate to the prospect of transboundary water cooperation. Integrated water and flood control, as well as catastrophe prevention should be addressed by both the nation. Water is an important resource and linked with security, stability and development of a nation hence its proper management is crucial and the same applies for India and China. There are complexities associated with water sharing on Brahmaputra but these needs to be addressed at a higher level by the diplomats concerned of both the state for which effective water diplomacy is a must.

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