



**INSTITUTE OF
STRATEGIC STUDIES**

web: www.issi.org.pk
phone: +92-920-4423, 24
fax: +92-920-4658

Report – Public Talk

“Indus Water Treaty and Water Security”

June 18, 2019



Rapporteur: Aamna Rafiq

Edited by: Najam Rafique

PICTURES OF THE EVENT



The Institute of Strategic Studies Islamabad (ISSI) organized a Public Talk titled, “*Indus Water Treaty and Water Security*” on June 18, 2019. Syed Mehr Ali Shah, Pakistan Commissioner for Indus Waters, was the guest speaker at the occasion.

Welcoming the speaker and guests, Director General, ISSI Ambassador Aizaz Ahmad Chaudhry, said that water is life and it has been observed that over the course of history, human settlement have grown around the sources of fresh water, mainly rivers. He acknowledged the fact that the Indus River System (IRS) is a life line for Pakistan and nature has endowed Pakistan with plenty of fresh water. Despite having the world’s largest glaciers, Pakistan is among the world’s 36 most water stressed countries. The Pakistan’s Council of Research in Water Resources (PCRWR) has warned that unless timely measures are taken, the country will run out of water by 2025. The World Bank too has cautioned that Pakistan is moving from a water stressed country to becoming a water scarce country.

He identified growing population and rapid urbanisation as major factors behind increasing stress on the available water resources in Pakistan. Adverse climatic variations like drought and erratic monsoon patterns are also taking their toll and the Himalayan glaciers are retreating at a faster pace. Furthermore, water management has become wasteful and inefficient, especially with regard to massive expansion of tube well irrigation. The inability of Pakistan to save flood waters or build large reservoirs is making the situation even worse. Consequently, among the countries facing acute water shortages, Pakistan now ranked third in the world according to the International Monetary Fund (IMF). The people of Pakistan are becoming acutely aware that water security would be the most serious challenge facing Pakistan in the near future. That in turn means on one hand Pakistan must manage the available water more efficiently, and on the other, ensure that its share of water in the IRS flows to its territory without any obstruction or diversion. Although internal management of water resources is of critical importance, today’s talk is about the second aspect, that is judicious apportionment and management of the inflow of Pakistan’s share of water in the IRS.

Talking about the significance of Indus Waters Treaty (IWT), he stated that adequate distribution of trans-boundary water resources can be a bone of contention among states if proper legal framework and mechanisms are not in place for equitable allocation. Since 1947, Pakistan and

India are embroiled in a conflict over this resource until the historic IWT was signed between the two countries in 1960. Legally well-rounded and skilfully drafted, this treaty is an amicable instrument of mutual cooperation between the two opposite sides. The treaty is often cited as a success story of international riparian engagement as it has withstood major wars between the two signatories, incidents of terrorism, and several skirmishes over water distribution. The agreement is also heralded as crucial by the World Bank which played an instrumental role in its negotiations. Recently, however, India has embarked upon projects which Pakistan deems as a violation of IWT. India is also not ready to accommodate Pakistan's point of view and has adopted a hostile posture, which raises question marks on its cooperation and implementation of IWT. He warned that if not amicably resolved, it could further aggravate the water security of Pakistan. He affirmed that the dispute has arisen mainly over the dams that India is constructing on the western rivers allocated to Pakistan. The treaty does allow water storage to India within the permissible quota of the upper riparian, as well as run of the river projects, but India is building storages and diverting water in violation of this quota. This leads to a fundamental question: How to resolve this dispute?

He informed the audience that IWT provides for the mechanism whereby a Neutral Expert could be engaged, like Pakistan did for Baglihar dam or a Court of Arbitration could be set up, like Pakistan did for Kishanganga dam. Unfortunately, in cases of Kishanganga and Ratledams, India refused to make changes necessary to bring the projects in conformity with the standards and limits set out by the treaty. Even the intervention and facilitation by the World Bank in the past few years has not done much to make India comply with IWT. This leads one to believe that India is politicizing the issue. Under Prime Minister Modi, the water issue is increasingly linked to overall hostile approach of the Bharatiya Janta Party (BJP) towards Pakistan and Indian Occupied Kashmir (IOK), which is the source of water in IRS. Mr. Modi's public threat that water and blood can't flow together reflects the prevailing mind-set in India. Through this non-cooperation, India is practically making the treaty dysfunctional. Moreover, there is also a security dimension if India builds enough dams and uses them to impede the flow of water to Pakistan during the sowing season, which can inflict serious injury to the livelihood of millions of Pakistanis whose lives depend on agriculture. Already, there is a chatter of water wars between the two countries. India, he said, must think it through.

He described the impact of climate change on Indus water basin as a common problem for India and Pakistan. The rising temperature, retreating glaciers and erratic monsoon patterns should worry both India and Pakistan. In his view, this can become an area where both should cooperate to address the common challenge. He also put forward few specific questions for the guest speaker: How does Pakistan deal with the situation when the other party, upper riparian in this case, is not ready to negotiate in good faith or reach a compromise, but instead insists that only its position should prevail? What will India gain in long-term by making the treaty dysfunctional? How does this serve for India to commit blatant violations of bilateral international legal obligations, especially when India is aspiring for a regional and global power status? Is there any political will in India's present leadership to work with Pakistan to deal with this common menace? How does Pakistan address the security dimension when India remain a belligerent upper riparian playing politics on water reserved for Pakistan? Will war over water serve India and Pakistan? Lastly, he expressed his hope that this intellectual endeavour by ISSI will encourage others in academia to address this important project and help in finding solutions to achieve water security in Pakistan.

Syed Mehr Ali Shah gave a comprehensive and thought-provoking power-point presentation on the topic. His presentation was divided into six themes: a brief overview of IRS; the historical perspective of IWT; perception vs. fact on IWT; water issues with India; water security; and way forward.

Mr. Shah provided a precise overview of the IRS through excellent graphical illustrations. The total geographical area of 1.16 million square-kilometres (mlnsq-km) is divided among four countries. The largest area of the Indus Basin belongs to Pakistan, which is 47 per cent. The 39 per cent area lies within the geographical boundary of India. The shares of China and Afghanistan are 8 and 6 per cent respectively. The surface water and glaciated areas are 171 million acre feet(maf) and 16,933 sq-km respectively. IRS is comprised of six rivers. The three Western Rivers - Indus, Jhelum and Chenab cover 137 maf. The three Eastern Rivers - Ravi, Beas and Sutlej cover 34 maf. The total irrigated land is approximately 45 million acre with a total population of approximately 208 million. According to the IWT, control of three Western Rivers belongs to Pakistan. The main infrastructures on these three rivers include two dams (Tarbela and Mangla) with the storage capacity of 13.7 maf. This is just 10 per cent of the total

water available in Pakistan. There are 18 barrages which are constructed all the way to the Kotri Barrage on all six rivers. The total length of watercourses is 107,000 km. The total length of 45 canals is 56,073 km. The total length of 12 link canals is 700 km, constructed to divert water from the Western Rivers to the Eastern Rivers. The hydropower capacity is 41 billion Kilowatt hour (KWh) per annum. The role of the topography of the basin is tremendously important. The three Western Rivers originate from mountainous region and enter the plains after crossing the Line of Control (LOC). However, the three Eastern Rivers pass through the plains before crossing the LOC, which places India in an advantageous position to exploit the water resources.

The water availability record from 1923 to 2017 in the basin shows that an average availability of water is 137 maf. The trend shows that the water availability stands normal during the two out of six years and one out of six years stands dry where the water availability dropped to 97 maf. Similarly, one out of six years stands wet where the water availability reached the maximum of 186 maf. The Sub-continent experienced two drought waves from 1923 to 1927 and the second during the early 1950s, 1960s and the 1970s. Pakistan also faced the worst situation at the beginning of this millennium. He also informed the audience about the five – year moving average which means that water availability varies in the form of cycles. There were normal years after period of drought. These normal years were followed by flood period, which again approached the normal average leading up to drought. The data of last 100 years shows that the water availability in the Western Rivers did not change even in 1960 when Pakistan signed the IWT. However, water availability significantly reduced from 6 maf in the 1960s to 1 maf in 2017 which was 34 maf before the conclusion of IWT. The Tarbela Dam receives 80 per cent of its total water during the 100 days from mid-June to mid-October. The capacity of Pakistan to divert water from the Western Rivers to the Eastern Rivers has reduced by 5 per cent since IWT. The reasons for this reduction are water seepage and sedimentations.

