



Seminar

on

“River Water Sharing in South Asia: Identifying Common Concerns for Peace and Development”

April 19-21, 2012



Organised by

**UNESCO Madanjeet Singh Institute of South
Asia Regional Cooperation (UMISARC) &
Southern Asia Studies Programme
Pondicherry University, Puducherry, India**



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Pondicherry

Pondicherry, now Puducherry, is a Union Territory with one of the highest levels of quality of life in the country with excellent physical infrastructure and almost a hundred per cent literacy level. The Pondicherry University was established at this beautiful town in 1985 by the Government of India through an Act of Parliament. The University is located in the serene surroundings on Coromandal coast and 10 km north of Puducherry. The campus is spread over 780 acres of land some of which is rolling down to the sea beach. The University is a member of the Association of Commonwealth Universities and has signed Memorandum of Understanding with several foreign universities / institutes. A recent survey reported by the UGC (University Grants Commission) and the NAAC (National Accreditation and Assessment Council) ranked this university as one of the best in the country.

UNESCO Madanjeet Singh Institute of South Asia Regional Cooperation (UMISARC)

The Pondicherry University signed a Memorandum of Understanding (MoU) with South Asia Foundation (SAF) on June 20, 2009 for establishment of the Madanjeet Singh Institute of South Asia Regional Cooperation (MISARC), with financial support from South Asia Foundation. The Institute became functional with the appointment of its first Director with the concurrence of the founder of SAF, Ambassador Madanjeet Singh. In the year 2010, the UN Educational Scientific and Cultural Organization (UNESCO) agreed to associate with all institutions of excellence established by SAF including MISARC of Pondicherry University. Hence, it has been now renamed as UMISARC (U standing for UNESCO). The institute has thus now become truly global.

The Institute is currently offering M A programme in South Asia Studies. Though this is the first and the only institution in the country, which is offering this highly innovative course, it has bright career prospects in diverse fields such as governmental and non-governmental organizations, media, think tanks, international organizations and corporate sector. The course is uniquely designed to provide cutting edge knowledge of South Asian history, society, culture, economy, governance and politics, etc., from an interdisciplinary perspective. Students are expected not only to develop broad knowledge base to critically understand contentious issues concerning South Asia, but also offer a holistic perspective to address them and contribute towards promoting peace and cooperation in the region.

Publication

The Institute publishes an *International Journal of South Asian Studies* to provide a forum for academic research in areas relating to political, social, economic, cultural cooperation and development in South Asia. Besides, the Institute is in the process of publishing books, monographs and papers in journals and edited volumes.

Together with the publication of the Journal, the Institute offers a broad research platform for refined academic debates with regular guest lectures by eminent scholars and diverse academic activities. At the same time, the Institute organises cultural meets and exchanges for promotion of cooperation and harmony in South Asia.

The Conference Theme

While water has always been an essential requirement of life, the significance of this precious natural resource has got all the more salience because of rising population, scanty rainfall, disregard for environmental resources and their mismanagement. These factors have put a huge pressure on availability of water in the world. Hence water is emerging as one of the defining issues of the next half century.

This is especially true in South Asia, which holds less than 5 percent of annual global renewable water resources that too is endangered due to spread of irrigated farming, water intensive industries and demand of the rising middle class. Moreover, continental South Asia (India, Nepal, Bangladesh and Pakistan) is the most populated region in the world with about one sixth of the global population and the ever increasing population at the rate of 1.5% is increasing the demand for food and water. Beyond this, water is also associated in South Asia with fertility, purity and spiritual nourishment. Its great value is a deep and central element of the millennium culture.

Hence rivers in South Asia are the life and blood of these countries. Bangladesh, for instance, relies on water from the Ganges and the Bhramaputra for irrigation and drinking water. Nepal is angling to earn 'hydrodollars' by selling its immense hydroelectricity potential from the many tributaries and sub-tributaries of the Ganges. Three bi-lateral treaties to share the major tributaries of the Ganges — the Koshi, Gandak and Mahakali (in India known as Sharada) — have been signed between the Government of India and Nepal in 1954, 1956 and 1996 respectively. The Government of Bangladesh and India have signed a Farakka treaty on sharing of Ganges River in 1996. Attempts are on to sign an accord on the sharing of Tista river water between India and Bangladesh.

However, critiques argue that the benefits of sharing of these rivers have been unequal and over politicized. It is alleged that sharing has not been done in accordance with the present and future water needs of each of the riparian countries. Each country has been trying to get the largest share, leading to more controversies. Most of the negotiation processes have therefore failed to lead to a basic framework for sharing the rivers for peace, security and regional cooperation.

In fact a very little effort has been done to explore the great possibility of sharing these rivers for peace, security and development in the region. The South Asian Association for Regional Cooperation (SAARC), the only inter-governmental body in the region, does not address the subject of water rights, but only some narrowly defined economic and trade issues. No regional framework has been worked out for making the best use of these rivers to promote the collective harmony and prosperity of the region, in stark contrast to the case of Mekong, or other trans-boundary river basins in other parts of the world.

The proposed Seminar therefore is intended to bring together leading academic experts, policy analysts, legal experts, defence personals as well as members of media and think tanks from different parts of the India, Nepal and Bangladesh to deliberate upon the above-mentioned and related questions and to come out with valuable policy inputs for the Government of India. The Seminar will focus on why and how water should be regarded as a source of co-operation, as a

potential means towards mediating and resolving existing conflicts. Disagreements about how our limited and common water resources should be used are not unusual, but proper solutions must be found through mutual understanding and negotiations that are socially, economically, politically and environmentally acceptable. It will be explained, for instance, how the Kosi river that devastated north Bihar on Aug 18, 2008 and which is categorized as one among “rivers of sorrow,” could be transformed as sources of irrigation and power generation. This can only be achieved through the free, prior, and informed participation of all the river basins-based stakeholders.

