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Abstract

The non-traditional threats to health security observed globally have come into a more prominent focus in the context of international and regional security as climate change, pandemics, resource shortage, and environmental degradation have all been acknowledged as critical to the global security environment. Examples of non-traditional threats that pose critical challenges especially in the areas with trans-boundary rivers include water security. The research article discusses the non-traditional security issue of water security in South Asia by analyzing using a secondary data the Indus Waters Treaty (IWT) between India and Pakistan. The paper employs a thematic analysis of the literature on the matter, treaty documents, policy reports and institutional assessments to show that the IWT has operated as a stabilizing mechanism by bringing the countries through cooperative efforts across a system of strategic importance along with constant political tensions. However, water problems are becoming politicized, there is increased variability in climate changes, demographic expansion, infrastructure

advancements and so forth. The researcher draws a conclusion that the reforms to the institutional strategies are adaptive and important to make the treaty remain relevant to the regional stability under the influence of changes in the non-traditional security threats.

Keywords: Non-Traditional Security, Water Security, Regional Stability, Treaty Of Indus Waters, South Asia, Climate Change.

Introduction

The concept of security in the International Relations (IR) has been dramatically changed, whereby the scope has changed to involve extended societal, ecological, and resource-related issues in addition to the earlier military focused solutions. Unconventional security (NTS) factors are climate change, pandemics, food and water shortages, terrorism, and cyber threats. These are issues that cut across national boundaries, are progressive, and carry immense implications to the



human wellbeing and the stability of nation states. Compared to traditional threats, NTS challenges are based on the intricate relationships between the natural, social, and political systems and need a multidimensional policy to address (Mateen, (2025).

Water security is one of the most problematic non-traditional security concerns. Water plays a critical part in human survival, agricultural output, energy production and development of industries. Economic growth and social stability have access to adequate, safe, and sustainable water. Lack of water, misuse, or inequitable allocation may increase poverty, lead to social instability and interstate conflicts, particularly those that involve transboundary rivers (Akhtar, M. 2024).

South Asia provides a relevant case study in how to analyze water security as a non-traditional threat since the population is dense, it relies on agriculture, is highly susceptible to climatic changes, and interstate conflicts were witnessed in the past. The case of the Indus River basin between Pakistan and India shows that water conflicts can lead to more global geopolitical issues, in case they are poorly handled (Khan, 2019). IWT (1960) has allowed both legal and institutional structure to organize water allocation procedures and resolve any disputes. The fact that it has lasted even after wars and political unrests portrays the significance of formal mechanisms in countering non-traditional threats to security.

Water security as a form of NTS threat is diverse. The climate change impacts the rivers flow pattern in terms of glacial melting, disturbed monsoon variations, and extreme weather conditions in the environment. The government is experiencing rapid population growth and urbanization in the social life, which adds pressure on the existing infrastructure by causing higher water demand. Upstream-downstream asymmetries provide possible points of leverage politically due to issue of water based conflicts. These aspects show the complexity of the interactions between environmental and social and political aspects of the development of non-traditional security outcomes (Karim, 2015; Siddiqui, 2016).

The human security concept is a complementary to the NTS framework because it lays stress on the fact that individuals are saved against both the risk to life and the risk to livelihood. Water insecurity has a direct impact on human health, food output, and economic lives, which demonstrates how human-centered the concept of water security is (Khalid, 2018; Khan, 2019). Water scarcity can disrupt all the communities and consequently even countries by threatening/undermining fundamental human needs and hence the connection between human security and regional stability.

Mitigation of water threats through water-related NTS land through institutional means is the focus on water-related NTS hazards. Treaties and commissions minimize uncertainties and get states to trust each other by offering articulate allocations, supervision, and avenues of resolving disputes. The IWT reveals how legal and technical collaboration are possible even in, perhaps, more confrontational political situations and how water is turned into a construct of collaboration and not a source of conflict (Haque, 2012; Karim, 2015).

However, the new menace such as climate change, population growth, infrastructural expansion and securitization in politics present great threats to the success of the treaty. To combat them, a combination of adaptive policies, regional cooperation, and putting science and technologies into water governance systems would be needed (Siddiqui, 2016; Khan, 2019).