Mr. Shah also enlightened the audience about the water storage situation and groundwater availability in Pakistan. At the time of completion in 1976, the storage capacity of the Tarbela Dam was 9.68 maf which has now reduced by 36 per cent and reached 6.17 maf. The original capacity of the Mangla Dam was 5.34 maf which reached 7.41 maf after it was raised in 2013. It's a gain of 39 per cent capacity. The Chashma Barrage is in a regulating form where Pakistan experienced huge loss of 61 per cent, but the absolute capacity of Chashma is so small that it

hardly produced any adverse effect. The original combined storage capacity of these three reservoirs was 15.74 maf, which has now reduced to 13.86 maf. So, the net loss of Pakistan in terms of water storage capacity is almost 12 per cent or 1.88 maf. The overall quality of fresh water in a basin is good, especially in the areas close to the rivers. However, the quality of water becomes unusable or marginal as it moves away from rivers and become hazardous when it enters into the Sindh province, especially near the sea. Furthermore, the quality of water in Dohab (an area between two rivers) is also marginal. The number of tube wells constructed by the government and private users in the basin is increasing. There were just 10,000 - 13,000 tube wells in 1971, but presently they have increased to almost 1.1 million. The major problem for Pakistan right now is that there is only one operator for surface water storage, but in the case of tube wells there are 1.1 million operators. Pakistan faced flood in the 1960s, 1970s, 1990s and a super flood in 2001. The total direct losses are US\$ 38,053 million including the loss of US\$ 19,040 during the last six years.

The second theme of his presentation was the historical perspective of IWT. HE said that the water dispute started between Pakistan and India soon after the partition due to little consideration of this sensitive issue by the British. Punjab was partitioned in 1947 into West and East Punjab. The important Head works at Ferozepur and Madhupur which fed about 1.7 million acres in Western Punjab (Pakistan) were given to Eastern Punjab (India). Chairman Boundary Commission, Cyril Radcliffe assumed in his award that “drawing of a boundary line cannot avoid disrupting such unitary services as canal irrigation, railways and electric power transmission, a solution may be found between the two states for some joint control of what has hitherto been a valuable common service.” The Committee on “Division of Physical Assets” was formed to settle questions of future management of joint assets by Punjab Partition Committee. The Committee gave a unanimous report on the issue of post-partition water shares of East and West Punjab in which, “it is agreed that there is no question of varying the authorized shares of water to which the two zones and various canals are authorized.” Accordingly, a standstill agreement “to continue status quo till 31st March 1948” was made between Chief Engineers (designate) of East and West Punjab. At the expiry of standstill agreement, India cut off supplies to Pakistan from Madhupur and Ferozpur Headworks on April 1, 1948. Mr. Shah also quoted a proposal by David E. Lilienthal in August, 1954 which highlights the careless handling of water distribution in the partition.

The treaty negotiations were not easy for Pakistan. Former President Muhammad Ayub Khan in his book *Friends Not Masters* talked about the confrontations he had with the technical experts of Pakistan. The experts had unrealistic goals without realizing the fact that Pakistan was in the position of weakness all along the line. President Muhammad Ayub Khan also termed IWT as a great sacrifice and not the ideal one, but it was the best Pakistan could get under the circumstances. Although, there was no cause for rejoicing at the signing of the treaty, there was certainly cause for satisfaction that a possibly very ugly situation had been averted. With the treaty, a chapter of long and uneasy negotiations and suspense in the national affairs of Pakistan came to an end, and Pakistan entered a period of sustained hard work to provide the huge storages and immensely long link canals for the alternative sources of water. These views of President Ayub depicts the complexity, heart-breaking delays and frequent stalemates of the entire process

While expressing his views on perception vs. fact on IWT, Mr. Shah said that the treaty does not allow India to obstruct the flow of run-of-river by storing or diverting water. The general perception in Pakistan is that India is building many big and small dams which can cause major water shortages in or produce flooding through mal-operation. Furthermore, if India continues to build dams on Western Rivers and stops water, then the day is not far when lands of Pakistan will become barren and Pakistani nation that has a spectacular history of agriculture production will be forced to import food. However, the comparative analysis between the pre-treaty and post-treaty water inflow data portray an entirely different picture. The water inflow of the Indus, Jhelum and Chenab Rivers remained same in the pre-treaty and post-treaty periods.

The IWT consists of twelve articles and eight annexures. The main subjects of the treaty are :river water rights of both Parties on the Eastern and the Western Rivers and their obligations; hydropower generation rights of India on the Western Rivers (run-of-river and storage projects); agricultural uses of water; exchange of river and canal flow data on a reciprocal basis; supply of advance information about extraordinary floods; maintenance of international drains (quality and section); future cooperation between the parties; and mechanism of dispute settlement.