The Seminar may also include a paper, which will focus on how in the interest of optimal use of scarce water resources some countries can produce some crops and other countries can cultivate other crops depending on soil, moisture and other factors. To do that we need strong economic co-operation and a free trade market in agriculture. That means that we have to go for new forms of regional co-operation. The new global framework suggested by the World Commission on Dams in its report in 2000 for the best management of water and energy resources is certainly an approach to adopt.

The year 2012, is very appropriate for organizing this conference in view of a couple of political developments taking place. The World Water Forum will take place in France. This will lead to a major reassessment of the whole water scene in the world. Second, the Swiss Parliament has specially allocated authority and support to the government to find solutions to the world’s water problems. Singapore will also give a big push. They have their annual version of World Water Forum. Third, Israel’s technologies will hit the market. Hence it is high time to organize a seminar on sharing of river water at Pondicherry University, which has all necessary infrastructures for successfully conducting this kind of relevant academic meets.

Tentative Topics for Discussion

Water as a Source of Economic Development and Technological Advancement

1. Sharing of River Water: A Means of Regional Cooperation
2. Sharing of River Water with Pakistan
3. Sharing of Water Resources with Nepal
4. Sharing of River Water with Bhutan
5. Managing Water Controversies with Bangladesh
6. Role of Provinces in Water Sharing with Neighbours
7. Role of the SAARC in Managing the Issues of Water Sharing
8. Need for Engaging Civil Society
9. Need and Prospects for Water Sharing Agreements

Programme

Day One: Thursday, April 19, 2012

Inaugural Session: 10.00-12.00 Noon (UMISARC Auditorium)

- Registration** : **9.00 – 9:45 a.m**
- Opening Remarks** : **Prof. N. K. Jha**
Director, UMISARC & Dean, School of Social Sciences &
International Studies, Pondicherry University
- Inaugural Address** : **Prof Ramesh Dadhich**
Member Secretary
Indian Council of Social Science Research (ICSSR),
New Delhi
- Keynote Address** : **Ambassador Ms. Meera Shankar, IFS (Retd.)**
Former Indian Ambassador to the US
Ministry of External Affairs, New Delhi
- Special Address** : **Prof Pushpesh Pant**
Former Dean, School of International Studies
Jawaharlal Nehru University, New Delhi
- Special Address** : **Prof Varun Sahni**
Former Vice Chancellor, University of Jammu
- Presidential Address** : **Prof. J. A.K. Tareen**
Vice Chancellor
Pondicherry University
- Vote of Thanks** : **Dr. A. Subramanyam Raju**
Associate Professor, UMISARC
Pondicherry University

Campus Visit: 12:30 -1:00 p.m

Lunch Break: 1.00 -- 2.00 p.m

Working Session – I: An Overview

2:00 – 4:00 p. m

Chair: Prof. K Warikoo

Panelists

Paper Titles

- Prof Varun Sahni : Climate Change and Water Issues in the South Asia Region
Dr. K C Sreekumar : Trans-Boundary River Water Sharing and Enhancement of Regional Cooperation in South Asia
Dr. Sunil Sondhi : Water Insecurity and Weak States in South Asia
Mr. Khursheed Ahmad Wani & Ms. Shyna V V : Water as a Pathway to Peace in South Asia
Dr. N. K. Kumaresan Raja : Depleting Global Commons and Threat of Human Security: The Case of River Water Resource Management in South Asia with Special Reference to India

Tea Break: 4:00-4:15 pm

Visit to Auroville: 4.15 - 6:15 p.m

Dinner at 7:30 p.m

Day Two: Friday, April 20, 2012

Working Session – II: Pakistan

9:30 a. m – 11:00 a. m

Chair: Prof. P. Moorthy

Panelists

Paper Titles

- Prof. K. Warikoo : India-Pakistan Water Dispute over Sharing of Indus Waters
Dr. Sudhir Kumar Singh : Inter Province Water Disputes in Pakistan
Prof. P. Moorthy & Mr. Khursheed Ahmad Wani : Critical Review of Indus Water Treaty: A Current Flashpoint between India and Pakistan
Mr. D. Sendhilkumar : Application of Indus Water Treaty to Resolve the Afghanistan and Pakistan Kabul River Problem

Tea Break: 11:00 – 11:15 a.m

Working Session – III: Nepal & Bhutan

11:15- 1:00 p.m

Chair: Prof. Arvind Kumar

Panelists

Paper Titles

- Prof. Sangeeta Thapliyal : Trans-boundary Rivers of India and Nepal: Sharing Resource, Anxieties and Complexities

- Prof. B.C. Upreti : India- Nepal Water Resource Sharing: Issues, Problems and Common Concerns
Ms. Trishna Jaishi : Peace through Water Sharing in South Asia: A Case of Bhutan
Dr. K. Manikandan & : River Water Sharing between India and Nepal: Opportunities and
Dr. D. Purushothaman Challenges

