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**POWER PROJECTS IN JAMMU & KASHMIR:
CONTROVERSY, LAW AND JUSTICE**

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Water is one of the key disputes between India and Pakistan. In fact, it is the underlying interest of the stated positions over Jammu and Kashmir between the two countries. While water disputes of smaller scale have existed for centuries in the region, their resolution came through mediation and negotiations between the communities. After the partition of Indian sub-continent in 1947, these disputes attained an international dimension.

Six rivers of the Indus basin, originating in Himalayas passed through India and Indian controlled Jammu and Kashmir before crossing over to Pakistan and part of Jammu and Kashmir controlled by Pakistan. This led to the internationalization of the water dispute and a negotiation process began to agree over the terms for use of water in the Indus basin. The World Bank mediated this process and attained multilateral funding to compensate Pakistan for the losses she suffered due to the terms of the treaty called the Indus Waters Treaty.

The treaty came to be regarded as a model treaty for dispute resolution between countries that share rivers. However, it has come under serious attack due to its failure to answer questions over environmental security, water justice and joint working mechanisms in ensuring water security of all the people's of the Indus basin. While diplomatic efforts are on to analyse what can be done to prevent these disputes from taking a violent turn, legal battles are being fought at different levels to settle the disputes.

This paper analyses why power projects built in Jammu and Kashmir by India are engaging India and Pakistan in a legal battle. It also discusses the relevant provisions of the Indus Waters Treaty and how the dispute resolution mechanism of the treaty limits the cooperation between the two countries over water issues and why the people of Jammu and Kashmir feel marginalized by the treaty and the exploitation of water resources in Jammu and Kashmir for hydroelectricity generation.

The paper also examines the Indus Waters Treaty in the light of the principles of non-navigational uses of water and makes recommendations to minimize conflict on water and maximize cooperation over the use of waters in the Indus basin.

I. INTRODUCTION

The inherent discord in Indus Waters Treaty is manifest in hydroelectric power projects in Jammu & Kashmir (J&K), where India and Pakistan are fighting a legal battle for control over water resources of the Indus basin. J&K's attempts to secure rights over waters of three rivers that flow through its territory has added a new legal dimension to the battle, bringing into question the provisions of the Indus Waters Treaty and the principles on which the treaty operates.

India and Pakistan, two south Asian neighbours, have thousands of years of common history and a bitter recent past. The bitterness began in 1947, when British colonialism ended and the Indian subcontinent was partitioned into two nation states – India and Pakistan. Decades since then have witnessed three wars between them and a further partition of Pakistan for the creation of Bangladesh.

A treaty on sharing of transboundary rivers – Indus Waters Treaty – signed in 1960 between India and Pakistan, had largely succeeded in keeping water out of this mutual rivalry. It provides a legal framework for use of waters in six rivers of the Indus basin –Indus, Chenab, Jhelum, Sutlej, Ravi and Beas. The treaty describes in great detail the rights of each party for consumptive and non-consumptive use of water on each river and also provides a mechanism for conflict resolution between the parties. As population in both countries continues to grow exponentially, per capita water availability plummets as a result. For growth in economy, the two countries need energy that comes through hydroelectricity generated from river waters – therefore the race to control maximum water. J&K is turning out to be the theatre for this renewed water rivalry.

II. COMMON RIVERS

Pakistan and northern India fall in one of the largest river basins in the world, called the Indus Basin. Its six perennial rivers, which originate in the glacial mountain peaks of western Himalayas, flow from India into Pakistan, traverse mountains gorges, fertile plains and arid lands and on their way confluence into river Indus, which empties into the Arabian Sea. Three of these rivers – Sutlej,

Ravi and Beas – flow through Punjab, a province partitioned between India and Pakistan. In British India, this undivided province offered scope for high agricultural yield through irrigation. The British, therefore, planned irrigation schemes on these rivers that spread across the Punjab plains.

Partition left the headworks of some of these projects, especially that of the Sutlej Valley Project, in East Punjab (India), while as the canal system extended deep into West Punjab (Pakistan).

On 1st April 1948, seven months after the two countries came into existence, India stopped water in the Sutlej from flowing across the border into West Punjab, threatening Pakistan's agriculture. The water stoppage denied irrigation to some 5.5 percent of the sown area and almost 8 percent of the cultivated area in Pakistan (1). A standstill agreement between India and Pakistan on water had expired on 31st March 1948. On 4 May 1948, India and Pakistan agreed to the Inter-Dominion Agreement to allow the continuation of water supplies for irrigation purposes until the Pakistani side managed to develop alternative water resources (2).

The other three rivers of the Indus basin – Indus, Jhelum and Chenab – run through the territory of Jammu and Kashmir, a state occupied in part by India and Pakistan. These rivers enter west Punjab after crossing the border between J&K and Pakistan. Because of its control over a part of territory in Jammu and Kashmir, India became the upper riparian on these rivers as well.

The two countries thus began a negotiation process for all the six rivers of the Indus basin. This process was mediated by the World Bank and resulted in the signing of the Indus Waters Treaty (IWT) at Karachi on 19th September 1960.

III. INDUS WATERS TREATY, POWER PROJECTS AND THE DISPUTE RESOLUTION MECHANISM

IWT provides in Article II of the treaty that all waters of Eastern Rivers (The Sutlej, The Ravi, The Beas as defined in Article I, Para 5 of IWT) 'shall be available for the unrestricted use of India'. In Article III, the treaty provides that Pakistan shall 'receive for unrestricted use all the waters of the Western Rivers (The Indus, The Chenab and The Jhelum as defined in Article I Para 6 of IWT) which India is under obligation to let flow'.

The treaty made an exception for use of water in Western Rivers by India for:

- i. Domestic Use
- ii. Non-Consumptive Use
- iii. Agricultural Use
- iv. Generation of Hydroelectric Power

For the generation of hydroelectric power on western rivers by India in J&K, the treaty lays down different provisions in its Annexure D. Part 3 of the annexure prescribes that any hydroelectric power project constructed in J&K by India after the signing of the treaty shall be a Run-of-River plant that ‘develops power without Live Storage as an integral part of the plant, except for Pondage and Surcharge Storage’ (3). The maximum pondage¹ in the operating pool is allowed to reach a level that is twice the pondage required for firm power².

Water stored in such live storage is required to be delivered into the river below the plant during the same seven-day period as it is received (4) and per day releases can not fall below 30 percent or cross 130 percent of the water received per day above the plant. (5). India is mandated to furnish information to Pakistan about location of the plant, hydrological data, hydraulic data, design of the plant and general information about the possible effects of the plant on flow of water downstream when she plans a project on western rivers (6). This information should be provided six months in advance of starting construction of a project while Pakistan has to respond with objections, if any, within three months of receipt of the design information (7).