He identified a few important areas of water conflict with India. The designs of Indian hydropower projects are violating the criteria specified in treaty like excessive freeboard, deep

orifice spillway, and high pondage. India also plans and constructs projects without informing Pakistan e.g. Chutak HEP, Wullar Barrage/Tulbul Navigation Project. Moreover, India does not provide data of the projects as per the requirements of Article VII(2) of IWT. India stalls on the discussions on the projects with the intent to bring these projects near completion before Pakistan opts for NE/COA.

He also pointed out the challenges of water management in Pakistan. The major challenge is an uncontrolled population growth which is making the water shortage problem even more severe. The population of Pakistan was 34 million with 5,260 cubic meters per capita in 1951. However, the population of Pakistan is now 208 million with less than 1,000 cubic meters per capita in 2018. Another challenge is the phenomena of climate change which is manifesting itself in the form of extreme weather conditions like unprecedented rains, floods and droughts. There are no regulations regarding groundwater management, sea water intrusion, water pricing and Delta protection. These issues show bad governance, poor institutional performance, absence of fund and lack of political will.

Concluding his presentation, Mr. Shah said that Pakistan is facing an increasingly grave water crisis and there is no more time to waste. The challenge of water scarcity has been created by conditions within the country, so their solutions reside within the national borders. In addition, the Indus problems are complex and multi-disciplinary; therefore they need expert people, capable institutions, reliable information and aligned leadership committed to construct a compelling narrative through authentic community engagement.

Q & A

Several interesting questions were raised by the audience on topical issues related to IWT, IRS, federal vs. provinces water management system in both countries, accumulative storage impact and negotiating a new treaty.

On a question related to a large number of institutions for water management in Pakistan with overlapping mandates and unified services in neighbouring states; Mr. Shah made the participants wise on the constitutional setups in India and Pakistan. He said that unlike Pakistan, India has four river basins to manage. Water management is a devolved subject and states feel

more responsible in India. It has a water service in the shape of All India Water Engineering Service in which it has a union level water commissions. These union level commissions incentivize the federal budget for the construction of water projects. If the construction of any project involve three states, then all three will collaborate with each other. However, in Pakistan the financing and construction of reservoirs are federal responsibilities.

To another question regarding the impact of accumulative storage; Mr. Shah stressed that if India continues to construct hydropower projects with maximum pondage, then it can produce an accumulative storage impact which Pakistan could experience in terms of reduction in the flow of the Western Rivers. This is the main reason behind Pakistan`s reservations on the designs of Indian hydropower projects on the Western Rivers. Raising concerns on the increased pondage is a fundamental right of Pakistan granted by the IWT. Additionally, the IWT also allows India to construct reservoirs but with a specific capacity. However, India can easily execute this malicious plan because there are hardly any consumers in the Western mountainous region of IOK.

On a question of provision related to revisiting the treaty; Mr. Shah said that Article 12 of the IWT allows the revision provided that both countries agree to do so. However, until the mutual ratification of new treaty, the existing IWT will remain enforced. He also cautioned that Pakistani leadership must take into account a position of strength before entering into negotiations for any new treaty.

A question was raised on why the narrative of climate change does not resonate with the actual on-ground situation where the average water inflow of the Western River remained unchanged?

Mr. Shah responded that climate change is an important factor, but there are different schools of thought regarding its impact on the Himalayan, Hindu Kush and Karakoram mountain ranges. The impact of climate change on Himalayan region is small as compared to others. The water availability can change due to climate change which could be managed through construction of more resilient water infrastructure, large reservoirs, careful domestic use and adaptive policies.

In his concluding remarks, the Chairman Board of Governors (BOG), ISSI, Ambassador Khalid Mahmood said that water security is a global issue. He affirmed that Pakistan is particularly

categorized as a water scarce country and will be reaching level of absolute scarcity level. Pakistan's water security issues are related to water flowing from India and to regulate this flow, it signed the IWT in 1960. Despite few deficiencies which have been pointed out during the presentation and the discussion, the treaty has so far succeeded in meeting Pakistan's concerns. In addition to technical problems, there is also a political dimension to this issue. How both countries resolve the historic Kashmir dispute could have huge impact on water security of the region. Another aspect to highlight is the politicization of water distribution among the provinces within Pakistan. Furthermore, he advised that new challenges like environment, ground waters and population which are not or inadequately covered in the treaty could be incorporated in the form of additional protocols. The Indian threat of scrapping the IWT is just a bluster rather than a well-thought out move. He warned that any tinkering with the existing treaty could have serious implications for water security in South Asia.