Lunch Break 1:00- 2:00 pm

Working Session – IV: Bangladesh

2:00 - 3:30 p.m

Chair: Prof. B.C. Upreti

Panelists

Paper Titles

- Dr. Sanjay Bharadwaj : Water Sharing Issues between India and Bangladesh since 1996
Mr. Abu Sala Md. Yousuf : Bangladesh-India Water Negotiations: Political and Institutional
Dr. B.B. Biswas Challenges
Mr. Gaurav Kumar Jha : Water Sharing in South Asia: India's Emerging Challenges with
Bangladesh
Mr. Abiderda Md. Abdujjaher: The Water Sharing of the Ganga and Teesta Rivers between
Indian and Bangladesh: The West Bengal Factor

Tea Break: 3:30 – 3:45 p.m

Working Session – V: China

3:45 –5:00 p.m

Chair: Prof. Sangeeta Thapliyal

Panelists

Paper Titles

- Mr Amit Ranjan : China's Threat to India's Water Security
Dr. Binoda Kumar Mishra : China Can be the Cause of South Asian Water Crisis
Prof. Arvind Kumar : Politics of Water Sharing in Regional Security in South Asia:
Bridging Differences among Nations

Day Three: Saturday, April 21, 2012

Working Session – VI: 9. 30—11. 30 a. m.

Role of Provinces, Parliament and Science & Technology

Chair: Prof. Lazarus Samraj

Panelists

Paper Titles

- Dr. Tridivesh Singh Maini : Why Provinces Cannot be Ignored in Water Disputes
Dr. S. Prabhakar : Indian Parliament's Role in Sharing of River Water in South Asia

- Prof. S. A. Abbasi : Conflicts Associated with Intra-national and International Water-Sharing: Can Science be of Help?
- Dr. Tasneem Abbasi : Concerns about the Adverse Impact of Damming Rivers: Is Small Hydro an Alternative

Tea Break: 11:30 a.m – 11:45

Wrap Up Session: 12.00 -- 1.00 p. m

Chair: Prof. M. Ramadass

- Introductory Observation** : **Prof. N. K. Jha**
Director, UMISARC & Dean, School of Social Sciences & International Studies,
Pondicherry University
- Brief Report** : **Dr. Pramod Kumar**
Assistant Professor
Dept. of Politics & International Studies &
Mr. Gaurav Kumar Jha, Research Scholar, DPIS
- Valedictory Address** : **Prof K Warikoo**
Founder, Himalayan Research and Cultural Foundation,
New Delhi & Professor of Central Asian Studies,
Jawaharlal Nehru University, New Delhi
- Felicitation** : **Shri S .Raghavan, IA & AS**
Finance Officer, Pondicherry University
- Presidential Address** : **Prof. M. Ramadass**
Director
Studies, Educational Innovations & Rural
Reconstruction, Pondicherry University
- Vote of Thanks** : **Dr. B. B. Biswas**
Research Associate
Southern Asia Studies Programme
Pondicherry University



List of Participants

External

1. Ambassador Ms. Meera Shankar, IFS (Retd.), *Former Indian Ambassador* to the United States of America
2. Prof. Ramesh Dadhich, Member Secretary, Indian Council of Social Science Research (ICSSR), **New Delhi**
3. Ms. Trishna Jaishi, Institute of Management, Thimphu, **Bhutan**
4. Mr. Abu Sala Md. Yousuf, Research Fellow, Bangladesh Institute of International and Strategic Studies (BISS), Dhaka, **Bangladesh**
5. Prof. B.C. Upreti, Director, Centre for South Asian Studies, University of Rajasthan, **Jaipur**
6. Prof. Pushpesh Pant, Professor in Diplomatic Studies, Centre for International Politics, Organization and Disarmament (CIPOD), School of International Studies, Jawaharlal Nehru University, **New Delhi**
7. Prof. Varun Sahni, Former Vice Chancellor, University of Jammu & Currently Professor in Center for International Politics and Organization, Studies, School of International Studies, Jawaharlal Nehru University, **New Delhi**
8. Prof. K. Warikoo, Founder, Himalayan Research and Cultural Foundation, New Delhi and Professor, Centre for South, Central, South-East Asian and South-West Pacific Studies, School of International Studies, JNU, **New Delhi**
9. Prof. Sangeeta Thapliyal, Professor, Centre for South, Central, Southeast Asian and Southwest Pacific Studies, Jawaharlal Nehru University, **New Delhi**
10. Dr. Sanjay Bharadwaj, Assistant Professor, South Asian Studies, School of International Studies, Jawaharlal Nehru University, **New Delhi**
11. Dr. Sunil Sondhi, Principal, Maharaja Agrasen College, University of Delhi, **Delhi**
12. Dr. Sudhir Kumar Singh, Assistant Professor, Department of Political Science, University of Delhi, **Delhi**
13. Mr. Amit Ranjan, Ph.D Student, South Asian Studies, School of International Studies Jawaharlal Nehru University, **New Delhi**
14. Dr. Tridivesh Singh Maini, Associate Fellow, Observer Research Foundation, **New Delhi**
15. Dr. S. Prabhakar, Joint Director Reporting, Lok Sabha, Parliament House, **New Delhi**
16. Dr. Binoda Kumar Mishra, Fellow, Maulana Abul Kalam Azad Institute of Asian Studies (MAKAIAS), **Kolkata**.
17. Dr. W. Lawrence S. Prabhakar, Associate Professor, Department of Political Science at Madras Christian, **Chennai**.
18. Dr. S. Manivasakan, Director, Centre for South Asia Southeast Asian Studies, University of Madras, **Chennai**
19. Dr. K. Manikandan, Associate Professor, Department of Defence and Strategic Studies and Research Centre, Guru Nanak College, Velachery, **Chennai**
20. Dr. Arvind Kumar, Professor and Head, Department of Geopolitics & International Relations and Director, Study Abroad Program, Manipal University, Mangalore, **Karnataka**
21. Dr. K C Sreekumar, Department of Political Science, University of Kerala, Trivendram, **Kerala**.

