

Seminar Report

WATER SECURITY AND EMERGING THREATS IN PAKISTAN



Center for Global &
Strategic Studies, Islamabad



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Seminar Report

“Water Security and Emerging Threats in Pakistan”



**Organized by
Center for Global & Strategic Studies, Islamabad
at
Islamabad Club, Islamabad
on
13th July, 2017**

Participants

The Seminar was attended by almost 120 participants including water experts, climatologists, government representatives and students from across the country including the individuals from public and private entities.

Host Lieutenant General Muhammad Zahir UI Islam, HI(M), (Retd) -
Chairman, Center for Global & Strategic Studies (CGSS)

Guest Speakers Mr. Shams UI Mulk (HI) - Former Chairman WAPDA

Mr. Muhammad Ashraf - Chairman Council of Research in Water
Resources (PCRWR)

Brigadier Muhammad Aslam Khan (Retd) - Chairman Gomal
Damaan Area Water Partnership

Mr. Babur Suhail, LL.M Berkeley - Vice President CGSS

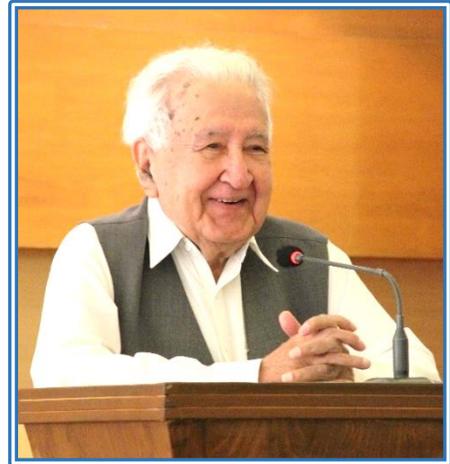
Mr. Khalid Rahim, Security Analyst - Member Advisory Board
CGSS

Moderator Major General Syed Khalid Amir Jaffery HI(M), (Retd) -
President CGSS

Introduction of the Speakers

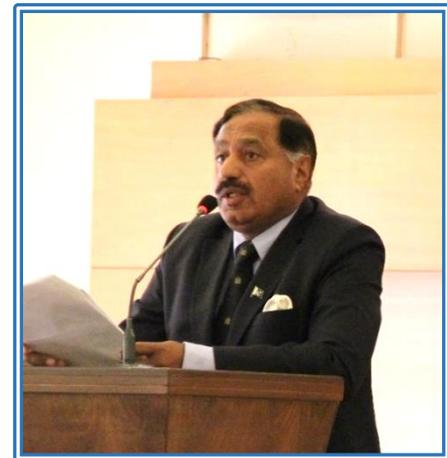
Mr. Shams UI Mulk (HI) - Former Chairman WAPDA

Mr. Shams UI Mulk is a Civil Engineer by profession and one of the most regarded professional figures in the Energy Sector. He is the former Chairman of Water and Power Development Authority (WAPDA) and has also served as the Provincial Minister in the province of Khyber Pakhtunkhwa (KP). He also remained the caretaker Chief Minister of KP in the year 2008.



Brigadier Muhammad Aslam Khan (Retd) - Chairman Gomal Damaan Area Water Partnership Pakistan

Brigadier Aslam (Retd) holds a unique blend of senior management experience acquired through various military and civil appointments. His professional experience stretches over 45 years, in which he served as the Chief Executive of Faisalabad Electric Supply Company and Director of National Commission for Human Development. He was also appointed as the senior Joint Secretary Political Affairs, and one of the founding Directors of Pakistan Water Partnership. He is a member of the International Water Association, World Water Council and Global Water Partnership. He established an NGO named Gomal Damaan Area Water Partnership and



is also the Chairman of Committee on Water Resources Good Governance Forum and Director Eco Environment Initiative.

Mr. Babur Suhail, LL.M – Vice President CGSS

Mr. Babur Suhail is a Berkeley graduate and specializes in Commercial and Constitutional litigation matters, Telecommunication, IT, Cyber Laws, Banking, Oil and Gas, Taxation, Privatization, Competition Infrastructure/ Property/ Real Estate, and etc. He has been an advisor to numerous Multinational companies which includes the World Bank, Asian Development Bank as well as



Government agencies. He has worked as the Chief Executive Officer at Legal Management Solutions-UK. He has also worked as an International Legal Specialist at the Asian Development Bank. With over twenty years of experience in teaching he has also completed short courses from INSEAD, Cambridge, M.I.T and Harvard.

Mr. Khalid Rahim, Security Analyst - Member Advisory Board CGSS

Khalid Rahim served as Field Administrator in OGDC. He also served in Pakistan Shell Ltd and later moved to US whereas alongside his work, he studied Planning and Development. He has also remained a research member of Asia Society Houston, Rand Organization. He has also worked with Texas Division of Emergency Management and later in the Sales Management of Primerica Financial

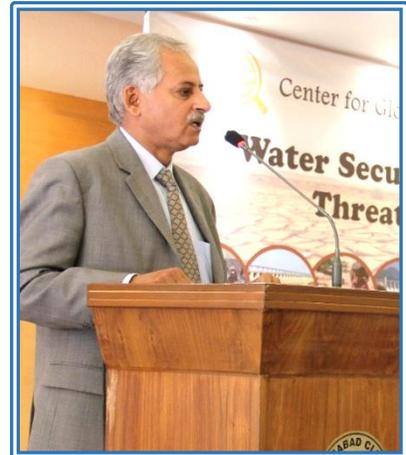


Services, Toronto. He has qualified in Security and Private Investigation from Department

of Public Safety Toronto, Ontario and joined Toronto Public Libraries Security Division. He is also a member of Vision Institute since 2013 and Member of the Advisory Board at the Center for Global & Strategic Studies.

Dr. Muhammad Ashraf- Chairman Pakistan Council of Research in Water Resources (PCRWR)

Dr. Ashraf has more than 22 years of research experience in water resources development and management in arid and semi-arid areas and has a proven record of over 70 national and international research publications. During his professional career, he worked for the integrated management of water resources, particularly surface and groundwater resources in the irrigated and dry areas and is currently the Chairman of Pakistan Council of Research in Water Resources (PCRWR).