Methodology

The proposed studies utilizes a methodology that entails use of secondary data as a mean of qualitative research. The sources will consist of peer-reviewed journals, books, official treaty documents, reports of international organizations, and policy briefs on the topics of water security, climate change, and transboundary governance of rivers.

Thematic analysis was used in the three phases; (1) finding common themes of non-traditional security and regional stability, (2) breaking down the common themes into analytical themes, namely, water security, institutional cooperation, climate and environmental stress, politicization of water, and implications of regional stability and (3) explaining the analytical themes using the established IR theories. The method can be a systematic evaluation of the part of the IWT in the process of overcoming non-traditional security with the help of primary data collection unnecessary.

The notion of Non-Traditional Security

Non-traditional security (NTS) is those threats that do not pose direct military problems to well-being by indirectly impacting individuals, communities and states (Haque, 2012; Karim, 2015; Raza, 2017). Environmental degradation, resource dearth, climate changes, demographic tension, and structural vulnerability are some of the NTS threats in South Asia. Scholars of the Copenhagen School and human security activists posit that present-day conceptions of security should first and foremost rest on protection of life, health, livelihood, as opposed to emphasizing only on the concept of territorial sovereignty and military security.

The one of the core dimensions of NTS is water security, which can be understood as the guaranteed access to sufficient, secure, and sustainable water to human beings, farms, and the environment (Khalid, 2018; Siddiqui, 2016). It is estimated, including 2.2 billion without access to safe drinking water in the world, with up to 900 million of it represented in South Asia (UNICEF & WHO, 2021). Pakistan is faced with water stress as the per capita water availability reduces to less than 1,000 cubic meters per year in 2020 (as opposed to 5,000 cubic meters per year in 1951) (Pakistan Water Sector Report, 2020). The shortage of water impacts in a cascading fashion with the resulting results of decreased agricultural output, energy deficiency, population displacement, population health crisis, and civil unrest. Water scarcity is securitized in politically sensitive areas, becoming a national security issue in terms of water resources management (Khan, 2019; Ahmed, 2020).

Water insecurity has a multidimensional effect. The sector of agriculture, where it is estimated that nearly 42 percent of the Pakistan workforce is employed, is reliant on the systems of Indus basin irrigation; any drops in the quantity of water will lower the yields of products in the industry, endangering the existence of Pakistan's population as well as rural communities (Pakistan Bureau of Statistics, 2020). The operation of hydroelectric generation power, which supplies approximately 30 per cent of the electricity on the country, is susceptible to changing river levels. The cities are in an upsurge of water stress, and the large cities have increased intermittence in the supply (World Bank, 2021). Such dynamics portray the fact that NTS threats are not military in nature, but they can as well have a huge impact on governance, social cohesion and interstate relations. Upon identifying the watershed security as an NTS issue,



human, social, and spatial factors have to be incorporated into policy-making so as to formulate holistic security measures.

According to Haque (2012) and Karim (2015), water insecurity can be used as an example of the impact of non-traditional threats to domestic and regional stability. Siddiqui (2016) and Khan (2019) also observe that water-politics nexus increases the likelihood of a conflict when the political perspective is compared with the nature of water problems, and therefore, it is necessary to have cooperative structures and institutionalized procedures to reduce crises.

Regional Water Resources and Transboundary Stability.

Regional stability is a situation in which states have predictable relations via strong institutions, collaborative mechanisms, and proper structures of dispute resolutions (Haque, 2012; Karim, 2015). Transboundary rivers may intensify or build cooperation based on historical relations, forms of administration, and legal order.

Although resource scarcity theories suggest that contention regarding the water situation can result in conflict, it has been proven that cooperation is the most common in the presence of institutional frameworks (Siddiqui, 2016; Khan, 2019; Raza, 2017). The common rivers in South Asia like the Indus, the Ganges, and Brahmaputra have resulted in conducting various agreements which targeted allocation, checking and solving disputes. Proper legal and technical systems help decrease the level of uncertainty, building trust, and transitioning a potential conflict into cooperation.