Internal

1. Prof. J A K Tareen, Vice-Chancellor, Pondicherry University.
2. Prof M. Ramadass, Director - Studies, Educational Innovation, Rural Reconstruction, Pondicherry University
3. Shri. S. Loganathan, Registrar, Pondicherry University.
4. Shri. S. Raghavan, IA & AS, Finance Officer, Pondicherry University.
5. Prof. N.K. Jha, Professor & Director, Southern Asia Studies Programme, UNESCO MS Institute of South Asia Regional Cooperation (UMISARC), Pondicherry University.
6. Prof S Gabriel, former Dean, School of International Studies, Pondicherry University
7. Prof. S. A. Abbasi, Professor & Centre Head, Centre for Pollution Control & Environmental Engineering, Pondicherry University.
8. Prof. P. Moorthy, Professor & Head, Department of Politics & International Studies, Pondicherry University.
9. Prof. P. Lazarus Samraj, Professor, Department of Politics & International Studies, Pondicherry University.
10. Prof. T. Subramaniam Naidu, Head, Center for Study of Social Exclusion and Inclusive Policy, Pondicherry University.
11. Prof. Venkata Raghotham, Professor & Head, Department of History, Pondicherry University.
12. Prof. B.B. Mohanty, Professor & Head, Department of Sociology, Pondicherry University.
13. Dr. B. Krishnamurthy, Associate Professor in Department of Politics & International Studies, Pondicherry University.
14. Dr. A. Chellaperumal, Head, Department of Anthropology, Pondicherry University.
15. Dr. V.T. Usha, Head, Centre for Women Studies, Pondicherry University.
16. Dr. R. Nalini, Head, Department of Social Work, Pondicherry University.
17. Mr. G. Rose, Assistant Professor, Department of Politics & International Studies, Pondicherry University.
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19. Dr. Pramod Kumar, Assistant Professor, Department of Politics & International Studies, Pondicherry University.
20. Dr. A.S. Raju, Associate professor, UMISARC, Pondicherry University.
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26. Dr. Gorakh Chawla, Assistant Professor, Department of Economics, Bharthidasan Government College for Women, Puducherry.
27. Mr. Sumit Kumar, Ph. D Candidate, UMISARC, Pondicherry University.
28. Mr. Gaurav Kumar Jha, Ph.D Candidate, Department of Politics & International Studies, Pondicherry University.

29. Ms. M. Premalatha, Centre for Pollution Control & Environmental Engineering, Pondicherry University.
30. Ms. Shyna VV, Ph. D Candidate, UMISARC, Pondicherry University.
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32. Mr. K.B. Thangavel, Ph.D Research Scholar, UMISARC, Pondicherry University.
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34. Mr. Bikashdev Chhura, Ph. D Candidate, UMISARC, Pondicherry University.
35. Mr. Mohammad Neam Poya, UMISARC, Pondicherry University (From Afghanistan).
36. Mr. Abdul Hai, UMISARC, Pondicherry University (From Afghanistan).
37. Mr. Najeebullah Hazem, UMISARC, Pondicherry University (From Afghanistan).
38. Mr. Abiderda Md. Abdujjaher, UMISARC, Pondicherry University (From Bangladesh).
39. Ms. Natasha Israt Kabir, UMISARC, Pondicherry University (From Bangladesh).
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68. Mr. Vinoth.B.S, UMISARC, Pondicherry University.
69. Mr. Pouchundaiyang Kahmei, UMISARC, Pondicherry University.

Trans-Boundary River Water Sharing and Enhancement of Regional Cooperation in South Asia

Dr.K.C.Sreekumar

Former Head, Department of Political Science, University of Kerala, Trivendram, Kerala

As life depends on water the scarcity of it can cause socio-political, economic, and environmental crises at national and international levels. The increase in human population and the unbridled exploitation of natural resources by mankind have adversely affected the availability of natural resources, especially water. It is idealistic to say that water belongs to the entire humanity. That could be said about any other natural resource. However, in the present global order of independent sovereign nation states, internationalisation of resources is unimaginable. Still, sharing of such scarce resources as water, which amounts to extending a helping hand, is conducive to have better relations with neighbours.

In this background I would like to look at:

- the predicament related to river water sharing among the nations of Continental South Asia – India, Pakistan, Bangladesh, and Nepal,
- the official policies initiated bi-laterally to resolve such issues,
- the limitations of these measures, and
- the possibility of creating the silver line.

As far as river water sharing between India and Pakistan is concerned it has to be said that India has an upper hand. Every year 190 billion cubic metres of Himalayan snowmelt flows through the river Indus. However, there can be alterations in the timing and the rate of the snowmelt due to such factors as global warming and environmental pollution. This can lead to a decrease in the availability of water. Since India has constructed dams in the upper part of the Indus, Pakistan would naturally doubt that the fall is due to the construction of these dams. Pakistan has accused India for damming of the Western rivers in the disputed regions of Jammu and Kashmir. Here answering the following questions becomes obligatory.

1. What are the causes of Pakistan's tension in this matter?
2. What are the major concerns of India?
3. How far both these are justified?
4. What could be done to ease tension and enhance peace and stability in this region?