Lieutenant General Muhammad Zahir UI Islam, HI(M), (Retd) – Chairman CGSS

Lieutenant General Muhammad Zahir UI Islam HI(M), (Retd), is the former Director General of the Inter-Services Intelligence (ISI). He has also served as Commander 5 Corps, Karachi. Presently he is the Chairman of Center for Global & Strategic Studies, Islamabad.



Major General Syed Khalid Amir Jaffery HI(M), (Retd) – President CGSS

Major General Syed Khalid Amir Jaffery HI(M), (Retd) is the former Director General Anti-Narcotics Force and has also remained Pakistan's Ambassador to Bosnia-Herzegovina. He has served on various command, staff and instructional assignments including Military Intelligence Directorate, General Headquarters and Inter-Services Intelligence Headquarters.



Seminar Report

Welcome Note by Lieutenant General Muhammad Zahir UI Islam HI(M), (Retd)-

Chairman CGSS

The session was chaired by Lieutenant General Muhammad Zahir UI Islam HI(M), (Retd), who expressed his gratitude to the worthy panelists and the participants. On behalf of the Center for Global & Strategic Studies, he welcomed all to the seminar on “Water Security and Emerging Threats in Pakistan”. He paid special gratitude to honorable speakers, Mr.

Shams UI Mulk (HI)

- Former Chairman

WAPDA, Brigadier

Muhammad Aslam

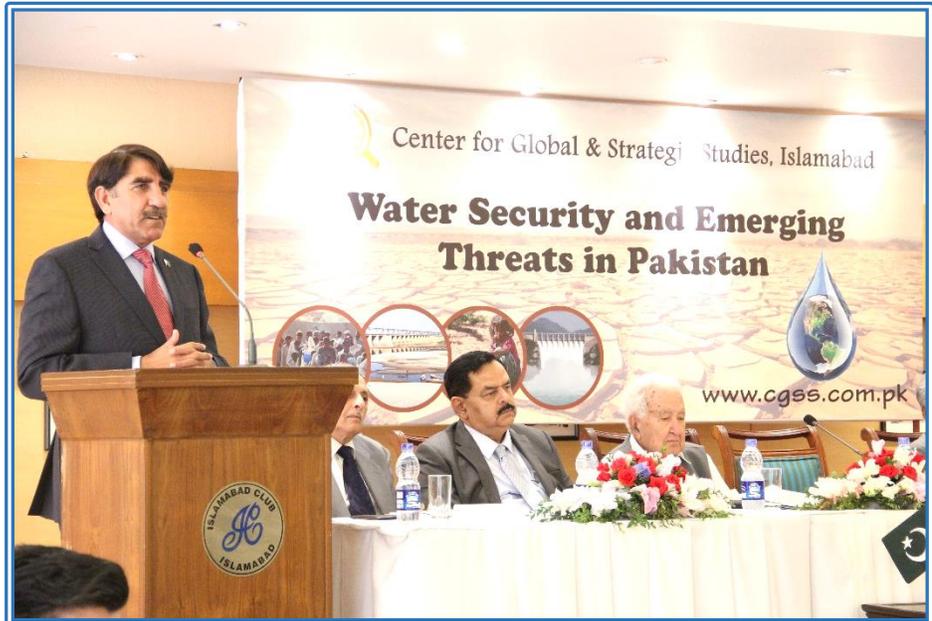
Khan (Retd) -

Chairman Gomal

Damaan Area

Water Partnership,

Mr. Babur Suhail,



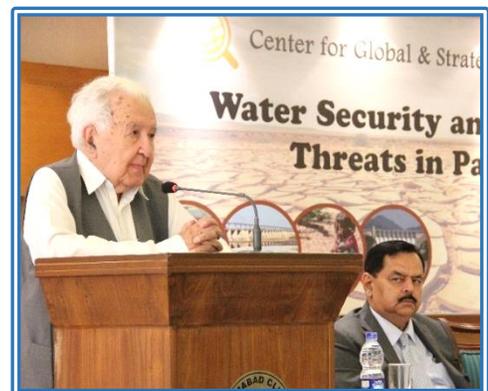
LL.M Berkeley - Vice President CGSS, Mr. Khalid Rahim, Security Analyst - Member Advisory Board CGSS, Mr. Muhammad Ashraf - Chairman Council of Research in Water Resources (PCRWR) and Major General Syed Khalid Amir Jaffery HI(M), (Retd)- President CGSS for sparing their valuable time.

He further endorsed his stance by welcoming the guests to a very important subject that Center for Global & Strategic Studies (CGSS) had selected for the seminar. He said that he is very sure that we have experts on the water management issue who are going to

give wise information and also recommendations on how Pakistan should go about in future for managing this important resource. We all understand that water is the basic necessity of survival for the humanity. Likewise, we need water for our industries, agricultural productions and most significantly for all the important activities that are essential for our existence. It is an existential necessity that needs to be managed in a way that it is available to all the human beings. We all understand that the increase in population is directly proportional to the scarcity of this resource. The gap between water resources and population is increasing day by day. He further exclaimed that the experts on this particular matter will speak with more logic than he has. We all understand there is scarcity of clean drinking water and the experts will provide us information and stats. He also said that the necessity of water in future will make water a strategic weapon. We are a lower riparian state and we are dependent on the good will of the upper riparian states which is India in our case. This issue should be addressed through a rational approach by our leadership otherwise it is going to be a serious problem for Pakistan in the future.

Speaker 1: Mr. Shams UI Mulk (HI)- Former Chairman WAPDA

The topic of Mr. Shams UI Mulk's (HI) speech was "Political, Economic and Social Issues faced by Pakistan in Securing Water Resources". While speaking to the participants he stated that as General Zahir said that water is not a commodity, it is not oil, gold or gas- "water is life". When we talk of water, we talk about life. When we talk about life, we talk about other ingredients such as



food. Water is an essential component of food production. In Quran, when Allah describes the creation of heavens and universe, it says at that time the throne wrested in water. He stated that he has read many commentaries on this Ayat and he loves the commentary of Allama Asad's narration that the whole process of creation was directed at water. Water is of utmost significance which cannot be compared to any other resource.

Mr. Shams Ul Mulk (HI) stated that when he thinks of water, he thinks about his early times, of joining service in WAPDA in 1959. At that time it was just a new organization and he was supposed to work for West Pakistan Water and Power Development Authority, without having any idea, what this new organization was about. His first assignment was as an assistant engineer at Barani Dam, which was the first Dam being built in KP.

He further stated the time of 1960's when Indus Water Treaty was signed and WAPDA was made an agent to the treaty. This meant that WAPDA is solely responsible for developing the infrastructure and management related to the Treaty for Pakistan.





Afterwards massive numbers of planners, engineers, writers and economists came to Lahore who would tell that Indus replacement work was the world's largest water development project ever conceived. It was an assumption that comparable works have been done by other countries but it has taken generations and we had to do it in 10 years without having the capacity.

70's was an era where we had the dreams of becoming an "Asian Tiger". Mr. Shams shared his experience of the visit of the Energy Secretary of United States to Pakistan who called him for a meeting in Lahore and asked about the exact cost of generation of electricity? He replied that each unit costs 0.10 paisa, after which he was asked the same question again as the Secretary thought that her question was misunderstood. However, upon finding out that electricity is very cheap in Pakistan, the energy Secretary was astonished and asked "is it so cheap?" and he replied yes it is that cheap!

Mr. Shams said that, we had a desire that most of the South Asian countries would bring the raw materials for manufacturing purposes in Pakistan because of the cheap energy cost. However, it did not materialize as Indian lobby became strong in Pakistan. The Pakistani leadership started taking decisions that Indians wanted us to do. In these circumstances the only achievement was the completion of Indus Water replacement which was done by commendable efforts of WAPDA within the time frame of 10 years.

In the aftermath of the division of rivers according to the Indus Water Treaty, three rivers were allocated to India while seven thousand acre area of Pakistan became barren. Furthermore, Mangla dam was the largest rock and silt dam of 20 feet high while at that time when Pakistan had no experience. When Tarbela dam was developed, it was twice as big as Mangla. He stated that what he was trying to say is “we have the capacity if we have the will. We have done the things which the world has discarded as impossible.”

We have to be realistic in the context of India. We have to decide what price we will pay for not doing the right things at the right time.

First, the yield of our winter crops continues to be the lowest in the world because the water supplies we are getting the river constitutes only 14 percent of the overall annual water share that Pakistan is entitled under the Indus Water Treaty. This is not sufficient enough to meet the requirements of our winter crops.

The second price is the loss of lives and damage to infra-structure. We saw the devastating floods of 2010, where the loss is estimated to be \$10 billion.

Third price is the energy deficiency. We are suffering a loss of 192 billion rupees annually due to lack of required water reservoirs such as the Kalabagh and Bhasha dam. Since

Kalabagh's 12000 billion units do not exist, currently, we are generating the electricity for 7-25 rupees per unit depending on the energy mix. This is extremely expensive in comparison to hydel power generation.

Speaker 2: Brigadier Muhammad Aslam Khan (Retd) - Chairman Gomal Damaan

Area Water Partnership

While speaking on the topic "Realistic Appraisal of Indus Water Treaty", Brigadier Muhammad Aslam (Retd) stated that, there is a strong perception of India's wrongdoing with the water situation in Pakistan. Water would not have been a central issue between

India and Pakistan if it had been utilized efficiently over the last half century. Pakistan has a unique irrigation system and the largest irrigation network in the world.

While highlighting the 'World Trans-boundary



Water Basins and Treaties', he stated that water is not confined to political borders. According to an estimate, about 148 countries share basins internationally. There are 276 trans-boundary river basins in the world including; 64 trans-boundary river basins in Africa, 60 in Asia, 68 in Europe, 46 in North America and 38 in South America. Out of the 276 countries sharing trans-boundary rivers, 185 are shared by two countries, 256 are shared by 2, 3 or 4 countries, whereas, 20 are shared by five or more countries by

maximum being 18 countries (Danube). While enlightening the participants about the number of river basins shared by one country he quoted the following facts:

- Russia shares 30 river basins
- Chile and United States 19
- Argentina and China 18
- Canada 15
- Guinea 14
- Guatemala 13
- France 10

Afterwards he shed some light on the basic principles of the Indus Water Treaty and explained that India will be allowed to use the eastern rivers without any restriction except it will limit the use of water to be used for the agricultural purposes in Pakistan. Pakistan, on the other hand, shall receive water from the western rivers without any restriction. India will be under the obligation

to allow flow of all the water and not permit any interference with the water of western rivers and will be allowed to use the water for domestic, non-consumptive, and agricultural purposes (limited area to be irrigated in Kashmir and discharge limits on two canals specified).



Brigadier Aslam (Retd) stated following trans-boundary concerns which exist among riparian states:

- Mutual trust
- Political environments.
- Is “Might Right”?
- Riparian mindset
- Fear on capability of upper riparian to interfere and control flows
- Fear on development of storages and barrages, diversion
- Data collection and communications
- Safety of upstream infrastructures (glacier bursts, geological weaknesses etc)
- Flood control
- Environment effects, water pollution
- Monitoring, metering, water thefts
- Watershed management
- Disrespect to Treaties





While explaining the water situation in Pakistan, he stated that due to limited storage capacity of the water reservoirs there is an inadequate availability of water. Pakistan has only 30 day storage as buffer against drought. The per capita water has fallen down to less than 1000 cubic meters. Whereas, approximately 92% of land in Pakistan is arid or semi-arid. Indus plain covers around 25% of total land area and supports 65% of the population, 80% of total cultivation produces 90% of food requirement, 25% GDP from agriculture and 40% population increase by 2025. Furthermore, out of 180 million population around 110 million people rely on agriculture. Approximately, 35 % population in Pakistan lives below the poverty line and around 60 million do not have safe drinking water and 85 million do not have proper sanitation facilities. Persistent drought has left 30% less irrigation water than the average water available for spring crop. The short fall of food grains in Pakistan stands at around 14 million.