The treatment of Indus Waters (IWT) is a good example of effective transboundary water governance. It was signed in 1960, assigning the eastern rivers (Ravi, Beas, Sutlej) to India and the western rivers (Indus, Jhelum, Chenab) to Pakistan though minor non-consumptive use by India is allowed on western rivers. The use of technical monitoring systems and organized dispute resolution systems such as the Permanent Indus Commission have enabled the two nations to be able to manage the flow of 80 million acre-feet of annual flow (World Bank, 1960; Khan, 2019). The treaty has ensured that despite the periods of political tension and military confrontation, there has been institutionalized cooperation, which removes the risk of water-related conflict (Ahmed, 2020; Khan, 2019).

Institutionalized cooperation emphasizes the value of transparency, discussion and framework rules. The IWT decreases the chances of violent issues due to their attempts to settle the dispute in a technical and legal manner. This case will show that the same environmental resources when handled collectively can strengthen peace and stability in politically sensitive areas. It further highlights the fact that non-traditional forms of security threats like lack of water is not necessarily a conflict-generating factor; the question of whether they can affect the stability in a region, lies with governance, institutions and collaboration.

The Indian Subcontinent, River Basin, Indus River: History.

The basin of the Indus River which includes the rivers of Indus, Jhelum, Chenab, Ravi, Beas, and Sutlej, is the lifeline of the socio-economic and ecology systems in South Asia. The basin sustains more than 200 million people in the areas of Pakistan, India, and some regions of China on a land area of about 1.12 million square kilometers (World Bank, 1960; Khalid, 2018). Pakistan's agrarian sector is largely reliant on the Indus basin, in which wheat, rice, sugarcane,



and cotton are main products, and which are essential to both food and export income (Pakistan Water Sector Report, 2020).

Integrated river management was upset by the post-1947 partitioning of British India that put upstream-downstream positions in a compromised situation. Several recently drawn borders made India have been left to control the headwaters of the eastern rivers and the Pakistani government was left at the mercies of downstream flow of water in the western rivers in terms of agriculture, domestic water and power generation. The necessity to mediate at the international level was underscored by the early post-partition wrangles, especially on the allocation of water to irrigation and the flow of canals. That resulted in the terms of water management between India and Pakistan being negotiated and signed, creating a legal and institutional system of water management across borders (Haque, 2012; Khan, 2019).

Another key strategic value of the basin is that it provides the country with energy security. Indus basin is attributed to approximately 6,000 MW of hydro electricity generation in Pakistan, which supplies about 30 percent of electricity requirements in Pakistan (World Bank, 2021). This agribusiness, household, and power dependence predetermines making the Indus basin a key component of the socio-economic stability of Pakistan and a driving force in the water politics of the region.

The Indus Waters Treaty: Consideration and Character.

The Indus Waters Treaty divided the east (Ravi, Beas and Sutlej) and the west (Indus, Jhelum and Chenab) before allowing limited non-consumptive use of the western rivers by India to generate run of the river hydroelectric power and storage (World Bank, 1960; Siddiqui, 2016). The treaty also formed the Permanent Indus Commission (PIC) through which a bilateral technical body was formed to oversee the implementation process, exchange of data and resolve disputes by the help of a neutral expert, technical review or arbitration.

This depoliticalized and technical quality of the treaty has been key in making it last so long. Cooperation is also possible because the IWT is not selecting political issues but water management and during the armed conflict between India and Pakistan, cooperation has lasted. Its definite river assignments, its institutionalized dispute settlement systems, and regulatory frameworks have converted what otherwise might be a hotspot of dispute to a viable place of cooperation between states (Khan, 2019; Ahmed, 2020).

Besides, the treaty has facilitated the integrated development of infrastructure. Pakistan has built big storage and irrigation systems, including the Mangla and Tarbela dams and India has developed run-of-the-river hydroelectric projects in accordance with the terms of the treaty. This shows that the IWT tries to reduce the risks of conflicts as well as ensures water is used sustainably and socio-economical development within the basin (Khalid, 2018; Siddiqui, 2016).

The IWT represents a good example of a transboundary water governance model by institutions because it institutionalizes monitoring, technical consultation, and dispute resolution. It shows how properly designed treaties, which are based on technical and legal skills, may turn the common natural resources which might be a source of conflict, into tools of regional peace.



Cases of IWT Water Security and Conflict Management.

The Indus Waters Treaty (IWT) is the perfect example of how the institutionalized collaboration is effective in controlling the non-traditional security dilemmas, especially the lack of water. The allocation of the river has allowed avoiding the worsening of water disputes into armed conflicts by introducing transparent river allocations, facilitating the exchange of data on a regular basis and a well-developed system of dispute resolution structured by the treaty (Khan, 2019; Ahmed, 2020). Among them, the Baglihar Dam on the Chenab River and the Kishanganga Hydroelectric project on the Jhelum River, which were negotiated using legal and technical procedures, are the most outstanding as they do not imply unilateral action and interstate conflicts (Siddiqui, 2016; Khalid, 2018).

Security wise, the treaty eliminates uncertainty by paying certain water flows, and straightforward operational guidelines, which eliminate misperceptions between India and Pakistan. It makes dialogue institutionalized with permanent indus commission where technical issues are handled systematically, transparently and accountably. It is one of the communication structures that ensure constant connection between the antagonistic states, which helps to stabilize the conditions in the region even in the context of the wider political conflict (Haque, 2012; Karim, 2015).

There is empirical evidence that depicts the importance of this treaty. IWT control about 80 million acre-feet water each year, of which most of it is allotted to Pakistan, approximately 75m. More than 42 percent of the agricultural workforce in Pakistan and about 30 percent of the hydroelectric generation capacity of Pakistan depends on this flow (Pakistan Water Sector Report, 2020; World Bank, 2021). Moreover, it supports millions of rural lives and guarantees over 200 million people in the basin food security. The treaty ensures that such essential resources have dependable access which minimizes the chances of water-related socio-economic fallouts, and thus this case illustrates how negotiating non-traditional security threats through joint institutional practices.

Additionally, the IWT offers the framework of technical and legal dispute resolution. They encompass processes like the Neutral Expert process and formal arbitration which, in addition to that, has made animate infrastructural or river usage conflict settle without escalation to a wider political or military conflict. Such mechanisms have already been successfully implemented on several occasions, which confirms the effectiveness of the treaty as a factor of stabilizing the situation in this region with complicated geopolitical relations.

Emerging Challenges on Indus Waters Treaty



Challenge	Key Indicators	Data / Statistics	Source
Climate Change & Hydrological Uncertainty	Glacier retreat rate	10–15 meters/year	ICIMOD, 2020
	Frequency of floods	15 major floods (2000–2020)	Pakistan Meteorological Department, 2021
	Drought-affected population	>20 million	World Bank, 2021
Population Growth & Rising Demand	Pakistan population growth	33 million (1951) → 225 million (2021)	Pakistan Bureau of Statistics, 2020
	Per capita water availability	5,000 m ³ /year (1951) → <1,000 m ³ /year (2020)	Pakistan Water Sector Report, 2020
	Urban water stress	>35% affected during peak demand	World Bank, 2021
Infrastructure Development & Technical Disputes	Hydropower projects (India)	>40 small- to medium-scale on western rivers	Siddiqui, 2016
	Major dams (Pakistan)	<u>Tarbela</u> , <u>Mangla</u>	Pakistan Water Sector Report, 2020
Politicization & Securitization of Water	Public perception / political rhetoric	Periodic statements highlighting water as strategic leverage	Ahmed, 2020; Khan, 2019
Institutional Rigidity & Limited Adaptive Capacity	Allocation system	Fixed volumetric shares (1960)	<u>Haque</u> , 2012; Siddiqui, 2016
	Adaptive mechanisms	None for climate variability or cumulative impacts	Khalid, 2018; Karim, 2015

Climate Change and Uncertainty of Hydrology

Climate change is one of the most urgent problems facing the Indus River basin and by implication the functionality of the Indus Waters Treaty (IWT). In the Hindu Kush-Himalayan region, glaciers, providing the Indus system, are receding at a rate of 10-15 meters per annum, and this causes a temporary rise in the river flows, followed by a fall (ICIMOD, 2020; Khalid, 2018). The change in patterns of monsoons has also augmented the inter-annual fluctuation to an extent of causing extreme events in hydrology both floods and droughts. In Pakistan, there were fifteen significant floods and extended drought periods, which came to more than 20 million people in total between 2000 and 2020 (Pakistan Meteorological Department, 2021; World Bank, 2021).

These hydrological transformations destabilize predictability of the IWT allocations in rivers that are fixed. By way of illustration, an example of an unexpected glacial burst of a lake and delayed monsoon rains might interfere with the expected flow of the western rivers, which may impact 80 million acre-feet of water controlled by the treaty. The IWT was established in the hypothesis of a fairly constant hydrological state and lacked elements of adaptive management when the phenomenon of climate change and risk mitigation of the basin wide (Haque, 2012; Siddiqui, 2016).

According to secondary sources, the Indus basin is very susceptible to climatic changes. A 10 per cent reduction in the flows of rivers can also potentially decrease the irrigated agricultural productivity in Pakistan by up to 15 per cent, which would impact on the food security and rural



livelihoods (Khan, 2019; Pakistan Water Sector Report, 2020). On the same note, hydropower generation, which supplies about 30 percent of the national power is susceptible to the same fluctuations, and it may be affected amid the deficient energy. This also influences urban water supply; more than 35 percent of the population living in large cities experiences the intermittency of water supply during drought times (World Bank, 2021).

All these factors, the accelerated glacier retreat, monsoon variability, and stature of extreme events, point to the fact that the IWT should include adaptive governing structures. In the absence of these mechanisms, the hydrological uncertainty caused by climate may increase the level of water stress, increase the risk of interstate tension, and compromise the long-term ability of the treaty to act as a stabilizing agent in South Asia.

Population Increasing and Demand Growing.

Both India and Pakistan have experienced rapid population growth and economic growth thus increasing the water demand levels within basin of the Indus River. The population of Pakistan has increased to more than 225 million in 2021 as compared to 33 million in 1951 whereas India population in the Indus basin region is more than 200 million (Pakistan Bureau of Statistics, 2020; Census of India, 2011). This population growth has contributed to per capita water becoming less than 5,000 cubic meters per year in 1951 and less than 1,000 cubic meters in 2020 in Pakistan, which puts the country in a state of water stress (Pakistan Water Sector Report, 2020).

Water demand is largely driven by agricultural expansion in which more than 42 percent of the Pakistani labor force works within irrigated agriculture which is nearly wholly dependent on the Indus River system (Pakistan Bureau of Statistics, 2020). Water consumption has also been aggravated by industrialization and urbanization, especially in cities like Lahore, Karachi, and Islamabad, whereby, at times, people in these locations experience intermittency of water supply that covers over 35 percent of the populace during peak periods (World Bank, 2021).

Although the Indus Waters Treaty has been successfully used to control the flow of rivers between states, there is a lack of regulation of internal water problems of states like effective irrigation, urban water conservation and the depletion of groundwater. This drawback illuminates structural issues: the growing domestic demand can support the worsening of the water shortage, the development of rivalry among branches, and the emergence of the local conflict over water. The interstate framework of the treaty cannot guarantee long term water security and stability in the region without complementary domestic policies on management (Haque, 2012; Siddiqui, 2016; Khan, 2019).

To be well adapted to the pressures of population-driven demand needs an integrated approach in the water resources management like enhanced irrigation efficiency, urban water conservation and the communication of planning by the federal and provincial governments. These domestic pressures in combination with the interstate mechanisms of the treaty should be addressed to ensure the reliability of the Indus system and avoid the growth of the non-traditional security threats.



Infrastructure Development and Technical Disputes.

Projects on hydropower and storage infrastructure on the Indian Indus basin western rivers have often created technical and legal wrangles between India and Pakistan. Significant projects, such as Baglihar Dam in Chenab River and Kishanganga Hydroelectric Project in the Jhelum River have raised issues about the design of the dams, its own storage capacity, and the downstream effects on the water availability (Siddiqui, 2016; Khan, 2019). These conflicts emphasize the reality of tension between national goals of development and area of constraint of allocation initiated under the Indus Waters Treaty (IWT).

To effectively deal with these conflicts, the IWT has organized ways of dealing with them, which are the Permanent Indus Commission (PIC), the Neutral Expert process, and de jure arbitration processes. An example is the Baglihar Dam which was solved by technique review with a Neutral Expert, which led to design changes in consideration of downstream flow issues without stopping the work of the project (Ahmed, 2020; Khalid, 2018). On the same note, Kishanganga project was done under arbitration by treaty provisions thus enabling the development to proceed with protection of water rights by Pakistan.

According to the empiric data, since 1960 India had built more than 40 small- to medium-scale run-of-the- river hydroelectric facilities on western rivers, and Pakistan had developed large storage and irrigation facilities, such as Tarbela and Mangla power plants, to use the water offered (World Bank, 2021; Pakistan Water Sector Report, 2020). Such initiatives put emphasis on the increased demand of water to energy and agricultural production which is intertwined and overlapping with the provisions and testing within the treaty which requires legal and technical investigations.

Although dispute resolution mechanisms in the IWT have mostly pegged disputes at a lower level before the situation deteriorates into military conflict, the occurrence of disputes depicts a constant issue in trying to strike the balance between the developmental interests and the treaty. It is the most efficient to note that effective management must involve constant technical consultation, a strong monitoring system, and legal support, so as not to jeopardize the development of infrastructure at the expense of interstate confidence and stability of the region (Haque, 2012; Siddiqui, 2016).

Politicization and Securitization of Water.

The politicization and securitization of water in South Asia have played a major role of challenging the Indus waters treaty (IWT) and stability in the region. Water resources have been used as a political tool at times in the politics of the two countries, India and Pakistan, in larger geopolitical disputes, both when military tensions are high or during the periods of the nationalist mobilization of citizens (Haque, 2012; Khan, 2019). This framing has the possibility of undermining trust and depoliticized cooperation on which the treaty is based and putting misperception and acting unilaterally at risk.

As an example, the words of political leaders or newspaper accounts that upstream dam can be the tool of coercion sometimes have increased the levels of anxiety and political pressure of the people, though the IWT offered a plethora of technical and legal safeguards (Ahmed, 2020; Siddiqui, 2016). This securitization is that a common resource of the environment is converted into an instrument of cooperation and a question that is perceived to be a strategic threat,



potentially making normal technical negotiations carried out by the permanent indus commission difficult.

Empirical evidence shows that even though the treaty has effectively managed the curbanse of conflicts affecting more than 80 million acre-feet of water each year, incidences of political tension may have a short-lived effect to block hydroelectric or irrigation projects through approvals. As an instance, the Kishanganga dispute received a lot of political remarks in both nations during the 2016-2018 period, and its discourse focused more on the strategic aspect of the issue than on technical aspects (Khalid, 2018; World Bank, 2021).

Irrespective, the IWT has survived the test of time showing that it is resistant to politicization. The strong legal framework laid out in the treaty, and institutional cushions against geopolitical pressures, through Neutral Expert consultation and arbitration over dispute resolution are still in place to date. However, the exposed nature of water governance systems to foreign political influences points to the necessity of constant confidence-building steps and transparency, as well as educating the population to ensure adherence to cooperative norms and stability in the region (Karim, 2015; Khan, 2019).

Although the Indus Waters Treaty (IWT) is a very effective agreement that can guarantee a minimum flow of water and avoid civil war, it has institutional rigidity that restricts its scope in dealing with emergent problems arising in a changing climate, environmental degradation, and cumulative effects of infrastructure development (Haque, 2012; Siddiqui, 2016). It has its own fixed volumetric shares of distribution that were developed in 1960 and it lacks adaptive management, basin-wide planning, and climate-sensitive management mechanisms.

According to secondary data, hydrological variability in the Indus basin is rising because of glacial recession, inconvenience of the monsoons as well as pressure on demand by the population. As an example, to explain this, glacier melting in the upper Indus leads to short-term floods with long-term flow reductions covering up to 80 million acre-feet of water every year (ICIMOD, 2020; Pakistan Water Sector Report, 2020). At the same time, the growth of irrigation and hydroelectric activities leads to the cumulative stress on the rivers, which results in possible conflicts over its use within the boundaries of the treaty (Khalid, 2018; Khan, 2019).

IWT does not include an aspect of environmental watch over the basin, collaborative climate research and adaptation of flexibilities to address extraordinary hydrological conditions. This means that it might reduce its efficiency in handling non-conventional threats to security unless these are exacerbated. Addressing the rigidity of the institution would imply additional agreements, adaptability, and incorporation of climate resiliency policies to maintain further dependability of the water flows and equitable allocation (Ahmed, 2020; Karim, 2015).

Theoretical Perspectives

It can be improved by analyzing the Indus Waters Treaty (IWT) with help of different theories of international relations in order to understand its effects on the stability of the region. The idea of water as a source of power or leverage is a concept in the realist theory, which pays attention to the ethical character of the international system as anarchic and prioritizing the importance of national interests (Haque, 2012; Khan, 2019). According to the realist perspective, cooperation in water is only realized when it corresponds to the strategic or economic interest of the concerned states. In the example of the IWT, the history of Hydropower development, irrigation expansion,



and energy security of Indian and Pakistani countries was the precondition to their cooperation, and the common understanding that the cost of war could be very high preconditioned the readiness to cooperate. As a case in point, western rivers India has previously developed run-of-the-river hydro schemes, which could potentially provoke disputes, yet national interests of the country were not prejudiced by the need to adhere to the prescriptions of the treaties, but instead the nation was able to pursue its national development goals without losing strategic stability (Siddiqui, 2016; Ahmed, 2020).

Liberal institutionalism provides an alternative explanation, focusing on the relevance of structured institutions, legal rules and formal mechanisms in eliminating uncertainty and promoting cooperation. The IWT is an excellent example of liberal institutionalism at work: permanent data sharing arrangements and the Permanent Indus Commission (PIC), monitoring and communication have been institutionalized between India and Pakistan, mitigating the chance of any possible conflict over water resources (Khalid, 2018; Karim, 2015). According to empirical evidence, these mechanisms have been able to efficiently handle disagreement on dams and water distribution since decades showing that strong institutions could create predictable interstate links even in a politically delicate environment. This implies that such structures lead to recurrent contacts, build up trust, and promote norms that structuralize the state behavior stabilizing it in the long run, as suggested by liberal institutionalists (Haque, 2012; Khan, 2019).

Constructivist views are concerned with how shared norms, socialization and professional practices are involved in the formation of compliance and cooperation. During the decades, the observance of the IWT has been naturalized by habitual technical consultations, resolving disputes supported by specialists, and institutionalized dialogue and proves that collaborative behavior may still exist even in the takeoff of political disputes (Ahmed, 2020; Siddiqui, 2016). Constructivists underline that identities, perceptions, as well as practices of states are socially constructed, and recurrent interactions along the IWT have led to the establishment of a working and professional culture in the Permanent Indus Commission. Compliance has been strengthened and the risks of unilateral or politicization in action have been reduced through this culture, demonstrating the power of shared norms and expectations, as well as coercive power and formal institutions alone as factors in strengthening the durability of the treaty (Karim, 2015; Khalid, 2018).

An amalgamation of these theoretical approaches will give an overall picture of the IWT. Realism describes the hidden motives of actions of each state and the significance of the deterrence towards each other in preventing the conflict. Liberal institutionalism places emphasis on the structural and procedural processes that institutionalize cooperation and lowering the cost of transactions. Constructivism stresses on the progressive change of cooperative norms, professional practices and institutional culture that strengthens obedience even in times of increased political stress. Combined, these views enable to underline the multifaceted nature of the success of the IWT: it is both influenced by strategic interests, the institutional design, and social constructs that have been formed throughout the years.

There are also broader arguments based on the IWT on how to govern transboundary water. Researchers have reported that asymmetry in power and strategic advantage remain the issues of concern of realists, but these forces are kept in check by the initiatives of organizations, such as the PIC and institutionalized chance mechanisms in dispute settlement, so that resource



disparities would not develop into outright hostilities (Haque, 2012; Khan, 2019; Siddiqui, 2016). Meanwhile, according to constructivist lessons, regular adherence, technical expertise, and norm creation is necessary to maintain cooperation even between political periods and administrations. To take an example, the IWT still managed to operate efficiently during the times of the Indo-Pakistani military conflict, i.e. the Kargil war in 1999, which underscores the strength of institutionalized collaboration and the strength of shared norms (Ahmed, 2020; Khalid, 2018).

Implications on Regional Stability.

The stability of South Asia will never happen without the continuity of the Indus Waters Treaty (IWT). The treaty regulates the flow of about 80 million acre-feet of the yearly river flow which directly provides the agriculture sector, hydroelectric energy production, and domestic water supply in India and Pakistan. Any interference with this structure may cause deep-seated socio-economic impacts, such as reduced level of agricultural output, energy deficiency, water scarcity in the cities, and increased vulnerability of people to illness. Such pressures have the potential to increase domestic instability and increase the chances of interstate conflicts especially in a region where there is a history of rivalry and complicated geopolitical relations (Haque, 2012; Khan, 2019).

The changing issues of the climate change, population increase, and infrastructure development emphasize the necessity of adaptive collaboration and institutional transformation. The inclusion of adaptable water allocation systems, basin wide surveillance and climate sensitive managerial tactics would increase the ability of IWT to manage hydrological variability due to glacial retreat, changes in monsoons, and extreme weather (Khalid, 2018; Siddiqui, 2016). These types of adaptations would build confidence-building to both states and minimise the uncertainty and avoidance of misperception and unilateral action turning into a conflict.

The institutional reforms might also enhance the role of the treaty in curbing non-traditional security threats. To illustrate, collaboration between research schemes, knowledge-management like resources, and predictive modelling on river streams would allow proactive control of the water shortage and associated social and economic effects. Such actions would stabilize bilateral relations and also facilitate human security as the shedding of livelihoods, food security, and energy supplies (Ahmed, 2020; Karim, 2015).

In addition to South Asian situation, IWT will be useful in transboundary water governance in other parts of the world. Through its cohesive legal framework and technical management and organized dispute resolution systems, the treaty shows that even in the face of political conflict, shared natural resources can be dealt with in a manner that is cooperative. It highlights the need to have transparency, continuing dialogue, and institutionalized conventions to ensure that the possible sources of conflict are changed to become a tool of regional stability.

Conclusion

This paper illustrates that water security is a non-traditional security issue that has serious far-reaching implications on the stability of a region. The Indus Waters Treaty (IWT) constitutes a good example of how well-established and sustainable institutions can be effective in the management of common resources even among states with a history of hostile relations towards



each other. The treaty has turned a potentially controversial resource into a tool of long-term collaboration and the prevention of conflicts, by way of offering explicit distributions, institutionalized agenda-resolution systems and inventive data-sharing procedures.

The Indus basin is confronted with new demands that question the effectiveness of the treaty in the long term. The changing patterns in the monsoons and frequency of floods and droughts are some of the effects of climate changes that bring with them hydrological uncertainty that the treaty allocations lack. Quick population increase and ever-growing agricultural and urban-industrial needs also place pressure on water supply and an increased infrastructure and hydropower development and project infrastructures creates some technical conflicts that must be settled by the institutions. In addition, the securitization of water and political rhetoric, points to the weakness in terms of external forces, which may disrupt the norms of cooperation.

This will require adaptive reforms that will make the IWT play its stabilizer role. Resilience can be enhanced by including the flexible allocation systems, climate sensitive organizational approaches, shared orientation apparatus, and building institutional capacity, which can reduce the non-traditional security threats, and keep riparian states trusting each other. These reforms would help to protect water resources and human livelihoods, food security and energy stability to strengthen the human and regional security.

The experience with lessons learned in the Indus basin are not limited to the South Asian region, and their example can be used to offer an excellent blueprint to manage transboundary water resources in the politically and environmentally sensitive regions. Mutual resources can be controlled through the incorporation of strategic interests, strong institutions and collaborative norms and potential sources of flashpoints turned into tools of stability. The IWT experience significantly highlights how adaptive governance, enduring dialogue and legal-technical structures can help in diminishing non-conventional security challenges and ensure long-term region-wide peace.

To sum up, the Indus Waters Treaty proves that even in a complicated geopolitical situation, the stability in the region can be stimulated by efficient control of the water security. To ensure its continued relevancy, actions should be paid to the variability of environmental conditions, the socio-economic pressure, infrastructural changes, and political processes. By being proactive and adapting further, the IWT can still serve as a case study on how transboundary water governance can be in the future, providing lessons to other regions facing the same set of challenges at the 21st century.

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