Pakistan also dislikes India helping Afghanistan to carry out development projects along the Kabul River. So in this matter an assessment of the positions taken by both Pakistan and India becomes a must. In Afghanistan water infrastructure is thoroughly underdeveloped. So along with the US, the World Bank, the International Monetary Fund, and the Asian Development Bank India came forward to assist the Afghanistan Government. A developed and stable Afghanistan would be able to contribute towards promotion of peace and security in South Asia.

Here one may ask: How far an Af-Pak water treaty would sow the seeds of better understanding and promotion of peace and cooperation among Afghanistan, Pakistan and India?

Ever since its completion, India's Farakka Barrage across the Ganga has been a sore point in Indo-Bangladesh relations. The question of sharing the Teesta water with Bangladesh has affected Indo-Bangladesh relations adversely. The domestic pressure politics of India has a major role in this.

The Kosi River can make the Indo-Nepal relations better or worse. Three bi-lateral treaties have been signed by India and Nepal so far.

If the treaties signed for river water sharing by these nations are not sufficient to enhance regional cooperation in South Asia then one will have to think of having more intelligent and effective institution building initiated by unambiguous political vision informed by the unique history and culture of this region and supported by enlightened public opinion.

Water Insecurity and Weak States in South Asia

Dr. Sunil Sondhi

Principal, Maharaja Agrasen College, University of Delhi

In this paper it is argued that water insecurity represents deep-rooted issues that present significant risk factors for weak states in South Asia. Water insecurity implies low state capacity, particularly in regards to short and long term planning, insufficient institutions, and inadequate infrastructure. A deficit in water infrastructure and institutional capacity is symptomatic of broader incapacitation across other domains in the states of South Asia. The inability to secure water resources hinders economic growth and human productivity. Water insecurity places additional stress on intergroup relations, intensifying feelings of inequalities between groups, which further weakens the state's monopoly of legitimate use of force and increase demands for state allocated social welfare. Water insecurity therefore undermines economic security for the state, as well as livelihoods, food security, and human health and well-being, all of which create a negative feedback loop that can undermine the capacity and legitimacy of the states in South Asia.

Water as a Pathway to Peace in South Asia

Mr. Khursheed Ahmad Wani &

Ms. Shyna V V

Ph D Scholars, UNESCO Madanjeet Singh Institute of South Asia Regional Cooperation,
Pondicherry University

Water, one of the most important of all natural resources has emerged as a key issue that would determine whether South Asia is steered towards cooperation or conflict. Water poses both a threat and an opportunity for South Asian Region. Because of the rapid population growth and

intense climatic changes, the talks on future water wars are going on. But in fact, the instances on cooperation between riparian nations outnumbered the conflicts by two to one in the whole world. South Asia is the home of three densely populated river basins like Indus, Ganges and Brahmaputra. There are bilateral treaties and agreements, like Indus Water treaty, Ganges Treaty etc. Then what was wrong with the governments of the different South Asian countries? Why these treaties are not showing any spill over effect? The paper will try to answer these two questions. The narrow nationalism and the wrong management in the countries are creating troubles. This paper will try to find out the hindrances, which are blocking the South Asian countries to move in the right track of peaceful cooperation. It will identify the initiatives or lack of initiatives which regard to water sharing and water management in South Asia for building peace. India, the largest country in South Asia in different angles and is acting lower, upper and middle riparian country has to take initiative for making water as a tool to come closer to its neighbours.

Depleting Global Commons and Threat of Human Security: The Case of River Water Resource Management in South Asia with Special Reference to India

Dr. N. K. Kumaresan Raja

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Housing the second largest aggregate of impoverished population (30.84%) in the world, South Asian countries especially the Post-Colonial Countries need to revisit their respective institutional framework of Land Revenue Laws so as to foster sustainable development and Food Security. The postcolonial National Governments while asserting their titular sovereignty in inter Regional River water sharing, should equally focus on their inland river water management. While arguing for a comprehensive revamping of the existing Colonial Land Administrative System of India, with a viable participatory model of governance, the paper in addition also tends to identify the scope for cross cultural exchanges of best practises of water resource management across South Asian Countries especially India, Pakistan, Bangladesh and Nepal. The paper also argues for a joint institutional mechanism of governing CPR (Common Property resources) as part of regional cooperation. It is pertinent to mention that it has been projected that in the few decades potable water would be a cause for International Conflicts, it become paramount for each modern State to have a out of box approach in augmenting, conserving CPR inclusive of River Water to realise the dam of sustainable development and an all inclusive growth. In this aspect, taking clue from Nobel Laureate Elinor Ostrom's ideas of governing the commons in the millennium, the paper strive to give a viable roadmap for a better understanding of River Water management and the need for a greater understanding for a regional cooperation centred around river water management.

India-Pakistan Water Dispute over sharing of Indus Waters

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Commonly held view by Indian media, academics, policy planners and civil society, that the Indus Waters Treaty has been a success story of Indo-Pak relations, runs counter to the public and official perception of local people and politicians cutting across party/political lines in Kashmir. Kashmiris believe that Indus Waters Treaty has worked against the interests of Kashmir, as it puts conditions/restrictions on the usage of waters of Chenab, Jhelum and Indus rivers flowing through the upper riparian state of Jammu and Kashmir.