IWT also provides a multi-layer dispute resolution mechanism. A Permanent Indus Commission, established by the treaty, works as the first level of dispute resolution. The Commission has one government appointed commissioner from each country (8). The Commission is responsible for exchange of all information between the two countries including giving and responding to notices on either side.

¹ "Pondage" has been described in the IWT as "Live Storage of only sufficient magnitude to meet fluctuations in the discharge of the turbines arising from variations in the daily and the weekly loads of the plant".

² "Firm Power" means the hydroelectric power corresponding to the minimum mean discharge at the site of a plant.

In case a difference arises between the two governments on 'interpretation or implementation of the treaty' or a fact, if established, is seen as a breach of the treaty, the Permanent Indus Commission shall first endeavor to resolve the question bilaterally. If the commission is unsuccessful in resolving the dispute, a Neutral Expert could be appointed at the request of either commissioner to resolve the dispute, or the two governments at other levels could also deal with the dispute. The treaty also prescribes the constitution of an International Court of Arbitration to deal with certain questions with regard to implementation or interpretation of the treaty, in case the two governments agree or either of them requests (9).

The treaty allowed for a transitional period of 10 to 13 years. During this period, Pakistan constructed a system of replacement works consisting of two dams, six barrages, and nine link canals to transfer 14 MAF of water from the Western Rivers to the parts formerly irrigated by the Eastern Rivers of the Indus basin. India was to limit its withdrawals for agricultural use, to limit its abstractions for storage, and to make deliveries to Pakistan from the Eastern Rivers till Pakistan completed its works.

The World Bank set up an Indus Development Fund with a billion dollars, to which India contributed \$174 million. After the completion of replacement works, each country acquired independent control in the operation of its supplies.

IV. DISPUTED PROJECTS

India started building major power projects in J&K in 1970s. Pakistan has since objected from time to time, to at least four power projects and a navigational lock that India proposed to build on Wullar lake that connects river Jhelum. The disputed projects are Salal Hydroelectric Project, Baglihar Hydroelectric Project, Tulbul Navigation Lock (referred to as Wullar Barrage by Pakistan), and Kishenganga Hydroelectric project that connects with the Wullar project and Nimo Bazgo Hydroelectric project.

Salal Hydroelectric Project is built on river Chenab near Reasi in Udhampur district of J&K. It was first conceived in the year 1920, but never built. The J&K Government started investigations on Salal HP started in the year 1961 and construction of the project started in 1970. The design of the project laid out a two-stage powerhouse with a total installed capacity of 690 MW (345 MW each). The site of the powerhouse is about 72 Km upstream of Marala headworks of the Triple Canal Project for irrigation in Pakistan. Chenab and Jhelum rivers feed the Triple Canal Project.

Construction of Salal HP was first assigned to Central Hydroelectric Project Control Board, which came under Government of India's Ministry of Irrigation and Power (10). Pakistan's technical objections were to the design that envisaged outlets at the bottom of the dam and 40-foot high gates and the capacity of the water storage (11). It feared that the project allows India an option to use water as a strategic tool during warfare. It feared that Salal HP creates a reservoir that can store enough water to flood parts of West Punjab in Pakistan or to stop water from reaching Punjab plains at crucial times in an agricultural season.

India provided information about the project in 1974. In 1976, after Pakistan had raised objections, both countries entered into a series of talks to resolve the issue. After two rounds of talks, India agreed in 1978 to reduce the height of the dam by two meters – reducing it to 10 meters from 12 meters. India also argued that it would be impossible to cause flooding to Pakistan without causing much greater damage to territory with the international border.

After the agreement, construction of the project was entrusted to National Hydroelectric Power Corporation (NHPC) on an agency basis in 1978. Stage-I of the project was commissioned in 1987. The first unit of Stage-II of the project was commissioned in 1993, second in 1994 and third in 1995. The final commissioning of the project took place in 1996.

By this time, India had already stopped the Wullar project on Pakistan's objections that alleged that the water storage in the lake due to the lock was against the provisions of the Indus Waters Treaty. The Wullar project involves construction of a 440-foot long lock on Jhelum River with the objective to increase the level of water in the lake during the lean season – late-October to

mid-February. The project envisaged constructing 10-parallel waterways – a lock way, two over-flow ways, six non-overflow ways and a fish ladder. The out-flow channel was thus supposed to divert water into constructions to gain a navigable water level. Work on this project started in 1984 and was stopped in late 1987 after Pakistan objected.

The project was aimed to facilitate proper navigation over a 20-kilometer river stretch between Sopore and Baramulla and to stabilize water level in Jhelum. It would also help Uri I, Uri II and Lower Jhelum power projects to generate more electricity in their lean seasons by providing the required supply of water during the lean season.

A minimum of 4000 cusecs and 4 ft. depth is required for navigation, and so the Wullar project was conceived. Pakistan's objection is that the Wullar project violates Article I (11) of the Treaty. Its argument is that the "article prohibits both parties from undertaking any "man-made obstruction" that may cause "change in the volume ... of the daily flow of waters" unless it is of an insignificant amount. Further, Article III specifically bars India, from "store[ing] any water of, or construct any storage works on, the Western Rivers". Storage and obstruction to flow appear as two major concerns.

As talks proceeded, India is reported to have offered in October 1991 to offset the storage question by considering it a 300,000 acre-feet part of the storage provision permitted on Jhelum in Indus Waters Treaty. The treaty states in Annexure III in clause 6 (a) that 'Within the limits of the maximum Irrigated Cropped Areas specified against items (b) and (c) (i) in Paragraph 5, there shall be no restriction on the development of such of these areas as may be irrigated from an open well, a tube-well, a spring, a lake (other than a Connecting Lake) or a tank.' Indus Waters Treaty, however, limits the maximum permissible amount of a single storage at 10,000 acre-feet.

India also offered to keep 6.2 meters of the barrage un-gated with a crest level at EL 1574.90 m (5167 ft). The design change was probably aimed to satisfy Pakistan's security concerns. Pakistan had not referred to the Wullar project as a dispute; it has rather used the terminology of difference

and in return agreed in 1991 to the principle of maintaining operational level in Wullar lake. In implementation, it means maintaining a water level of 5177.90 feet in Wullar (12).

Since 1987, India and Pakistan have held eleven rounds of talks about the project. While they have in the past been reported close to signing an agreement, the question became more entrenched because of the Kishenganga Hydroelectric Project.

There is another dimension of the project brought out by expert analysis. It is the importance of Jhelum river in feeding the Triple Canal Project that irrigates Upper Bari Doab. Jhelum feeds the triple canal project and thus sustains irrigation through this project in the lean season. In Pakistan, any storage work upstream is thus seen as a threat.

