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INDUS WATERS SPECIAL

Indus Waters Treaty: View from Kashmir

K. Warikoo

Optimising Hydel Development in Chenab Basin

S.C. Sud

**Baglihar Dispute: A Blessing in Disguise for the
People of Kashmir (A Kashmiri View)**

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Editor's Page

Providing water security to the ever growing population of the world is a formidable challenge facing nations in the 21st century. The year 2005 marks the beginning of the “Water for Life” Decade 2005-2015, which seeks to focus attention on action-oriented activities and policies that ensure the long term sustainable management of water resources and include measures to improve sanitation. Kofi Annan, the UN Secretary General in his message on the occasion of the World Water Day on 22 March 2005 stressed the need for “better management of the world’s water resources, which are our lifeline for survival, and for sustainable development in the 21st century.”

Though the developed countries have tapped their hydel resources to the optimum, in India over the past four decades, there has been steady decline in the share of hydel power to total power generation. A recent World Bank study on *India's Water Economy* (October 2005) points out that India’s dams can store only 200 cubic meters per person, whereas “arid rich countries like USA and Australia have built 5000 cubic meters of water storage per capita” and countries like South Africa, Mexico, Morocco and China can store about 1000 cubic meters per capita. This study underlines the fact that “industrialized countries harness over 80 per cent” of their economically-viable hydropower potential, as against only 20 per cent in India, “despite the fact that the Indian electricity system is in desperate need of peaking power and despite the fact that Himalayan hydro power sites are, from social and environmental perspectives, among the most benign in the world.” Enormous potential of hydel resources in the Himalayas is waiting to be harnessed.

It is against this background that this Special Issue of the *Himalayan and Central Asian Studies* provides both political, technical and international law perspectives of the Indus Waters Treaty and its implications with regard to water security and economic development in Jammu and Kashmir by harnessing its own river waters.

As the study explains, there is a sound basis for reviewing the Treaty, so that it is turned into a resilient one after making necessary modifications and adjustments which can take care of the substantial changes in the ground situation in Jammu and Kashmir during the past four and a half decades.

There is a strong case for creating adequate storage facilities to harness the enormous hydel resources of the Himalayas and also to store the rainfall. This task assumes urgency as the global climatic change will cause more and more glacial melting in the western Himalayas. Given the importance of sustainable management of water, smaller projects can be considered keeping in view the factors of environment, cost and seismic fragility. Setting up mini-hydel power projects in remote and mountainous areas of Jammu and Kashmir would not only involve simple technology and shall be cost effective. This can be achieved only through proper coordination and synergy between central ministries of Power, Non-Conventional Energy and Defence, the Planning Commission, NHPC, Border Area Development organizations, state government and local governments like Ladakh and Kargil Autonomous Hill Development Councils.

Transboundary water issues such as control of floods, glacial mud flows, outbursts of glacial dammed lakes, landslides, sharing of water, improved management of watersheds to control sedimentation, collection and storage systems in headwater regions for supply during lean period in the downstream region need to be tackled on a long term basis. These tasks can best be achieved through regional cooperation, collaboration and mutual accommodation.

K. Warikoo

INDUS WATERS TREATY

VIEW FROM KASHMIR

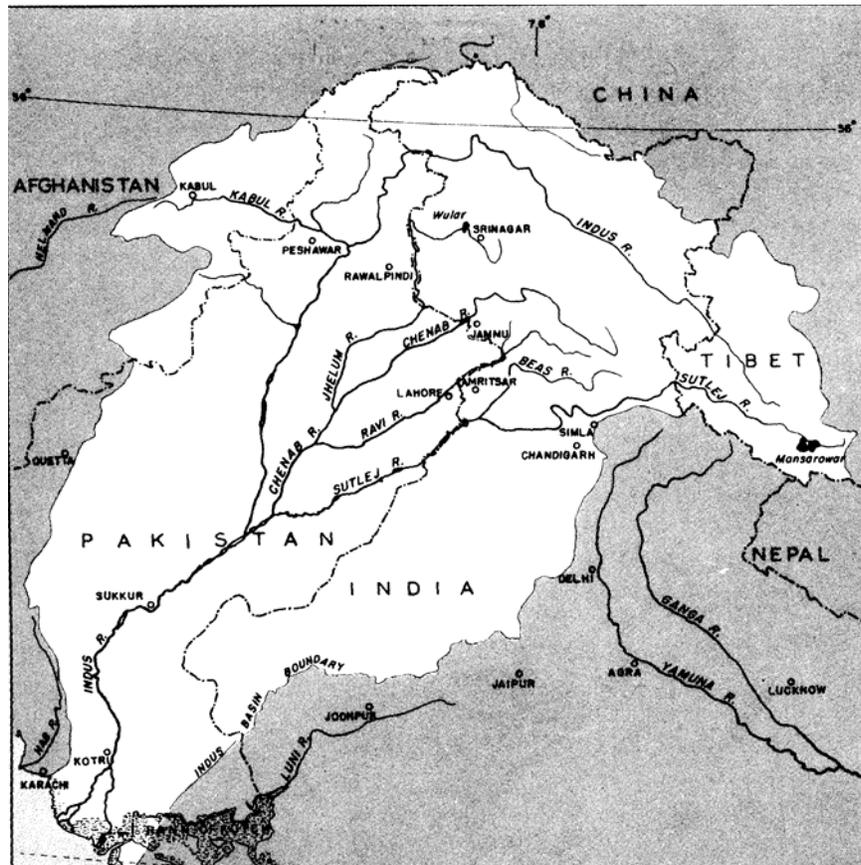
K. Warikoo

With Pakistan securing World Bank's intervention by having appointed a neutral expert, Raymond Lafitte from Switzerland, to adjudicate its dispute with India over the 450 MW Baglihar hydropower project on the Chenab river in Doda district of Jammu and Kashmir, the 45 years old Indus Waters Treaty has once again come into the focus of national and international attention. It is for quite some time that the Indus Waters Treaty, which was signed by India and Pakistan in September 1960 after more than eight years of negotiations to resolve the dispute over the usage for irrigation and hydel power of the waters of the Indus water system, has been publicly denounced by the Jammu and Kashmir government for being "discriminatory" to the Indian State of Jammu and Kashmir.¹ On 3 April 2002, the Jammu and Kashmir Legislative Assembly, cutting across party affiliations, called for a review of the Treaty. Speakers who denounced the Treaty ranged from the National Conference's G. M. Bawan to the Bhartiya Janata Party's Shiv Charan Gupta and Communist Party of India (Marxist) leader Mohammad Yusuf Tarigami.² The State government has been contending that in spite of having an untapped hydro-electric potential of 15,000 MW, the State has been suffering from acute power deficiency due to restrictions put on the use of its rivers by the Indus Treaty. And when the State Chief Minister, or his officials point to the losses accrued to the State by virtue of this Treaty, they are not indulging in any rhetoric. In fact their views that the requirements of the J&K State were not taken into account while negotiating the Treaty with Pakistan are shared largely by the intellectual, media and public circles in Jammu and Kashmir. Not only that, some people even stretch it further suggesting that the central government has been insensitive to the State's problems. Pakistan's action is seen to be obstructing the

K. Warikoo

agro-economic development of Jammu and Kashmir State. The State Chief Minister Mufti Mohammad Syed and other political leaders have appealed to Pakistan to facilitate the economic growth of Jammu and Kashmir by not raising objections to hydro power projects in the state under the Indus Treaty provisions.

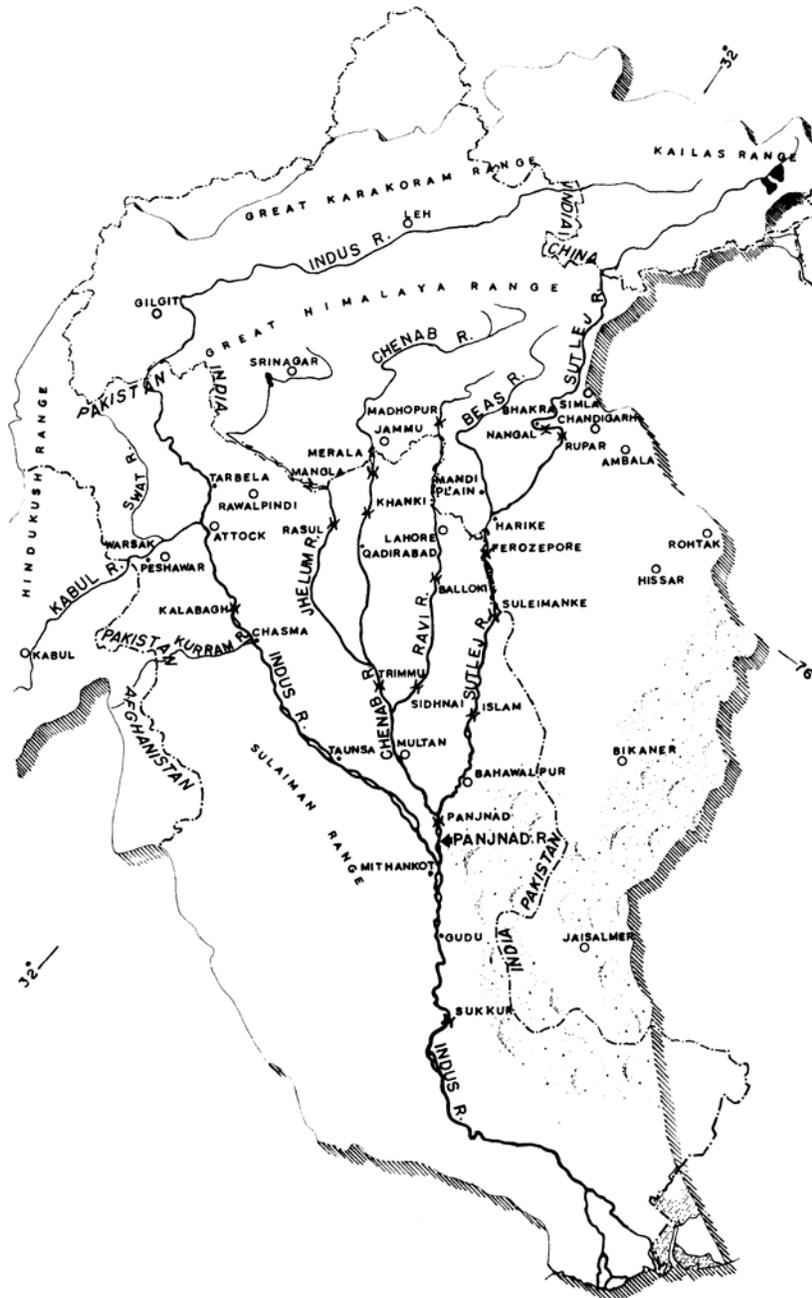
It is against this background that this paper seeks to have a relook at the Indus Waters Treaty. That the Treaty has been in force for nearly 45 years is a considerable period for making an appraisal whether the Treaty really served the larger purpose of bringing India-Pakistan amity and cooperation on other fronts.



The Indus Region

Not to Scale

INDUS WATER TREATY: VIEW FROM KASHMIR



The Indus Basin

Not to Scale

THE INDUS BASIN

The Indus system of rivers comprises of the main river Indus, known as the river *Sindhu* in Sanskrit, and its five tributaries from the east, the Jhelum, Chenab, Ravi, Sutlej and the Beas, and three tributaries from the west, the Kabul, Swat and the Kurram rivers.³ The great Indus river is 2880 kms. long and the length of its tributaries as mentioned above is 5600 kms.⁴ Historically, India has been named after this great river-Indus. The main Indus river rises in the Kailas range in southwestern Tibet. In Ladakh, it is joined by its first tributary, the Zaskar river and continuing for about 150 miles the Indus is joined by the Shyok river. Then Shigar, Gilgit and other streams join the river. The Shigar joins the Indus near Skardu in Baltistan. The Gilgit stream joins it farther down at Bunji. Some miles further downstream, the Astor river joins the Indus, which then crosses the Kashmir territory and enters Pakistan. The Kabul river which is joined by the waters of Swat in Peshawar valley, joins the Indus just above Attock. The Indus then receives from the east, the rivers of Punjab - the Jhelum, the Chenab, the Ravi and the Sutlej. The river Jhelum originates in Verinag in the valley of Kashmir and after flowing through Kashmir it enters Pakistan. The Chenab river rises in Lahoul in Himachal Pradesh State of India and after flowing through Jammu province enters Pakistan. The Ravi river rises near Kulu in Himachal Pradesh and flowing through Punjab enters Pakistan. The Sutlej rises in Tibet and flows through Punjab before entering Pakistan. River Beas rises in Himachal Pradesh and flows wholly within India. After receiving the waters of the Punjab rivers, "the Indus becomes much larger and during July-September, it is several miles wide".⁵ According to a study made in Pakistan, the Indus river carries about 144 billion cubic yards, which is more than half of the total supply of water in the Indus River system."⁶ Whereas the Jhelum and Chenab combined carry roughly one-fourth, the Ravi, Beas and the Sutlej combined constitute the remainder of the total supply of the system (that is nearly one-fourth).

Though the Indus basin is known to have practised irrigation since ancient times, it were the British who developed an elaborate network

of canals in the Indus system of rivers. However, their emphasis was that lands belonging to the Crown received such irrigation so that the British Indian government would earn revenue from water cess as well as from the sale of crown waste lands.⁷ In this manner, the Indus system waters were used to irrigate annually about 23.4 million acres in the Indus plains and 2.6 million acres above the rim stations before partition.⁸

PARTITION AND ITS AFTERMATH

Immediate aftermath of the partition of the Indian sub-continent and the creation of two Dominions of India and Pakistan in 1947 was that bulk of the irrigation canals developed on the Indus system went to Pakistan. Out of 26 million acres of land irrigated annually by the Indus canals, 21 million acres lay in Pakistan and only 5 million acres in India.⁹ As per the 1941 census, the population dependent on the Indus system waters was 25 million in Pakistan and 21 million in India.¹⁰ Besides, India had “another 35 million acres of lands crying out for irrigation from the Indus basin sources”.¹¹ Thus the partition gave independent India much less undeveloped area inspite of the fact that it was an upstream country with control over Ravi, Beas, Sutlej, Jhelum and Chenab. India had not only to cater to the food requirements of 21 million people but also those millions who migrated from irrigated areas in West Punjab and Bahawalpur, now in Pakistan, all of whom were dependent on the Indus waters.

The dispute over sharing of Indus waters came to fore immediately after partition because the existing canal headworks of Upper Bari Doab Canal (UBDC) and Sutlej Valley canals fell in India (State of East Punjab), while the lands being irrigated by their waters fell in Pakistan (West Punjab and Bahawalpur State). In order to maintain and run the existing systems as before partition, two Standstill Agreements were signed on 20 December 1947 by the Chief Engineers of East Punjab and West Punjab. These interim arrangements were to expire on 31st March 1948, after which East Punjab started asserting its rights on its waters. It was on 1 April 1948 that the East Punjab Government in control of the head works at Madhopur on the Ravi and at Ferozpur

on the Sutlej, cut off water supplies to the canals in Pakistan fed by these head works, after the Standstill agreements expired on 31 March 1948.

In fact, East Punjab had formally notified West Punjab on 29 March 1948 that the 'Standstill Agreements' would expire on 31st March, and had accordingly invited the Chief Engineers of West Punjab to Shimla for negotiating an agreement for resumption of water supplies.¹² According to Rushbrook Williams, the water supplies were cut because "the canal colonies in Pakistan served by these head works did not pay the standard water dues. The people incharge of the head works were applying exactly the same kind of sanction that they would have applied in an undivided India – no canal dues, no water."¹³ The Chief Engineers of the two Punjab met in Shimla and on 18 April 1948 concluded two agreements which were to take effect from the date of their ratification by the Dominions of India and Pakistan. Finally at the inter-Dominion Conference on 3 May 1948 at Delhi the matter came up for discussion. It was on 4 May 1948 that an agreement was reached after a meeting at Nehru's instance between the Indian Prime Minister and Pakistan's Finance Minister, Ghulam Mohd. By the Delhi Agreement of 4 May 1948, East Punjab agreed not to withhold water from West Punjab without giving the latter time to tap alternative sources. On its part West Punjab recognised "the natural anxiety of the East Punjab government to discharge the obligation to develop areas where water is scare and which were underdeveloped in relation to parts of West Punjab."¹⁴ As regards the payment of seigniorage charges to East Punjab, the West Punjab government agreed to deposit immediately in the Reserve Bank of India "such adhoc sum as may be specified by the Prime Minister of India."¹⁵ It may be pointed out that the British Province of Punjab recovered, before partition, from Bikaner State seigniorage charges for the supply of water to the State in addition to proportionate maintenance costs etc. of the Ferozepore headworks and of the feeder canal.¹⁶ East Punjab now wanted to recover a similar charge for water supplied to West Punjab.

Though this agreement was not final, it did provide some basis for dealing with the vexed problem. But soon it was found that Pakistan was unwilling to stick to the agreement, as it was seeking to use the Indus water dispute as a political tool in the battle over Kashmir being fought at the United Nations. Pakistan also sought to create anti-India hysteria in Pakistan over this issue. As such Pakistan unilaterally abrogated the May 1948 Agreement saying that it was signed “under duress”.¹⁷ Besides, Pakistan refused to pay the dues to India even after a year of the agreement.¹⁸ Pakistan now asked for a reference to the International Court of Justice for final verdict, which was objected to by India. Pakistani media and politicians launched a campaign over the issue of canal waters dispute to create a scenario of serious crisis in Indo-Pakistani relations. All along Pakistan’s policy was to seek third party adjudication, which India was opposing.

THE LILIENTHAL PROPOSAL and WORLD BANK INITIATIVE

It was in this atmosphere of mutual distrust and contrived tensions, that David E. Lilienthal, formerly Chairman of the Tennessee Valley Authority and the U.S. Atomic Energy Commission visited India and Pakistan in February 1951 on a supposedly private visit. Before embarking upon this visit Lilienthal had met the then U.S. President Truman, the U.S. Secretary of State, Dean Acheson, Pakistan’s Foreign Minister, M. Zafrulla Khan and Secretary General of Pakistan’s Delegation to the U.N., Muhammad Ali.¹⁹ While in India, Lilienthal was a guest of Prime Minister Nehru and he also held talks with Sheikh Abdullah on Kashmir. In Pakistan, Lilienthal discussed with Prime Minister Liaquat Ali Khan, Kashmir and the “economic warfare” between India and Pakistan. Liaquat Ali was reported to have told Lilienthal that “unless the Kashmir issue is settled it is unreal to try to settle the issues about water or about evacuees”.²⁰ On his return to America, Lilienthal wrote an article titled *Another “Korea” in the Making* analysing the Indo-Pakistani relations. He prefaced his article with a loaded comment : “India and Pakistan are on the edge of war

over which shall possess Kashmir – a fight the U.S. might be forced to enter. The direct issue is whether the historic region of Kashmir and Jammu shall be part of India or Pakistan. On one of this disputed region's frontiers lies Red China, on another Red Tibet. Along another frontier is Soviet Russia".²¹ Explaining the importance of the Indus waters for ensuring food security to millions of people in India and Pakistan, Lilienthal proposed that the canal waters dispute could be solved by India and Pakistan by working out a program jointly to develop and operate the Indus basin river system. He wrote : "Jointly financed (perhaps with World Bank help) an Indus Engineering Corporation, with representation by technical men of India, Pakistan and the World Bank, can readily work out an operating scheme for storing water wherever dams can best store it, and for diverting and distributing water".²² Lilienthal, who appeared to be concerned about the presence of Communist China and Soviet Union on the borders of Kashmir, was hoping to become the head of the proposed Indus Engineering Corporation.²³ Whereas Lilienthal sent copies of his article to the Indian Ambassador and the Pakistani Counsel on the water dispute, he also pursued the proposal with the U.S. State Department.

Interestingly around the same time, Eugene R. Black, then President of the International Bank for Reconstruction and Development, Washington (World Bank) and a close friend of David Lilienthal²⁴ became interested in the Lilienthal proposal. In September 1951, World Bank formally offered its good offices to both India and Pakistan to work out a solution of the Indus waters issue on the basis of Lilienthal proposals. The World Bank offer was conditioned by the 'essential principle' that "the problem of development and use of Indus Basin water resources should be solved on a functional and not a political plan, without relations to past negotiations and past claims, and independently of political issues".²⁵ Both countries accepted the suggestion after the World Bank President, Eugene Black personally met both the Indian and Pakistani Prime Ministers. By May 1952 the first of a long series of conferences opened at Washington which were continued at Karachi and Delhi. But it soon became clear that

INDUS WATER TREATY: VIEW FROM KASHMIR

Lilienthal's proposal of a joint Indus Engineering Corporation could not be realised. Instead it was found necessary to replace the existing supplies from alternative sources. So in February 1954 the World Bank officials proposed to India and Pakistan, the division of rivers. "The three eastern rivers (Ravi, Beas and Sutlej) would be available for the exclusive use and benefit of India, after a specified transitionary period. The Western rivers (Indus, Jhelum and Chenab) would be available for the exclusive use and benefit of Pakistan, except for the insignificant volume of Jhelum flow presently used in Kashmir ... Each country would construct the works located on its own territories which are planned for the development of the supplies. The costs of such works would be borne by the country to be benefitted thereby".²⁶ Whereas India accepted the World Bank proposals, in spite of its sacrifices, Pakistan vacillated and accepted 'in principle' only after the Bank pressed her for a reply. In his letter of 22 March 1954 to the World Bank President, Prime Minister of India while conveying his general acceptance to the principles governing the Bank proposals as the basis of agreement stressed that : "the actual agreement which would be worked out with the assistance of the Bank authorities will naturally deal with a number of details including the question of the small requirements of Jammu and Kashmir."²⁷ On the other hand, Pakistan continued to ask for clarification of details and further technical studies, thereby taking several years in the negotiations.

India's acceptance of the World Bank proposals was based on the hope that in five years' time India would be able to make use of the waters of the eastern rivers. This was, however, frustrated by Pakistani procrastination. Pakistan was seeking a comprehensive replacement-cum-development programme in Pakistan involving high investment of about 1.12 billion US dollars.²⁸ And in 1959 the World Bank, USA and certain western countries became ready to foot the bill for this huge construction programme in Pakistan, so that the vexed canal waters dispute between India and Pakistan could be solved. It was on 1 March 1960 that the World Bank made a public announcement of the financial plan it had evolved for the replacement

and development works of the Indus system. It was estimated to cost about 1000 million dollars (partly in foreign exchange and partly in local currencies). The Bank announced that the requisite expenditure would be contributed by Australia, Canada, New Zealand, Germany, United Kingdom, United States, the World Bank besides the contributions by India and Pakistan. Ironically as it may sound, the bulk of this financial plan was meant to be spent in Pakistan (691 million dollars out of 747 millions of grants and loans with India getting only 56 million dollars as loan for the Beas Dam, as against Pakistan getting all her development underwritten by the Bank's financial plan).²⁹ Besides, the World Bank press release did not mention about the additional U.S. grant of 235 million dollars (in local currency).³⁰ Yet, India stuck to its commitment to conclude the Indus Waters Treaty based on the World Bank proposals. And the Treaty was duly signed on 19 September 1960 at Karachi by Jawaharlal Nehru, the Prime Minister of India, President Ayub Khan of Pakistan and W.A.B. Iliff of the World Bank.

THE TREATY

The main features of the Treaty are as follows : ³¹

- (i) The waters of the three eastern rivers – the Ravi, the Beas and the Sutlej- would be available for unrestricted use by India, after a transition period.
- (ii) The waters of the three western rivers-the Indus, the Jhelum and the Chenab – would be allowed to flow for unrestricted use by Pakistan except for some limited use such as (a) domestic use, (b) non-consumptive use, (c) agricultural use, (d) generation of hydro-electric power (run-of-river-plants) in Kashmir.
- (iii) During the transition period of ten years, India would continue to give Pakistan some supplies from the eastern rivers, in accordance with detailed regulations set out in the Treaty. The period may be extended at Pakistan's request up to a maximum of another three years. If so extended, India would deduct from its contribution Rs. 4.16 crores for one year's extension and Rs. 8.54 crores for two years' extension and Rs. 13.13 crores if the extension is sought for three years.

INDUS WATER TREATY: VIEW FROM KASHMIR

- (iv) Pakistan would build works in the transition period to replace, from the western rivers and other sources, waters she used to get in her canals from the eastern rivers.
- (v) Non-consumptive use, domestic use etc. would be permitted in all the rivers by both the countries, but such use should not in any way affect the flow of rivers and channels, to be used by the other party.
- (vi) India would contribute in ten equal annual instalments the fixed sum of Pounds Sterling 62,060,000 to the Indus Basin Development Fund towards the cost of replacement works in Pakistan.
- (vii) Both countries have recognised their common interest in the optimum development of the rivers, and declared their intention to co-operate by mutual agreement to the fullest possible extent.
- (viii) The two countries would regularly exchange data regarding the flow in and utilisation of waters of the rivers.
- (ix) A Permanent Indus Commission would be constituted with the Commissioners for Indus Waters of the two countries- a post which should be filled by a high-ranking engineer competent in the field of hydrology and water use. Each Commissioner will be the representative of his Government for consideration of all matters arising out of the Treaty. The purpose and functions of the Indus Commission would be “to establish and maintain cooperative arrangements for the implementation of this Treaty and to promote cooperation in the matter of development of the rivers”.
- (x) If the Indus Commission fails to reach agreement on any matter pertaining to the Treaty it would be referred to a Neutral Expert. If the difference is in the nature of a dispute and the Neutral Expert certifies it to be so, the matter would be dealt with by the two Governments and might be referred to a Court of Arbitration.
- (xi) Nothing contained in the Treaty, and nothing arising out of the execution thereof shall be construed as constituting a recognition or waiver (whether tacit, by implication or otherwise) of any rights or claims whatsoever of either of the parties.

CRITICAL REVIEW

The Indus Treaty was signed by Nehru in the fervent hope of ushering all round improvement in India-Pakistan relations and resolution of all outstanding problems including Kashmir. Perhaps Nehru was impressed by Ayub's offer of joint defence with India made in early 1959 in the wake of deteriorating India-China relations.³² Ayub's offer, however, needed to be viewed in the light of Pakistan being a member of SEATO and CENTO, which made him susceptible to western prescriptions for regional peace and cooperation. At that time the U.S. and its friendly western nations viewed the Communist Block – USSR and China, as a greater threat. Although India did not accept the concept of joint defence, it sought to improve relations with Pakistan by agreeing to substantially pay for the cost of irrigation programme in Pakistan, besides surrendering the use of three western rivers. India treated the Indus waters issue as a technical and engineering problem. On the other hand Pakistan exploited it as a political weapon in her cold war against India. At the same time Pakistan succeeded in extracting huge financial assistance of about one billion dollars from the World Bank, USA and other western countries, using the geopolitical environment in the region to its advantage.

Nehru went to Karachi on 19 September 1960 to sign the Treaty hoping to begin a new chapter in the history of Indo-Pak relations. Though the joint communique issued at the end of Nehru-Ayub talks on 23 September 1960, revealed little progress on Kashmir, both sides agreed to work for promotion of friendly and cooperative relations and resolve the outstanding differences. However, Pakistan did not hide its disappointment that there was no progress over Kashmir. The Pakistani press continued to harp on the theme of "free and impartial plebiscite to determine the choice of the people of Kashmir."³³ On the other hand, Indian press highlighted the positive aspects of the joint communique. *Times of India* even suggested that, "in the interests of a lasting settlement this country may be prepared eventually to accept the status quo in the State and agree to slight changes in the present cease-fire line to make it a viable international frontier."³⁴ Hardly a month

INDUS WATER TREATY: VIEW FROM KASHMIR

had lapsed after Nehru's visit to Karachi, that President Ayub of Pakistan speaking at a public meeting in Muzaffrabad (Pak occupied Kashmir) in early October 1960 declared that "Pakistan could not trust India until the Kashmir question was settled and that the Pak army could never afford to leave the Kashmir issue unsolved for an indefinite period."³⁵ In this way Indian hopes of building up mutual trust and confidence with Pakistan were belied. What followed is too well known to be repeated. Pakistan launched Operation Gibraltar in 1965 to wrest Kashmir. There was yet another war in 1971 and ever since 1989 Pakistan has been engaged in a deadly proxy war against India in Kashmir and elsewhere. And in 1999 India had to encounter the Pakistani armed intrusion in Kargil.

As such Nehru's assertion in the Lok Sabha on 30 November 1960 that "we purchased a settlement, if you like; we purchased peace to that extent and it is good for both countries",³⁶ was not borne out by the subsequent events. Members of Parliament belonging to both the Congress, PSP and Jana Sangh pointed to the glaring mistakes committed in conclusion of this Treaty. Congress MPs from Punjab and Rajasthan, Iqbal Singh and H.C. Mathur called the treaty disadvantageous to India stating that both their home states "had been badly let down".³⁷ Ashok Guha, another Congress MP lamented that "interests of India had been sacrificed to placate Pakistan". Ashok Mehta, leader of the PSP in the Lok Sabha described it as a "peculiar treaty under which Pakistan, already a surplus area, would be unable to make full use of her share of the Indus Water and would have to allow it to flow into the sea. On the contrary, India after the fullest development of the water resources, would still be short of supplies".³⁸ But Nehru's efforts of creating goodwill and understanding with Pakistan by giving concessions through the Indus Treaty, did not bear fruit. That Nehru himself had realised this soon after, is confirmed by N.D. Gulhati, who led the Indian delegation during the negotiations over Indus. Gulhati recalls : "When I called on the Prime Minister on 28th February 1961, my last day in office, in a sad tone he said, 'Gulhati, I had hoped that this agreement would open the way to

settlement on other problems, but we are where we were”.³⁹

In retrospect, it can be stated that India was too generous to Pakistan, both in terms of allowing use of waters of western rivers and by making a payment of more than 62 million Pounds Sterling (i.e. about 430 crores of rupees in current value) to Pakistan. It is also surprising as to why World Bank advanced such disproportionate proposals to India, “particularly when the eastern rivers given to India carried 20 to 25 percent of the total flow of the Indus Basin as against the 75 to 80 percent in the three western rivers allocated to Pakistan”.⁴⁰ Out of the total annual flow of 168.4 million acre feet (m.a.f) of water in the Indus system of rivers, the total requirement for irrigation water was 96.36 m.a.f. for the entire cultivable area of the Indus basin, thereby leaving a surplus of 72.02 m.a.f. of water which would be going to the sea. Since the cultivable area on the three eastern rivers was 22.856 million acres, little less than on the western rivers (25.100 million acres), the mean annual supplies made available by the eastern rivers was only 32.8 m.a.f., that is 13.57 m.a.f. less than the actual water requirement of 46.37 m.a.f. In quite contrast to this, the mean annual flow in western rivers was 135.6 m.a.f., i.e. 85.59 m.a.f. more than its requirement of only 50.01 m.a.f. of water. It is quite intriguing as to why the Indian government delegation involved in the prolonged negotiations over Indus waters, agreed to much lower share of water available in the eastern rivers, particularly when the concerned officials were in know of the facts.⁴¹ However, it appears that the Jammu and Kashmir government, particularly its irrigation and power development departments, had not done their homework to study and quantify the existing and future water requirements for irrigation, hydel power generation and other uses inside Jammu and Kashmir. As such the Indian delegation failed to secure the necessary safeguards in the Treaty for future consumption of water for hydel power purposes, excepting by run-of-the-river methods. Gulhati himself admits that “since no study had ever been made until then, of the development locally possible, above the rim stations, none of us had, at that time, any real idea of the quantum of future developments in the upper

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reaches of the Western Rivers. Nor did we have any idea of the irrigation from the Indus in Ladakh. As regards hydro-electric development we felt that, being a non-consumptive use, it was not covered by the Bank proposal which dealt only with irrigation uses".⁴² Moreover, it is not the number of rivers but quantum of water which was to be distributed. Besides, the World Bank did not include the Kabul river while dividing the six rivers among the two countries.

If we consider the internationally accepted Helsinki Rules framed by the International Law Association which postulate the equitable utilisation of waters of an international drainage basin taking into consideration various factors such as the extent of the drainage area, hydrology of the basin, economic and social needs of each basin state, population dependent on the waters of the basin, avoidance of unnecessary waste in utilization of waters of the basin, then India did not get a fair deal. According to S.K. Garg, who has computed the respective entitlement of India and Pakistan on the basis of the population, drainage areas, length of rivers and culturable area, India should have been given 42.8% share in the waters of the Indus Basin, as against the actual allocation of 20 to 25%, flowing in the three eastern rivers.⁴³

It may be worthwhile to mention that post-Soviet Central Asia has also been faced with the problem of water distribution. Upstream countries- Kyrgyzstan and Tajikistan, argue that "the long term projections of water usage need to take into account the dynamics of population growth and the resultant necessity to increased water use to meet drinking water, agricultural, industrial and other needs."⁴⁴ Kyrgyzstan has been insisting on its right to increased water use for hydropower generation and has been demanding compensation from the downstream countries for the water resources provided for irrigation.⁴⁵ In fact, Kyrgyzstan adopted in June 2001 the law on inter-State use of water bodies, water resources and water management facilities in Kyrgyzstan, which declared "the foreign policy of Kyrgyzstan based on the principle of paid water use in water relations with other countries."⁴⁶ An Inter State Commission for Water

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Coordination (ICWC) representing the five Central Asian Republics, which was established in 1992-93 following an agreement signed in Almaty on 18 February 1992, has been regulating the allocation, consumption and exchange of water for natural gas, coal, oil or their monetary equivalent. For instance, as per existing agreements, Kyrgyzstan released from Toktogul reservoir to Kazakhstan and Uzbekistan 3.25 ckm of water for each country in exchange of 1.1 billion kWh of power (either electricity or coal) valued at 22 million dollars from Kazakhstan and 400 million kWh of power (electricity) plus 500 million cubic meters of natural gas valued at 48.5 million dollars per year from Uzbekistan.⁴⁷ Besides, agreements were worked out for supporting the operation of Toktogul reservoir in Kyrgyzstan in the irrigation mode out of compensation payable to Kyrgyzstan. All parties were agreed to be a guarantor for compensation and monetary exchanges.

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It becomes clear that the Indian State of Jammu and Kashmir in spite of being the upstream area, has suffered due to restrictions placed by the Treaty on the unhindered usage of its river waters (of Jhelum, Chenab and Indus). The irony of the matter is that the State being rich in its hydel resources has been facing a perennial problem of shortage of hydro-electric power, more particularly during winter months and due to the dry spell in the valley. Though the State government's official estimates put the total hydel power potential of the State at 15,000 MW, the Centre for Monitoring Indian Economy (CMIE) has reported it to be at 7487 MW which constitutes about 9 per cent of the total hydel power potential of the country.⁴⁸ Since the Treaty has placed curbs on the construction of storage reservoirs which could ensure the provision of requisite water flow, all power projects in the State are to be run-of-the-river type. This not only raises the construction cost of the projects but also affects adversely the cost-effectiveness of power generation from these projects. Cost of run-of-the-river projects using small head fall is reported to be about 75 per cent higher than hydel projects using high head fall.⁴⁹ Thus

“the generating capacity of all run-of-the-river projects falls by about 65 to 75 per cent during winter because the water level in different rivers gets depleted substantially.”⁵⁰ These high cost hydel projects generate electricity much below their installed capacity. For instance, run-of-the-river Uri Hydel Project built at a cost of more than 800 million US dollars has been producing a maximum of only 200 MW in winter as against the 480 MW installed capacity.⁵¹ As such the J&K State is unable to meet its demand of about 700 MWs, even after it has been importing 230 MWs of power from the northern grid.⁵² The State accounts for only 0.9 per cent of the hydel power generated in the country.⁵³ The shortage of power in the State has not only been causing problems for domestic consumption, but has also been inhibiting the growth of industry and agriculture. During the past forty years, since the Indus Treaty was signed, there has been sizeable increase in the State’s population and standards of living. Simultaneously, the State has witnessed a big leap in agricultural and industrial development, leading to a steep increase in the demand for electricity. As such there have been fundamental changes in the ground situation, so far as the actual power requirement of the State for domestic, agricultural and industrial uses, is concerned.

Similarly, work on the construction of Tulbul Navigation Project started by the J&K government in 1984 in order to raise the level of water in the Wullar lake for facilitating transport on the river Jhelum, was stopped in 1988 after India accepted Benazir Bhutto’s demands and stopped construction work at the Tulbul project.⁵⁴ Despite several rounds of talks held with Pakistan during the past 17 years, the issue remains unresolved. Whereas the Tulbul Project would not diminish or change the flow of water to Pakistan, it would keep the Jhelum river navigable for a considerable stretch thereby bringing economic benefits to the people in the valley. This project could provide a cheap mode of transport to the fruit growers in north Kashmir and thus transform the region’s economy. The existing dam in the Salal project is full of silt upto three fourths of its 400 feet height, which needs to be flushed out urgently, in order to let the project run.

India had earlier agreed to Pakistan-dictated terms on the Salal project, which led to very high siltation levels affecting power generation sharply.

Given its success in forcing India to abandon the construction work on Tulbul Navigation Project in 1987 and also in obstructing the construction of anti-siltation sluices at the Salal Hydel Project, Pakistan has now created a controversy over the construction of the Baglihar Dam on the Chenab river. The Rs.4000 crore Baglihar Dam project is being constructed by the Jammu and Kashmir government since the year 2000, and over Rs. 2500 crore have already been spent. This hydel project which has an installed capacity of 450 MW and is expected to be completed by the year 2007⁵⁵, will go a long way in alleviating the problem of power shortage in Jammu and Kashmir. Though the Baglihar project is “run-of-the river project as provided under the Indus Waters Treaty, Pakistan sought to scuttle this project by creating a controversy over its design, pondage, height of the dam and spillways.”⁵⁶

The authorities of J&K Power Development Corporation (JKPDC), responsible for executing this project, point out that Pakistan is making unnecessary noises without “concretizing its objections or making them specific”.⁵⁷ Ghulam Hassan Rather, Managing Director and Abdul Ahad Malik, Chief Engineer of JKPDC revealed that the basic data of the Project was sent to Pakistan as early as in 1992 and work on the project was started in January 2000 after making modification in the design. “They want us to provide a low weir instead of a dam, but that would go against the basic design. And if the spillways were kept ungated, as Pakistan wants, the silt load would block the functioning of the machine. In about 18 or 20 years the project will become redundant.”⁵⁸ Baglihar engineers point out that spillways with channels are constructed to remove the silt deposited in the dam and have nothing to do with controlling the Chenab waters.⁵⁹ Indian contention is that building of a 470 ft. high dam with fully equipped gated spillway will not affect the flow of the river into Pakistan. Besides, in the light of its experience in Salal Project, which is suffering due to deposition of large amount of silt, India can not afford to repeat the same mistake in Baglihar.

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It is, therefore, understandable that there has been growing concern and anger in Jammu and Kashmir over the negative consequences of the Indus Treaty for the State. Both the official and public circles in J&K State have been pleading for a review of this Treaty, so that the legitimate water requirements of J&K State for hydel power generation, deepening of rivers for navigation purposes, erecting protective bunds for floods and building adequate water reserves for irrigation are fulfilled. Environmental considerations also demand that the locally available hydel resources be utilised to the optimum to preserve and to maintain the deteriorating ecosystem in the State. Already, various water bodies particularly the famous Dal lake, Wullar lake and other aquatic systems have shrunk, thereby causing alarm.

Yet another associated problem has been the revenue loss of millions of rupees to the J&K State, as a result of the floating of timber logs from Jhelum and Chenab across the LoC into Pak-occupied Kashmir. This author learnt from some responsible officials of some insurance companies operating in J&K State, that the local timber merchants have been claiming millions of rupees of insurance compensation in lieu of their timber losses on this account.

And in Pakistan itself, experience has shown that its portion of Indus basin has been suffering from acute problem of water logging and salinity due to excess availability of Indus waters and consequent canal seepage and percolation of excess amount of water. According to a study, in Punjab alone, “5 million ha have already gone out of cultivation due to salinity caused by water logging, 690,000 ha are in an advanced stage of deterioration and 2 million ha are affected to a lesser degree.”⁶⁰ Pakistani experts point out that Pakistan has made heavy investment in gigantic projects like Tarbela and Mangla dams, barrages, link canals etc. whereas projects of small irrigation, drainage, soil and water conservation remained on low priority. They believe that “rational use of water on three crops - wheat, cotton and sugarcane alone would save Pakistan about 5.6 MAF.”⁶¹ Experts in Pakistan are forthright in ascribing the so called problem of water shortage in Pakistan to inefficient usage of water and distortions in its socio-economic policies.

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According to them, “with more than 1300 cubic metres per person available annually, Pakistan is by hydrological definitions, not a water stressed country.”⁶² They argue that the water balance in the Indus Basin was massively destabilized due to addition of “more water to the eco-system than its natural drainage potential”, which resulted in desertification through water logging and salinity.⁶³ Besides, there is the unresolved issue of inter-provincial discord over distribution of water.

To conclude, Indian efforts to buy peace from Pakistan by giving concessions through the Indus Waters Treaty failed miserably. Indus water dispute was and is sought to be used by Pakistan as a political tool in the Indo-Pak dual over Kashmir. All along Pakistan’s policy has been to avoid any direct bilateral settlement with India and to seek third party intervention. The manner in which the Treaty was negotiated and concluded, lends an impression of external pressure group network exerting their influence since huge investments were involved in the construction of big dams and canals. It is a reflection on the functioning of the World Bank which was influenced by the Cold War politics in the region and by the interested construction lobbies. It also reminds that outside mediation or arbitration in bilateral disputes between India and Pakistan, as was done by the World Bank in this case, would not lead to a lasting and positive solution based on principles of equitability and just distribution of resources. The Treaty which has been in force for more than 45 years, has added to the economic woes of the people of upstream Jammu and Kashmir State by depriving them of the legitimate right to full usage of Jhelum, Chenab and Indus waters for hydro-electric generation, irrigation, navigation and other purposes. As such there is sufficient ground for reviewing the Indus Treaty, so that it is turned into a resilient one after making necessary modifications and adjustments, which can take care of the substantial changes in the ground situation in Jammu and Kashmir.

That Pakistan has secured third party intervention (the World Bank) to resolve its dispute with India over the Baglihar hydro project is part of its strategy to internationalize and politicize the issue. It marks a complete deviation from the path of the “Composite Dialogue”

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process agreed to by both India and Pakistan to resolve all outstanding issues including Kashmir. Pakistan's objections to the construction of Baglihar dam are more political than a technical one. Pakistan's contention that this dam can inflict damage to Pakistan controlled territory downstream by withholding water or flooding does not hold good, as in that event two mega projects – Salal and Sawalkot, which are built downside within the Indian territory, would get flooded and damaged. Baglihar project is situated about 120 kms. inside of the LOC in Jammu and Kashmir. Indian Water Resources Minister, Priyaranjan Dasmunsi soon after his visit to Baglihar project site in June 2005, affirmed that “the project design fully conforms to the provisions of the treaty.”⁶⁴

Interestingly, Pakistan is raising the height of Mangla dam by another 40 feet to ensure more power and water for Punjab at the cost of the people of Mirpur in Pakistan occupied Kashmir (PoK). Similarly, Islamabad is planning to build the Skardu dam in ‘Northern Areas’ of PoK, to ensure added water supply and electricity to Punjab in spite of the protests from the people of Gilgit and Baltistan who fear that this dam would submerge Skardu, the capital of Baltistan. Yet, Pakistan is not acceding to the demand of PoK government to let it build a dam at Kohala to meet the water and electricity requirements of that part of Kashmir. Pakistan, which is never tired of talking of human rights of Kashmiris, is thus denying the people of Jammu and Kashmir, their legitimate right to use water from their own rivers.

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OPTIMISING HYDEL DEVELOPMENT IN CHENAB BASIN

S.C. Sud

1. INTRODUCTION

With the increase in population, urbanization and industrialization, power demand has increased considerably. This has resulted in continued shortage of power both in terms of peak demand as well as energy requirement. Systematic development and utilization of energy resources, is thus of prime importance to meet the increasing demand. In fact, the requirement of power and its availability has come to be recognized as the surest index of a country's overall development in a big way. As compared to hydel generation, thermal generation cannot be a solution to meet the energy needs of North-Western region, as it is located far away from the pit heads. Also the stocks of fossil fuels are fast depleting and getting costlier, whereas mother nature has provided an unending supply of water in this region.

River Chenab and its tributaries being snow-fed, are perennial and flow with steep bed slopes in their mountainous reaches, with a series of loops and bends, which can be economically, harnessed for hydel generation. In the present context of global energy crisis, an effort towards development of the hydel source of energy to the maximum possible extent, which is presently going waste, must be made. This will not only make hydel power available in the power starved State of Jammu and Kashmir, resulting in the speedy economic and industrial development, but also help in partly meeting the power requirements of other nearby States.

However, use of Chenab waters for irrigation and power generation is guided by Indus Waters Treaty-1960, between the governments of India and Pakistan. Conforming to the Treaty obligations, a number of projects have been identified and investigated

by the erstwhile Central Water and Power Commission and these need to be constructed at the earliest to tap the hydel potential of the basin, which is presently going waste. But due to the limited availability of funds, the inter-se-priority for construction of projects is to be decided for optimal development of hydropower in the basin.

2. DESCRIPTION OF THE BASIN

The Chenab river basin in India is spread over two States viz. Himachal Pradesh (H.P) and Jammu and Kashmir (J&K), and comprises the extreme western sector of Himalayas. Upper catchment lies in Lahaul and Pangi valley of Chamba district in H.P. This region is roughly rectangular in shape, with main Himalayas on the North, mid-Himalayas on the South and the connecting lines of heights at either end on East and West respectively. These hills rise to a mean elevation of about 5480 m. The Chenab basin in J&K lies in its southern part covering the districts of Doda, Udhampur, Jammu and Rajouri. The drainage basin covers the areas partly between Shivaliks and outer Himalayas. The total catchment area of the basin in India is about 29,050 sq. kms, out of which 7,844 sq. kms. lies in H.P. and the balance 21,206 sq. km. in J&K. About 10,130 sq.km. of the catchment area remains under permanent snow cover.

2.1 *The River system.*

The Chenab rises in the Himalayas in two streams, the Chandra and the Bhaga, which originate at an elevation of 5,412 m and 4,891m from the north and south faces of Baralacha pass in Lahaul district of H.P. The Chandra after flowing southwards for 88 kms, sweeps round the base of mid-Himalayas and joins the Bhaga at Tandi, about 6 kms. south of Keylong, the district Headquarter of Lahaul and Spiti. The combined river, known as the Chenab or Chandra Bhaga, then flows in a north westerly direction for about 48 kms, where it is joined by a major tributary, the Miyar-Nallah on the right bank. Thereafter, it flows for about 96 kms. generally in northerly direction in H.P and crosses the Pangi valley before entering into the Paddar area of Doda district

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of J&K State. Then for 234 kms, it flows between steep cliffs of the high mountains upto Reasi, after which it flows for about 32 kms. in plain area upto Akhnoor, before entering into Sialkot district of Pakistan. The main tributaries of Chenab upto Akhnoor are the Thiro, Shadi, Sohal, Bhut Nallah, Marsudar, Neeru, Bisleri and Ans. River Jammu Tawi, another left bank tributary, joins the Chenab in Pakistan at a little distance downstream of the international boundary. The total length of the river between Chandra-Bhaga confluence and Akhnoor is 410 kms. The average bed slope of river Chenab in India is 10 m/km.

3. POWER POTENTIAL ASSESSMENT

Systematic assessment of the total economic hydro-power potential of the basin as well as of the region is of prime importance, particularly for a State like J&K which has large amount of undeveloped hydel potential and is short of other fossil fuels. A systematic assessment of the entire hydel potential is a pre-requisite for any long term planning, because such assessment would provide basic information for evolving economic development plan for the power system and for fixing proper order of priority for investigation and construction of projects. Central Electricity Authority (CEA), Ministry of Power has conducted the assessment of “Economic Hydro Power and Energy” potential of the Chenab basin.³⁷ economic sites for development of hydel power were identified on the main Chenab and its tributaries. The assessment was done by identifying suitable sites with the help of hydrological and topographical studies and keeping in view the provisions of Indus Waters Treaty. Before finalising the schemes, preliminary economic assessment and limited financial studies were also made. The identified schemes may utilize gross head ranging from 60 m to 280 m and the continuous power generating capacity ranges from 6 MW to 305 M.W. In this study, CEA have not identified micro and most of the mini-hydel schemes, because of various practical considerations and non-availability of data. The total potential of the Chenab basin has been assessed as 3600 MW continuous and total installed capacity as 11,400 M. W. Total annual energy contribution

from these schemes has been assessed to be about 52.93 TWH and 59.34 TWH for 90 % and 50 % dependable flow years respectively.

4. INDUS WATERS TREATY OBLIGATIONS

Due to the partition of India in 1947, Indo-Pakistan border cut across the rivers and channels of Indus system. In some cases, areas irrigated under a system went to one country, while head works remained in the other. So a dispute arose regarding sharing of waters of Indus basin. The Government of India and the Government of Pakistan, being equally desirous of attaining the most complete and satisfactory utilization of the water of Indus system of rivers, concluded Indus Waters Treaty in September 1960. The use of Chenab waters for irrigation and power generation is, thus, guided by the Treaty.

As per the Treaty, the aggregate storage capacity of all single/multi-purpose reservoirs on the Chenab and its tributaries shall not exceed 1.7 MAF. Out of the permissible storage of 1.7 MAF, power storage of 0.60 MAF each can be created on the main Chenab and its tributaries. In addition a storage of 0.5 MAF can be provided for general purposes on the tributaries of Chenab. This storage of 0.5 MAF can be used for any purpose whatsoever, including the generation of electric energy. It is also stipulated that the storage works in the Chenab main shall not be constructed below Naunat near Kishtwar (Latitude 33°19' N and Longitude 75° 59' E).

The Treaty provides that the Hydro-Electric Plants shall be so operated that (a) the volume of water received in the river upstream of the Plant, during any seven consecutive days, shall be delivered into the river below the Plant during the same seven day period and (b) in any one period of 24 hours, within that seven- day period, the volume of water delivered below the plant shall not be less than 30 % and not more than 130 % of the volume received in the river, above the plant during the same 24 hour period. However, if the plant is located at a site on the Chenab main below Ramban the volume of water received in any 24 hour period shall be delivered into the river below the Plant within the same period of 24 hours.

4.1 *Implications of the Treaty*

The conclusion of the Treaty between the two Governments, cleared the ground for rapid and large development for use of basin waters in the two countries. Since the Treaty aimed at most complete and satisfactory utilization of the waters of Indus system, most of which were flowing unutilized in the two countries at the time, an emphasis was laid on speedy implementation of the projects. Since the Treaty provided that no storage project on main Chenab be constructed below Naunat, out of the 14 projects, all the six projects identified on main Chenab below Naunat are run-of-the-river projects. However, Pakistan has been raising objections on the construction of almost all the projects including Baglihar, perhaps due to the following fears :

4.1.1 *India May Store Lean Season Flows*

This fear is unfounded due to the following reasons :

- As mentioned above all the projects on river Chenab below Naunat have been planned as run of the river projects and limited pondage provided to meet fluctuations in discharge of the turbines from variations in daily/weekly plant loads.
- Treaty specifies maximum and minimum daily/weekly releases from these projects during operation and Indus Waters Treaty was honoured even during war periods.
- Since Baglihar and other projects in Chenab main are more than 120 kms away from International border, the areas in India will be affected first and downstream projects like Salal will become inoperational.
- Contribution from intermediate catchment and tributaries will supplement the flows to Pakistan.

4.1.2 *India May Flood the Areas in Pakistan by Opening Gates*

- Since Baglihar project is located 120 kms. upstream Indo-Pak border and upstream of Salal project, the devastation due to flooding will first affect the downstream areas and projects of India and due to routing of flood in this reach, the effect of flood in Pakistan would be minimized.

- The river experiences floods during the monsoon months of July to October and
- due to significant temporal variations of flows in the river during this period, releases from run-of-the-river project would not have significant effect in flooding areas in Pakistan.
- India is issuing round the clock flood warnings to Pakistan from 1st July to 10th October every year, when major floods occur.

4.1.3 Spillway Gates Cause Storage of Water

- Due to significant temporal variations of Chenab flows, it is necessary to provide spillway gates for managing the severe flood flows, as allowed under the Treaty.
- Intentional opening of gates to flood the areas in Pakistan, would first affect the areas and projects downstream in India and by the time routed flood reaches Pakistan, its peak would be considerably reduced.
- International border being 120 kms. downstream, of Baglihar project, the routed flood's effect will be considerably reduced.

4.1.4 Silt Ejectors Not to be Provided

- Due to heavy silt load in the river, provision of silt ejectors is necessary. However, the Treaty permits the provision of outlets below the dead storage for sediment control or any other purpose.
- Even after provision of silt ejectors, these projects would help retention of silt and reduction of silt flow downstream, resulting in reduced sediment inflows in the river in Pakistan.

5. INVESTIGATION OF HYDRO-ELECTRIC PROJECTS

Signing of Indus Waters Treaty in 1960, opened the avenues for the development of water resources of Indus basin. In view of the growing demand for power in the region, it had become necessary to identify and investigate Hydro Electric (H.E.) Projects in Chenab basin, which has tremendous hydel potential. The perspective plan for power development of the basin was, therefore, proposed by erstwhile

OPTIMISING HYDEL DEVELOPMENT IN CHENAB BASIN

Central Water and Power Commission (CW&PC). For the development of the hydel potential of the basin, Chenab Coordination Committee (CCC) under the Chairmanship of Chairman, Central Water Commission (CWC), was set up by the Ministry of Power in the year 1961. During its first meeting held on 19 November 1961, CCC identified and examined 14 major H.E. Schemes in the basin as given below (Table 1) and outlined the programme for their investigation. The location of these schemes is given in Fig.1. The cascade of H.E. projects alongwith salient features is given in Fig 2. In the subsequent meetings, the work for investigation of these hydro-electric schemes was distributed and investigation of 6 schemes was entrusted to CWC, 5 schemes to the Government of H.P and 3 schemes to J&K .

TABLE-1
Hydro Electric Schemes Identified by Chenab
Coordination Committee

S.No.	Name of Scheme	Installed Cap. (MW)	Investigating Agency
1	Salal	345	J&K Govt.
2	Sawalkot	600	CWC
3	Baglihar	450	- Do -
4	Ratle	180	- Do -
5	Bursar	1020	- Do -
6	Pakal-Dul	1000	- Do -
7	Dul-Hasti	390	- Do -
8	Naunatoo	400	J&K
9	Kirthai	750	CWC
10	Raoli	500	H.P. Govt.
11	Seli	165	- Do -
12	Bardang	115	- Do -
13	Thirot		- Do -
14	Jispa	240	- Do -

5.1 Status of Investigations

Out of the 6 schemes originally assigned to CWC for investigation by CCC, CWC has completed the investigations for all the 6 schemes and submitted the feasibility reports to the government of J&K. J&K government has completed the investigation for 1 scheme, viz; Salal, out of the 3 schemes assigned to them by CCC. On request from J&K Government, CWC had taken up the investigation of Kirthai Project also and has now completed the investigations. Out of the 5 projects assigned to the government of H.P. for investigation, H.P. authorities have carried out preliminary investigations of one project, viz Jispa H.E. project. Thiro project was discarded due to the submergence of fertile Patan valley in Lahaul. As agreed by the Government of H. P., CWC has now started the investigation of Seli and Raoli projects. The present position of investigation/ techno-economic appraisal of the 14 schemes is indicated in Table 2.

TABLE 2 : Status of Investigations

J&K :

Salal H.E. Project is completed and both 1st and 2nd stage projects have been constructed Investigation of Naunatoo-Naigad is in progress. Investigations for Kirthai H.E. Project have been handed over to Central Water Commission.

H.P.S.E.B :

1. **Thiro H.E. Project** is discarded as it submerged Patan valley.
2. Pre-feasibility report has been prepared for **Jispa Project** based on available data. Investigation is to be continued.
3. H.P.S.E.B. has now requested CWC to carry out investigations of Seli, Raoli, Bardang and Jispa Projects.

CWC :

1. **DULHASTI** – Under construction by N.H.P.C.
2. **BURSAR** – Feasibility Report submitted
3. **PAKAL DUL** – - DO -
4. **RATTLE** – - DO -
5. **BAGLIHAR** – Under construction
6. **SAWALKOT** – - DO -
7. **KIRTHAI** – Feasibility Report submitted

6. INTER-SE-PRIORITY FOR CONSTRUCTION OF PROJECTS

Out of the 14 schemes identified in the basin for investigation, investigations for 8 schemes have so far been completed and only one of them viz. Salal H.E. Project is commissioned. The construction of Dul- Hasti and Baglihar projects is under progress. Thus so far no storage project on Chenab has been constructed/taken up for construction, though a storage of 1.7 MAF is permitted on the Chenab above Naunat and its tributaries. It would, therefore, be desirable to take up the construction of some storage project in the basin. Out of the 14 schemes identified for investigation, it would be possible to provide storage in 3 schemes only, viz; Jispa, Bursar and Kirthai, due to the provisions of the Treaty and topographical features. Since investigations of Jispa project are yet to be completed, construction of Bursar or Kirthai projects could be considered. Since Bursar project has considerable storage, it would be desirable to give preference to its construction due to the following benefits :

- (i) Due to spatial and temporal variations of rainfall, about 85 % of the runoff in the basin is received during the monsoon months of July to October, which not only causes flood losses, but also flows waste. Storage of excess monsoon flows, will reduce flood losses and supplement lean season flows for irrigation and power purposes.
- (ii) In Chenab a number of power projects have been planned and are under construction. Out of these Dul-Hasti, Ratle, Baglihar, Sawalkot and Salal are all downstream of Bursar project. The regulated releases from storage in lean season, will enable almost doubling the hydel generation capacity of all these downstream projects.
- (iii) To utilise the stored water, all the downstream projects are planned in two stages. If storage project like Bursar is taken up for construction on priority, it will result in considerable saving of time and money, as all the downstream projects can be completed in single stage and their firm power will also increase.

- (iv) The road constructed for Bursar project, would also be useful for Pakal- Dul H.E. Project, another project on the tributary of Chenab with an installed capacity of 2000 M.W.
- (v) Marwa area, where Bursar project is located is a backward area. Construction activities for the project would give a thrust for economic development of this region.
- (vi) The head race tunnel for Bursar project is 4.7 kms only and runs through good tunneling rock, thus facilitating construction of headrace tunnel.
- (vii) The releases from the storage in the basin would enable increase in the permissible irrigated cropped area as per Treaty provisions.

In view of the above, it would be desirable to give over riding priority to the construction of Bursar H.E. Project over other projects.

7. CONCLUSIONS AND RECOMMENDATIONS

The Chenab and its tributaries offer very attractive sites for the development of hydel power, as they are perennial and have got very good slope in their head reaches. Conclusion of Indus Waters Treaty between the two countries in September 1960 has enabled the development of this huge potential, most of which is going waste and unutilized for want of the construction of feasible projects and the state of J&K is facing acute shortage of power. Due to the constraint of funds availability, it is not possible to take up the construction of all the feasible projects simultaneously. It is, therefore, necessary that a systems study for the whole basin be carried out, for optimal development of the hydel potential and for fixing inter-se-priority for construction of the projects.

Due to temporal variations of flow most of the flow, in the river is received during the monsoon months. Optimal development of hydro power of the basin, therefore, requires the desirability of providing storages, preferably in the higher reaches of the basin, so as to even out the variations in the flow to the maximum possible extent, thereby increasing the firm power potential of various downstream schemes.

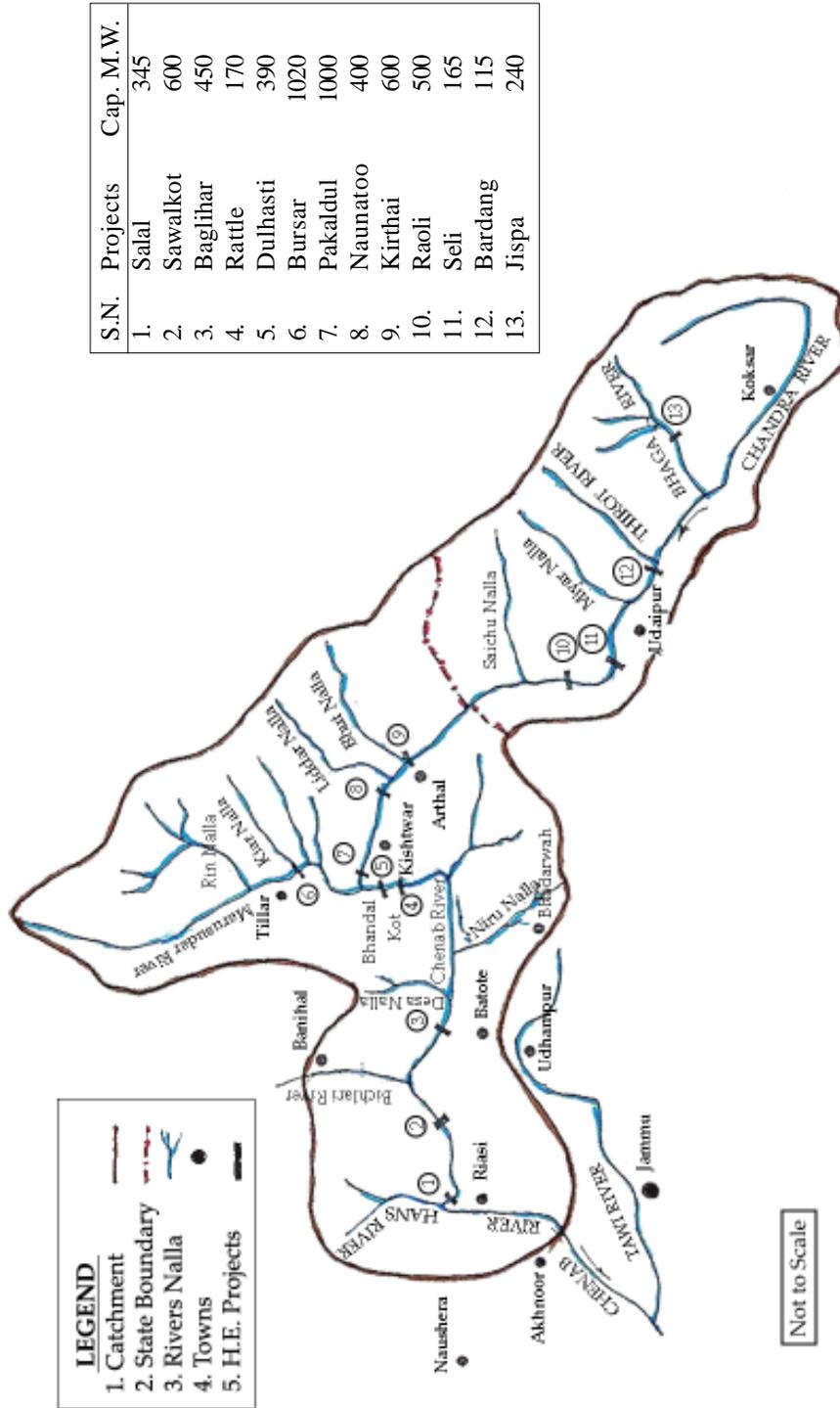
OPTIMISING HYDEL DEVELOPMENT IN CHENAB BASIN

It is unfortunate to know that though as per the Treaty total storage of 1.7 MAF is permitted on river Chenab and its tributaries, even after 45 years of signing of this Treaty, no storage has yet been created in the basin and the river waters are flowing unutilized. Out of the 3 possible storage projects on river Chenab and its tributaries, since Kirthai project has considerable storage and its investigations have also been completed, it would be desirable to take up its construction on priority. This project will not only help in generation of huge power, but also increase the firm power capacity of all the downstream projects, due to the release of stored monsoon flows during lean season. It will also be necessary to complete the investigations of the remaining 5 projects.

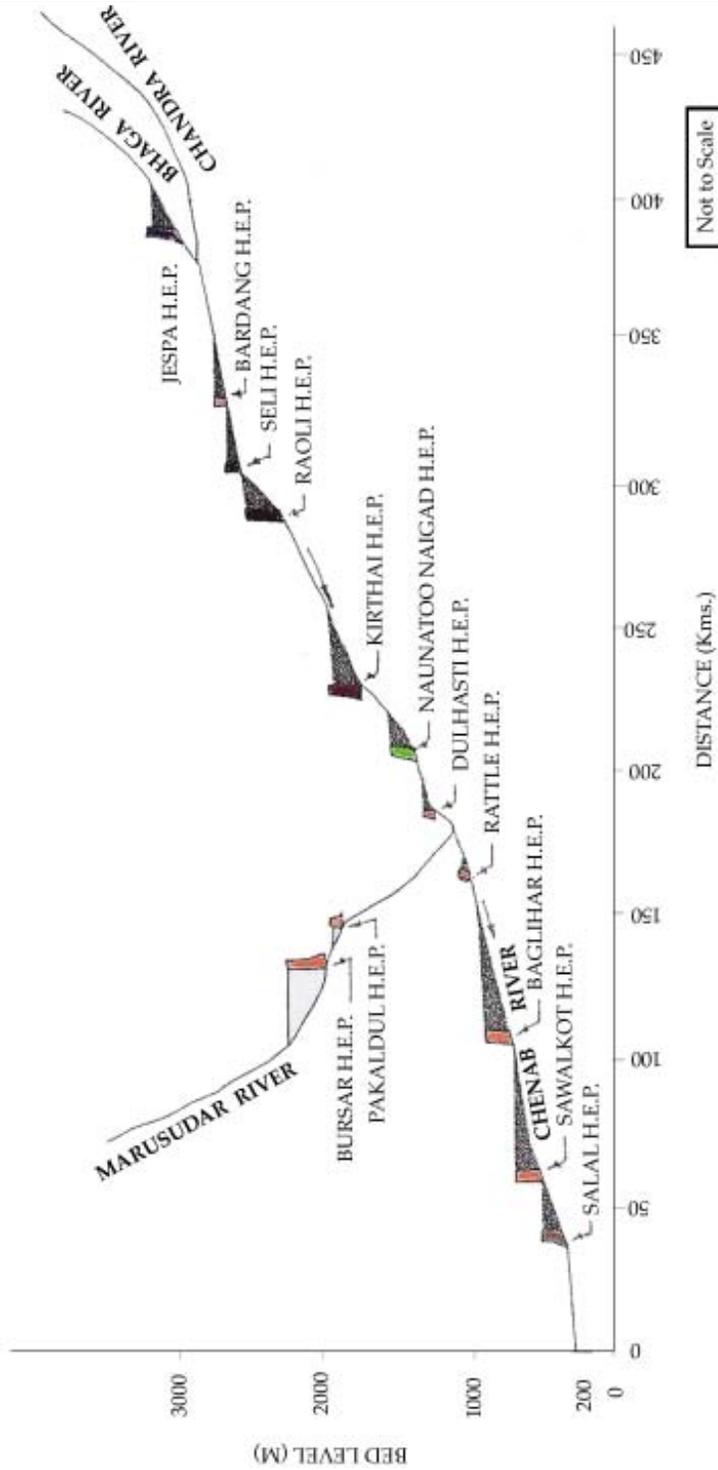
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LOCATION OF HYDRO ELECTRIC PROJECTS IN CHENAB BASIN



CASCADE OF HYDRO-ELECTRIC PROJECTS IN CHENAB BASIN



Cascade of Hydro-Electric Projects in Chenab Basin

S.N.	Projects	River	CA (Sq. Km.)	Bed Level (M)	Height of Dam	Head (M)	Installed Capacity (MW)		Length of HRJ (Km)	Inv. Agency	Estimated Cost (in Crore)
							Pre Bursar	Post Bursar			
1.	Salal	Chenab	21497	370	118	94.5	345	690	2.41	(J&K)	—
2.	Sawalkot	-do-	19480	525	198	185	600	1200	8.41	C.W.C	713 (1983)
3.	Baglihar	-do-	17325	7035	141	129	450	900	1.50	C.W.C	639 (1984)
4.	Rattle	-do-	14600	984	50	113	170	340	9.10	C.W.C	54 (1973)
5.	Bursar	Marusudar	2937	1970	252	320	1020	1020	4.70	C.W.C	1386 (1986)
6.	Pakal Dul	-do-	2969	1845	77	646	1000	2000	14.70	C.W.C	570 (1986)
7.	Dulhasti	Chenab	10500	1200	70	234	390	780	9.78	C.W.C	97 (1972)
8.	Naunatoo	-do-	9959	1493	194	189	400	400	8.10	(J&K)	
9.	Kirthai	-do-	8625	1776	212	305	600	600	8.14	C.W.C	
10.	Raoli	-do-	5900	2240	250	260	500	500	10.00	(H.P.)	
11.	Seli	-do-	5750	2520	85	90	165	165	6.40	(H.P.)	
12.	Bardang	-do-	4817	2668	63	60	115	115	3.20	(H.P.)	
13.	Jispa	Bhaga	1311	3245	161	256	100	100	8.50	(H.P.)	410(1988)

BAGLIHAR DISPUTE: A BLESSING IN DISGUISE FOR THE PEOPLE OF KASHMIR

(A Kashmiri View)

Syed Nazir Gilani

Taking a position in India-Pakistan dispute on Kashmir (Jammu and Kashmir) entails a respective blackmail and stereotyping. These stereotypes are used to strengthen controls and manage a compliance of choice. Various schools of opinion – political and social in the civil society have yet to surface with an effectiveness to empower the common man and woman to stand guard on the common interests of Kashmiri people and to challenge the culture of black-mail and stereotyping of the people by India and Pakistan.

Baglihar dispute is one such dispute and taking a position in the interests of the people of Kashmir is full of such risks. But the question is not - the fear of becoming the victim of a stereotyping but one of taking a position in the interests of the people.

As Chair of IKA and more so as a State Subject I see an imperative role in the ‘Water Dispute’ in the interests of the people. Since Pakistan has moved to World Bank under the terms of the Indus Water Treaty (article IX), it is in public interest that we subscribe our interest as a party without fail.

It is important to point out that Baglihar Dispute is “A Blessing In Disguise For the People of Kashmir”. It has landed Pakistan in the soup and has exposed weaknesses in the word and deed of Pakistani policy with regard to the welfare of the people of Jammu and Kashmir. Pakistani move under article IX to the World Bank has caused an opening for the defenders of Kashmiri interest to subscribe their interests before the World Bank and to seek the indulgence of the public opinion in India and Pakistan.

Under article IX Pakistan has to meet the litmus test of the Neutral Expert that the expressed difference of stand on Baglihar should be treated as a dispute. Pakistan has to meet the test and beef up evidence that the difference on Baglihar qualifies to be treated as a dispute. It is only thereafter that the sequence would lead to a court of arbitration.

Once a Kashmiri interest is agitated - India, Pakistan and World Bank would not be able to complete the circle of wisdom without taking a due regard of this interest. On the one hand we shall be subscribing our objections on the vires of Indus Water Treaty and on the other we shall highlight the failure to assure the basic needs and all uses in a reasonable manner for the people of Jammu and Kashmir.

It is our considered opinion that the allocation of water – under Indus Water Treaty has no legal basis for creating such a ‘Right for Pakistan’. India under the articles of the Instrument of Accession with the people of Kashmir has breached the principle of safeguarding the over all trust associated with this bilateral agreement.

Government of India cannot trade off a natural resource of the people of Kashmir and the World Bank cannot adjudicate Indus Water Treaty without fully assessing the jurisprudence of the principality of water, whether the water being allocated actually exists or may be taken without detriment to other users (the people of Kashmir in this case), the water or the environment.

World Bank has failed to take into account the question of ‘the public good’ of the people. It has failed to develop a system of rights and obligations in respect of the benefit due to the people of Jammu and Kashmir. It has failed in taking a full cognizance of the fact that the resource was embedded in a disputed habitat.

The Indus Water Treaty does not pass the test of a ‘larger framework which specifies the general benefits that water provides’. It is an exploitation of a resource and is adversely pitched against the social and economic development of the people of Kashmir. World Bank has acted without regard to the multi-purpose aspects of the Kashmiri water and the common interest of the people of Kashmir.

While subscribing our interest before the World Bank we shall argue that the Indus Water Treaty is not a means of promoting the public interest. Water is fundamental to development and community well-being, health and a standard of living. The policies and priorities for water use in Indus Water Treaty have not been aligned on a principled, fair and just basis. It does not recognise the interests of the affected people (Kashmir) and has failed to develop a mechanism to include those interests in water allocation decision.

In 1960 (Indus Water Treaty) Pakistan has not only erred at core on the Jurisprudence of the 'water habitat' but now in 2005 by moving to World Bank has further prejudiced its ill-fated policy on Kashmir. By concluding The Indus Water Treaty with India, the Government of Pakistan has in practice accepted the sovereignty of India over the Water Resource and the Habitat. She has added one more example to her chequered record of continually nudge passing the Jurisprudence of the Rights Movement and the Embedded Interest of the People of Jammu and Kashmir, in safe guarding the interests of her people in Pakistan.

Under the Indus Water Treaty the Government of India on her part has on the one hand breached the trust embedded in the instrument of accession and on the other has exposed her confused stand on Kashmir question.

It is interesting to point out that on 21 August 1957 the Government of India complained to the United Nations that Pakistan was about to build a 'Mangla Dam Project' in the disputed territory under its (Pakistan's) control. The Indian complaint further added that the 'execution of Mangla Dam Project by the Government of Pakistan was a further instance of Pakistan's consolidating its authority over the Indian territory of Jammu and Kashmir and of the exploitation of the territory to the disadvantage of the people of the State and for the benefit of the people of Pakistan. The complaint added that Pakistan's action was in violation of the Council's Resolution of 17 January 1948 and of the assurances given to India by the Chairman of UNCIP.

One sees that under the Indus Water Treaty the Government of India reversed her stated position on Kashmir. It is in keeping with the Pakistan's history of nudge passing the interests of the people of Jammu and Kashmir.

The various Governments of Pakistan have continued to use the Rights Movement of Kashmir for their own domestic interests and to keep India pressured by exploiting a Muslim sentiment. Pakistan's policy on the civil and political life of the people living in the three administrations of Jammu and Kashmir has been self-serving and full of double standards. It has used the polity of one administration to engineer its own advantage in the other.

Pakistani Governments would travel any distance to assure their interests at the cost of the interests of the people of Kashmir. The Government of Pakistan has used the political habitat of Srinagar, Muzaffarabad and Gilgit on an adhoc basis. In this regard a deceit on the question of Mangla Dam needs a mention. Pakistan assured the United Nations on 3 October 1957 that "the Mangla Dam project was being carried out co-operatively with the Azad Kashmir authorities. It informed the UN that the Project would greatly strengthen the economy of the Azad Kashmir area and would in no way adversely affect the existing interests".

In order to blanket her self-serving interest in the Mangla Dam Pakistan resorted to a pointed compromise with India and informed the UN that – "India had carried out a number of projects on its side of the cease-fire-line. If India's action could not be deemed to aggravate the situation in terms of the Resolution of 17 January 1948, Pakistan failed to understand how a development project in the Azad Kashmir area could be described as a violation of that Resolution".

We all know that the construction of the Dam was resisted by the people of Mirpur and that they were unwilling to allow the submerging of their homes and hearths and history under the Dam for a non Kashmiri interest. It is a well documented fact that brute force was used to quell the popular dissent and bribery was used to silence the leaders.

It is obvious that a political psychology in Pakistan that was anti-Kashmir in 1957 (a second time after the Stand Still Agreement) could not be hoped, to all of sudden cure its leper spots in 1960 under Indus water Treaty and in 2005 in her decision to move to World Bank under Article IX.

Pakistan has no regard for the benefit of the people of Jammu and Kashmir if Tulbul-Wullar Project on Jhelum and Baglihar on Chenab are completed. The people of Jammu and Kashmir desperately need the power generation to light their dark nights and dark lanes. They need power to expand the industrial base and shrug off their dependence on other States of India.

Chief Minister Mufti Mohammed Sayed of the Srinagar based administration has made a strong case in favour of Baglihar project. We appreciate his pro-Kashmir interest in making an appeal to Pakistan to become facilitator in the economic progress of the State by not objecting to the various projects started on the State's own resources. He has rightly pointed out that "Jammu and Kashmir faces electricity crisis, particularly during the winter season. As of now the State has to depend on other States to meet its power needs. Projects like Tulbul-Wullar barrage on Jhelum and Baglihar project on Chenab are essential for improving the economic condition of the people of the State. These projects would help us to become economically self sufficient", he said.

IKA is not averse to the welfare of the people of Pakistan. Our argument for our subscription of the interest in the Baglihar dispute is based on the Jurisprudence of the Habitat and the Water Resources embedded in it. We shall be arguing a corresponding and reciprocal benefit of compensation due to the people of Kashmir.

IKA would argue the principal interest of the People of Jammu and Kashmir in the Indus Water Treaty. Kashmiri interest is incremented and guaranteed by our bilateral agreement with the Government of India and Pakistan's "assumed responsibilities in Azad Kashmir" and its responsibilities under "Karachi Agreement on Gilgit and Baltistan".

World Bank has made an error at core in failing to take any regard of the Jurisprudence of the Kashmir dispute and of a use of its resources without assuring a corresponding benefit for the Kashmiri people. We would wish to argue that water resources are not unlimited and always available. We will argue that the Indus Water Treaty does not maximise in equity and in fairness the benefits accrued from the use of water and at the same time it has failed to preserve and protect water resources and the environment.

The Kashmir specific benefit of industrial and economic development, health, sanitation and agriculture and others are missing at core. The legal framework has to recognise the use and firmly establish priorities. The most important of all would be the principal share of the people of Jammu and Kashmir in the 'stewardship of water resources' of Kashmir. If Indus Water Treaty has to stay – it needs to incorporate the right of the people of Kashmir in the management of water uses and water-related activities under the treaty. WB has to evaluate the manner and extent which is due to the people of Kashmir in the exercise of the stewardship role for their water resources.

NEUTRAL EXPERT AND INDUS WATERS TREATY

V. G. Hegde

I. INTRODUCTION

The contentious technical issues relating to Baglihar project between India and Pakistan are now before the neutral expert.¹ India, *inter alia*, has announced that it would fully cooperate as per the relevant provisions of the Indus Waters Treaty to resolve the Pakistani objections on the Baglihar Project. Indian concurrence to the appointment of a neutral expert connotes that it would agree to a third party intervention as per the Treaty and it is, indeed, a major policy shift. Considering the earlier Indian position generally on such similar issues of fact-finding by experts and expert bodies, this shift appears like a significant departure from India's avowed position.² However, Indian acceptance has been carefully worded. It, *inter alia*, refers to (a) that it has no hesitation in making available to the 'neutral expert' technical details of the Baglihar dam project; and (b) that it will do so within the parameters 'clearly laid down' in the 1960 Indus Waters Treaty ('Treaty' hereinafter).³ It may be noted that Indus Waters Treaty which took nearly a decade to negotiate, contains 12 substantive articles and 8 annexes (Annexure A to H), along with several Appendices. In the following study we shall briefly examine the salient features of the Treaty, with particular reference to the role of the Neutral Expert. The study also proposes to identify the possible legal implications for India within the framework of the Treaty, with particular reference to Baglihar project.

Baglihar Project is being built on the Chenab River in Kashmir for the purpose of generating hydro-electric power. The Salal Hydro-Electric Project is already in operation in the down stream. According to Article III of the Treaty, Pakistan has unrestricted use of all those waters of the Western Rivers which India is under an obligation to let flow and shall not permit any interference with these waters.

Chenab along with Indus and Jhelum was categorized as the Western River under the Treaty. The Eastern Rivers, as per Article II of the Treaty were Sutlej, The Beas and The Ravi. These rivers were available for the unrestricted use of India. Generation of hydro-electric power was allowed as per the Treaty as unrestricted use provided that there was no storage of water of any kind. Annexure D to the Treaty provided the detailed technical criteria for the design, construction and operation of new hydro-electric plants which are incorporated in storage works. The criteria set out in Clause 8 (a) to (g) of the Annexure D concerning the New Run-of – River Plants were the key technical elements which will now have to be examined by the Neutral Expert.

II. THE INDUS WATERS TREATY – SALIENT FEATURES

The Indus Basin is one of the unique and largest river basins in the world.⁴ It is the lifeline of large population living both in India and Pakistan. Immediately after the partition in 1947, the control and use of the waters of the Indus Basin became a matter of serious contention. With the intervention of World Bank, after a decade of protracted and strenuous negotiations, both India and Pakistan signed the Indus Water Treaty finally on 19 September 1960.⁵ Pakistan, at certain stage of negotiations, refused to enter into any dialogue concerning the Treaty. It felt that the distribution of waters of the Indus Basin as envisaged in the Treaty did not take into account its legitimate share.⁶ India, on the other hand, felt that undue emphasis was placed on the dispute settlement and other procedures. India refused any intervention by third party and preferred a negotiated settlement of any future dispute or conflict. In other words, it should be noted that both sides had their negotiating positions clear on each of the provisions. For this reason, this Treaty had a large number of Annexures (A to H) covering in detail various technical and legal aspects.

The Treaty, it may be noted, divides the rivers of the Indus Basin into ‘Eastern’ and ‘Western’ rivers. The exclusive use of Eastern Rivers, namely Sutlej, Beas and Ravi, were given to India.⁷

NEUTRAL EXPERT AND INDUS WATERS TREATY

Pakistan, on the other hand, got the exclusive use of 'Western' rivers namely, Indus, Jhelum and Chenab.⁸ Both countries were under an obligation to "let flow, and shall not permit any interference with, the waters" of the rivers of which they had no exclusive control. They were, however, allowed 'domestic use' and 'non-consumptive' use.⁹ Article VI and VII dealt with 'Exchange of Data' and 'Future Co-operation' between both the countries.

The Permanent Indus Commission envisaged within the Treaty is a technical body to essentially implement the various provisions of the Treaty.¹⁰ The Commissioner for Indus Waters, appointed by both Parties in terms of Article VIII (1) "should ordinarily be a high-ranking engineer competent in the field of hydrology and water use". The Permanent Indus Commission, with two technical heads along with other experts, has been mandated to "serve as the regular channel of communication on all matters relating to the implementation of the Treaty". Its mandate, *inter alia*, includes – (a) to study and report to the two Governments on any problem relating to the development of the waters of the Rivers which may be jointly referred to the Commission by the two Governments : in the event that a reference is made by the one government alone, the Commissioner of the other Government shall obtain the authorization of his Government before he proceeds to act on the reference; (b) to make every effort to settle promptly, in accordance with the provisions of Article IX (1), any question arising thereunder.¹¹

IV. DISPUTE SETTLEMENT – WHEELS WITHIN WHEELS

The dispute settlement structure provided in the Article IX and of the Treaty is a complex one.¹² There are two layers for treating the dispute or conflict beginning with a possible negotiated settlement within the framework of the Permanent Indus Commission. It is, accordingly, provided that "any question which arises between the Parties concerning the interpretation and application of this Treaty or the existence of any fact which, if established, might constitute a breach of this Treaty shall

first be examined by the Commission...”¹³ Only when the Permanent Indus Commission fails to resolve the matter by negotiation, the ‘difference’ will go to a Neutral Expert who shall also make proposals for the settlement of ‘differences’. The Neutral Expert will be appointed as per the provisions of Part 2 of the Annexure F.

By accepting the appointment of a Neutral Expert, India has now formally and for the first time in the history of the Treaty agreed to trigger dispute settlement process under Article IX of the Indus Water Treaty. Article IX (2) provides for the appointment of a neutral expert to resolve “any difference” which falls within the provisions of Part 1 of Annexure F of the Treaty. The appointment of the neutral expert itself is in accordance with Part 2 of Annexure F.

Once this provision is triggered, India cannot exercise the option to go back to negotiating table again unless Pakistan too agrees to do so.¹⁴ Before this, India and Pakistan in their joint statement while conducting their composite dialogue process had agreed that all technical details concerning Baglihar Project could be and should be discussed and resolved mutually between the two Indus Commissioners who together constitute the Permanent Indus Commission under Article VIII. In the last few years Pakistan has been consistently opposing the continuation of work on the Baglihar Project on the ground that the technical details concerning the design of the project provided by India were not in tune with the relevant provisions of the Treaty. Accordingly, Pakistan argued, there existed a ‘question’ which needed a resolution between both the Parties. Article VIII (4) (b) of the Treaty enjoined on the Permanent Indus Commission “to make every effort to settle promptly, in accordance with the provisions of Article IX (1), any question arising thereunder”. This is what India resisted for all these years and sought to settle the matter bilaterally within the framework of Permanent Indus Commission.

In a nut shell, the whole issue has now moved from Article VIII to Article IX under the Treaty. In the historical context of the Treaty, this undeniably, is a significant move. India was resisting moving and

NEUTRAL EXPERT AND INDUS WATERS TREATY

Pakistan was insisting on the move. While India's stated position, as mentioned above, was to go for a mutually acceptable solution within the parameters of the Permanent Indus Commission in Article VIII, Pakistan was keen to invoke the dispute settlement provision under Article IX. These divergent positions reflect and conform to the views held by both countries since 1949. In 1949, Pakistan was insistent on the equitable apportionment of the waters of the Indus Basin. If this did not happen through negotiation, it was insistent on taking the matter to the World Court.¹⁵ Further, Pakistan was also insistent on the creation of a permanent body of neutral expert/s to take care of the problems/conflicts which would arise in the future.¹⁶ India, being an upper riparian, not only did not agree to this proposal, it has been consistently advocating the negotiated settlement on all such differences as the solution. Accordingly, during the negotiation of the Treaty, India had proposed that a joint technical commission be appointed to work out proposals for an equitable utilization of the entire waters of the Indus Basin.¹⁷ There were major disagreements on these modalities between both countries during the negotiations.

Article IX of the Treaty, therefore, appears like a blend of the two divergent approaches, namely, (a) up to a point negotiated settlement of all 'differences'; and (b) binding arbitration procedure, if these 'differences' substantively exist necessitating a formal settlement between the parties. The role of the neutral expert, although limited to resolve the 'differences', he could transpose the so-called question of 'difference' from 'difference' to a 'dispute'. This requires us to examine, *albeit* briefly and carefully, certain kind of 'language' employed in Article IX which might pose problems for India.

a. Treaty Language and Interpretation¹⁸

Clause 1 of Article IX refers to the 'examination' of 'any question' which may arise between the Parties concerning interpretation and application of the Treaty. This 'examination' is within the domain of the Permanent Indus Commission. 'Examination' of any question *ipso facto* does not involve any binding obligation on either of the Parties.

When we come to clause 2 of Article IX the existing ‘question’ transforms into a ‘difference’ i.e., when the Permanent Indus Commission is unable to reach an agreement. At this point of time, both Commissioners after reporting the matter to their respective Governments could invoke Article IX (2) (a). It provides that ‘any difference’, in the opinion of either Commissioner falls within issues identified in the Annexure F (Part 1) be dealt by a neutral expert. In other words, the neutral expert, once appointed, will ‘deal’ with the ‘difference’ and his suggestions are binding.

Article IX (2) (b) is the actual problem area. It provides the transition phase from ‘difference’ to ‘dispute’. To put it differently, in this clause a ‘difference’ evolves into a ‘dispute’. More importantly, this determination could entirely be made by the neutral expert. Annexure F of the Treaty, which provides for the ‘questions’ to be dealt by the neutral expert in Part 1 and the procedure of his appointment in Part 2, is an integral part of the Treaty. According to clause 7 of Part 2 (of Annexure F), the Permanent Indus Commission will have to, in the first instance, agree on the ‘question’ to be referred to the neutral expert. If the Parties fail to agree on the ‘question’ (which could be essentially termed as the ‘terms of reference’) the neutral expert will have to decide the status of his own terms of reference i.e., whether to term it as a ‘difference’ or a ‘dispute’. If he decides it is a ‘difference’, he will assume jurisdiction and will go on to examine the ‘question’. On the other hand, “should *he decide* otherwise, he shall inform the Commission that, *in his opinion*, the difference should be treated as a dispute. Should the Neutral Expert decide that only a part of the difference so falls, he shall, *at his discretion*, either: (a) proceed to render a decision on the part which so falls, and inform the Commission that, *in his opinion*, the part which does not so fall should be treated as a dispute, or (b) inform the Commission that, *in his opinion*, the entire difference should be treated as a dispute (emphasis added). Neutral expert, therefore, has enough authority to shut all the doors for the negotiated settlement. This could be an uncertain phase for India while matter is pending before the neutral expert.

b. Questions before the Neutral Expert

Part 1 of Annexure F provides for 23 different technical areas as “questions to be referred to a Neutral Expert”. These areas, for example, include such specific technical questions as – determination of the component of water available, boundary of the drainage basin, extent of usage or storage, any action taken by either Party which is likely to have the effect of diverting the water, issues concerning data availability, determination of schedule of releases from Conservation Storage, new agricultural use or hydroelectric use, criteria to operate a plant, conformity of flood control works to the specification of the Treaty and so on. These are randomly listed. Otherwise, these ‘questions’ appear to raise very specific issues which are, in fact, addressed in other Annexures of the Treaty. So, by implication, anything outside the scope of this Part 1 of Annexure F will have to be considered as a ‘dispute’, if the neutral expert so decides. Perhaps this is where the uncertainty exists as it is for the first time in the history of the Treaty that Article IX is being invoked.

The Treaty provides that the neutral expert should be a “highly qualified engineer”. Compare this language with the qualifications of the Commissioners. Commissioners are “high-ranking engineers”. There are no other prescriptions for his appointment. He should be a highly qualified (engineering) ‘neutral’ expert. The word ‘neutral’ itself connotes by implication that he cannot be and shall not be a national of either of the Parties. There are also issues concerning ‘neutrality’ of the highly qualified engineer. Determination of the substantive content of the word ‘neutral’ could pose several problems. Consent of both Parties is the only key for neutrality of the ‘neutral’ expert. In other words, the word “neutrality” refers to the ability of the expert to ascertain and assess the engineering facts in a thoroughly objective manner. The phrase used in the Treaty is “consultation with each of the Parties”, not just with the Commissioners.

V. Implications for India

The appointment of a neutral expert has some definite implications for India, an upper riparian. It is possible that a neutral expert may generally treat the plight of the lower riparian more sympathetically as it has to bear the impact of the omissions and commissions of the upper riparian.¹⁹ In this case, Pakistan has certain advantage and accordingly for this reason it has always been advocating a judicial settlement of the whole issue from the very beginning. More importantly, in the present case, there are no obligations (financial or otherwise) for Pakistan. Pakistan has only concerns, technical or otherwise, which need to be met as per provisions of the Treaty. India, on the other hand, will have to modify the design or will have to remodel the work already undertaken. If it is so, it entails a definite financial implication for India, causing a substantial delay in the completion of the project. It is also not clear within the parameters of the Treaty whether the neutral expert has the authority or mandate to suggest such changes which would require minor or major changes in the Baglihar Project. While it is clear that he has no authority to deal with issue of financial compensation²⁰, any suggestion from him (of whatever kind) to modify the design would ostensibly involve financial implications for India.

If one looks at the evolution of international legal norms till date (even domestic legal norms as well in certain instances) relating to law of international watercourses, these norms generally tend to benefit lower riparian.²¹ Balancing of interests and obligations is the key element. At one end of the scale was the Harmon Doctrine advocated in 1895 by the Attorney General Judson Harmon of the United States while dealing with the apportionment issue of the waters of the Rio Grande River between US and the Mexico.²² Harmon Doctrine upheld the absolute sovereign right of the upper riparian. However, this doctrine did not survive that long. Both the US and Mexico concluded a Convention in 1906 concerning the Equitable Distribution of the Waters of the Rio Grande for Irrigation Purposes. This was followed by another treaty between US and Mexico after a protracted negotiation and litigation (within the US) in 1944, namely, the Treaty

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between the United States and Mexico relating to the Utilization of the Waters of the Colorado and Tijuana Rivers, and of the Rio Grande (Rio Bravo) from Fort Quitman, Texas to the Gulf of Mexico.²³ Both these treaties had significant impact on the evolution of the norms incorporated in the 1960 Indus Water Treaty, in particular the procedures relating to dispute settlement process. The idea of a neutral expert emerged from the concept of International Joint Commission specifically designed within the framework of the Treaty Relating to Boundary Waters and Questions Arising between the United States and Canada in 1909.

VI. Conclusions

In conclusion, it should be restated that the Indian concurrence in principle to the appointment of a neutral expert modifies one of the basic structures of the Indian approach to not to accept third party settlement in any form. It could be argued that since this was a treaty obligation, the variant Indian State practice should not be treated as a precedent. It could also be argued that a neutral expert is merely a technician (a highly qualified engineer) and accordingly we should concur with the approach to look at the technical issues dispassionately. In other words, technical issues should be treated as merely 'technical' issues within the parameters of the Treaty. The so-called technical issues emerging as 'questions' within Article IX and then the possibility of it evolving as a 'dispute' triggering an entirely new mechanism, i.e., the Court of Arbitration also cannot be totally discounted.

However, it should be noted that the operational setting of the Indus Water Treaty in the last four decades has undergone a significant change, despite intermittent rough political weather between the two countries. It operates, now, in an entirely different normative-setting, with the international legal norms outlining a very balanced interpretative approach towards the international river systems. The Indus Water Treaty now perhaps needs to look at an entirely new interpretative matrix with the active involvement of both the Parties.

REFERENCES

1. Both India and Pakistan concurred with choice made by the World Bank to appoint Professor Raymond Lafittee, a Swiss national as the Neutral Expert. Professor Lafittee who is 70 years old, is a civil engineer and teaches at the Swiss Federal Institute of Technology in Lausanne. He has expertise in the field of electrical power plants and water resource development. He has been the advisor and expert to many developing country governments, including Turkey, Iran, Algeria, Burkina Faso and others on dam safety and other similar related areas.
2. One of the primary reasons for India to abstain from voting in the United Nations General Assembly on 21 May 1997 during the adoption of the Convention on the Law of Non-Navigational Uses of International Watercourses related to the aspect of 'fact-finding' in Article 33 (4) of the said Convention. India made a statement to this effect before abstaining.
3. See *The Hindu*, April 29, 2005.
4. The Indus system of rivers comprise the main river Indus and its major tributaries, the Kabul, the Swat and the Kurram, from the west (from Afghanistan), and the Jhelum, the Chenab, the Ravi, the Beas and the Sutlej. The Indus Water Treaty, however, deals with six rivers, namely Sutlej, Beas, Ravi, Indus, Jhelum and Chenab. It is estimated that the Indus Basin as a whole has a drainage area of 450,000 square miles. Most of the Indus Basin, however, lies in India and Pakistan. See Niranjana D. Gulhati, *Indus Water Treaty: An Exercise in International Mediation*, (Allied Publishers: Bombay: 1973) p.18; also see Aloys Arthur Michel, *The Indus Rivers: A Study of the Effects of Partition*, (Yale University Press, 1967).
5. Although the Treaty was signed on 19 September 1960, according to Article XII (2) it was given retrospective effect from 1 April 1960. The retrospective effect to the Treaty should be read in conjunction with Article II (5) and (6) dealing with Transition Period which would begin from 1 April 1960 and end on 31 March 1970. During the Transition Period, India had definite obligations while exercising its exclusive use on the Eastern Rivers such as (a) to limit its withdrawals for Agricultural Use (b) limit abstractions for storage, and (iii) make deliveries to Pakistan from the Eastern Rivers.
6. During negotiations Pakistan was looking for a 70 per cent share of the water for its use.
7. Article II of the Treaty.

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8. Article III of the Treaty.
9. Both these concepts have been defined in Article I (10) and (11) of the Treaty. Definitions are descriptive. 'Domestic use' means – (a) drinking, washing, bathing, recreation, sanitation (including the conveyance and dilution of sewage and of industrial and other wastes), stock and poultry, and other like purposes; (b) household and municipal purposes (including use for household gardens and public recreational gardens); and (c) industrial purposes (including mining, milling and other like purposes); *but the term not to include Agricultural Use or use for the generation of hydro-electric power* (emphasis added). The term 'Non-Consumptive Use' means any control or use of water for navigation, floating of timber or other property, flood protection or flood control, fishing or fish culture, wild life or other like beneficial purposes, provided that, exclusive of seepage and evaporation of water incidental to the control or use, the water (undiminished in volume within the practical range of measurement) remains in, or is returned to, the same river or its Tributaries; *but the term does not include Agricultural Use or use for the generation of hydro-electric power*(emphasis added).
10. Article VIII of the Treaty. It has no interpretative powers. It will just serve as regular channel of communication between the Parties on all matters relating to implementation.
11. In order to implement the mandate they undertake, once in every five years, a general tour of inspection of the Rivers for ascertaining the facts connected with various developments and works on the Rivers; this tour can be effected at the request of either Commissioner as well. See Article VIII (4) of the Treaty.
12. The appointment, qualifications and terms of reference of the Neutral Expert are outlined in Annexure F. The Court of Arbitration will have to be established in accordance with the provisions of Annexure G. The terms of reference of the Neutral Expert or the matters to be dealt by him are to be referred in Annexure D.
13. Article IX (1).
14. This aspect has not been covered in Part 2 of Annexure F while covering the procedural aspects to be followed by the Neutral Expert. This is particularly important in the context of Pakistani experts visiting the Baglihar project recently and this visit appears to be independent of the 'question' or reference made before the Neutral Expert. Generally, under international law nothing should prevent both sides to arrive at a negotiated settlement while the issue is still pending before the Neutral Expert.

15. See Niranjan D. Gulhati, n.4, p.73. Pakistan, in a communication dated 16 June 1949 referring to “an equitable apportionment of the flow of all waters common to Pakistan and India and of resolving by agreement all disputes incidental to the use of these waters” , further stated, if “negotiations cannot accomplish such a practical solution, the International Court of Justice shall, upon application of either party , have jurisdiction to resolve the dispute”.
16. While India proposed the appointment of an *ad hoc* tribunal consisting of two judges “of the highest judicial standing” from each country, Pakistan had proposed for the appointment of a “necessary chairman from a disinterested country”. See Niranjan D. Gulhati, n.4, p.80.
17. India was opposed to refer every dispute, whatever its nature, to a particular authority, much less to an external authority. It had proposed a model based on the International Commission established between the United States and Canada. *The Treaty Relating to Boundary Waters and Questions Arising between the United States and Canada, 1909* established the International Joint Commission. India argued that any reference to third party would mean “confession of our continued dependence on others”. See India’s communication of 8 October 1950 quoted in Niranjan D. Gulhati, n.4, p.81
18. The use of language is an important tool in defining the rights and obligations of the Parties to a Treaty. See Article 31 of the Vienna Convention on Law of Treaties, 1969 which *inter alia*, states, “A treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose”. There are also arguments in India that the Indus Treaty should be denounced (as there is no withdrawal or termination clause in the Treaty) on the basis of Article 62 of the Vienna Convention which restates the customary principle of international law, namely, *rebus sic stantibus* (meaning, upon the fundamental change of circumstances). This needs an entirely different treatment and does not come within the purview of this article.
19. *The United Nations Convention on the Law of Non-navigational Uses of International Watercourses, 1997* which could be treated as codification of State practice in the field does not use the term ‘upper’ or ‘lower’ riparian. The term used is ‘Watercourse State’. Article 2 (c) defines it as “in whose territory part of an international watercourse is situated”. The word “situated” should be noted. The Convention is annexed to UNGA Res. 51/229, 21 May 1997, adopted by a vote of 103 for and 3 against, with 27 abstentions. Both India and Pakistan abstained.

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China along with Turkey and Burundi voted against. The Helsinki Rules refer to 'Basin State' which has been defined as "geographical area extending over two or more States determined by the watershed limits of the system of waters, including surface and underground waters, flowing into a common terminus". See The Helsinki Rules on the Uses of the Waters of International Rivers adopted by the *International Law Association, Report of the Fifty-Second Conference, Helsinki, 1966*, International Law Association, London, 1966.

20. Clause 13 in Part 2 of Annexure F provides that "Without prejudice to the finality of the Neutral Expert's decision, if any question (including a claim to financial compensation) which is not within the competence of a Neutral Expert should arise out of his decision, that question shall, if it cannot be resolved by agreement, be settled in accordance with the provisions of Article IX (3), (4) and (5)".
21. Article 7 of the 1997 UN Convention provides that States have an obligation to prevent the causing of significant harm to other States sharing the watercourse. This principle of 'no-harm' arises from the maxim, *sic utere tuo ut alienum non laedas* (so use your own as not to harm that of another).
22. See Stephen C. McCaffrey, *The Law of International Watercourses, Non-Navigational Uses* (Oxford University Press, 2001) p.76 for an elaborate treatment of this doctrine.
23. See McCaffrey, n.21, p.285.

HELSINKI RULES ON THE USES OF WATERS OF INTERNATIONAL RIVERS AND INDUS WATERS TREATY

Muhammed Siyad A.C.

The forty-five year old Indus Waters Treaty (IWT) has been a significant accord between India and Pakistan since its inception. This explains how a water treaty has become a catalyst to cooperation, even among especially contentious riparian states. The IWT has withstood the tumultuous relations and the political ups and downs between the two neighbours. Generally, IWT has been acclaimed as a successful instance of the settlement of a major international river basin conflict. However, for the first time a need has arisen this year to resort to the appointment of a Neutral Expert (NE) under Article IX(2)a of the IWT; which set in motion the dispute settlement mechanism outside the purview of the Permanent Indus Commission (PIC). The invocation of this provision by Pakistan brought to the fore many debatable issues regarding the IWT. The task of the NE is to decide whether the so called disagreements at the PIC level are a difference or dispute. If the NE decides the issue as a dispute, a court of arbitration has to be set up.

It is in this backdrop that this paper is structured into four parts. Part I consists of a summary of the body of legal principles, as a background to the Helsinki Rules on the Uses of Waters of International Rivers, 1966 (HRs), that had been prevalent during the time of negotiation of the IWT. Part II deals with those relevant provisions of the IWT, which are debated after the NE has been appointed. Part III briefly outlines the corpus of international law as is found in the HRs because it is the first and most often cited text in the field of river water sharing as it buttresses the law of equitable utilisation. Part IV makes a critical assessment of the schemes of water allocation as set out in the IWT along with the Helsinki calculus to be taken into account while deciding the parties' share of Indus waters. This part also deals with the issue of hydroelectric power project in terms of the principle of

equitable use and no-harm. Part V provides some final reflections on the study. The analysis is in general terms, as specific issues relating to particular projects such as Baglihar or Kishenganga are not referred to.

I

INTERNATIONAL LAW BEFORE THE IWT

The Indus River posed serious problems after partition in 1947 as the new political boundary between India and Pakistan was drawn cutting across the Indus system of rivers and canals leaving Pakistan as the lower riparian. This resulted in the disruption of well-established canal irrigation. Subsequently, a 'Stand- Still Agreement' for maintaining the pre-partition allocation of water from the Indus basin to Pakistan was signed on December 18, 1947.¹ But this Agreement expired on March 31, 1948. Later, on April 1, 1948, East Punjab discontinued delivery of waters from the Upper Bari Doab (UBD) canal system to the lower part of the canal. Then onwards the Indo-Pakistan waters dispute had begun in a stark form. After the day on which the Indo-Pakistan Arbitral Tribunal was abolished on March 31, 1948, East Punjab sought to assert its right on the eastern rivers. East Punjab refused to restore the flow of water in the canals unless West Punjab recognised that it had no right to the water. Subsequently, an Agreement was signed on May 4, 1948. Thus, supplies of water to West Punjab were resumed. Later, conflicting claims on behalf of the upstream and downstream States emerged. For resolving this problem, the IWT was signed on September 19, 1960 after 8 years of sustained and hard bargaining under the auspices of the World Bank (WB) between the Prime Minister of India Pandit Jawaharlal Nehru and Pakistan President Field Marshal Ayub Khan at Karachi. Thus, the IWT came into existence with retrospective effect from April 1, 1960.

This section is necessary because of the pervasiveness of the misunderstanding about the legal doctrines and principles before the drafting of the IWT. International law in this field started developing since 1955 as well. There are certain important doctrines governing the legal positions of the riparian States regarding sharing of waters.

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The Harmon doctrine or absolute territorial sovereignty doctrine states that the upper riparian State has the absolute right to stop the flow of water flowing within its territory. The doctrine draws its name from an opinion delivered in the late nineteenth century by the US Attorney General during the time of dispute between the US and Mexico.² Farmers in the US had begun increasingly to divert its waters, significantly reducing its flow to Mexico. Thus, Judson Harmon, the then Attorney General, was asked by the US State Department for an opinion on the contentions of Mexico on the shared river, the Rio Grande. Harmon replied way back on December 12, 1895:

The fundamental principle of international law is the absolute sovereignty of every nation as against all others, within its own territory... All exceptions, therefore, to the full and complete power of a nation within its own territories must be traced up to the consent of the nation itself. They can flow from no other source.³

Harmon conceded that he had found in support of his view ‘no precedent or authority which has a direct bearing’ and the ‘case presented is a novel one’. The Harmon doctrine was discredited in the land of its origin, the US, and lies buried beyond recall. This is evident from the 1906 Convention between the US and Mexico concerning the Equitable Utilisation of the Waters of the Rio Grande for Irrigation Purposes.⁴

Absolute territorial integrity doctrine states that the lower riparian States have an absolute right to have an uninterrupted flow of the river from the territory of the upper riparians, no matter what the priority is.⁵ According to Berber, this doctrine is supported by certain commentators including, Schenkel, Max Huber, Fleischmann, Reid, and Oppenheim.⁶ It is to be noted that Pakistan in its dispute with India characterised its position as of absolute territorial integrity. In its telegram to Prime Minister of India, Pakistan stated:

The view of the West Punjab Government is that the water supply can not be stopped on any account whatsoever and we fully endorse this view. Such stoppage is a most serious

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matter....It will cause distress to millions and will result in calamitous reduction in production of food grains, etc.⁷

Close to this point is the doctrine of prior appropriation which maintains that the State that puts the water to use first, which existed prior in time, has got the right over others. But these doctrines are largely irrelevant on a practical level.

According to limited territorial sovereignty doctrine, sovereignty of a State over its territory is limited by the obligation not to use it in such a way as to cause significant harm to other State.⁸ This is the prevailing and most acceptable doctrine of water apportionment. Community of interest doctrine states that there should be a collective right of action by all riparian States to utilise the waters with the consultation and cooperation of other co-basin States.⁹ In the *River Oder case* of 1929 the Permanent Court of International Justice (PCIJ) ruled that a solution of the problem lay not in the idea of right of passage in favour of upstream States, but in that of a community of interest of riparian States.¹⁰ The PCIJ observed:

This community of interest in a navigable river becomes the basis of a common legal right, the essential features of which are the perfect equality of all riparian states in the use of the whole course of the river and the exclusion of any preferential privilege of any one riparian state in relation to the others.¹¹

One will note with interest that this principle also applies to non-navigational use since it was based on a community of interest in riparian States.

Even though Pakistan continually invoked international law in support of, what she claimed were, her due rights in the Indus waters, she was, it seems little aware of the existence of certain rules of international law on the subject, which buttressed India's negotiating strategy.¹² The doctrine of equitable utilisation was born out of the US Supreme Court decision in inter-State apportionment cases beginning in the early 20th century,¹³ and is supported by a noted German court decision.¹⁴ The German court observed in the 1927 *Donauversinkung* Case as follows:¹⁵

C. The Rule of International Law as to the Utilisation of the Flow of International Rivers. The Duty to Abstain from Injurious Interference— the exercise of sovereign rights by every state in regard to international rivers traversing its territory is limited by the duty not to injure the interests of other members of the international community. No state may substantially impair the natural use of the flow of such a river by its neighbour. This principle has gained increased recognition in the international relations. The application of this principle is governed by the circumstances of each particular case. The interests of the states in question must be weighed in an equitable manner, against one another.¹⁶

This doctrine of equitable utilisation is chiefly a principle governing apportionment or quantitative allocation of water sharing between two or more States. Justice Holmes had emboldened the philosophical and policy underpinnings of the principle of equitable utilisation in the case of *New Jersey v. New York*.¹⁷ Holmes effectively rejected both the Harmon doctrine and absolute territorial integrity doctrine stating that both States have real and substantial interests and these interests must be reconciled as best they may rather than simply declaring one the absolute winner and the other the absolute loser. He ruled that the object is to secure an equitable apportionment without quibbling over formulas. The novelty is that equitable utilisation purports to become the principal basis of entitlement to the use of international watercourses. Therefore, claims to a portion of the waters of an international watercourse or to undertake a particular activity or project cannot be separated from the question of equitable utilisation.

In October 1949, Pakistan moved a resolution in the Sixth Committee of the General Assembly of the United Nations suggesting that the topic of 'international rivers' should be taken up for codification by the International Law Commission (ILC) and given priority.¹⁸ It is pertinent to note that toward the end of 1949, the Government of India appointed S.M. Sikri, the then Assistant Advocate General of East Punjab, to make a study of international law in respect of use of river waters. Though this study did not reveal any defined principles of

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international law on this subject, it pointed to the US inter-State practice in this regard.¹⁹ The study undertaken by Berber in the winter of 1951-52 of international relations pertaining to the use of river waters in different parts of the world showed that international law on the problem of economic use of river waters was too vague for the purpose.²⁰ Berber stated that a sovereign nation can freely use the natural resources existing in its own territory unless restricted by international treaty or by international customary law.²¹ This meant that the upper riparian has got obligations to take care of the interest of the downstream nation. It is also to be borne in mind that several cooperative developments had emerged on many rivers out of bilateral treaties.

It is to be noted with interest that the Madrid Resolution adopted by the Institute of International Law (IIL) through its Madrid Conference of 1911 was an important contribution in this field.²² Thus, the IIL drew up two essential rules resulting from that interdependence which States should observe. The first one concerned the contiguous watercourses and boundary lakes, and the second one relating to the successive watercourses. The first rule was that:

When a stream crosses the frontiers of two states, whether naturally, or since time immemorial, may not be changed by establishment of one of the states without the consent of the other; no establishment may take so much water that the constitution, otherwise called the utilisable or essential character of the stream, shall, when, it reaches the territory downstream, be seriously modified.²³

The second rule was that:

When a stream traverses successively the territory of two or more states... no establishment ...may take so much water that the constitution, otherwise called the utilisable or essential character of the stream shall, when it reaches the territory down stream, be seriously modified.²⁴

Further, the IIL decided in its Madrid resolution that:

A State is forbidden to stop or divert the flow of a river which runs from its own to a neighbouring state but likewise to make

such use of the water of the river as either causes danger to the neighbouring state or prevent it from making proper use of the flow of the river on its part.

The foregoing principles are significant in many respects. According to Stephen C. McCaffrey, the resolution of the IIL was half a century ahead of its time. It blazed a trail that the IIL as well as other organisations followed, but only in the latter half of the 20th century.²⁵

Further, the Barcelona Convention (1921) to which India was a signatory expressed the following view:

No State is allowed to alter the natural conditions of its own territory to the disadvantage of the natural conditions of the territory of a neighbouring State.

The only major systematic work in English, until a comprehensive assessment of the position of law undertaken by Berber, is the book by Smith in 1931.²⁶ In the years between 1919 and 1939, considerable number of treaties concerning the use of international rivers of common interests were concluded. It is apt to quote the following statement of law by the *Trail Smelter* Tribunal:

No state has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another or the properties or persons therein, when the case is of serious consequences and the injury is established by clear and convincing evidence.²⁷

The arbitral award concerning the waters of *Lake Lanoux* in 1957 was concerned with the interpretation of a treaty between France and Spain. However, the tribunal made observations on certain Spanish arguments based on customary law. On the one hand, the tribunal seemed to accept the principle that an upstream State is acting unlawfully if it changes the waters of a river in the natural condition to the serious injury of a downstream State. On the other, the tribunal stated that 'the rule according to which States may utilise the hydraulic force of international watercourses only on condition of a prior agreement between the interested States cannot be established as a custom or even less as a general principle of law.'²⁸

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It is pertinent to note here a relevant part from the Lake *Lanoux* Case:

The Tribunal considers that the upper riparian state, under the rules of good faith, has an obligation to take into consideration the various satisfactions compatible with the pursuit of its own matter, or real desire to reconcile the interests of the other riparian with its own.²⁹

One related point to be mentioned in this connection is the Report of B.N. Rau Commission. Sections 130-132 of the Government of India Act, 1935 empowered the Governor-General to appoint a Commission to inquire into complaints in respect of the use, distribution or control of inter-provincial rivers. The Federal Court was given jurisdiction to give its opinion on the issue. In September 1941, the Governor-General appointed a Commission “to investigate the complaint of the Government of Sind about their interests in the waters of the river Indus”. It comprised B.N. Rau, the then Judge of the Calcutta High Court, and two Chief Engineers from Uttar Pradesh and Madras. The Commission discussed at length the decisions of the US Supreme Court and placed much reliance on them. The Commission observed:

The Act... recognises the principle that no Province can be given an entirely free hand in respect of a common source of water such as an inter-provincial river. This is in accordance with the trend of international law as well as of the law administered in all Federations with respect to the rights of different states in an inter-state river... A Province cannot claim to do whatever it likes with the water of a river regardless of the injury which it might inflict on other Provinces or states lower down.³⁰

In sum, the Rau Commission found the governing principle to be that of “equitable apportionment- a borrowing from the law applied in the interstate river dispute in the United States.”³¹

The Memorandum of the United Nations Economic Commission for Europe, the revised edition of which appeared in 1952, constitutes a valuable study.³² The Memorandum arrives at the conclusion, *inter alia*, that:

A State has the right to develop unilaterally the section of the waterway which traverses or borders its territory, in so far as such development is liable to cause in the territory of another state only slight injury or minor inconvenience compatible with good neighbourly relations.

On the other hand, when injury liable to be caused is serious and lasting, developments works may only be undertaken under prior agreements...It is possible, however, to establish criterion as a basis for the distinction between a light and a serious injury...

This supports the Madrid resolution adopted by the IIL. In 1954, at its Edinburgh Conference, the International Law Association (ILA) appointed a Committee on the Uses of the Waters of International Rivers.³³ Its objective was to clarify and restate existing international law as it applies to the rights of States to utilise the waters of international drainage basins. The Committee presented its first "Statements of Principles" before the ILA's Dubrovnik Conference in 1956.³⁴ The conference adopted the Statements of Principles including the right of the basin State to a reasonable use of waters, as a sound basis upon which to study further the development of the rules of international law, with respect to international rivers."³⁵ Modifying some of the Dubrovnik principles, the ILA adopted in its 1958 New York Conference, a report of the Committee "consisting of certain Heads of Unanimous Agreement, Four Agreed Principle of Law and Ten Agreed Recommendations."³⁶ It is to be borne in mind that the Dubrovnik principles referred to the 'river basin' and to the principle of 'equitable apportionment', but the New York principles defined 'the drainage basin' as the object of international water law and relinquished the principle of equitable apportionment in favour of the now prevailing principle of 'equitable utilisation'. It was obvious that the River Committee of the ILA continued its allotted task till 1966 and Berber and Indian lawyers, on the one hand, Laylin and his associates and Pakistani lawyers, on the other, ostensibly acting under their individual capacities, continued to keep up an open debate in the committee and conferences of the ILA, as between the upper and lower riparian States.

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Meanwhile in 1956, during a discussion in ECOSOC on the question of 'international cooperation with respect to water resources development', Pakistan took the opportunity to put forward a draft resolution recommending, *inter alia*, "that the General Assembly to draft a covenant which shall enunciate and define the rights and duties of States with respect to the utilisation and development of international water resources".³⁷ Berber notes that the theoretical works on the law of international rivers were unsatisfactory and state practice also is in a state of fluidity.³⁸ Berber also observes that it is premature at the present times to wish to offer a system of international water law, as this would inevitably lead to half true generalisations and to dangerous superficialities.³⁹ On the basis of the literature, the Madrid Declaration of 1911, the Geneva Convention of 1923, the pronouncement of the Rau Commission, the ECE Report, and numerous US Supreme Court decisions, it can be stated that Berber's view runs apparently contrary to the then juristic opinion. In the *Lotus* case, Judge Altamira observed:

There are moments in time in which the rule, implicitly discernible, has not yet taken shape in the eyes of the world, but it is so forcibly suggested by precedents that it would be rendering good service to the cause of justice and law to assist its appearance in a form in which it will have all the force rightly belonging to rules of positive law appertaining to that category.⁴⁰

Further, it is to be noted that both the absolute territorial sovereignty and absolute territorial integrity principles to the uses of international watercourses have also been roundly rejected by every expert body that has examined the question. According to Smith both doctrines are in essence, factually myopic and legally anarchic.⁴¹

Principle of Restricted Territorial Sovereignty and Restricted Territorial Integrity

This principle has got the overwhelming support from the international community.⁴² In 1915, Karl Neumeyer, the Munich law teacher, endeavoured to show that restrictive rules of customary international law already exist on the basis of the river law practiced in the Holy Roman empire between its constituent entities in the

seventeenth and eighteenth centuries.⁴³ Professor Brierly gave a comprehensive exposition of the legal position in this regard⁴⁴ :

The practice of states as evidenced in the controversies which have arisen about this matter, seems now to admit that each state concerned has a right to have the river system considered as a whole, and to have its interests weighed in the balance against those of other states; and that no one state may claim to use the waters in such a way as to cause material injury to the interests of another, or to oppose their use by another state unless this causes material injury to itself.

Max Huber and Fauchille while referring to the principles of international neighbourship rights through their writing also took the same position. Hans Thalman while writing in 1951 referred to the principle of restricted territorial sovereignty as principle of customary international law after an assessment of the general European legal conceptions.⁴⁵ A.W Quint, a Dutch writer while analysing in 1931 also asserts that the rules of international water disputes are substantially to be drawn from the law of international neighbourship rights.⁴⁶ Oppenheim expressed the same idea in the classic work published in 1905:

Territorial supremacy does not give a boundless liberty of action. Thus, by customary international law ... a state is, in spite of its territorial supremacy, not allowed to alter the natural conditions of its own territory to the disadvantage of the natural conditions of a territory of a neighbouring state, for instance to stop or divert the flow of a river which runs from its own into another territory.⁴⁷

H.A. Smith whose seminal work came out in 1931 suggests the following principles of international law⁴⁸ :

(1) The first principle is that every system is naturally an indivisible physical unit, and that as such it should be so developed as to render the greatest possible service to the whole human community which it serves, whether or not the community is divided into two or more political jurisdictions. It is the positive duty of every government to cooperate... From this principle the

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following inferences can be reasonably drawn:

(2) No state is justified in taking unilateral action to use the waters of an international river in any manner which causes or threatens appreciable injury to lawful interests of any other riparian state.

(3) No state is justified in opposing the unilateral action of another in utilising waters, if such action neither causes nor threatens any appreciable injury to the former state.

(4) Where any proposed employment of waters promises great benefits to one state and only minor detriment to another, it is the duty of the latter state to acquiesce in the employment proposed subject to full compensation and adequate provision for future security.

(5) Where a proposed employment of waters by one state threatens to injure the legitimate and vital interest of another, the latter is justified in offering an absolute opposition to the employment proposed.....as a justifiable dispute suitable for arbitration

(6) Where the differences between States relate to technical matters, their solution, failing the direct agreement, should be referred to international commissions possessing the appropriate technical qualifications.

(7) Where the circumstances of any river system are such that question relating to its proper use are likely to be of frequent occurrences, permanent international commissions should be constituted to deal with such questions, whenever they may arise.

While part III of this paper examines the IWT, it will be made clear that not a single provision of the IWT goes outside the contours of the analysis made out by H.A. Smith way back in 1931. Still, there were many instructive analyses, which could have been incorporated into the IWT.

The reconciliation of the conflicting claims of the riparian States can be better had from the application of the principle of equitable utilisation, which will be discussed in the Part III of this paper. The more

a treaty incorporates and complies with the general principles of international law, the higher are its chances of being honoured and implemented. Moreover, any general principles of international law can be used to interpret the treaty clauses. Let us now briefly examine the provisions of the IWT.

II

INDUS WATER TREATY : AN ANALYSIS

The IWT comprises 12 Articles and 8 Annexures. It is a 'masterpiece of legal and technical drafting'.⁴⁹ The lifetime of the IWT is perpetual. The IWT has got both the substantive and procedural principles. The substantive rules are those regarding the allocation of the Indus system of rivers as the western and eastern rivers and the procedural provisions are those related to the management of the basin resources through the exchange of data and cooperation. For implementing the IWT, the IWT provides for a PIC. The IWT provides for 10 years transitional period.⁵⁰ India made a fixed contribution of Pounds 62,060,000 towards the cost of the replacement works.⁵¹

The IWT apportions the three western rivers (the Jhelum, the Chenab and the Indus itself) to Pakistan, and the three eastern rivers (the Ravi, the Beas and the Sutlej) to India. Under the IWT, India just got 33 MAF (million acres feet) of annual flow from the eastern rivers and Pakistan got 165 MAF from the western rivers.⁵² Article II says that all the waters of the eastern rivers shall be available for the unrestricted use of India, except as otherwise expressly provided in this Article. Article III provides that India shall be under an obligation to let flow all the waters of the western rivers, and shall not permit any interference with these waters but permits India some limited uses for domestic use; non-consumptive use; agricultural use, as set out in Annexure C; and generation of hydro-electric power, as set out in Annexure D. The IWT further provides that except as provided in Annexures D and E, India shall not store water of, or construct any storage works on, the western rivers.⁵³ By virtue of this provision, India has planned to harness 8,769 MW at 60% load factor.⁵⁴ But as of now

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only about 1348 MW have been harnessed and projects having installed capacity of about 1,300 MW are in different stages of construction.⁵⁵

Under the IWT, the exchange of data and information⁵⁶ is quintessential for the riparian State. The *raison d'être* of it is to alleviate the suspicions regarding the projects' detail and quantity of water to each side. It is to be noted that under the IWT India is entitled to use the western rivers for some restricted uses. In fulfilment of the obligations of Article 6 of the IWT, India has supplied the requisite data of 27-hydel projects including small plants, run-of-the-river plants and a storage work to Pakistan. Every month, the data with respect to the flows in and utilisation of the waters of the Indus basin are being exchanged.⁵⁷ The exchange of data and information on a regular basis tends to be the lynchpin of many inter-State water-sharing treaties.

Article VII of the IWT states that "the two parties recognise that they have a common interest in the optimum development of the Rivers, and, to that end, they declare their intention to cooperate, by mutual agreement, to the fullest possible extent in undertaking engineering works in the Rivers'. This Article mandates that riparian States must inform the lower riparian prior to affecting any substantial project on the Indus system of rivers. This Article is very significant as it provides for one of the customary international watercourse law rules that of prior notification.⁵⁸ The accepted authority on the notice rule is the 1957 *Lake Lanoux* Arbitration between France and Spain.⁵⁹ The 1992 Rio Declaration on Environment and Development frames the principles of prior notification in the following terms:

States shall provide prior and timely notification and relevant information to potentially affected States on activities that may have a significant adverse transboundary environmental effect and shall consult with those States at an early stage and in good faith.⁶⁰

This underscores the importance of cooperation between the riparian States with a view to achieving a regime of equitable and reasonable utilisation. The ICJ has recently emphasised the necessity

of cooperation between States sharing a major European watercourse, the Danube:

The Danube has always played a vital part in the commercial and economic development of its [nine] riparian states, and has underlined and reinforced their interdependence, making international cooperation essential. Only by international cooperation could action be taken to alleviate...problems of navigation, flood control and environmental protection.⁶¹

In addition to the IWT, the obligation to exchange data and information on a regular basis has been recognised in a variety of instruments including the United Nations Convention on the Law of the Non-navigational Uses of International Watercourses, 1997 (UNC),⁶² the revised SADC Protocol,⁶³ the 1992 E.C.E. Helsinki Convention,⁶⁴ the 1995 Mekong Agreement,⁶⁵ and the Helsinki Rules, 1966.⁶⁶ Some agreements such as the 1995 Mekong Agreement and the 1996 Ganges Treaty,⁶⁷ establish joint bodies for the collection and exchange of data and information.

The IWT provides for some institutional mechanisms also. There has to be a PIC consisting of one Commissioner from each State, who should ordinarily be a high-ranking engineer competent in the field of hydrology and water-use.⁶⁸ The purpose and functions of PIC shall be to establish and maintain cooperative arrangements for the implementation of the IWT and to promote cooperation between the parties in the development of the waters of the rivers.⁶⁹ The PIC has also to meet regularly at least once a year, alternately in India and Pakistan and to submit to the Government of India and Pakistan, before the first of June of every year, a report on its works.⁷⁰ Apart from holding an annual meeting, the PIC is also entrusted to conduct general and special tours of inspection and special meetings on specific issues on the request of either Commissioner. The PIC was inspired by the International Joint Commission (IJC) under the 1909 Boundary Waters Treaty between the US and Canada.⁷¹

Article IX of the IWT provides for a three-stage procedure for the resolution of disputes. These are: questions to be decided by the

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PIC⁷²; differences to be decided by an NE⁷³; and disputes to be decided by a Court of Arbitration (CoA).⁷⁴ The first stage under the IWT is that any question that arises between the parties concerning the interpretation or application of the IWT or the existence of any fact shall first be examined and be resolved by agreement at the PIC level. The second stage is that if the PIC, does not reach agreement on any of the questions, then a difference will be deemed to have arisen.⁷⁵ Any difference, in the opinion of either Commissioner, can be dealt with by an NE to be appointed by the two countries, or by a third party agreed upon by the two countries. In the absence of an agreement by the parties, the World Bank (WB) in consultation with the two countries will appoint an NE. Under the IWT, the NE would establish whether the disagreements referred to him are a difference or a dispute.⁷⁶ If the difference referred to him is falling within 23 items in Part 1 of Annexure F of the IWT, he can render a decision on merits, should he decide otherwise, he shall inform the PIC that in his opinion, the difference should be treated as a dispute. If only a part of which falls at his discretion, then either he has to render a decision on the part, which so falls, or in its entirety it should be treated as a dispute, then there can be negotiations at the governmental level to resolve the difference.⁷⁷ Subsequently, a CoA would be established under the IWT, which is the last and final step.

The CoA is to consist of seven members, two arbitrators to be designated by each of the parties, and the other three to be selected by agreement of the parties or, failing that, by designated individuals. The three neutral umpires are to be respectively a person qualified to be chairman of the CoA, an engineer and an international lawyer.⁷⁸ It is necessary to discuss Art. XI para 2 of the IWT. It reads as follows:

Nothing in this treaty shall be construed as in any way establishing any general principle of law or any precedent.

This express provision indicates that the IWT has merely resolved to the dispute and it has not laid down any general principle of law or any precedent for future. Rather in a way it has prohibited the derivation of any general principles of law or precedent from any treaty as such.⁷⁹

However, a provision of this nature can't keep others from looking to the settlement as precedent or from deriving what general principles they choose from the terms agreed upon.⁸⁰ The IWT has also not given any hint in its preamble or elsewhere that in reaching the conclusion contained therein, it has followed or applied any existing principles of law, whatsoever, or any prevailing theories as such.⁸¹

III

HELSINKI RULES AND INDUS WATERS TREATY

This section deals with the IWT in the context of Helsinki Rules. The HRs are the result of a series of efforts on behalf of the ILA right from 1954. It is important to note that the applicable law for the CoA to be set up under the IWT will be the IWT itself.⁸² However, for the interpretation and application of the IWT, international conventions establishing rules which are expressly recognised by India and Pakistan and customary international law are to be applied.⁸³

Legal principles with regard to the non-navigational uses were first codified and adopted by the ILA way back in 1966.⁸⁴ As it is clear from Part I, during the time of negotiation leading to the IWT, some basic rules were nevertheless present in one way or the other through the works of the Institute of International Law (IIL), the deliberations of the International Law Association (ILA) from 1954 onwards, and through a catena of international and federal decisions. It is pertinent to note here that the IWT was negotiated while the ILA had been debating over the rules governing the non-navigational uses of international rivers. In December 1954, India and Pakistan returned to the negotiating table. Thus, the WB proposal was transformed from a basis of settlement to a basis for negotiation and the talks continued, stop and go, for the next six years. Pakistan during the negotiations leading to the IWT was feeling wary about the non-existence or unsatisfactory state of international law in this field. However, according to one commentator, the findings of the ILA could have but little effect on the course of the negotiations leading to the IWT or on the terms of the settlement.⁸⁵

Helsinki Rules

The ILA, is a non-official body founded in 1873. As mentioned in Part I, the ILA River Committee completed its mandate and presented its final report in 1966 to its 52nd Conference in Helsinki, which adopted a set of Articles referred to as the HRs embodying the basic rules of international law on the subject. At that Conference, the Executive Committee of ILA also adopted the recommendation of the River Committee that further work was required on the subject and appointed a new ‘ International Water Resources Committee’ (WRC) for that purpose. Since 1966, the WRC has produced a series of additional and supplemental principles and rules on various aspects of water resources. Latest in the series of the ILA’s work is the Berlin Rules on Water Resources, 2004.

The two principles of equitable and reasonable, no-harm are designated by the ILA’s HRs as the basic and governing principle on the subject. One of the salient features of the HRs is the ‘international drainage basin’ approach,⁸⁶ which mandates that the river basin be governed and managed as a single and indivisible unit. This expression is defined in Article II of the HRs as follows:

An international drainage basin is a geographical area extending over two or more States determined by the watershed limits of the system of waters, including surface and underground waters, flowing into a common terminus.

Though the WB floated the idea of integrated management and river basin approach during the negotiations leading to the IWT, they were discarded.

The cornerstone of the HRs is the principle of reasonable and equitable utilisation. This principle is embodied in Article IV of the HR as follows:

Each basin state is entitled, within its territory, to a reasonable and equitable share in the beneficial uses of the waters of an international drainage basin.

Deciding what is equitable and reasonable utilisation is not a matter of arbitrary assessment. In this regard, Article V of the HRs lists

11 relevant factors for an objective determination of what constitutes “a reasonable and equitable share”. The relevant factors to be considered are listed in Article V (2) of the HRs as follows:

The geography of the basin, including the extent of the drainage area in the territory of each basin state in particular; the hydrology of the basin, including the contribution of water by each basin state in particular; the climate affecting the basin; the past utilisation of the water of the basin, as well as current utilisation in particular; the economic and social needs of each basin state; the population that depends on the water of the basin in each basin state; the comparative costs of alternative means of satisfying the economic and social needs of each basin state; the availability of other resources; the avoidance of unnecessary waste in the utilisation of the water of the basin; the practicality of compensation to one or more of the co-basin states as a means to adjust conflicts among users; and, the degree to which the needs of a basin state may be satisfied without causing substantial injury to a co-basin state.

These are indicative and non-comprehensive list leaving enough flexibility to the criteria. Yet, the flexibility of the principle of equitable utilisation is its real strength.

It is to be noted that the HRs integrated the no-harm (substantial) rule into the criteria for determining the equitable utilisation. The HRs further stipulate that as per the existing principles, a basin State might not be denied the present reasonable use of waters of an international drainage basin to reserve for a co-basin State the future use of such waters,⁸⁷ and that a use or a category of uses was not entitled to any inherent preference over any other use or category of uses. The HRs also implied that the ground water and estuarine water as well as surface waters, were interconnected through cause and effect and this formed the basis for a holistic approach in legal aspects and prudent management of aquatic environment.

Under the HRs, both India and Pakistan are entitled to a reasonable and equitable share in the development of the Indus waters in its territories. Their reasonable and equitable shares are to be

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determined in the light of all relevant factors of the case, mainly in the light of factors enumerated under Article V, Clause (2)(a) - (K) of the HRs. It is important here to emphasise socio-economic needs of the co-basin States. Some sort of prima facie evidence seems to support the assumption that the scheme of allocation provided for in the IWT is not in conformity with Article V of the HRs. Unless Pakistan can prove the contrary, this perception would already seem to be justified. If one closely and carefully considers the Helsinki calculus, then it is obvious that the IWT negotiators had not considered whole of them.

According to Gulhati, the terms of the IWT or of other international agreements reached about that time, such as those on the Columbia, and the Nile did, however, influence the development of the HRs.⁸⁸ As pointed out in part I that the 1956 Dubrovnik principles referred to the 'River Basin' and to the principle of 'equitable apportionment', and later the 1958 New York principles defined 'the drainage basin' as the object of international water law and relinquished the principle of equitable apportionment in favour of the now prevailing principle of "equitable utilisation". This evidences a little contrary to the arguments advanced by Gulhati that the IWT influenced the development of the HRs. It is rather true to say that the codification process that led to the HRs influenced the IWT.

It is interesting to note that India has always stood for the equitable utilisation of its international rivers. It is instructive to note that when Bangladesh took the Farakka Barrage dispute to the U.N. General Assembly in 1976, India told the Special Political Committee (at the 21st meeting):

India's views regarding the utilisation of waters of an international river were similar to those held by the majority of states. When a river crossed more than one country, each country was entitled to an equitable share of the waters of that river... Those views did not conform to the Harmon Doctrine of absolute sovereignty of a riparian state over the waters within its territory... India, for its part, had always subscribed to the view that each riparian state was entitled to a reasonable and equitable share of the waters of an international river.

The HRs serve to set a general guideline and a minimum common denominator. The IWT can't remain static, it must adapt to emerging norms of international law. In sum, the ILA's contributions constituted a paradigm of legal thought until then. The HRs obviously constitute a monumental work. They have had a major impact upon the development of the law of international watercourses. The HRs formulated the phrase "equitable utilisation" to express the rule of restricted territorial sovereignty as applied to fresh waters. According to Professor Joseph Dellapenna, the HRs are the best known study of customary international law of transboundary water resources.⁸⁹ Thus, as a part of the customary international law, HRs are to be taken with due weight by the CoA while interpreting the IWT.

IV

ALLOCATION OF WATERS UNDER THE IWT AN ANALYSIS

The HRs provide for equitable and reasonable utilisation of a river. The principle of equitable utilisation has often been said to share a common legal nature with other principles of international law such as good neighbourliness, the principle of good faith or the prohibition of abuse of rights. Equity was first conceptualised as a general principle of international law within the meaning of Art. 38 (1)(c) of the ICJ Statute by Judge Hudson in his individual opinion to the *Diversion of Water from the Meuse*.⁹⁰ The application of equity is taken to constitute a method of interpretation and application of the rule of law in force of which it forms an attribute,⁹¹ thus "fulfilling the law and if necessary supplementing it".⁹² Born out of the U.S. Supreme Court's decisions in inter-State apportionment cases beginning in the early 20th century, and supported by decision in other federal States, the doctrine of equitable utilisation must be applied to international watercourses as the basic and governing principle of law.

Turning to the modus of allocation of water the IWT through Articles 2 and 3 provides for a sort of territorial type of division. This enables independent rather than cooperative development of water

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resources. Still, the IWT has retained a provision for future cooperation and for the joint management of the same river.⁹³ It is to be noted that the allocation found in the IWT is not completely in line with the criteria of equitable utilisation determinations. The point is not simply who got to the river first or who is upstream or downstream, but what is equitable and reasonable in the given circumstances. The principle of equitable utilisation is flexible and it may change over time. It must be recognised that determination of a State's equitable share is not in many cases, a simple and easy matter. Most of the cases present so much of legal and factual details.⁹⁴ Suppose, down-stream Pakistan, is the only one making use of the Indus, the upstream State, India has no immediate cause for complaint. At this point the use of water by Pakistan could be equitable and reasonable, although equity may require that Pakistan should alter its earlier use if and when India begins to make use of the waters of the Indus. On the other hand, if we suppose, when India has been using and relying upon the Mahakali waters and then Nepal begins diverting large quantities of water, leaving virtually none for India as a practical matter, then the use of waters by Nepal would appear *per se* inequitable and unreasonable. Hence, some adjustments by both States are required to balance their interests. In a problem of this sort, all relevant factors must be taken into account before pronouncing *a priori* upon the equity and reasonableness of a State's use.⁹⁵ As any new use would throw a regime of equitable utilisation out of balance, it should be subject to prior notification and consultation.⁹⁶

Coming to the scheme of allocation of waters under the IWT, there are two viewpoints. On the one hand Kerstin Mechlem,⁹⁷ Yon-Claude Accariez,⁹⁸ McCaffrey,⁹⁹ R.R. Baxter¹⁰⁰ and Ramaswamy Iyer¹⁰¹ hold the view that the IWT has applied the basic criteria while making allocation of waters. Thus, the share of India was increased from the earlier 8% pre-partition use to 19.6%. Iyer argues that share of 20% is not *ipso facto* low; on the other hand, the level of historic use (10% or whatever) does not necessarily determine a country's future needs or entitlements. A multiplicity of factors and criteria has to

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be applied, having regard to all the relevant circumstances; not *a priori* view on what is fair is possible'.¹⁰² When prolonged inter-country negotiations by teams acting under governmental briefings led to the IWT, and the IWT is approved and signed at the highest levels, it must be presumed that it was the best outcome that could have been negotiated under the given circumstances; either side is then precluded from saying that it was unfair, unequal, poorly negotiated, etc.¹⁰³ . If a degree of dissatisfaction with the IWT arises in the course of operation of the IWT, that would be a matter for inter-country discussions within the ambit of the IWT, or a re-negotiation of the IWT with much uncertainty as to the outcome.¹⁰⁴ According to Mechlem, the IWT reflects a complex and detailed equitable apportionment scheme.

On the other hand, it is argued by K. Warikoo,¹⁰⁵ S.K.Garg,¹⁰⁶ B.R. Chauhan¹⁰⁷ and M.S. Menon¹⁰⁸ that if factors like the dependent population, drainage area, length of rivers and cultivable areas are applied, India should have been given 42.8% share in the waters of the Indus basin. One commentator explains that on the basis of the population dependent on the Indus basin at the time of partition, India was entitled to 45.65%; on the basis of cultivable area lying in India, 40% share; keeping in view the drainage area, 31.69%; in terms of the length of the arms (or river beds) of the rivers of the basin, 53.84%. That means a total of 171.18, resulting in 42.795%.¹⁰⁹ One noted engineer argues that the IWT deprived India of its legitimate share of Indus waters needed to meet the increasing demands of the co-basin States of Punjab, Haryana and Rajasthan and concludes that India should have got more than 40% of the total waters of the Indus basin.¹¹⁰ Menon observes that the IWT outlived the tempests of history only because India was more accommodative to the demands of Pakistan. It is also argued that pre-partition use should never be the criteria as the concept of historic use come into play only when a State historically continues the enjoyment or utilisation of some waters of some international rivers as such. It is also added that Indus River was a national river before August 15, 1947 and its history as an international river started only on August 15, 1947.¹¹¹

He also emphasised that it is not the number of rivers but the quantum of water that counts.¹¹² There is also a general perception that the IWT is biased in favour of Pakistan as the IWT considered only six rivers in the Indus basin, thereby dropping a seventh river, viz. Kabul river and then secondly and the division allocating three eastern rivers to India (which contain only 20%) and three western rivers to Pakistan (which contain 80%), gives false impression of the application of equitable distribution of the Indus waters.

It may be pointed out that the cautious conclusion of Smith in 1949 that 'legal tribunals may decide if the apportionment should be 'equitable', is beyond the competence of legal learning to decide as to what should be fair shares to two independent States in the same waters'.¹¹³ Going by the drainage basin approach of the HRs, the Indus basin should have been treated as a single unit without partitioning the Indus basin; thus giving a share on each tributary of the Indus for both the nations for the integrated management of the basin.

Equitable Use and No-harm Rules: Hydroelectric Power Project

The rule that States are under a customary obligation to prevent serious harm to others through their use of an international watercourse is not itself controversial. This rule, no-harm rule, is identified with the maxim *sic utere tuo ut alienum non laedas* (so use your own as not to harm that of other). *Sic utere* principle has been derived from the Roman law. Caflisch considers the doctrine of *sic utere tuo* as originated from the general principle of law recognised by civilised nations within the meaning of Art. 38(c) of the Statute of the ICJ.¹¹⁴ Judge Castro called it a feature of law both ancient and modern,¹¹⁵ while Bruhacs refers to it as an Anglo American legal maxim par excellence.¹¹⁶ This *sic utere tuo* maxim is not being invoked strictly. It is not an ironclad rule without limitations. If applied literally it would largely defeat the very purpose of its existence, for in many instances it would deprive States of the legitimate use of its international rivers. The notion of due care and reasonableness are flexible ones, which prescribe a degree of care that is appropriate in the circumstances.

Along with the exercise of due diligence, a certain degree of harm will be caused legitimately to one or more watercourses.¹¹⁷

What is clear is that a State is only responsible for legal injury but not for factual injury in this field. According to the ILC, a harm will become 'significant harm', if there is a "real impairment of use, i.e., a detrimental impact of some consequences" upon the public health, industry, property, agriculture, or the environment of another State.¹¹⁸ Hence, it is a matter of degree of harm. When Pakistan is objecting to any project, for the exclusive appropriation of the western river waters, it cannot be considered as a legitimate objection unless it is supported by the stipulations of the IWT in particular and the criteria enumerated by the HRs for the equitable utilisation in general.

Is there a difference between a factual harm and a legal harm in international watercourse law? This question is at the heart of the controversy in international watercourse law. The distinction between a factual harm and a legal harm is crucial as harm benefit balancing test is an integral part of equitable utilisation analysis.¹¹⁹ If harm is caused, it is to be remedied with appropriate compensation.¹²⁰ This is instructive in the case of the IWT too.

In this context, it is pertinent to note one of the contributions of the ILC in this field. The international law expressly makes it clear that riparian States shall exercise due diligence to utilize an international river in such a way as not to cause significant harm. This, according to the ILC, was not in any way an absolute obligation but best efforts under the circumstances or due care. According to the ILC, if the harm is *de minimis* or which is not substantial or significant is merely a factual harm for which the riparian State has no responsibility under international law. According to the Rapporteur to the UN General Assembly on this subject, that means any harm, which is not causing inequitable utilisation of a river, is to be tolerated and accommodated under international law.¹²¹ Thus, an understanding of the threshold limit for legal harm is very necessary in the equitable utilisation context. However, the phrases for the threshold limit are used differently to mean the same things.

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It is important to note that the ILA, uses the phrase “substantial harm”; UNC uses it as “significant harm”; and the ILC as “appreciable harm.”¹²² This threshold refers to the amount of harm that rises to the level at which the affected State is justified in raising the matter with the initiating State, and a response is necessary, if not required, from the latter.¹²³ It is only injury to a legally protected interest that is prohibited. In this regard, the affected State must be able to make out a prima facie case that it has sustained harm that crosses the threshold.

In *Gabcikovo- Nagymaros* case, the ICJ didn’t endorse Hungary’s heavy reliance on the no-harm rule. The court gave pre-eminence to the principle of equitable utilisation as the guiding principle, which suggests that the former rule has little utility for resolving complex problems related to shared fresh water resources¹²⁴. Thus, this point is supportive to the Indian position in relation to the hydroelectric power project on the western rivers. International law obligates each State not to cause harm to another.¹²⁵ However, this obligation includes direct State action within its own territory and each State’s duty to ensure that its territory is not used in a manner injurious to other countries.¹²⁶ Regarding international watercourses, harm is to be distinguished as minor and significant as the former is a part of equitable utilisation.

Protocols to the IWT

In this context, one option for India will be to persuade Pakistan to modify the IWT by a Protocol to it as per Article 12 clause 3 of the IWT.¹²⁷ Unilateral abrogation is not possible under the IWT. When a Protocol is adopted, it is only a step in two-step process. Step two is the honouring of the IWT in good faith and its implementation. The Protocol should be a method to incorporate all the customary principles and to incorporate the basic provisions of the HRs. This mode of re-negotiation is not without any precedent. There was a 1999 Protocol to the 1992 UNECE Convention on the Protection of Transboundary Watercourses and International Lakes; also a revision of the 1995 SADC Protocol on Shared Watercourse Systems in 2000. There was also a Protocol to the IWT *per se* in the same year it was adopted in 1960.

A Final Caveat

The analysis in this paper has been with reference to the provisions of the IWT, the HRs and the international law rules that were prevalent during the time of the negotiation leading to the IWT. It has not dealt with the UNC and the status of contemporary international watercourse law. As both India and Pakistan have made reservations to the UNC, it has been kept outside the purview of the study. However, the ILC Draft Article on International Watercourses, 1994, which is the most authoritative text in this field, has been quoted as and when it is required.

V

CONCLUSIONS

To regulate the uses of waters of international rivers, way back in 1966 the ILA formulated the HRs. International watercourse law has got both procedural and substantive components. The two substantive principles include principle of equitable utilisation and no-harm and the principle of cooperation is important at the procedural level. The norms enunciated by the HRs are widely invoked so as to resolve the domestic river water disputes. It is interesting to note here that the HRs crystallised through the state practice and domestic judicial decisions make the States difficult to challenge its legitimacy and effectiveness. The pioneering Madrid Resolution adopted by the IIL in 1911, the ILA's codification and the subsequent initiatives all have strongly endorsed approaches emphasising the avoidance of unreasonable harm to other riparian States and equitable accommodation of competing interests of States sharing international watercourses. However, though the phrases used for unreasonable harm vary, its contents and import remain the same.

Contrary to popular belief, cooperation and agreement and not open conflict, appear to be the norm in inter-State water relations. The IWT is a remarkable achievement in the area of Indo-Pakistan relations in general and water sharing in particular. The IWT terminated all claims regarding prior appropriation and the Harmon doctrine. It affected the

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territorial apportionment of the Indus river waters as western and eastern rivers. During the negotiations, the WB pursued a “continuing conciliation”¹²⁸ than a mere good offices or mediation. The active participation of Eugene Black and the WB were crucial to the success of the IWT. The financial assistance on behalf of the WB provided sufficient incentive for a breakthrough in negotiations. The fund given by the WB gave it a strong hand to exert influence on the parties to reach at a settlement. The example of the IWT suggests that cooperation between India and Pakistan is possible in cases where the benefits of agreement are abundant and demanding. There are negative sides too to the IWT. It ignored the drainage basin principle of the ILA. It improperly applied the principle of equitable utilisation without providing for what criteria are applied while reaching the settlement. Art. XI discredited international law contribution but it can never preclude others from construing the relevant laws and precedents. Traditional rights of farmers have been denied. In today’s world where farmers are more vocal about their traditional rights, it is unlikely that the similar treaty could be negotiated without some regard to the rights of people directly affected by them. The key to the success of the IWT lies in its adaptation to the political and physical realities of the basin. As there is a growing perception that the IWT is inequitable in its schemes of allocation of waters, time has now come for a fresh thinking on the IWT keeping in mind the growing needs of water and electricity for India. One can hope that the Protocol will enable India to harness uninterruptedly its immense hydropower potentials on the western rivers as part of equitable utilisation process. The Protocol will bring an affect on the IWT by incorporating the common minimum denominator found in the HRs regarding the equitable utilisation determination.¹²⁹

The equitable utilisation may be relied on to determine the permissibility of injury falling below the threshold of serious or significant harm, but not to excuse injury above that threshold. Such injury will itself be inequitable. The fundamental importance of cooperation by India and Pakistan is the inevitable result of the fact that Indus system of rivers is shared by these two nations. Hence there should be

consultation in good faith in order to attain optimal utilisation and adequate protection of the Indus system of rivers. The application to international watercourses of the principle that States are entitled to equitable share, no harm, prior notice and consultation, in cases where the proposed use of a shared resource may cause serious injury to their rights or interests is amply supported by international codifications, declarations, case laws, and commentaries. Any equitable utilisation regime is resilient enough to survive conflicts between otherwise hostile riparian States engaged in conflicts over water sharing issues. However, the Pakistani attitude in terms of the compliance of the IWT is disturbing and one cannot help having certain suspicions as to Pakistan's way of handling the projects on the western rivers. The more the IWT complies with the basic principles of international watercourse law, the greater are its chances of being honoured and effectively implemented.

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OPINION

OPINION

REVIEW THE INDUS WATERS TREATY

M.S. Menon

The intentionally lauded, much hyped agreement on the Indus waters, the Indus Waters Treaty (IWT) signed in 1960 between India and Pakistan is back in the news, but for the wrong reasons. Since then, Pakistan has been raising the bogey of violation of the treaty to stall or delay any such projects in J&K.

Construction of the Wular Project (J&K) had to be stopped by India just to accommodate the tantrums of Pakistan. More recently, the Baglihar Project (J&K) was in the news with Pakistan getting a World Bank nominate, a “Neutral Expert”, to go into the features of the project, thus delaying its construction. It is now targeting the Kishan Ganga Project (J&K) raising similar objections to stall it.

Partition resulted in the division of the Indus basin between the two countries triggering dispute on the sharing and utilization of the Indus waters. Continued negotiations between India and Pakistan held under the auspices of the World Bank culminated in the signing of the Indus Waters Treaty. While the World Bank brokered the treaty, it is not a guarantor, but has certain responsibilities to ensure its smooth functioning.

The treaty allocated, with some restrictions, the waters of the three western rivers – Indus, Jhelum and Chenab – to Pakistan and the waters of the three eastern rivers – Sutlej, Beas and Ravi – to India. Signed as a gesture of international cooperation and good will, it envisages the most complete and satisfactory utilization of the waters of the Indus system. But even after five decades, due to Pakistan’s interference India has been able to develop only 1500 mw of hydro power out of a potential of 8769 mw from its share in the western rivers.

An impression has been created internationally that the Indus

REVIEW THE INDUS WATERS TREATY

Waters Treaty is a model for international river water agreements since it has inbuilt resilience and has survived two wars between the countries. To claim that the treaty has outlived the tempests of history is a blasphemy; and to extol it as a model for principles of water sharing and utilization is a sacrilege. Subsequent events have proved that equitable sharing was not the concern and complete utilization was never the intention of the vested interests who strived for the treaty; the underlying objective seems to be only to perpetuate the dispute.

They made a mockery of equity in the distribution of the Indus waters by allocating three rivers each to the disputants to give an impression that they have equally divided the Indus system. India got only 20 to 25 per cent of the total flows. Further, they faulted by ignoring the seventh prominent river, the Kabul river, in the Indus system thereby permitting Pakistan the unbridled use of its waters in addition to the three western rivers.

If we delve deep into the principles of water allocation and other provisions in the treaty, it would be clear that the real facts on the much-hyped treaty are concealed and buried under a mountain of rhetoric. Working of the treaty has revealed that India has accommodated more than what is expected of her even though the proposals in the treaty were biased in favour of Pakistan.

The treaty is being used as a handle by Pakistan to scuttle India's storage projects in J&K. Its objections to Indian projects have always been couched in a language of non-constructive application of the treaty provisions. The costly alternatives suggested by Pakistan ignored sound engineering economics and practices, and India had been pointing out all such anomalies.

On its part, India has been always willing to accommodate Pakistan in the interest of peaceful relations. But this spirit of accommodation is being considered as a weakness by Pakistan, which is becoming more aggressive to make the Indian projects a subject of endless debate thereby impeding their implementation. The delay tactics have affected developmental efforts in J&K.

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Disenchantment with the treaty is growing in India as Pakistan has succeeded in stalling the Indian projects, 27 in all, by objecting or adversely commenting on them inspite of India supplying the requisite data. It is time Indian remodelled its strategy in dealing with Pakistan in this regard. India should go ahead with the construction of all planned projects as these are well within the treaty provisions. There is no provision in the treaty necessitating India taking formal clearances from Pakistan for these projects. Nor is there any provision to stop the construction of a project pending resolution of Pakistan's objections. What is needed is a strong will to implement the projects.

A review of the treaty is required considering the inequity in water allocation, design and construction technologies then suggested – which have now become outdated – and inherent ambiguity in treaty clauses giving undue benefit to Pakistan. Though there is no exit option in the treaty, there is an option for review. India should ask the World Bank to review the treaty clauses including the water sharing formula in the light of the Helsinki Rules (1967) and other international guidelines so that injustice done to it in the treaty is rectified.

With the demand for water increasing and scarcity looming large, we have to get our rightful share of the Indus waters. It is time to strike at the root of the problem. A review of the treaty is what the Government of India should bid for.

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