The J&K government publicly denounced the Indus Waters Treaty in late 1998 describing it “discriminatory” to the State. On 3 April 2002, the J&K Assembly cutting across party affiliations, called for a review of the Treaty. Those speakers who denounced the Treaty ranged from National Conference’s G. M. Bawan to BJP’s Shiv Charan Gupta and CPI (M)’s M. Y. Tarigami. The State government’s contention is that inspite of having an untapped hydro-electric potential of 15,000 MW, the State has been suffering from acute power deficiency due to restrictions put on the use of its river waters by the Indus Treaty.

The extremist and secessionist elements in the Valley stretch the argument further suggesting that the Government of India signed the Treaty to safeguard the interests of Punjab, Rajasthan etc. at the cost of the interests of J&K State. In fact, the recurring power shortage in the Valley was one of the issues which was played up to trigger anti-India sentiments in the late 1980s and afterwards.

A new disturbing element has been introduced in the local political discourse over Indus Treaty by Mufti Mohammad Syed and his party – PDP by pressing the claim of J&K state for compensation by Government of India of the losses incurred by the State in lieu of restrictions imposed by the Indus Treaty over the full use of waters of three rivers flowing through the State of J&K. Several Kashmiri political groups, instead of blaming Pakistan for obstructing the construction of Tulbul, Baghlihar and other projects, shift the onus on the Government of India and seek monetary compensation running into thousands of crores of rupees.

Inside Pakistan, both the politicians, extremists/militants and officials are of the strong opinion that possession of Kashmir is of fundamental importance to Pakistan, as it is the source of water resources. They link the survival of Pakistan’s economy to the availability of water from Kashmir’s rivers. The fact is that Pakistani leadership, right from 1947, has been unambiguous in its approach towards its claim over Kashmir, which it also hinged upon the necessity to fully harness the rivers flowing through Kashmir. Pakistan’s political leadership, military/Foreign Office establishment and other voices within Pakistan treat the issue of Indus Waters as inseparable from the overall Kashmir dispute.

There is a view in Pakistan, which was particularly harboured by former Pak President Musharraf, that the Indus Waters Treaty can be renegotiated as part of the full and final solution of the core Kashmir dispute on the basis of joint control over the territory of Jammu and Kashmir and its resources. This is again a strategy to trick India into ceding its sovereign rights over the

upper riparian state of J&K and its waters. As in the past, Pakistan is once again seeking to use water as a weapon to secure territorial concessions from India in Kashmir, which it could not otherwise gain through armed conflict/proxy war.

Whereas India has had no say, so far as the development and construction of Mangla, Bhasha and other dams inside Pak-occupied Kashmir and Gilgit-Baltistan region is concerned, Pakistan has succeeded in blocking the construction of Tulbul dam and hindering the progress of other hydel projects in the Indian State of Jammu and Kashmir.

Ironically, Pakistan, inspite of being the main beneficiary of the Indus Waters Treaty, has been decrying it and raising the “bogey of India using water as a weapon” in order to (i) internationalise the bilateral issues between India and Pakistan; (ii) obstruct the progress of hydel development/irrigation projects in J&K; and (iii) deflect attention from domestic tensions/conflicts between various provinces of Pakistan whether on Kalabagh, Bhasha and other dams.

Right from the beginning, Pakistan used Indus Waters issue as a political tool in its dispute over Kashmir being debated at the United Nations. All along, Pakistan’s policy remained to seek third party adjudication, which India was opposing. Whereas Pakistan exploited the Indus Waters issue as a political weapon. India viewed the settlement of Indus Waters dispute, as a means of bringing peace with Pakistan. To quote, Jawaharlal Nehru who stated in the Lok Sabha on 30 November 1960, “we purchased a settlement, if you like; we purchased peace to that extent and it is good for both countries.” And soon after, on 28 February 1961, Nehru lamented before Mr. N. D. Gulhati (who was leading the Indian delegation during the negotiations over Indus), “Gulhati, I had hoped that this agreement would open the way to settlement on other problems, but we are where we were.”

Now that India and Pakistan are moving towards normalisation of bilateral relations, Indus Waters and related issues (Tulbul, Baghlihar, Kishanganga etc.) should be included as part of the Composite Dialogue process between India and Pakistan. At the same time, India needs to make use of the existing opportunities and water availability in all the rivers of Indus system, without running the risk of violating the existing provisions of Indus Waters Treaty. This can be achieved only through proper coordination and synergy between respective states (Punjab, Haryana and Rajasthan) and between Central Ministries of Power, Defence, Planning Commission, NHPC, Border Area Development Organisations, J&K government and local governments like Ladakh and Kargil Hill Development Councils.

Mini- hydel projects, which can be set up at various places in Kargil, Leh and other parts of J&K State, need to be expedited. This assumes urgency in Ladakh, where Indian army is generating power by daily burning of 5,000 litres of diesel per day, which being a big source of pollution in the State, is a potential irritant in Ladakh-Indian Army relations. There is also need to take urgent measures to deal with the problem of accumulation of silt at Salal Hydel Project, Tulbul Dam, Kishen Ganga and other sites in Jammu and Kashmir, so that the actual potential for power generation and other uses in the State is achieved.

Inter Provincial Water Disputes in Pakistan

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In March 2001, Kofi Annan, then the United Nations Secretary-General, stated that “fierce competition for fresh water may well become a source of conflict and wars in the future”. This is a contentious statement. While some argued that water-related conflicts were near at hand as a result of climate change, population growth and weak water resource management, others noted that, during the last 50 years, international cooperation concerning water had increased significantly.