While talks on Wullar project failed to reach a conclusion, Pakistan raised technical objections on Baglihar Hydroelectric Project. The disagreement over this run-of-river power project could not be resolved between the two countries bilaterally. Instead, it went to the Neutral Expert for determination on technical “questions” raised by Pakistan.

The project was conceived in 1982 under the overall development plan of the Chenab Basin. India’s Central Water Commission investigated the project and the Planning and Investigation Organization of Central Water Commission prepared a project report in 1984. In 1987, J&K Government transferred it to NHPC. Construction work on the project started in 1999. The proposed dam was a concrete gravity type, with a height of 144.5 meters and a gross storage of 396 million cubic meters of water with a live pondage of 37.5 million cubic meters (46,570 acre feet). The balance was dead storage for trapping silt.

The Baglihar dam first came under discussion in 1992 when India provided information about the project to Pakistan. Pakistan claimed that India did not provide complete information and it took many years of correspondence between Indus Commissioners to complete the process. Pakistan, however, raised its concerns after construction started in 1999. On 4 April 2002, Pakistan sent its “questions” to India.

Pakistan’s objections officially communicated to India were:

1. 'The works themselves appeared to be capable of raising artificially the water level beyond the full pondage level specified in the design and would contravene the provisions of Paragraph 8 (a) of Annex D to the Treaty.
2. 'The pondage in the operating pool being 37.722 million cubic meters exceeds twice the pondage of water level.
3. 'The site was suitable for an un-gated spillway and, therefore, a gated spillway should not be provided. This was in contravention of Paragraph 8 (e) of Annex D and
4. 'The intake for the turbine had not been located at the highest level as required vide Paragraph 8 (f) of Annex D to the Treaty.' (13)

Between 1999-2004, India and Pakistan held several rounds of talks on the design of projects without agreement and after the failure of these talks on January 18, 2005, Pakistan raised six objections to the World Bank, a broker and signatory of Indus Water Treaty (14). Despite invoking the services of a Neutral Expert, Pakistan referred to the Baglihar disagreement as a 'difference' and not a dispute.

In May 2005, World Bank appointed Professor Raymond Lafitte, a Swiss civil engineer, to adjudicate the difference. Lafitte declared his final verdict on February 12, 2007. The Neutral Expert partly upheld three of the objections raised by Pakistan.

The verdict of the Neutral Expert (NE) on the Baglihar dam dispute was based solely on technical points. The decision dealt with issues contested under the four criteria of paragraph 8 of Annexure D of the Treaty under six headings: (i) maximum design flood, (ii) spillway, gated or un-gated, (iii) spillway, level of the gates, (iv) artificial raising of the water level, (v) pondage, and (iv) level of power intake.

The maximum design flood related to the calculation of the maximum amount of water, which can arrive at the dam. The verdict said "In view of all the uncertainties of flood analysis, the NE has decided to retain the value proposed by India of 16,500 m³/s as opposed to 14,900 m³/s proposed by Pakistan, for the peak discharge of the design flood." The Neutral Expert understood

that climate change, with the possible associated increase in floods, also encourages a prudent approach (15).

Whether spillway on the dam should be gated or un-gated was determined by the Neutral Expert: “in conformity with the state of the art, the conditions at the site of the Baglihar plant, including hydrology, sediment yield, topography, geology and seismicity, require a gated spillway”(16). Pakistan considered that a gated spillway was not necessary and would allow India to manipulate the flow of the river. The expert stated that his analysis of 13,000 existing spillways in the world showed that 89 percent of these structures, having a design discharge higher than 14,000 m³/s, are gated. The NE also indicated that an un-gated spillway might create a risk of flooding the upstream shores and that an elevation of the dam crest, which would prevent such a risk, would be costly.

The NE pointed out that the Treaty is “not well developed with respect to its provisions on sediment transport” and “reflects the status of technology on reservoir sedimentation in the 1950s.” The NE emphasized the “maintenance” and “sustainability” of the project.

Pakistan’s objection to the artificial raising of the water level was upheld by the Neutral Expert who said that the dam crest elevation fixed in the design submitted by India at el. 844.5 m above sea level, resulting from a freeboard above the Full Pondage level of 4.5 m, is not at the lowest elevation (17). The NE fixed the freeboard at 3.0 m above the Full Pondage Level leading a dam elevation at 843.0 m asl.

The Neutral Expert also determined that that values for maximum pondage stipulated by India, 37.5 million cubic meters as well as by Pakistan, 6.22 million cubic meters, were not in conformity with the criteria laid down in the Treaty and fixed it at 32.56 million cubic meters and the corresponding dead storage at el. 836 m asl, one meter higher than the level of the Indian design (18).

The NE agreed with Pakistan’s consideration that level of power intake was not located at the highest level as required by the Treaty, and determined that the intake level should be raised by 3 m and fixed at elevation 821 m asl (19).

A. Baglihar Verdict, a Landmark

The Baglihar verdict tested the dispute resolution option of invoking a Neutral Expert for the first time. It also brought to light how the two sides were viewing the dispute. However, the most important aspect of the invocation of this mechanism was the insight of the Neutral Expert about the provisions of the treaty and problems in its implementation. The verdict raises questions that call for a reanalysis of the treaty in a changed set of conditions – environmental and technological – that did not exist when the treaty was being negotiated.

Pakistan's approach to the Baglihar dispute was political and legal – it called for an adherence to provisions of Indus Waters Treaty and also sought to satisfy its concerns about use of water as a strategic weapon during war. India on the other hand viewed the dispute as a difference in views on the engineering of hydroelectric plants.

The Neutral Expert took the opportunity to interpret the rights and obligations of India and Pakistan "in the light of new technical norms and new standards" (20). The expert was of the opinion that interpretation of the Treaty must be guided by the 'principle of integration and the principle of effectiveness' so as to allow for the fulfilling of the object(s) and purpose(s) of the Treaty as laid out in its Preamble in "a spirit of goodwill and friendship" and in "a co-operative spirit". The Neutral Expert also took into account the 'best and latest practices in the field of construction and operation of hydro-electric plants'.

The Baglihar 'difference', therefore, was addressed bearing in mind the technological standards for hydropower plants in the 21st century that had developed and changed compared to what had been perceived at the time of negotiation of the Treaty in the 1950s. Global "climate change and its likely effects", which were not visible in the 1950s, also weighed heavy in the decision making of the Neutral Expert.

Interpretation of the Treaty is most likely to influence any future implementation of the Treaty. A glimpse of the influence was seen when Wullar project came under renegotiation after the Baglihar verdict. Professor Raymond Lafitte interpreted that use of new technologies and standard practices of design by India and Pakistan was consistent with “satisfactory construction and operation of the works” besides “sound and economic design” for the mutual benefits principle laid out in Paragraph 8 (e) of Part 3 of Annexure D of the IWT. Negotiators on the Indian side, pushed by the Government of J&K, saw it as a positive step in the direction of an agreement on Wullar project. However, the negotiations did not make a breakthrough as Wullar project was entangled with other disputed projects in the region.

B. Lingering Concerns on Baglihar Dam

Pakistan and India accepted the Neutral Expert’s decision, but Pakistan showed reservations about the expert’s consideration of latest technologies and practices. The then Federal Minister for Water and Power in Pakistan, Liaquat Ali Jatoi, was reported to have expressed that the NE should have gone strictly by the IWT on the design of the spillway. The minister also said that Islamabad “reserves the right to pursue the matter further in accordance with provisions of the treaty.” The Punjab Water Council asked the Pakistan government to move an appeal against the verdict. Saifuddin Soz, the then Water Resources Minister in India, had said, “India’s point of view has been completely upheld.”

The determinations, however, are binding for both the countries. Therefore, the Baglihar dam constructions went ahead according to the determinations. But the filling of the dam further fuelled the apprehensions in Pakistan that the dam gave India capacity to ‘manipulate’ water flow as an upper riparian state.

The filling of the Baglihar Dam started on 19th of August 2008. India claimed that it continued till 28th of August 2008 in accordance with the provisions of the Indus Waters Treaty. The

treaty says that commissioners of the two countries can decide the dates for initial filling below the Dead Storage Level, failing which India may carry out the filling on dates given for different rivers. If the site is on Chenab, the dates for such filling are between 21st June and 31st August 'at such rate as not to reduce, on account of this filling, the flow in the Chenab Main above Merala to less than 55,000 cusecs' (21).

Pakistan asserted that the filling of the dam violated these conditions. Pakistan maintains that water stoppage extended up to September (22) and water flow from the Chenab dropped below 55,000 cusecs in the months of September and October with 'India seizing 200,000 cusecs of water at a time of the ripening of the paddy crop'.

Indian Prime Minister Dr. Manmohan Singh, while inaugurating the project on 11th October 2008, said that the Baglihar power project had been constructed within the parameters of the Indus Waters Treaty. Stating that India and Pakistan should learn to help each other, he said, "We have decided to fully act on the treaty" and "This has been done to address the concerns of the neighbouring country so that they have no grievances." (23)

Pakistan, however, demanded compensation from India for the loss of 0.2 MAF water flow. India denied any violation of the treaty and so refused to pay any compensation. After the issue was raised in several high-level meetings, India agreed to a physical inspection of the dam between 18-25 October 2008, following which Pakistan's Indus Water Commissioner Syed Jamaat Ali Shah alleged that the filling of the dam was undertaken in gross violation of the understanding reached in the Permanent Indus Commissions as well as the provisions of IWT. He said that Indian Commissioner G. Arangnathan had assured that there will be no reduction in water flow while the dam filled, but 'the water level started declining at Marala and went to a record low of 23,000 cusecs. He added that water level was fluctuating between 30,000 and 35,000 cusecs, still far away from the original 55,000 mark'. India challenged the data furnished by Pakistan, but it also maintained that 2008 was a year of low precipitation and therefore the reduction in water discharge. (24).

Pakistan's compensation argument found precedence in the filling of Salal dam, which India compensated for by releasing water from river Sutlej. In June 2010, differences on the initial filling of the Baglihar Dam in 2008 were resolved at a meeting of the PIWC in which "India gave the assurance that it will be careful in future" and Pakistan "accepted that in spirit of cooperation and goodwill." But Pakistan's concerns that the Baglihar project gives India the capability to manipulate flow of water to Pakistan's disadvantage remain. Combined with other storage works built on Chenab to run Salal and Dulhati Hydroelectric Projects, exploitation of the river for power generation is still seen as a threat in Pakistan. Many analysts have argued in favour of this debate that dam building in J&K will adversely affect Pakistan's water security. On the other hand, analysts also argue in favour of the exploitation of water resources in Kashmir.

C. More Disputes

One of the tributaries of river Jhelum in J&K is Neelam, a river that joins Jhelum after crossing the Line of Control³ into Pakistan Administered Kashmir (also called Azad Kashmir). A power project planned on this tributary has taken the water discord between India and Pakistan to the highest echelons of dispute resolution provided in the Indus Waters Treaty.

Kishenganga Hydroelectric Project, named after the official name Kishenganga of the Neelam tributary, has been under consideration of the Indian Government for two decades. The 330 MW power project plans to build a barrage on Neelam in Gurez and divert water through a mountain in a 22-kilometer long tunnel to a power station on the other side and finally discharge that water into Wular Lake. For diversion of water, the project involves construction of a 37m high concrete faced rockfill dam (25). As the water is discharged in Wular (effectively Jhelum river), it involves an inter-tributary transfer of water. This diversion means that part of Neelam's water will reach Domail,

³ Line of Control (LoC) is an arbitrary line that divides two parts of Jammu and Kashmir between India and Pakistan. India and Pakistan fought a war for control on the territory of J&K in 1947-48. India and Pakistan later agreed to term the ceasefire line of that war as LoC.

where Jhelum meets Neelum in Pakistan Administered Kashmir. It is the site of Pakistan's Neelum-Jhelum Hydel Project.

India officially communicated to Pakistan about Kishenganga in June 1994. Initially Pakistan raised three objections to the project. First, inter-tributary diversions are barred and water drawn from a given tributary must be returned to the same river. Second, the existing Pakistani uses must be protected as Kishenganga project will deprive it of 27 per cent of the river's natural flow, thereby doing damage to its existing 133,000 ha of irrigation in the Neelum valley and a 900-MW Neelum-Jhelum hydropower project initiated downstream by Pakistan. Pakistan maintained that it had already started the Neelum-Jhelum project and invested Rs. 71 million in preparatory works. Third, the objection related to certain design features that were not in conformity with the IWT.

In June 2006, following protest by Pakistan and environmental groups in J&K, India modified the design of the project. The basic blueprint envisaged a 962.50 acre 73-meter high dam that would displace 961 families in seven hamlets of Gurez, the only Dard-Shin race left in J&K. The dam displaced 25 of their villages, besides six summer high altitude habitats for shepherds and eight camping sites. The dam height was reduced to 37 meters in the new design, without altering energy output, and displacement of only two villages was envisaged.

Talks about Kishenganga Hydroelectric Project had begun in the Permanent Indus Waters Commission level in May 2004 when India promised to freeze the construction of the project. A series of five meetings discussed the project but differences over the project remained.

Pakistan raised six objections:

1. "Whether India's proposed diversion of the Kishenganga (Neelum) into another tributary, i.e. the Bonar Madmati Nullah, being one central element of the Kishenganga Plant, breaches the legal obligations India owes Pakistan under the Treaty, as interpreted and applied in accordance with international law, including India's obligations under Article III (2) (let flow all the waters of the Western rivers and not permit any interference with those waters") and Article IV (6) "maintenance of natural channels?"

2. Whether the design of the plant is in conformity with Paragraph 8 (a) of Annexure D to the Treaty?
3. Whether the design of the Kishenganga Plant is in conformity with Paragraph 8 (c) and Paragraph 8 (f) of Annexure D to the Treaty?
4. Whether the design of the plant is in conformity with Paragraph 8 (d) of Annexure D to the Treaty?
5. Whether the design of the plant is in conformity with Paragraph 8 (e) of Annexure D to the Treaty?
6. Whether under the Treaty, India may deplete or bring the reservoir level of a run-of-the-river plant below dead storage level in any circumstances except in the case of an unforeseen emergency?

During this period, while India asked Pakistan to furnish 'quantitative technical substantiation' of its objections, it also sought a deadline for resolution. Meanwhile, it changed the design and furnished it to Pakistan. But Pakistan retained its position that the modified design did not address Pakistan's concerns. Pakistan argues that it will receive 27 per cent less water due to the diversion of Neelum river to Wullar Lake. It also said that the "tunnel would affect the water speed that is reaching the Neelum river, due to which the Neelum-Jhelum Hydropower Project would not be able to generate the required electricity" (26) and thus reduce energy generation at NJHP by about 16 per cent. After joint inspections of losses that Pakistan claimed, India rejected the claims. In April 2008, Indian Minister of State for Power Jairam Ramesh described Kishenganga HP as a project "of strategic importance as it is located on the border and Islamabad has begun work on their side of the river and that too with Chinese help," Ramesh said (27).

As talks at Commission level did not reach a conclusion and construction on Kishenganga HP continued, the dispute was referred to the governments of India and Pakistan. The dispute has been referred to the Court of Arbitration as provided in the IWT, because the dispute involves technical as well as legal issues.

Pakistan views the dispute through the provisions of the Article III and IV of Indus Waters Treaty. Para 2 of Article III provides that India is obliged to 'let flow all the waters of the Western rivers and not permit any interference with those waters'. Para 6 of the Article IV lays down that 'each party will use its best endeavours to maintain the natural channels of rivers, as on the effective date, in such condition as will avoid, as far as practicable, any obstruction to the flow in these channels likely to cause material damage to the other party'.

Indian justification for the construction of Kishenganga HP relies on the Treaty provisions that provide inter-tributary diversions. Annexure D, Paragraph 15 (iii) of IWT states, "Where a plant is located on a tributary of the Jhelum on which Pakistan has an agricultural use or hydro-electric use, the water released below the plant may be delivered, if necessary, into another tributary but only to the extent that the then existing agricultural use or hydro-electric use by Pakistan on the former tributary would not be adversely affected." The decision of ICA about the Kishenganga is awaited. It is the second time in past ten years that Pakistan has sought third party intervention for the resolution of a dispute.

There are a number of other disputes that India and Pakistan are engaged in over hydroelectric projects in J&K. These include Dul Hasti, Uri II, Chutak, Nimoo Bazgo, Dumkhar, Ratle and Sawalkote to name a few. The points of difference on Dulhasti are technical, besides the concern that the dam built for operation of the project on Chenab can store water and threatens Pakistan's water security. On the 240-MW Uri-II hydel power project, Pakistan's main concerns are about the height of the dam. India made some adjustments to the design to satisfy Pakistan's concerns after Pakistan threatened to take the issue to World Bank.

Chutak, Nimoo Bazgo & Dumkhar hydro projects on the Indus are facing opposition from Pakistan because of their location in an environmentally fragile area, strategic location and violation of IWT.

Most of these projects are located on river Chenab. Pakistan feels threatened that the cumulative effect of these dams is going to provide India a total control over water flows in Chenab.

Bursar, for example, is regarded as the biggest dam in J&K. NHPC, which is building these projects, states that Bursar storage project can regulate water flow not only for its powerhouse but also for all downstream projects, i.e. Pakal Dul, Dul Hasti, Raltle, Baglihar, Sawalkot and Salal.

It is the cumulative impact of live storages that is feared in Pakistan. John Briscoe, Professor of the Practice of Environmental Health at Harvard observes, “the cumulative live storage will be large, giving India an unquestioned capacity to have major impact on the timing of flows into Pakistan. Using Baglihar as a reference, simple back-of-the-envelope calculations suggest that once it has constructed all of the planned hydropower plants on the Chenab, India will have an ability to effect major damage on Pakistan.”

Pushed by the civil society movement, the Jammu and Kashmir government is contemplating securing the possession of these power projects by paying the NHPC at present costs. At the same time, Jammu and Kashmir government is charging the NHPC for use of water in the state through the Water Resources (Management and Regulation) Act passed by the state legislature in 2010. Government as well as civil society groups in Kashmir are also stressing upon the government of India to implement the recommendations of Rangarajan Committee set up by the Government of India to look into the financial relations between New Delhi and different states in India. On March 13, 2012, J&K’s Chief Minister, Omar Abdullah told the lower house of the state legislature that his government was vigorously pursuing with the central government the return of the power projects. “State government will secure its interest and law department is also examining on how to proceed in respect of our claims for Rs 2350.85 crore from NHPC on account of the losses suffered in absence of any agreement to this effect,” he said.

V. CONFLICT BETWEEN J&K AND NHPC LTD.

The Government of India incorporated National Hydroelectric Power Corporation in the year 1975, with an authorized capital of Rs. 2000 million. Salal HP was its first project. Initially, it acted

as an agent of India's Ministry of Power to handle the project and subsequently the asset was transferred to the corporation. The corporation changed its name to NHPC Ltd after its public issue. NHPC Ltd. today runs 15 power houses across India and is constructing 10 more while 19 others are under development.

Four out of NHPC's fifteen operational power stations are in Kashmir; their cumulative installed capacity of 1680 Mega Watts (MWs), nearly half of NHPC's total electricity generation. Of the five other projects (1719 MW) shifted to the corporation for implementation in July 2000, three (369 MW) are at an advanced stage of implementation. Work on 330-MW Kishenganga goes on amid the dispute between India and Pakistan. Besides, NHPC and J&K have 49 percent stake each in three other projects with a cumulative capacity of 2120-MW that are being implemented under the Joint Venture Chenab Valley Power Projects Ltd. India's Power Trading Corporation (PTC) holds the balance two percent equity in the Joint Venture.

List of NHPC Ltd's Projects:

Power Stations

Baira Siul
 Chamera - I
 Chamera - II
 Dhauliganga - I
 Dulhasti
 Indira Sagar
 Loktak
 Omkareshwar
 Rangit
 Salal
 Sewa - II
 Tamanthi & Shwezaye
 Tanakpur
 Teesta - V
 Uri - I

Projects Under Construction

Chamera-III
 Chutak
 Kishenganga
 Nimmo-Bazgo
 Parbati - II
 Parbati - III
 Subansiri (Lower)

Teesta Low Dam - III
 Teesta Low Dam - IV
 Uri-II

Projects Under Development

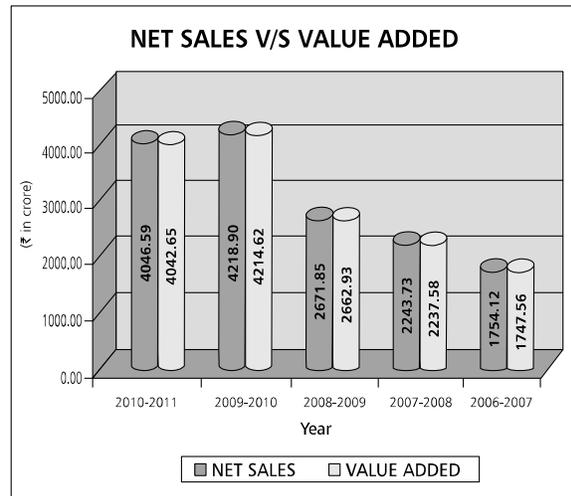
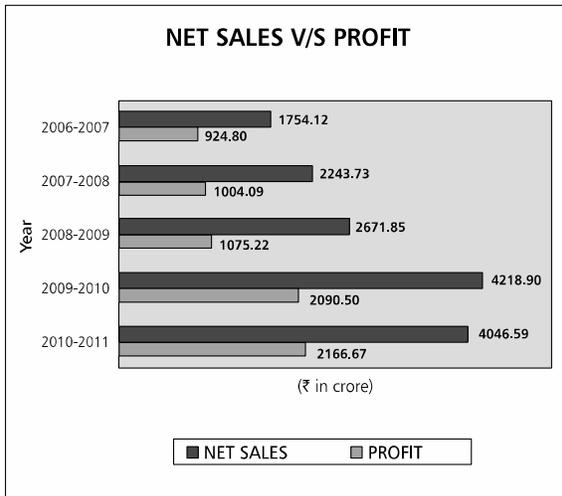
Bursar
 Chungar Chal
 Dhauliganga Intermediate
 Dibang
 Garba Tawaghat
 Goriganga-III A
 Karmoli Lumti Tulli
 Kiru
 Kotli Bhel Stage - II
 Kotli Bhel Stage - I A
 Kotli Bhel Stage - I B
 Kwar
 Lachen
 Loktak Downstream
 Pakal Dul
 Tawang-I
 Tawang-II
 Teesta - IV
 Tipaimukh

NHPC's Projects in J&K

Project	Installed Capacity (MW)	Status
Salal	690	Operational
Uri I	480	Operational
Dulhasti	390	Operational
Sewa II	120	Operational
Uri II	240	Being Commissioned in 2011-12
Chutuk	44	Being Commissioned in 2011-12
Nimmo Bazgo	45	Being Commissioned in 2011-12
Kishenganga	330	Construction going on, Dispute in ICA
Bursar	1020	At DRP stage
Total	3359 Mega Watt	

J&K's own power needs are not met despite these power projects in place, shooting up the state's spending on electricity. Every winter people protest in distress for lack of electricity, curtailment schedules are published in newspapers and industrial units shut for lack of energy. While the debt trap was termed vicious, NHPC Ltd was seen as the company responsible for the exploitation. A proactive civil society in Kashmir – comprising of trade groups, academicians, activists and media personnel – kept digging the issue and bringing to light the distribution of energy by NHPC Ltd between J&K and other states where NHPC made profit.

In its 2010-11, NHPC Ltd. reported a net sale of Rs. 4046 crores (US\$ 797.516 million) and a profit of Rs 2166.67 crores (US\$ 426.945 million).



Source: Annual Report 2010-11, NHPC Ltd.

In this period, power projects operational in J&K have contributed around half of the sales to NHPC Ltd. The table on J&K's share in NHPC energy sale shows the year-wise contribution. By this comparison, J&K's contribution in net sale of NHPC Ltd in 2010-11 is Rs 1922 crore (US \$ 1922) and profit owned out of sales from its power projects can be calculated at more than 1024 crore (US \$ 2000 million).

J&K's share in NHPC energy sale (million units) over the years:

	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
Salal	3477	3443	3480.86	3462.54	3231.64	3009	3024	3421
Uri	2874	2207	2724.82	2818.09	2595.67	3032	2703	3026
Dulhasti				46.77	2210	2199	2264	2210
Sewa II								365
Total energy generated in J&K	6351	5660	6205.68	6327.4	8037.31	8240	7991	8842
Total energy produced by NHPC	11405	11218	12567	13409	14813	16690	16960	18604

J&K %age Contribution	57.5	50.15	48.38	48.49	54.26	48.37	47.12	47.52
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Source: Kashmir Life (Weekly News Magazine) and NHPC.

However, the investments into these power projects have not come from J&K alone. In fact, the share of Jammu and Kashmir was spelled out in the Memoranda of Understanding signed between the corporation and J&K government from time to time. These memoranda had to be followed by agreements between NHPC and J&K Government. Under pressure from civil society in Kashmir, J&K government started digging into their records in 2011 and found that many of the records were missing, while the MoUs were being violated by NHPC Ltd. The corporation also reported records missing when approached by the J&K government.

A Cabinet Sub-Committee (CSC) constituted to look into case has recently come up with its report. As stated earlier by J&K's Irrigation and Flood Control Minister, Taj Mohi-u-din, the records of Salal Hydel Project are missing.

According to the report, cabinet order No 328 of June 21, 1975 is fundamental to the relationship between J&K and NHPC Ltd. The order contains terms and conditions offered by J&K for a relationship on electricity sharing with the central government. CSC has reported the file 'missing'. It had been reported missing earlier as well – on December 13, 1984 – when the state government sent a draft to the cabinet indicating that the particular file is missing. In 1995, when the government was processing a proposal for NHPC's exemption from the Stamp Duty, the department informed the law ministry that 'the agreement was missing'.

CSC report, however, says that it has been able to trace a document (a memo to cabinet dated October 28, 1980) pertaining to the Dul Hasti power project. It mentions that after the cabinet took a decision, the terms and conditions were conveyed to the central government on July 21, 1975 in a letter (PD-IV/234/72). The letter suggested that responsibility of the execution and management of the project was of J&K government during construction. Once in operation, half of the total generation from the project would go to J&K at generation cost and it will be reviewed every five

years. The J&K government was at liberty to sell part of its share as the overall profits of the project were to be shared equally (50:50) by the state and the central government (later NHPC, as the project was transferred to the corporation). Salal, according to the contents of the letter, was to be funded by Government of India but it was supposed to be transferred to J&K at depreciated cost.

The terms and conditions were set in a MoU, but NHPC never signed the agreement required by the terms of the MoU. The CSC report further points out a letter written by J&K's most popular leader, Sheikh Abdullah, who had been in jail for 20 years before coming to power. The letter (DO No PDD/IV/243/72) to the then Indian Energy Minister Abul Barkat Abdul Gani Khan Choudhary on October 16, 1981, pointing out specifically: "...all the terms and conditions for the execution of Salal Hydel Project have long back been finalized but the Ministry of Energy is yet to enter into formal agreement with the state in spite of their verbal and written assurances." On July 25, 1979, Mr Belliappa, a joint secretary in India's Energy Ministry had informed a Dul Hasti related meeting that "Government of India will not be able to agree to the same terms and conditions as are applicable in the case of Salal." Further records traced by the CSC show the minutes of a meeting convened on July 23, 1984 in New Delhi. Dr K L Rao, the then minister for irrigation and power in India said in 1969 that "(J&K) state would be given 50 percent of share out of the net profit from the project."

Mr. Belliappa's statement was the first indication of India's reluctance to provide J&K its share from the Salal project. The records traced further show that Delhi had agreed in 1969 that J&K would be provided 70-MW from Salal with an installed capacity of 230-MWs. When the generation capacity of Salal turned out to be 345 MWs, the state government demanded pro-rata increase to 120 MWs. But the energy was never provided. J&K has been getting 12.5 percent of energy generated by the project, one of the cheapest energy generation units in South Asia with an input cost of 0.60 rupees per unit.

After these discussions, J&K power department submitted a detailed memo to the cabinet that highlighted lack of an agreement between NHPC and state government. "Lands required for the project have been acquired by the state government at the cost of the government of India," the CSC

quotes the memo. “Under Section 256 (2) of the Constitution of India as applicable to J&K, no land can be transferred to the government of India till an agreement is signed between the state government and the government of India.”

A draft agreement was prepared by the state power and law departments and sent to government of India on June 24, 1975. It appears, the memo points out, “a revised draft agreement was also furnished to the government of India but relevant record on the subject is not traceable.”

The CSC report points out the records of negotiations for an agreement in 1984, where both sides had varying demands but sought to minimize them. Main points of the agreement quoted by CSC include that “government of India has transferred the project with all its assets and liabilities and rights there under to the corporation (NHPC) on absolute ownership basis”. J&K’s share from the generations shall be a minimum of 80-MW (and pro-rata when the generation is less than 80-MW) and 35 percent of the annual energy generated after meeting requirements of the NHPC as per the draft agreement. The NHPC may consider allocating the additional power to J&K from the project depending upon its availability after meeting the requirements of the NHPC and commitments made to other states as per the directions of the Government of India.

Though the agreement was never signed because of political upheaval in J&K – first a government was toppled in 1984 and then a militant struggle for independence of J&K began in 1989. However, CSC maintains that NHPC has not supplied the energy to the tune it was supposed to. The project according to CSC has generated 67411 million units of energy between 1987 and November 2011. J&K State was supposed to get 12 percent (free power as royalty/compensation) plus 35 percent (billed at bus bar rates) that makes around 31686 million units. However, it has got only 22883 million units, including the free power. The quantum of energy that did not wheel to the state, according to CSC, cost Rs 589.26 crores (US \$ 116 million), and the state had to procure the same at much higher rates that cost it Rs 2350 crores (US \$ 462 Million), a clear loss of more than Rs 1600 crore (US \$ 315 million).

There are similar issues with other power projects that NHPC runs in J&K. While the J&K state maintains that the ownership of other power projects – Dulhasti, Uri I and II, Nimoo Bazgo, and Chutuk – remains with them, NHPC differs. J&K government has openly stated its will to buy these projects back by paying the construction costs, but NHPC Ltd has insisted in different communications that the company owns the projects.

J&K's legal position, where no outsider – individual or company – can buy land, comes as a safeguard of its interests. J&K came under Indian rule in 1947. An Instrument of Accession signed on October 26, 1947 between the then Maharaja (king) of J&K and the Government of India gave India powers of managing Foreign Affairs, Defense, and Communications for Jammu and Kashmir (28). Rest of the powers remained with J&K. Over the years, New Delhi has acquired more powers over the state. However, the State Subject law remains: a law enacted by the Maharaja that limits any non-state subject from becoming a subject and buying land or holding any office of power in the state. Land, thus, can only be transferred to a corporation for use for a particular period of time; the lease period in certain cases extends to 99 years.

But NHPC Ltd has been operating more or less autonomously. J&K government sees its operations as 'exploitative' and one of its ministers referred to the company as 'East India Company of New Delhi'.

VI. WATER UNREST, WHY?

This conflict between New Delhi and Srinagar (J&K's Capital) on one side and Pakistan and India on the other makes questioning the principles of water sharing in the Indus basin imperative.

Water disputes in the Indus basin, where perennial rivers had been used for irrigation for thousands of years, were sporadic but not absent. Their resolution came through local community level negotiation or other available means. Things started to change in the middle of the nineteenth century due to sizable works on waters of the Indus system. The biggest dispute was the inter-

province dispute between Punjab, Sindh, Bahawalpur and Bikaner. Punjab, which was divided in two halves when British India was divided, inherited this dispute as three rivers of the Indus basin ran in this province. After its division, the rivers happened to cross the international border from east Punjab to west Punjab. Most of the water rich head-works of the nineteenth century had gone to India in this partition. Most important among these head-works were Ferozepur on Sutlej and Madhopur on Ravi: the canal irrigation system that fed west Punjab was derived from these head-works.

As the Radcliffe mission did not deal with the sharing of waters in the basin between the two countries, there was no legal framework available to deal with the situation. The situation was rescued for some time by the signing of a Standstill Agreement between the Chief Engineers of East and West Punjab that lasted till 31st March 1948, when India stopped water at Ferozepur.

The subsequent process of negotiations and signing of the Indus Waters Treaty, thus, was a significant achievement. A brief discussion on the laws that govern trans-boundary river systems is important to understand how the two countries approached the signing of the treaty.

A. *Principles of Non-Navigational Uses of Water*

There are four basic principles that have developed through state practice as well as scholarly work.

The first of these principles is the Absolute Territorial Sovereignty Principle. It argues that a state is free to dispose water of an international river within its territory without concern of harm for the other state through which the river flows. While the principle gives states absolute freedom to use waters within their territory, it deprives states of any right to ask for continuation of water downstream from other states. The law, devised by the Attorney General of United States Mr. Judson Harmon (1895) has been challenged and even described as radically unsound.

A fundamentally opposite principle is the Absolute Territorial Integrity Principle. It empowers a lower riparian state to demand continuation of the natural flow of an international river

from an upper riparian state, and imposes an obligation on upper riparian states to ensure continuation of natural flow of waters to lower riparian states. This principle is seen to favour lower riparian states, 'often by protecting existing uses or prior appropriations'. The principle invites criticism of the same kind as that of the Absolute Territorial Sovereignty principle and has thus not been incorporated in international water law.

The third principle, Equitable and Reasonable Utilization of water resources in an international river, combines the principles of Territorial Sovereignty and Territorial Integrity. The origins of the principle have been traced to the Meuse River dispute between Holland and Belgium in 1862. It is the guiding principle in contemporary international water law.

The fourth principle, closely related to the third, is Community of Co-Riparian States. This principle treats the entire basin as an economic unit and thus rests the rights on use of water in the collective body of riparian states. If these rights have to be divided, these are divided by agreement or by proportionality. A departure from Equitable and Reasonable Utilization principle is the overlooking of political boundaries in favour of optimal and integrated development of the entire river basin. However, this principle is criticized for being too idealistic and thus tends to be undermined by lack of trust between riparian states, varying degrees of development and absence of political will.

B. Non-Navigational Uses and Indus Waters Treaty

The Indus Waters Treaty has been commended for managing a compromise between territorial sovereignty and economic development needs. This argument suggests that the treaty recognizes India's territorial sovereignty and also recognizes Pakistan's right to fulfill its economic development needs. This argument needs closer examination.

The Indus Waters Treaty provides exclusive usage rights of eastern rivers to India. India can discharge water downstream if excess quantities need disposal, but that is not a necessitated action.

Instead of giving Pakistan any rights on eastern rivers, Pakistan has been given near exclusive rights on western rivers, while the people of Jammu and Kashmir are subjected to adherence to the principle of economic development needs. Uses on water in Jammu and Kashmir are limited to the extent of minimal use and water is discharged downstream in the maximum possible quantity.

The justification for the upper riparian's territorial control over eastern rivers and reciprocation of the lower riparian's economic development rights in eastern rivers amounts to a heterogeneous application of principles.

This has led to new disputes, more visibly so towards the end of the 20th century. As people of Jammu and Kashmir have awoken to the fact that Indus Waters Treaty limits their power to exploit the rivers for economic gain, their protest for their rights is growing. More so, because they feel that even their limited right on water is not being used for their benefit and is rather creating a situation of further exploitation for them.

Pakistan's objections to use of water by India in Jammu and Kashmir for power generation have taken disputes to the highest echelons of dispute resolution, which has grown into a never-ending process. Objections by Pakistan over construction of power projects in Jammu and Kashmir by India consume almost all of the media space allocated to water disputes between India and Pakistan. But Pakistan's objections are not limited to use on western rivers.

Pakistani experts have been expressing the need to relook water diversions on the eastern rivers. They claim that diversion of water outside the basin on western rivers when people downstream are suffering for the lack of water is not in tune with the spirit of the Indus Waters Treaty.

A much larger issue is the challenge of climate change in the Himalayan region. This South Asian region, guarded by the Himalayas on the north and by the Indian Ocean on the south, has adapted to a pattern of precipitations over millennia – the monsoon. Experts cautioned that monsoons will change more in the coming 50 years than they changed in the last one thousand years as the atmospheric carbon doubles over the baseline of 1990.

At an informal conference on India-Pakistan water relations in New Delhi in 2010, in a presentation about the possibility of climate change in south Asia, Mr. Syed Ayub Qutub explained the concept as follows:

'Scientists have suggested 22 models to predict the changes in climate. But to understand these changes, we need to look back at what the fundamentals are that make the monsoons happen in South Asia. To simplify, it is basically a switching mechanism – a switch of the jet stream from south of the Himalayas to north of the Himalayas. When the jet stream is south of the Himalayas, there are no monsoons and when the jet stream is north of the Himalayas, we have the monsoons. Jet stream basically is a fundamental result of rotation of the earth as the atmosphere tries to keep up with it.

Why would this 10,000-year-old pattern of the regular switching of the monsoon change in the next 50 years, resulting in protracted monsoon failure? The answer can be found in two scientific papers – the IPCC paper series on North Africa and Asia, which talks of a mega drought 10,000 years ago, and El Nino and the Science of Climate Prediction.

It seems to me on the basis of these two papers that the people of South Asia have to prepare, over the next 50 years, for extreme changes in the climate. It will be necessary to build institutions of cooperation to meet this extreme challenge. We will have to build infrastructure to resist the sporadic changes in conditions that we have accepted as well ignored for our lives. But more than that we will have to build resilience, which is another term that means the capacity to bounce back from disasters. All this requires structures of cooperation at the national, state, and local levels.'

The new approach to environmental preservation has brought about knowledge that has added new dimensions to water management. Recharge of groundwater aquifers takes place across the basin, mainly upstream, even if the waters are discharged somewhere downstream. Pakistani environmentalists believe that eastern rivers of the Indus basin run dry before entering Pakistan and impair recharge of aquifers.

Another pressing issue is the discharge of water into the sea by the Indus river system. The coastal areas in Pakistan are witnessing increased salinity because little water flows into the sea around the Indus delta in Sindh.

Indus Waters Treaty in its present form does not provide answers to these questions. New institutions will have to enable India and Pakistan to jointly invest in adaptation to new climatic conditions and mitigation of some of the effects of the change. But the cooperation mechanism laid out in the IWT is limited to the resolution of disputes on the implementation of the treaty. Though the treaty lays down a clause for future cooperation, experts from both sides agree that building cooperation on a treaty of division is tricky.

VII. RECOMMENDATIONS

Water conflicts are inherent to human nature as any other conflict is. However, management of these conflicts determines whether communities and countries come together to resolve disputes or move further apart while trying to resolve the conflict.

Indus Waters Treaty not only divides the rivers and the basin, which lives as an organism and can not survive in parts, it also divides the people of the basin. The basic principle followed in the treaty is that of division – eastern rivers and western rivers, which go to different countries in entirety. Cooperation can't be built on this division, even if the governments of the two countries try. In effect, the governments are cooperating on keeping the division alive. This needs to change.

The governments of the two countries need to re-examine the principles of water sharing followed in the IWT. Principle of division in the treaty should be replaced by cooperation and upper and lower riparian rights should replace the heterogeneous application of water sharing principles in eastern and western rivers. This will ensure justice to all communities.

Replacing the strict territorial division of the basin by upper and lower riparian rights will also pave a way for the two countries to jointly execute projects of common interest.

The two countries should also come together to examine the environmental degradation taking place in the entire basin and seek to protect ecologically fragile areas like glaciers, forests and delta region. At present there is no mechanism built in the IWT to fund ecological preservation.

Last, but not the least, the two governments should work towards toning down the rhetoric in their respective countries and ensure flow of accurate information about rivers and water discharge between the peoples of different parts of the basin.

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