The ground water in Pakistan is depleting, for instance, the water was 3.34 million acre-feet in the year 1959, but now it stands at 60 million acre-feet. 70 % of tube wells have hard or brackish water. There is a serious decline in the supply of water to the provinces of Sindh and Balochistan. Pakistan views this decline as a result of India's hydroelectric projects but India is of the view that the water is declining due to the reduction in rainfall

and snow melt. Due to the Sindh's opposition to the construction of Thal canal and desilting of Tarbela and Mangla dams, 32% storage capacity (100,000 cusecs) of these dams is being lost every year and if the situation persists, Pakistan will not be able to support adequate supply of cotton and wheat crops.



Brigadier Aslam (Retd) also highlighted Pakistan's concerns with India as the Indian Kishanganga hydel project could interfere with Neelum–Jhelum Power Plant and there are not enough safeguards about Indian projects on the Western rivers. India may be able to use water as a weapon of war against Pakistan. India being an upper riparian state is not being responsible in water shed management and Indians have not incurred any cost. Whereas, the Indians are of the view that they are using less water than their irrigation entitlement. They are only storing run of the river water. In fact as per their view, Pakistan is getting more water due to their inability to use the water entitled as huge quantity of unutilized water escapes to the sea which is approximately equals to 30 MAF. Indians term it as terrorism agenda to be abandoned.

He also speculated the future scenarios by stating that Pakistan would face a grim future due to population growth which will be around 250 million by the year 2030. The flow of Indus River is likely to decrease. Global warming is causing the glaciers to melt which is increasing the risk of flooding in next 20 years. The annual renewable water will be depleted down to 275 Billion Cubic Metres.

Construction of hydro power projects on the tributaries of Indus by India can reduce the flow of water. Untimely filling of dams by India during planting season could destroy Pakistan's land.

Pakistan is tapping just 12 to 15 % of its hydro power potential. Pressure on acquiring water resources will increase due to competing demands, climate change and increasing population.

Following recommendations were made by Brigadier Aslam (Retd):

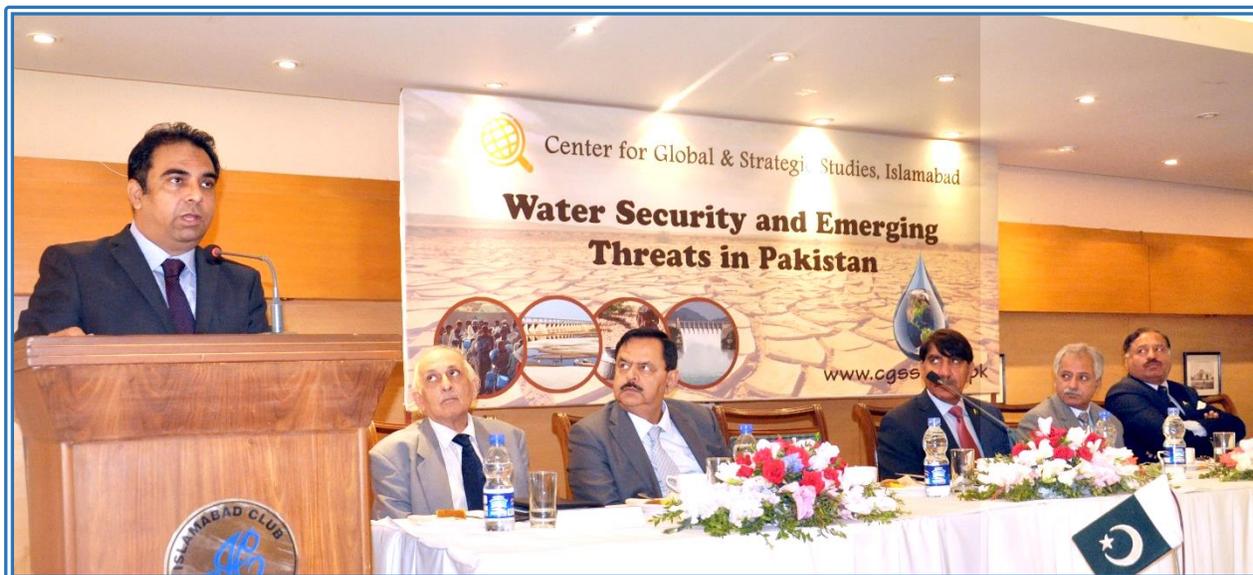
- Cooperation on water issue should be looked upon as a means for peaceful co-existence
- Trans-boundary issues need to be settled in a spirit of cooperation and most optimal use of water. There is a need to move from 'Zero Sum' to 'Positive Sum Game' of maximizing benefits for the people whose livelihoods are connected to waters
- Resolving trans-boundary issues through proactive engagement at appropriate level
- IWT and its fair application should be a National priority just like defense and foreign affairs
- Engagement with Afghanistan for a Water Treaty is required



- While we continue to highlight the India's violation of the IWT we need to look inside at home to find solutions
- Rebuild irrigation network
- Build storage capacity
- Construct Diamer-Bhasha, Munda Muhammad, Kalabagh, Shyok Dams, etc
- Improve efficiency of irrigation water and reduce its losses
- Harvesting of rain water
- Replenishment of ground water
- Institutional capacity building is needed to develop better understanding of technical, social, cultural, environmental and economic dimensions of water
- Dissemination of information and stakeholders' consultation is important
- A top level Technical Committee / Indus Water Commission office should have the best technical people to counter the India's observations

Speaker 3: Mr. Babur Suhail, LLM Berkeley - President Center for Global and Strategic Studies

The topic of Mr. Babur Suhail's speech was "Growing Indian Threats to cut water supply: An Analysis of Indus Water Treaty". While explaining the post Indus Water Treaty scenario he highlighted the following points:



Right after independence friction was there on water sharing between Pakistan and India. Therefore, both sides were engaged in negotiation and there was a dire need of some agreed mechanism to be in place. Initially, waters of Indus Basin were distributed on the basis of Inter-Dominion Accord dated 4th May, 1948.

This accord required India to release sufficient waters to the Pakistani regions of the basin in exchange of annual payments from Pakistani government.

David E. Lilienthal was a water expert from USA - he was Ex-Chairman of Tennessee Valley Authority (TVA) and also former Chairman of US Atomic Energy Commission. He suggested establishing an authority on the lines of TVA to regulate Indus River Waters.

The TVA Act, 1933 gave an interstate solution mainly covering states of Alabama, Kentucky, Mississippi, and partially covering Virginia, North Carolina and Georgia.

Now the question arises here that, why Pakistan opted for Indus Water Treaty? It was may be the vision of the leadership of that time that the future is contingent upon having infrastructural development and financing was conditionally offered by World Bank (WB).

The intention here is not to blame anybody. But for infrastructure development which can be measured on the scale of time, permanently giving away such valuable rights attached to life line like WATER – unfortunately will keep on haunting us.

Mr. Babur Suhail further shed light on the fact that Indus Water Treaty is based on “DIVISION” instead of “SHARING”. Pakistan is a lower riparian state, but there are International norms of sharing of natural resources. The oldest treaty on water related issues is pertaining to River Danube (Central & Eastern Europe) which started through the Treaty of Paris 1856 and have transformed into 1994 Danube River Protection Convention – a good study for everyone. There are other water sharing issues and mechanisms in vogue such as Jordan Unified Water Plan, Ethiopia and Kenya water conflicts. There are water issues of Malaysia and Singapore, on Okavango River at Georgia – but this is the sole example that absolutely three rivers were given to India with



no condition and/or string attached and water of the rest of three rivers was allocated in such a way that it cannot be called a fair distribution, sharing and or allocation. Eastern Rivers; Sutlej, Beas and Ravi were allocated to India with favorable condition attached whereas, Western Rivers; Indus, Jhelum and Chenab were allocated to Pakistan with certain stringent conditions.

He elaborated the fact that IWT is dominated on sharing of surface water alone and every possible right of usage of water available under-ground to the extent of Indi is preserved and with respect to under water rights of Pakistan it totally is mute – he further elaborated that as per Indus Water Treaty under Article III (2) (c), apart from the irrigation from the Ranbir and Pratap Canals under the provisions of Paragraph 3, India may continue to irrigate from the Western Rivers which made India safe to the extent of its irrigation needs. Mr. Babur Suhail elaborated different clauses of Para 5 and Para 6 of Article III, wherein protections of Under Water Rights of India are there but in comparison, the needs of Pakistan are not catered and protected which is blatant violation of human rights. He quoted para 6. (a) of Article III which says that for India within the limits of the maximum Irrigated Cropped Areas specified against items (b) and (c) (i) in Paragraph 5, with respect to using the waters of three shared rivers there shall be no restriction (on India) 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.



While referring NASA's data he highlighted the fact that border line underwater situation, at least in Punjab, is not good and this matter should be taken up seriously.

He suggested that if we have lost something while negotiating a balanced deal, at least we should not lose the lessons learnt. For that matter he shed some light about rulings on BAGLIHAR DAM and KISHANGANGA and analyzed both the rulings keeping in mind Annexure-D of Indus Water Treaty. In the case of Baglihar Dam, Pakistan's initial stance was that the movable gates of the dam should be built on higher level as opposed to Indian proposal, so that Indian capacity to manipulate water storage be minimized. Later on Pakistan changed its stance and took the position that the design in its current form is against I.W.T.

He shared that according to Prof. Raymond Lafitte who was a neutral expert and WB's arbitrator and he rendered the ruling and it was based on the fact that the project of Baglihar Dam, technically and economically was not viable – in other words, if there were some checks and balances on India under Article III, (2) (d) along with Annexure-D those



could have evaporated – Indian argument was based on (Article III (2)(d)) which in isolation cannot be regarded.

Then he referred a striking provision which is clause 2 of the Article XI of the Indus Water Treaty; which says as nothing in this Treaty shall be construed by the parties as in any way establishing any general principle of law or any precedent. Meaning thereby, the Annexure-D (which talks about some restrictions on India) could have been buried and the ruling had a potential to be a precedent for the days to come. Prof. Raymond decided in favour of India and accepted Pakistan's initial position.

He further stated that, ruling on Kishanganga have proved to be a safe harbor for Pakistan, which indicates that I.W.T. will prevail. Kishanganga basically is Neelum River. Indians reliance on earlier ruling on Baglihar Dam and decision to fetch more from that was a strange move on the touchstone of fairness. Had the Kishanganga ruling gone against Pakistan, Pakistan could have faced more catastrophic situation. However, Alhamdulillah, as per decision of Permanent Court of Arbitration in Hague, the Indian stance of economic and technical viability does not supersede the rights of lower riparian

to have viable water development downstream and relied on (Article III (2)(d)) read with Annex-D, Part 3, para 15(iii), which mirrored as “where a plant is located on a tributary of the Jhelum on which Pakistan has right to agricultural use or hydro-electric use, the water released below the plant may be delivered, into another tributary if necessary, 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.

He tried to give a voice to a natural question whether the IWT is stagnant? and referred

to the Article XII clause (3) which answers the question that; the provisions of this treaty may from time to time be modified by a duly ratified treaty concluded for that purpose between the two Governments.

The clause (4) of the same Article states that; the provisions of this Treaty, or the provisions of this treaty as modified under the provisions of Paragraph (3), shall continue in force until terminated by a duly ratified treaty concluded for that purpose between the two Governments.

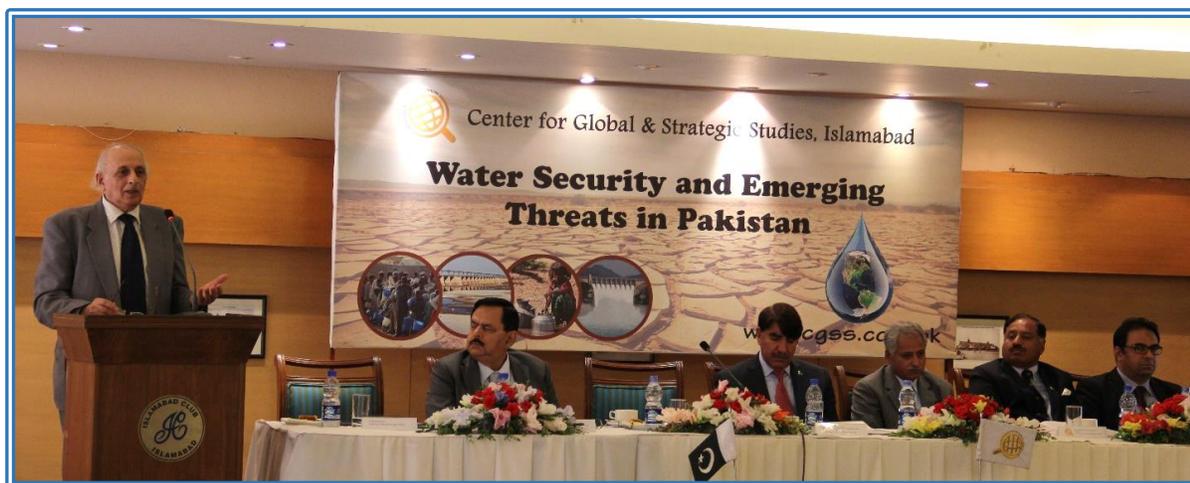


Mr. Babur Suhail concluded his presentation with his statement that India has a natural edge being an upper riparian, then they (Indian) have negotiated or maneuvered it well, now they are so focused and active that whatever is possible within Indus Water Treaty for them (or may be out of that also), they are doing it. He continued and said that what

could have been gained through this treaty we did much less and even this hour we are sleeping with open eyes. Let's accept that if we have lost something and at least we should not be losing the lessons learnt. He further elaborated his view by saying that for offering a few prayers we don't have the option of "Qaza (that later on can be offered), so let's treat this I.W.T like a Jumma Prayer – now the option left with us is (a) whether we want to wait for some Saturday and beg to International Community and worst enemy to let us "offer or to perform Jumma Prayer on Saturday" or we take this opportunity as Thursday to make arrangements to perform Jumma Prayer on Exact Time. He suggested that there is a dire need to strengthen the office of Indus Water Commissioner in every regard and thanked the audience.

Speaker 4: Mr. Khalid Rahim, Security Analyst- Member Advisory Board CGSS

Mr. Khalid Rahim presented his speech based on personal analysis and research on the 'Water Security and the Current Situation'. He stated that we have to ascertain the total amount of rainfall in millimeters and the duration of rainfall in hours. We need to assess the agricultural products which must include data on the types of crops and water consumption by each. Furthermore, we have to have knowledge of horticultural products



(types of fruits and water consumption) and the kind of forestation (types of trees and water consumption). Work needs to be done on river flows such as Upstream (width, speed and flow), Midstream (width, speed and flow) and Downstream (width speed and flow). We can also work on converting some canals from concave to trapezoid to produce 1-2 megawatts of additional power.

Furthermore, the water conservation authorities must be well informed about groundwater level such as number of operational wells and number of wells being dug in the vicinity.

Integrated Flood Control Systems needs to be operationalized to mitigate the natural disasters of floods.

Prevention of water crisis is not only the responsibility of the Government, but also the general public. Today many countries have adopted harvesting rainwater as a national policy. Whereas the equipment for this purpose is tax free. We need to look beyond our nose and develop vision to save and store rain and flood waters. Flood waters can be controlled and directed towards the underground reservoirs through bio-pores. Rooftops of homes are used as collectors from where water is directed into conduits and poured into surface water tanks using filters to prevent debris from entering the tanks. Once the tanks are filled, the rest of the water is directed into underground permeable tanks.

By harvesting rainwater we can overcome our deficiency of surface water and help in reducing the decline of groundwater levels, improvement in the availability of ground water for crop development and help in improving the quality by dilution. Furthermore, it will increase horticulture production through improved groundwater and ecology will be enhanced through vegetation cover.

**Speaker 5: Dr. Muhammad Ashraf - Chairman Pakistan Council of Research in
Water Resources**

Dr. Ashraf presented his speech on the “Persisting Loopholes in Water Management of Pakistan”. He explained that Pakistan has three major water storage reservoirs with a designed storage capacity of approximately 15 MAF. There are 23 barrages, headworks and siphons in Pakistan along with 45 main irrigation canals. The total command area is 16.6 Mha and the total geographical area is 80 Mha, whereas, the culturable land and rainfed farming land are 30 Mha and 12 Mha respectively. The average rainfall in Pakistan varies between less than 200 mm to over 1000 mm.

Pakistan has one of the largest contiguous irrigation systems of the world. Pakistan has the 4th largest groundwater resources in the world after India, USA and China. Over 90% drinking water and 100% industrial water comes from groundwater and groundwater supplement.

While elaborating the major issues in the water sector, he stated that the water shortfall in Pakistan which was 11% in 2004 will increase to 31% by 2025. The recurring floods in



the years 2010, 2011 and 2014 which cumulatively equalled to approximately 90 MAF, inadequate water harvesting and storage facilities that is only 10% of the average annual flow, the reduction in storages capacities of the existing reservoirs due to sedimentation (0.2 MAF/year), unutilized potentials, low system efficiency which is less than 40%, conventional methods of irrigation: unlevelled basins, improper size of furrows and groundwater depletion and degradation are few of the major issues in the water sector in Pakistan.

While explaining persisting loopholes in water management, Dr. Ashraf was of the view that there is no water policy, both, at provincial and national level. There has been a complete negligence by the government on construction of large reservoirs after the era of 70s. There is lack of importance of water as it is a free commodity so nobody makes an effort to secure it. There is lack of water education and awareness due to obsolete user practices. The untreated disposal of wastewater into the surface



water bodies, no regulatory framework for groundwater management, heavy subsidy on tube wells particularly in Balochistan, lack of knowledge on water diplomacy and water

literacy and poor coordination amongst policy, research and development institutions are the major issues that needs to be taken care of.

He further elucidated that the mismanagement of water resources are resulting in groundwater depletion, water quality deterioration, desertification, food insecurity and increased poverty. Therefore, in order to secure the water resources there is a need to increase the resource base by constructing small, medium and large dams where possible and must recharge the groundwater aquifer. There is a need to conserve moisture that is spate irrigation, deep tillage, terracing etc.

Management of the available water resources is very important. There is a need to improve the conveyance efficiency: watercourse lining/improvement. There is a need to use high efficiency irrigation systems, change the existing cropping pattern and introduce less water requiring crops/plants, control indiscriminate installation of tube wells, use non-conventional water resources such as; saline water, wastewater, etc., and educate the people through mass awareness campaign for water development, conservation and management.



Panel Discussion/Question and Answer Session

The panel discussion was moderated by Major General Syed Khalid Amir Jaffery HI(M), (Retd). He thanked all the participants of the seminar for attending the event. He stated that today's presentations have been of great significance



because eminent scholars, analysts and experts have graced this occasion and shared their views with us which highlighted the challenges faced by Pakistan pertaining to emerging water threats as well as opportunities. He congratulated the CGSS for bringing such a professional group of analysts and also appreciated the experts who highlighted bitter but truthful facts to spread awareness about the issue.

Certainly, these conclusions and suggestions will make their way to those who formulate policies as well as decision makers.

Panel discussion was designed to further enlighten over some important issues concluded earlier and initiate an interaction with the audience. The panelists included Mr. Shams Ul Mulk (HI)- Former Chairman WAPDA, Brigadier Muhammad Aslam Khan (Retd)- Chairman Gomal Damaan Area Water Partnership, Mr. Babur Suhail, LL.M-Berkeley- Vice President CGSS, Mr. Khalid Rahim, Security Analyst- Member Advisory Board CGSS and Dr. Muhammad Ashraf- Chairman Pakistan Council of Research in Water Resources (PCRWR), Major General Syed Khalid Amir Jaffery HI(M), (Retd) -

President CGSS, Lieutenant General Muhammad Zahir Ul Islam HI(M), (Retd) - Chairman CGSS.

Mr. Shakeel Ramay, from SDPI:

He stated that from his experience of 10 years of track two diplomacy in dealing with India regarding water issues, he observed that our institutions have their own specific agendas which is unsynchronized and that results into our major weakness. For instance, in the case of “Baghlihar



Dam” at World Bank, India raised the element of environmental degradation and won the case, but Pakistani counterpart failed to defend the Pakistani narrative on the issue. His suggestion was that whatever policy we formulate regarding the water issues, it should be coordinated, uniform and harmonious between our own institutions.

In a reply to this question **Mr. Babur Suhail** agreed with his suggestions which stated that we should have a synchronized and collective policy approach while dealing with water issues pertaining to Pakistan and India.

Mr. Abdullah Hameed Gul:

He commented that Pakistan is a country which is reliant on the agriculture. According to a report, Pakistan may need 16 million tons of grain for its consumption by 2020. He raised the question that what legislation have we formulated to mitigate the situation rising from such



circumstances? We have the example of USA where they have laws relating to the home consumption of water.

His second question was based on a reference to his late father General Hameed Gul who always believed that this situation is turning into an “Aqua Bomb”. So what will be the strategy and policy of our military to counter this threat? Are we ready to fight “Bhooka Pyasa”?

On a lighter note Major General Syed Khalid Amir Jaffrey HI(M), (Retd) replied that hungry partridge fights more passionately and Mr. Babur Suhail’s response was that the legal canvas is dry with respect to legislation, particularly the required legislation, so even we do not have the uniformed water polices and water saving and further developments on this subject. Comparing ourselves with India; we are far lacking behind. There is a significant need of devising policies to improve this situation. India is also locked in interstate water disputes. They have formulated treaties and mechanism. We need to step forward and learn the lessons from what India has done.



General Zahir (Retd) replied the second question and said that this issue can be responded in three dimensions. First is the domestic dimension; about that we have discussed. He further exclaimed that have we raised enough voice and noise on this issue and rang the bells loud and clear, which is an existential threat for us. All the experts sitting here have been on various important positions in government and had the ability to influence the issues regarding water threats. This issue is imminent and we have to take initiatives to conserve this precious resource using all possible means. To ring the alarm bells louder, is the strategy of domestic dimension.



We should be managing the surface water such as rivers, streams and lakes. We can conserve by building enough reservoirs to store water. We are specifically being affected by India on our eastern borders as well as to some extent on western borders.

We have been enslaved to Indus Water Treaty as Mr. Babur Suhail mentioned. However, beggars cannot be choosers and this was probably the best deal we could have gotten in that time frame and circumstances. And by the way, irrespective of its positives and negatives, the Indus Water Treaty has worked till now. One of the major concerns is that we did not come out of the horizon of Indus Water Treaty as yet. We need to have competent water managers to deal with these issues according to the necessity of time. We should also emphasize upon the humanitarian impact of allocating three eastern rivers to India. Millions of people had to be relocated and huge amount of land became barren as a consequence.

If we had raised these issues on the international forums, which is the third dimension, we would have had many more options in our hand than we have today. Strategically speaking, we have not been smart on this.

Summing it up, we need to come with innovative policies and solutions to the pertaining water issues outside the realm of Indus Water Treaty. Furthermore, international forums must be briefed with rational data regarding the humanitarian aspect.

As far as war is concerned, it has its own strategic dimensions. The main purpose of developing the conventional and non-conventional weapons is to deter war. As far as army is concerned, it will continue to formulate strategies to mitigate the war.

War is not a solution as fighting a war may not result into gaining the control of water reservoirs. We still have to build reservoirs to store our share of water.

In this context we have more responsibility at our diplomatic front to pursue our water agenda policy and our share of water must be effectively managed and utilized.

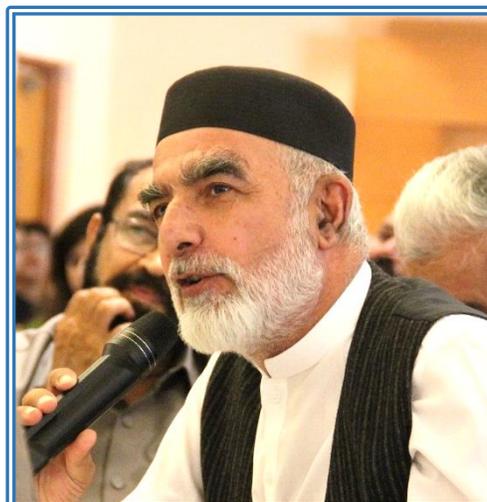
Lieutenant General Naeem Khalid Lodhi (Retd) commented on Mr. Abdullah's question that water crisis could be one of the reasons of engaging into a war with India similar to the Kashmir issue. However, we have an operational deterrence strategy regarding war as mentioned by the Major General Syed Khalid Amir Jaffrey HI(M), (Retd) and Lieutenant General Muhammad Zahir UI Islam HI(M), (Retd).

Mr. Shams UI Mulk (HI) responded that he has failed to understand one thing. We have different lobbies for different subjects but unfortunately we do not have a lobby for the people of Pakistan. Because if there had been any lobby for the people, then we would

not have to incur losses of 192 billion rupees for not building water storage reservoirs such as Kalabagh and Bhasha.

Mr. Owais Ahmad Ghani (Former Governor KP and Baluchistan):

Referring to the speaker's speeches, it was mentioned that "in the earlier times of mega projects loopholes started emerging and then Indian lobby became strong. Pakistan started projecting Indian oriented policies rather than policy of its national



interest. What was the specific point, time and the specific incident indicates that Indian lobby became stronger in Pakistan?

Mr. Shams Ul Mulk responded to Mr. Owais Ahmad Ghani's question that referring to the recent study conducted by National Defense University, there was a time in the early days of Ayub Khan's tenure when Pakistan's GDP was growing at 10 percent. So it was subsequent to the governments of Ayub Khan and Zulfikar Ali Bhutto that the Indian lobby became too strong. He referred to an incident involving a nationalist political party in Khyber Pukhtunkhwa and stated the exact remarks made by one of its prominent members that "even if Kalabagh dam is gold, we are not the buyers." He went on to say that if anyone will ask him to write a book about the history of Pakistan and the factors that crippled its economy, he would write the first chapter about Kalabagh Dam and Pakistan's inability to build it on time". He said that by delaying the project, the enemies of Pakistan are benefitting as the country is incurring 192 billion rupees in loss. It is the right of Pakistan to use three western rivers.

Admiral Noorani:

He questioned that why we cannot construct gravity dam in southern Punjab up to the borders for water storage.

Mr. Shams UI Mulk responded that as a nation, we are fond of opting for innovative methodology abandoning the known ones. We have China, USA and India as examples. Why do not we follow their pattern of water storage management and development.

Kalabagh is the only dam which will silt upto 33 percent while the rest can be used perpetually. Why are we omitting these facts.

Had Kalabagh dam been built in 1990 and Bhasha dam in 2010, we would have had a surplus of 8000 MW electricity at the rate of only 2 rupees per unit unlike the current power tariff of 20-25 rupees per unit. This could have had a great boost to Pakistan's economy. There was a rhetoric that foreign countries will bring raw materials to Pakistan for processing owing to its low cost of power tariff.

Dr. Basharat Hassan Bashir commented that PSC Chairman Khursheed abstained the briefing about Kalabagh dam. With this kind of attitude, it seems uncertain to have interest based strategy towards water storage administration. Now Pakistan is faced with two choices- either we can go dry or we build new alternative ways to store water.



Mr. Shams Ul Mulk responded to Dr. Basharat Hassan Bashir by stating that again same mantra of trying new alternative ways. We have to keep in mind that we do not need electricity but also need to store our share of water.

In case we had constructed the Kalabagh and Bhasha, we would not have faced the drastic consequences of 2010 floods. It would have been a less intensive flood if we had excessive storage capability.

Dr. Muhammad Ashraf further stated that small dams are important however we will have to build 4000 small dams to equal the capacity of Kalabagh dam and we do not have sufficient suitable sites.

Brigadier Bilal (Retd) questioned that we have been listening that Pakistan has been treated unfairly with respect to Indus Water Treaty. What should be the way forward? What do you think about availing army's services in managing and policy formulation regarding dam construction and water storage management by replicating the US model?



Mr. Shams Ul Mulk responded to the question that India would like to pull out but we cannot as this treaty protects

Pakistan's share when it's flowing through Indian Occupied Kashmir but when it comes to Pakistan's management, we throw our share in the sea.

In the USA, the US Army Engineers Corps are instrumental in formulating policies regarding the dams' construction and water storage management due to intrastate political differences.

Asma Khalid- Research Affiliate SVI:

What are our possible options in the face of Indian belligerence and emerging water threats?

Mr. Shams UI Mulk responded to the question that India cannot pull out of Indus Water Treaty, however, India can construct dams on these rivers by putting an argument that

since Pakistan is wasting its share of water and India is in desperate need of water reservoirs so it's our right to construct the dams on these rivers.



The Seminar was concluded with the presentation of shields to the worthy panelists by the Chairman of the Center for Global and Strategic Studies Lieutenant General Muhammad Zahir UI Islam, HI (M), (Retd).





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