Pakistan came into being as an independent country in 1947 and before that it was part of the larger British India along with modern Bangladesh therefore all major rivers of the sub-continent were shared by all three segments of the sub-continent after independence. We are aware about the fact that Bangladesh came into being after 1971 war of independence against the Pakistani forces. After its creation Bangladesh has been confronting many river water disputes with India. Pakistan after independence had the same problem but it was improved a lot with the conclusion of World Bank mediated 1960 deal which still exists with contemporary changes. Indus is one of the best sources of fresh water in Asia. The river Indus remains the life line of Pakistani economy because entire agriculture sector is based on water supply from rivers.

Agriculture contributes almost one fourth of the economy of Pakistan. The river Indus with its five tributaries and the agriculture based upon this river system, has been the mainstay of the economy of the former north-western Indian territories, now constituting Pakistan. Three tributaries of Indus, namely Ravi, Bias and Sutlej enter Pakistan from India and the other two viz. Jhelum and the Chanab flow into Pakistan along with Indus, from the State of Jammu and Kashmir. The waters of all the above five tributary rivers join that of the Indus at Panjnad, irrigate the province of Sindh and discharge into the Arabian sea in southern Pakistan, at and around Keti Bandar in Sindh. Since Indus is the largest river and covers all four provinces therefore there are divergences of opinion about the distribution of water among all provinces. After independence however intra provincial rivalry erupted in Pakistan for the justice based distribution of water. After the dismemberment of one unit plan after the creation of Bangladesh and bifurcation of Pakistan, it was divided into four provinces namely Punjab, Sindh, NWFP and Baluchistan. Many dams were constructed during British era and United Punjab became hub of agricultural production. Many dams were created after the creation of Pakistan. But adequate distribution of water remains a bone of contention among all four provinces. In 1991 Water Apportionment Treaty was inked by all four provinces and the treaty became the parameter of the distribution of water among all four provinces. But smaller provinces like Sindh, NWFP and Baluchistan have raised their finger and voiced their concern and repeatedly insisted for proper distribution of water. In early 1990, the construction of Kalbag Dam was announced. But it could not visualize because of intense resistance by all three small provinces against dominating Punjab. Sindh opposed the construction of this dam on the river Indus on the apprehension that because its location will be in Punjab therefore its due share will be marginalized. In 1919 the Cotton Committee appointed by the government of India to settle the Sindh-Punjab Water dispute held that Punjab should not be given any waters from Indus river system till the results of

the projected Sukkur Barrage do not become evident. The 1919 government of India Act lay it down that the matters regarding Sindh-Punjab water dispute should be decided by no less an authority than the Viceroy of India himself.

Khyber Pakhtunwah also opposed the construction of this dam because it is unable to its allocated water from the Indus and it is additionally apprehensive that the construction of this dam will devastate its agriculture and infrastructure. Baluchistan being the lowest riparian accused Sindh for using its share of water and apprehensive of more disturbance in future.

River Kabul is also one of the important contributories of the Indus. It originates near Kabul and out of 600 KM it flows around 120 KM in Pakistan and submerge in Indus. Afghanistan and Pakistan have many divergences and water remains one of the important issues. Since 1979 due to the platform of many wars, Afghanistan remains unstable therefore it was unable to make any concrete policy to use its water resources. But since 2001, Hamid Karzai government is comparatively stable government and has constructed Salma dam on the river Helmand with Indian support [1300 KM] near Iran border and has planned to construct 12 dams on the river Kabul with Indian support near Pakistan border. It has threatened Pakistan because in case of constructions of dams on river Kabul it is certain that the flow of water to Pakistan will reduce. It may further aggravate conflict over water among provinces.

Most of the great world civilizations have been the gifts of the great rivers of the world. Disputes over waters of rivers have been occurring from time to time in world history. Thanks to the enormous development and more or less effective implementation of International Law about rights of co-sharers of river waters, most of the present day river water disputes of the world have been amicably settled. The cardinal principle of the river water law that has emerged out of centuries of intra-national as well as international litigation on the issue, is that the party at the upper side of a river (legally known as upper riparian) has no right to withdraw or divert water from the common river if it causes loss or injury to a party at the lower side (legally known as the lower riparian). Prof: H.A. Simth's famous work "Economic uses of International Rivers", which examines treaties between states since 1785, states that all these treaties proceed with the principle that works executed in the territory of one state, require the consent of another, if they injuriously affect the interests of the latter.

Pakistan is a unique country where all four provinces belong to different ethnicities. All three smaller provinces have often complains that Punjab is dominating the country in all the spheres including command over water resources. All these three provinces have also engulfed with secessionist movements. In the commercial capital city of Karachi alone 2100 people have been killed in different kinds of violence. Karachi is vital for Pakistan,s economy , contributing 42% of the GDP, 70% Income Tax, 62% sale tax to economy. It has become urban Waziristan.

Khyber Pakhtunwah has had old issue of Pakhtunistan. This issue has kept the bilateral relationship between Pakistan and Afghanistan thorny. Jia Sindh movements have been active in Sindh. These problems have reflected in water disputes among provinces. The devastating floods of 2010 and 2011 have killed thousands of people and created havoc. The components of global warming have further aggravating the situation. There are divergences over water among many states in India and other countries as well. But the situation in Pakistan is complicated due to mixing of many other issues. Lacks of direction, technological deficiency, sustainability of

autocratic system etc have further complicated the situation. A trust deficit situation over water sharing has been created among the provinces and it is detrimental for the all round development of the country.

Critical Review of Indus Water Treaty: A Current Flashpoint between India and Pakistan

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Water scarcity is a serious and growing problem throughout the world and the twin pressures, population growth and climate change, will intensify the problem. Nowhere the challenge of water scarcity is more visible than in South Asia. India and Pakistan have been at odds since the partition of the sub-continent in 1947. During the partition borders were drawn with little consideration to water resources. This division led to number of disputes in which India, an upper riparian, attempted to restrict or alter flows to lower riparian Pakistan. After prolonged talks, the constructive approach of Nehru and Ayub Khan, assisted by the World Bank, led to the signing of the Indus Water Treaty (IWT) in 1960. India got three eastern rivers (Ravi, Beas and Sutlej) and Pakistan got three western rivers (Indus, Jhelum and Chenab) with specific provisions to use the western rivers by India. The extant literature of both countries indicate that each side felt ,and still feels, that it had done the other side ‘one hell of the favour’. However, to regard the IWT as an epitome of the successful resolution of water issues between India and Pakistan is not entirely correct. The treaty despite its long history is not based on the principles of integrated basin management. It was a reluctant geopolitical division of waters and did not involve cooperative water sharing. Moreover, recent issues have brought the sustainability of the IWT under serious scrutiny. For the first time, in the treaty’s history of more than forty years, India and Pakistan had sought the service of a neutral expert to resolve their differences over the Baglihar dam. But there are other equally antagonistic disputes which are generating a lot of heat among both these countries, which include the Tulbul Navigation Project and Kishenganga Project, the latter one being under the consideration of the Court of Arbitration. Presently another issue Nimbo Bazgo project is being talked in Pakistan which may extend the list further. This paper will critically scrutinise the IWT under the backdrop of the current water related flashpoints between the two neighbouring states.

Application of Indus Water Treaty to Resolve the Afghanistan and Pakistan Kabul River Problem

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Nature does not respect national borders; yet human beings seem incapable of managing their affairs without them. Nature has also not endowed every place on earth or every nation with the same type and amount of resources. Herein lay the roots of interstate conflict and cooperation over essential and scarce natural resources, such as freshwater. In Central Asia both possibilities will continue to exist for a long time. Over the several decade the problem of water has remained

a serious threat to international human being community due to political motivation in south Asia and central Asia. Therefore treaty and agreement of Indus water between India and Pakistan shall be as a fantastic role model to resolve the water problems remaining between Afghanistan and Pakistan over sharing the Kabul River water which flows from the Indus river of India. Seriously there is no alternative manipulation of an idea and suggestion for solve the both country water sharing problem except follow the Indus treaty while international community also fluctuating to come forward to solve the problem spending manpower and money investment . Based on the international law and neighborhood affinity and love, India has been taking all kinds of humanitarian assistance to Afghanistan especially building dam and irrigation cannels on the bank of Kabul river, to avoid water scarcity, boost up farming sector and reduce opium cultivation in Afghanistan to prevent drought and famine through accessing of more water from the Kabul river. So to bring out Afghanistan and Pakistan very near to solve this problem, the India Indus water treaty with Pakistan shall be as an appropriate way and tools.

Trans-boundary Rivers of India and Nepal: Sharing Resource, Anxieties and Complexities

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In the Indo- Gangetic plains nearly 6000 rivers and streams flow from Nepal to India. They not only share the precious natural resource but also sedimentation, floods and ecological hazards. Floods in the plains of Bihar are a recurrent feature that brings colossal damage to life and property. Hence, it is imperative that India and Nepal cooperate with each other in not only harnessing the water for power generation but also in the field of water management, irrigation and inland water ways.

It is estimated that the hydropower potential of Nepal is around 83,000 MW of which the actual production is only 240 MW per annum, which is less than 1% of the output. Nepal's per capita consumption of electricity is as low as 19 KWH. Only 15% of the population has access to electricity. Harnessing of Nepal's water resources for power would not only meet its energy requirements but will also be beneficial in earning revenue by selling excess power to India. An energy deficit India would be the logical and eager buyer. Currently India is purchasing nearly 50 MW of power from Nepal from the existing 19 transmission points for the exchange of power along the Indo- Nepal border made possible by the interconnections at 11 kv, 33 kv and 132 kv.

The earliest cooperation on water resource dates back to 1920 when Allahabad Presidency and the Government of Nepal signed an agreement for the construction of Sarda barrage for primarily developing irrigation facilities and generating hydropower at a low key level. Since the formulation of diplomatic relations between Nepal and Independent India, water resources has been recognised as an area for mutual cooperation. India was the first country to help Nepal in developing its water resources. India constructed the Kosi barrage in 1963 and Gandak in 1970 that helped both the countries enormously in irrigation from flood control. In 1976 a barrage was

built on Kamala. In 1978 India constructed Chandra canal on Gandak. The first major hydro-power project was built at Trisuli in 1962 with a capacity of 21 MW of power at a time when the total capacity of Nepal to produce hydro- electric power was 4.56 MW. A High-level task force was set up in 1991 to discuss on sharing of water resources which emphasised on cooperation in Tanakpur barrage, Kosi High dam and development of Medium term power production schedule instead of high cost mega dams. However the subsequent agreement was signed on a mega project. An agreement on Tanakpur barrage signed in 1991 was subsumed under the Treaty of Integrated Development of the Mahakali basin, signed in 1996, that is inclusive of the construction of the 2000 MW of Pancheshwar power project. On 1997 an agreement concerning the electric power trade was signed to develop power sector through participation of local and foreign investors in their respective countries.

It is noteworthy that almost all the treaties and projects on hydropower between India and Nepal have been controversial. