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Pakistan's Water Security: Contemporary Challenges and Options

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ABSTRACT

Despite extensive research on water scarcity in Pakistan, little is known about Pakistan's options in addressing its quest for water security. This study analyses Pakistan's options to address its water security in the light of contemporary challenges through qualitative method of text review of some important primary and secondary sources. An analysis of these documents reveals that in addition to the much debated factors of climate change and population increase, Pakistan water security is under challenge from Indian dams on the Western Rivers in the disputed territory of Kashmir, Indian threats of abrogating the Indus Waters Treaty, Afghanistan's claim on river Kabul, the seceding role of the World Bank and Pakistan's internal water feuds. In view of these challenges, Pakistan can live with the present Treaty but can also welcome another multilateral treaty which will include China, and Afghanistan as well. With the US clearly siding with India, Pakistan can employ Chinese clout and the deterrence power of its nuclear weapons to thwart Indian hydro-hegemony on the Indus. This study is part of the recent research on Pakistan's quest for water security and will contribute to future research on similar topics.

Keywords: *Climate Change, India, Indus Waters Treaty, Pakistan, Water Security*

Introduction

When India was partitioned in 1947, the new international boundary was drawn in a way that the vast irrigated lands of Pakistan became dependent on the waters from the upper hostile riparian India. In order to address its quest for water security, Pakistan entered into bilateral negotiations (1948-1951) with India. However, instead of assuaging Pakistan's water security, the bilateral arrangement aggravated it. The next best option for Pakistan was to ask for third party mediation. The World Bank intervened and after nine years of mediations (1951-1960) under the auspices of World Bank, the Indus Waters Treaty came into existence in 1960.

The Treaty was vigorously reviewed by a number of studies (Biswas 1992, Verghese 1997, Alam 1998 and 2002, Iyer 2005 and 2007, Zawahri 2006 and 2008, Mary Miner et al. 2009, Briscoe 2005 and 2010, Mustafa, 2010). Interestingly, most of these studies conducted before the turn of the present century, found the Treaty a success as it worked well in maintaining peace on the Indus. It sustained two total wars of 1965 and 1971, one half-war of 1999 and the nuclearization of South Asia.

As effects of climate change and population surge became more profound and Indian projects on the rivers granted to Pakistan came to limelight, the new research found the Treaty under severe stress and strain. However, no study made a serious attempt to analyse the contemporary challenges to Pakistan's water security and the options it could employ in addressing the same.

This article fills in the stated gape. It argues that Pakistan can live with the already installed Indus Waters Treaty. However, it should not shy away from renegotiating the India in case China is a party to such a multilateral negotiation upon which Pakistan can rely to balance Indian hydro-hegemony. First, an analysis of the challenges to Pakistan's water security is presented. Subsequently, an analysis of Pakistan's options to address such challenges are presented in the second part of the paper.

Contemporary Challenges to Pakistan's Water Security

Contemporary challenges to Pakistan's water security are discussed as follows.

I. Diminished Water Supply

Main sources of water supply in Pakistan are rivers, rainfall and ground water. River Indus and its tributaries of the Chenab, the Jhelum (called Western Rivers of the Indus River System) and the Kabul, waters one of the world's largest irrigation network of the Indus River Basin spread over the provinces of the Punjab, Sindh and Khyber Pakhtunkhwa of Pakistan. Before India was partitioned in August 1947, the three eastern tributaries of the Indus, the Ravi, Beas and Sutlej (called Eastern Rivers of the Indus River System) also irrigated these vast lands, mainly of western Punjab in the British India.

The Standstill Agreement, agreed upon between the two succeeding sovereign states of India and Pakistan in December 1947, maintained status quo on the water flow of these rivers and canals crossing the newly drawn international border. However, when the Standstill Agreement expired on 31 March 1948, India stemmed the water flow from two canals flowing into Pakistan the next day. In the course of time, India laid claim on the waters of the Eastern Rivers to develop the irrigation of eastern Punjab. India claimed these waters on the grounds that the British Raj irrigation policies favoured western Punjab which became part of West Pakistan at the cost of eastern Punjab which became part of India.[1] Bilateral negotiations ensued, and the Inter-Dominion Agreement was signed in May 1948.

The Inter-Dominion Agreement, also referred to as the Delhi Agreement, proved fatal for Pakistan's quest for water security as Pakistan agreed to Indian "gradual"

[1] "Inter-Dominion Agreement Dated The 4th May 1948 On The Canal Water Dispute Between The East And West Punjab," May 4, 1948.

withdrawal from the Eastern Rivers.[2] Pakistan claimed the Delhi Agreement was signed under duress and backtracked on it. Pakistan next entered into multilateral phase of negotiations under the tutelage of the World Bank. The negotiations protracted for nine years (1951-1960). Bureaucratic wrangling, political instability in Pakistan and the subsequent protraction in the Indus negotiations gave India enough space and time to claim limited rights on the Western Rivers as well. Ultimately the Indus Waters Treaty was signed in September 1960. The Treaty partitioned the Indus River System, giving India rights over the Eastern Rivers and Pakistan rights over the Western Rivers. In addition, India also acquired limited rights on the Western Rivers in the Treaty due to its superior hydro-diplomacy. Denied of the waters of the Eastern Rivers by the Indus Waters Treaty, water supply in the Indus River System began to dwindle as the effects of climate change began to unfold more clearly at the turn of the present century.

Climate change badly affected the two main sources of the Indus River System, the Himalayan glaciers and the monsoon rains. Such an effect of climate change on the Himalayan glaciers has serious consequences for Pakistan's water security. The late professor of Harvard University, John Briscoe, has argued in this regard that:

the Indus is unique in that it is a river in a low-rainfall area. Whereas the snowmelt contributes only 8% of the flow of the Ganges and 12% of the flow of the Yangtze, it contributes 45% of the flow of the Indus. (Briscoe, 2010)

As compared to the rest of the glaciers of the world, the Himalayan glaciers are the worst hit of climate change. According to the 2007 Working Group II report of the Intergovernmental Panel on Climate Change (IPCC):

Glaciers in the Himalaya are receding faster than in any other part of the world and, if the present rate continues, the likelihood of them disappearing by the year 2035 and perhaps sooner is very high if the Earth keeps warming at the current rate. (Kraska, 2009)

The aforementioned report of the IPCC was put to serious questions, later on. However, the phenomenon of climate change and its implications for the Himalayan glaciers are real. Some of the glaciers of the Karakorum ranges are expanding which, on the contrary, could have salubrious implications for Pakistan's quest for water security. However, glaciologists have verified that majority of the Himalayan glaciers are retreating at a pace of 10-60 meter per year, making the glaciers the fastest retreating ones in the world. (Morton, 2011)

Monsoon, which is not only the second source of waters in the Indus River System but is also a direct source of water supply for irrigation and recharging ground water tables, is also adversely affected by climate change. Monsoon, otherwise spread over a period of four months from June to September, has shrunk to forty days. Such a changed pattern in monsoon is, instead of addressing Pakistan's quest for water security, results in heavy rains in the forty days' period which causes heavy floods downstream. While writing a decade ago, another expert on South Asian water security, Ashok Swain, claimed that if global temperature kept on rising as projected, then climate change is:

[2] "Inter-Dominion Agreement."

predicted to lead to major changes in the strength and timing of the Asian monsoon. The impacts on Indus River flows and its ecosystem, as well as on people and their livelihoods in the basin, are likely to be dramatic. (Swain, 2009)

Such effects of climate change are more alarming for Pakistan because its dependence on the Indus is absolute as the other non-Indus rivers are seasonal and their total flow is less than 2 % of the annual inflow of the total water flow of the Indus River System. (Swain, 2009) John Briscoe has elaborated the importance of the waters of the IRS for the existence of Pakistan as:

Pakistan – much like Egypt – is a country built around a single river system. Securing its water supply is a central, existential challenge which has been a high priority for every government of Pakistan. (Price et al, 2014)

As the water supply in the rivers and canals receded, with the passage of time farmer's reliance on groundwater increased. During the signing of the Indus Waters Treaty, groundwater supplied only 8% of the waters for the irrigation in Punjab. However, it increased up to 40% in 1985 and 60 % in 2005. (Briscoe et al, 2005) As discussed earlier, the groundwater tables get waters from rainfall and the canals. In Punjab, the leakage from canals feed 80% of the groundwater, and as such "the great canal system became less of a water delivery mechanism, and more of a groundwater recharge mechanism." (Briscoe et al, 2005) With the change in rainfall patterns due to climate change and dwindling water resources in the canals, the groundwater tables are also drooping.

II. Increased Water Demand

From 1961 up to 2011, the population of Pakistan has increased at an average growth rate of 2.61% which has slowed down to 1.81% from 2001- 2011. Despite the slowing down in the population growth rate, the per capita water availability in Pakistan has decreased from 5,260 cubic meters in 1951 to about 1,040 cubic meters in 2010. (Akhtar, 2013) Moreover, rapid urbanization and the change in life standards are additional factors that has resulted in water crises in Pakistan. The change in diet from simple to complex ones has resulted in more per capita caloric intake, which has, for example, increased from 1,812 calories in 1961-1963 to 2,340 calories per person in 2001-2003. (Akhtar, 2013) The burgeoning population and the rising demand for more water in future will further aggravate Pakistan's quest for water security.

III. Indian Dams on the Western Rivers

For the first three years of the Indus negotiations (1951-1954), both India and Pakistan failed to agree to a common plan for the apportionment of the Indus River System. The World Bank then gave its own plan in February 1954 which is called the World Bank's Plan of 1954. The Plan granted India "exclusive uses" of the Eastern Rivers, and Pakistan the "exclusive uses" of the Western Rivers only with limited Indian uses allowed on the river Jhelum (a Western River) in Kashmir.[3] However, in the later years of the Indus mediations, India demanded limited uses on the other two Western Rivers as well, especially for hydel generation. Pakistan

[3]"Proposal by the International Bank Representative for a Plan for the Development and use of the Indus Basin Waters," February 4, 1954.

resisted such Indian rights on the Western Rivers. John Briscoe elaborated on Pakistan's anxieties as:

Pakistan was well aware that the backbone of its economy was irrigated agriculture that was built around the natural flows of the rivers and thus worried that its security would be seriously compromised if India built dams which could alter the timing of water coming to Pakistan, especially from the Jhelum and the Chenab. (Briscoe et al, 2005)

However, Pakistan failed and according to Article III Paragraph (2) of the IWT, India was asked to:

…let flow all the waters of the Western Rivers, and shall not permit any interference with these waters, except for the following uses, …(a) Domestic Use; (b) Non-Consumptive Use; (c) Agricultural Use,… (d) Generation of hydroelectric power as set out in Annexure D.

To address Pakistan's quest for water security against possible Indian adverse manipulation of the structures allowed to India, Indian structures had to meet a set criterion set out in Annexure D of the Treaty. This criterion was the most critical part of the Indus Waters Treaty and as such of Pakistan's water security.

Once permitted to utilize the Western Rivers, India began to construct a large number of dams on the Western Rivers. As of 2007, Pakistan had challenged 27 of such Indian dams as against Annexure D of the Treaty. (Sinha, 2008) India claimed all of its dams were in line with the letter and spirit of the Treaty. Such claims and counter claims resulted in disputes over different Indian projects on the Western Rivers. One such disputed project was the Baglihar Hydroelectric Project. Pakistan objected to the dam in 2005 and as per the Treaty's dispute resolution mechanism, a Neutral Expert (NE) was appointed who gave his verdict in 2007.

The Baglihar verdict proved a turning point in the history of the Treaty. Pakistan had claimed on the basis of the restrictive provisions contained in Annexure D that the Baglihar dam needed no spillways, or if the spillways were needed, they should be placed at the highest possible location. Pakistan wanted the spillways be either denied or placed at the highest location so as to ensure the water stored behind the dam might not be utilised to the disadvantage of downstream Pakistan. The verdict nullified Pakistan's claims as it not only allowed for gated spillways but also allowed India to fix it at the Indian proposed height.

After Pakistan's objections, India complied with the restrictive provisions of the Indus Waters Treaty, and modified the structure of its Salal dam in 1978. After its operationalization, the dam was filled with silt as Indus is the second highest silt carrying river next to the Nile. The accumulated silt could not be flushed out as gated spillways were not placed at the bottom due to restrictive provisions of Annexure D. In the case of Baglihar, Indian authorities justified their preferred location of the gated spillways on the same grounds. India argued that it was useless to build a dam without the spillways located at a suitable height to flush out the piling silt.

The decision of the NE proved a severe blow to Pakistan's water security as it knocked the Indus Waters Treaty out of its restrictive provisions contained in Annexure D. With the relaxing of the restrictions, India could build dams that will

give it the power to control even the flow of the Western Rivers into Pakistan. As such the verdict not only allowed Baglihar as per Indian preferred designs but paved way for the rest of the Indian projects on the Western Rivers. Individually, these Indian dams, as Professor John Briscoe argued, might not be a cause of concern for Pakistan's quest for water security and as such might be in conformity with the Indus Waters Treaty. However, the cumulative storage of these Indian dams, once built, will empower India with hydro-hegemony vis a vis downstream Pakistan.

The proposed Indian dams on the Western Rivers, devoid of the restrictive provisions, could give India the power to inflict heavy damage downstream. Such a damage could be economical, environmental, infrastructural and strategic, both during peace and war. Armed with the waters of the Indus behind the dams, India can play havoc on the agricultural sector of downstream Pakistan either through withholding the waters or releasing it to cause downstream floods. Strategically, the withholding capacity of the dams could turn Pakistan's defence canals along the Pakistan's eastern India-Pakistan border obsolete. Historically, these canals have been filled with water during actual war or the threat of war and the canals have acted as strong bulwark against the approaching Indian army.

In the India-Pakistan war of 1965, these defence canals acted as a main hurdle in the way of the belligerent Indian army. General J. N. Chaudhury, the then chief of army staff of the Indian Army (1962-1966), has been quoted to have advised not to cross the canals to attack Lahore as:

All my experience teaches me never to start an operation with the crossing of an opposed water obstacle; as far as I am concerned, I have ruled out Lahore or a crossing at Dera Baba Nanak. (Nawaz, 2008)

Similarly, in the 2002 India-Pakistan military stand-off, Pakistan released waters into the defence canals to convert them into "Maginot lines" against any possible Indian attack. However, the Indian dams on the Western Rivers, if completed in future, could render the defence canals useless against future Indian attack. More alarmingly, any Indian act of releasing water into the Western Rivers could trap Pakistani forces on the plains of the Punjab and could thus control Pakistan armed forces' strategic manoeuvrability. Therefore, the completion of the large number of proposed Indian dams, especially after the Baglihar verdict, not only heightens Pakistan water vulnerabilities but also pose strategic threats to its territorial integrity.

IV. The Kashmir Factor

The pioneer of the Indus mediations, David Lilienthal, proposed a functional approach to resolve the Indus question. (Lilienthal, 1951) This approach meant treating the water dispute on a technical plane, away from political wrangling especially the rhetoric on the Kashmir dispute. The same approach was approved and elaborated by the World Bank as:

The problem of development and use of the Indus basin water resources should be solved on a functional and not a political plane, without relation to past negotiations and past claims and independently of political issues. (Lilienthal, 1951)

India accepted the functional approach for many advantages. One of the main advantages was to keep the Kashmir dispute on the back burner especially at a times when India was on weak footing on the dispute and the US, UNO and the rest of the capitalist world had inclined to the Cold War ally Pakistan. Pakistan had to agree with the approach despite the fact it wanted to resolve the Kashmir dispute at its earnest. Generally, the functional approach was beneficial in the short run as it resolved the Indus question in 1960. However, the same approach of treating the Indus and Kashmir inseparable proved problematic in the long run. Despite four of the main rivers of the Indus flowed through the disputed state of Kashmir, the functional approach denied the Kashmiris their due representation in the Indus mediations. Resultantly, the Indus Waters Treaty denied Kashmiris their due rights in the waters of the Indus. The people of Kashmir have demanded their rights at many occasions and on n 3 April 2002, the Jammu and Kashmir Legislative Assembly of the Indian Administered Kashmir passed a unanimous resolution calling for the review of the IWT.

Another interesting dimension of the functional approach was that no mention was made to the disputed nature of the territory of Kashmir. The Treaty, by default, has acknowledged the Ceasefire Line as the permanent international border between India and Pakistan which is once again in conformity with the Indian policy on Kashmir and against Pakistan's Kashmir policy. Whenever, Kashmir dispute is resolved as per the aspirations of the people of Kashmir, and the state of Kashmir either joins Pakistan which Pakistan claims, or joins India which India claims, or becomes an independent state as the recent surge in protests in Kashmiri suggests, the Indus Waters Treaty will be revised in all the three scenarios.

V. Afghanistan's and Chinese Claims on the Indus

The Indus basin is shared by India, Pakistan, China, and Afghanistan. Two of the rivers of the Indus, the Indus and Sutlej, originate in the Himalayan glaciers of Tibetan plateau of China. River Kabul, which contributes 20 % of the waters of the Indus river system, (Briscoe et al, 2005) as much as river Chenab or Jhelum does, originates in the Chitral district of Pakistan, enters Afghanistan, creeps through it and then enters into Pakistan. Both Afghanistan and China have showed their will to exploit the waters of the rivers flowing through their territories, (Salman, 2008) which could not be exploited previously either due to tough terrain and lack of technological advancement in the case of China or due to political instability in the case of Afghanistan.

The exclusion of Afghanistan and China from the Indus Waters Treaty will affect its integrity and functioning. While elaborating on the same point, Zawahri and Mitchell argued that:

Excluding riparian states from an accord that can affect the quality and quantity of water flowing in a river is likely to challenge the implementation, compliance, and long-term sustainability of any Treaty. (Zawahri & Mitchell, 2011)

Afghanistan has already begun construction of twelve dams with Indian assistance on river Kabul, which has direct consequences for Pakistan's water security. Pakistan, in fact, has termed the Indian assistance to the Afghan dams as "extension of Indian hydro-hegemony from Kashmir to Kabul." Similarly, Indian media and think tanks have projected serious concerns about Chinese possible structures on the

headwaters of the Indus, Brahmaputra and Ganges in Tibet (Holsag, 2011) to materialise its gigantic north-to-south transfer project. As against Afghanistan's claim on river Kabul, the entry of Chinese into the regional row over water resources might have salubrious effect on Pakistan's quest for water security. One could hope that Pakistan could, once China becoming an active claimant on river Indus or even Brahmaputra which seems the immediate target of Chinese diversion projects, balance Indian hydro-hegemony in the region of South Asia via China. However, such an optimism being pinned on Chinese assistance in hydro-balancing Indian hydro-hegemony, is subject to Sino-Pak cooperative and Sino-Indian competitive calculus and presumptions. However, if China, being upper riparian to India, laid claim to the water of the Indus, the effect might trickle down and India, being upper riparian to Pakistan, may ask for the revision of the Indus Waters Treaty in its favour.

VI. Terrorism in Kashmir and Indian threats of abrogating the IWT

The state of Kashmir has been in a continuous state of terrorism since the decade of 1990s. India has alleged Pakistan for cross-border terrorism in Kashmir and Pakistan has alleged India for state-terrorism in Kashmir. Historically, many analysts have agreed that the Indian action of stemming the water in April 1948 was a tactic to pressurize Pakistan to withdraw the tribal *Lashkaris* from Kashmir. After the signing of the Indus Waters Treaty, India abstained from using water as a weapon against Pakistan for few decades. However, one of the recent means being employed by the Indian side was to use water to pressurize Pakistan. In 2002, for example, when the Indian parliament was attacked by alleged terrorists, M S Menon, a water related official, threatened to abrogate the Indus Waters Treaty and stop the flow of water into Pakistan. In September 2016, when a military base in Uri district of Kashmir was attacked by alleged terrorists, the Indian Prime Minister, Narender Modi, threatened Pakistan that, "Blood and water cannot flow simultaneously." (Times of India, 2016)

Such threats from the senior leadership of India has two implications. One, for the water security of downstream Pakistan. Second, the fact that the functional approach to treat the Indus question on a technical, functional plan that resulted in the Indus Waters Treaty of 1960, was flawed in the long run. The question of Indus and the Kashmir dispute are deeply interlinked. Crises in one dispute could result in crises in the other, and Narender Modi's threat proved this pint. Since India and the World Bank had pressed so hard to adopt a functional approach against the will of Pakistan, Pakistan is within every right to ask India not to mix the Indus in the troubled waters of Kashmir. Moreover, since protests in the Kashmir are the result of an indigenous movement, any stopping of water flow into Pakistan could only result in more troubles on the Indus.

VII. Internal water feuds

Inter-provincial water feuds in Pakistan have the potential to rip the federation apart. During British raj, the provinces of the Punjab, Sindh and the princely states of Bahawalpur, Bikaner and Khairpur were at loggerheads with one another over water apportionment. With the division of India, these inter provincial disputes were overshadowed by India-Pakistan international water disputes. However, water disputes between Sindh and Punjab came to fore during the Indus negotiations and later on became complex as the provinces of NWFP and Baluchistan also became

party to the dispute. Kalabagh Dam served as the main irritant in the interprovincial water disputes as the province of Sindh passed a resolution against the dam in December 1988, and NWFP in October 1994 and Baluchistan in June 1994. (Akhtar, 2013) A sincere attempt was made to redress mutual grievances through the water apportionment Agreement of 1991. However, a long-lasting resolution of the issue is yet to reach. In addition to water disputes at provincial level, water is contested at different communities, tribal, sectarian and district levels which serves as a challenge to Pakistan's water security at domestic front.

VIII. The seceding role of the World Bank

The World Bank is signatory to the Indus Waters Treaty. W. A. B. Iliff, who represented the Bank, signed the IWT for the purposes specified in Article V (Financial Provisions), Article X (Emergency Provision), and Annexure H (Transitional Arrangements), Annexure F (Neutral Expert), and Annexure G (Court of Arbitration). However, with the expiry of the "Transition Period" extending from 1 April 1960 up to 31 March 1970,[4] the Bank's role through Article V (Financial Provisions), Article X (Emergency Provision), and Annexure H (Transitional Arrangements) has lapsed. Its only role is left through Annexure F (Neutral Expert), and Annexure G (Court of Arbitration).

Even the World Bank's role through Annexure F (Neutral Expert), and Annexure G (Court of Arbitration) has remained but nominal. Annexure F, Part-2 of the IWT clearly states that, the Bank could play a role in the appointment of NE only after India and Pakistan failed to agree on the appointment of the expert. Similarly, Annexure G of the IWT confines the role of the Bank to "drawing of lots" in the selection of the three Umpires for the Court of Arbitration. Such minimal role makes the status of the World Bank as the custodian of the Indus Waters Treaty controversial. The World Bank has withdrawn from its active role on the questions arising out of the Indus waters. John Briscoe, a renowned expert on the Indus question, and who has worked with the World Bank for 20 years, has gone further by charging the Bank of joining the Indian, "conspiracy to prevent Pakistan from developing its water resources, as well as ensuring the Indian sabotage of the Indus Waters Treaty." (Briscoe, 2010)

The secession of the World Bank's role on the Indus question, or clear siding with the Indian side as pointed out by Briscoe, owes much to the India-US warming up of relations and other changing dynamics at international level. Such a receding role of the Bank has not only made the Indus Waters Treaty a 'quasi- multilateral' treaty, but has serious ramifications for Pakistan's downstream water vulnerabilities.

Pakistan's Quest for Water Security: Options

In the light of these challenges, Pakistan's options to address its quest for water security are discussed as follows.

I. Living with Indus-I

Keeping in view the present hydrological and political realities, the most viable option for Pakistan at present is to live with the Indus Waters Treaty. Despite all its

[4]The Indus Waters Treaty 1960, Article II, Paragraph (6).

weaknesses, the Treaty is still managing India -Pakistan water relations. Although the Baglihar decision was a rude shock for Pakistan as the decision ripped the Treaty off of the safeguards against the malicious use of the waters of the Western Rivers by India. However, Pakistan has still means both within the ambit of the Treaty and outside the Treaty to ensure India doesn't divert and store water at the cost of lower riparian Pakistan.

For example, after failure on the provisions of the Neutral Expert, Pakistan mobilised the provisions of the Court of Arbitration in the case of the Indian Kishanganga project dispute to revive the restrictive clauses of the Indus Waters Treaty in its quest for water security. The decision of the Court was once again not very helpful and has resulted in further rigidity of the Treaty, but Pakistan can still count on the Treaty to ensure water security of Pakistan against possible Indian encroachments in the short run. It was under such a hope that despite Modi's ""Blood and water cannot flow simultaneously" threat, India-Pakistan water negotiations were resumed again and the 137th meeting of the Indus Water Commissioner was held in Lahore in 2019.

Meanwhile Pakistan can focus on water conservation practices at domestic level and resolve the interprovincial water disputes through the consent of all the provinces. New water storage structures need to be installed and the old ones cleaned out of the silt on priority basis. John Briscoe, in another of his work, has warned that Pakistan has the lowest water storage capacity of 150 cubic meters as compared to United States and Australia which have over 5000 cubic meters of storage capacity per capita and Pakistan's already installed capacity can store 30 days of water in the Indus basin whereas India can store 220 days of water in its rivers. (Briscoe et al, 2005) If Kalabagh Dam cannot be built due to mutual mistrust, the commonly agreed upon dams could be initiated to upgrade Pakistan's water storage capacity in the face of variability in river flows due to the changing nature of monsoon and the melt down of Himalayan glaciers.

II. Hydro-Balancing India Through China

As long as Pakistan was a Cold War ally, USA not only helped Pakistan to balance India politically and militarily but on the hydrological front as well. Many analysts found the Indus mediations and the signing of the Indus Waters Treaty a product of US-Pakistan Cold War alliance politics specifically and the US Cold War policy in the region of South Asia in general. However, with the end of the Cold War, Pakistan fell from the western grace and the US tilted towards India. Such a change in Pak-US historic relations effected India-Pakistan water relations as well.

Left with no other choice to withstand Indian hydro-hegemony, Pakistan can count on China by hydro-balancing India. In order to counter Indian dams on the Western Rivers, Pakistan has already asked China to invest in many projects in Pakistan. The Neelum Jhelum project on river Jhelum, Chashma Barrage and Diamer Bhasha Dam on Indus are such examples in which Chinese firms have already invested. The popular China Pakistan Economic Corridor (CPEC) also has nine such hydro-electric projects in which China is investing. (CPEC, 2019) Pakistan can also pressurise India via China not to stop or reduce the water flow into Pakistan and respect the Indus Waters Treaty as China is upper riparian to India on the Indus, Brahmaputra and Ganges.

III. Nuclear Weapons and Pakistan's water Security

Apart from external hydro balancing, Pakistan can also rely on its nuclear weapons in order to ensure its quest for water security. The deterrence value of nuclear weapons is an open secret. Such a deterrence induces peace and pressurize states to respect the security of other nuclear armed states out of Mutual Assured Destruction. Water security being vital to Pakistan's national and geographic integrity is assured through its nuclear doctrine. Pakistan's nuclear doctrine is based on first strike and has four red lines. One, India captures a huge part of Pakistan's territory. Second, India captures a huge portion of Pakistan's armed forces. Third, India instigates internal rebellion in Pakistan. Fourth, India strangulate Pakistan economically. The fourth red line has two sub red lines. One, India blockades Pakistan's main ports. Second, India stem the rivers flowing into Pakistan. (Brennan, 2008) Such an expansion of the deterrence umbrella to water security is the strategic need of Pakistan.

IV. Renegotiating the Indus: Indus II or GIT

An Indian analyst, B. G. Verghese, while writing in 1997 suggested to optimize the Indus Waters Treaty which he called Indus-I into another treaty. He suggested:

…the Indus Treaty was good as far as it went as a quick and practical water sharing arrangement. It could, however, be optimized to provide improved drainage, more storage, and certainly more energy through what might be called Indus-II. This would be without prejudice to Indus-I and would in fact build on it. (Verghese, 1997)

He again revived and elaborated his concept of Indus-II through an article titled 'Indus II' that appeared in the Tribune in 2005. (Tribune, 2005) While reacting to his newspaper article, Ramaswamy R. Iyer, another renowned Indian analyst, rejected his idea of Indus-II. He stated that:

No one would wish to deprecate such a vision. However, there is a basic difficulty here. If the Indus treaty 1960 had been a constructive, cooperative water sharing treaty, it could have been built upon and taken further; but it is a negative, partitioning treaty, a coda to the partitioning of the land. How can we build cooperation on that basis? (Iyer, 2005)

Both the viewpoints apparently seem mutually contradictory. However, there is one thing common in both the viewpoints which is the need of the renegotiation of the Indus Waters Treaty. Both the writers suggested for the renegotiation either through optimizing Indus-I by modifying it (Verghese point of view) or replacing the present Treaty with another more cooperative treaty after rapprochement in India-Pakistan relations (Iyer's point of view).

Pakistan has historically shied away from giving any substantial response on the question of the Indus II. Being a lower riparian and a weaker state vis a vis India, Pakistan fears that any future negotiations over the Indus would rob of its present rights under the Indus Waters Treaty. Moreover, when the Indus negotiations were well under way, Pakistan was on strong footing as compared to today. First, with East Pakistan still a part of Pakistan, Pakistan was strong to balance India. Second, the western world due to the Cold War politics was on Pakistan's side. Third, as discussed earlier, India at that time was on weak grounds on the Kashmir dispute. All these factors gave Pakistan an edge over India in the Indus negotiations.

At present, Pakistan lack the bonhomie it enjoyed with the West. India is visibly stronger and bigger than Pakistan and as such has edge over Pakistan on the Kashmir dispute as compared to to the early decades. Therefore, Pakistan fears that any re-negotiations on the Indus will result in the loss of its rights over the waters of the Western Rivers.

However, there are three factors that Pakistan should keep in mind while approaching for the Indus II. One, no doubt Pakistan is the lower riparian and is weaker as compared to India, yet, she has granted more rights to India then it deserved under the Indus Waters Treaty. Second, in 1950s, international water law was not as well defined as it is today. During those decades any such negotiations were easily swayed by power-politics but at present under the glaring media and well codified international water law, the vagaries of power politics has no chance to influence negotiations. If the principle of "equitable utilisation" is there in support of the upper riparian, "the principle of no significant harm and historic use" is on the side of the lower riparian Pakistan. Third, China is an emerging global power, and its natural competition with India could play in Pakistan's favour. Therefore, in case India proposes for Indus-II, Pakistan should not fear of renegotiations.

On one side, Pakistan should abide by the Indus Waters Treaty, and on another side could welcome the re-negotiations of the Indus by suggesting its own treaty, a Grand Indus Treaty (GIT). Such a grand treaty should be negotiated amongst all the riparians of the Indus basin, including Afghanistan, and China. In case, Indian penchant for bilateralism unwelcome the GIT and insist on bilateral water treaties, Pakistan can welcome bilateral treaties as a first phase to the GIT. Pakistan can sign a bilateral treaty with Afghanistan (let us call it the Kabul Treaty) and with India bilaterally (let us call it Indus-II as suggested by Verghese). India being lower riparian will want to enter into a bilateral treaty with China (let us call it Sino-Indus Treaty). In the second phase of the negotiations, all these bilateral treaties could be clubbed into the GIT.

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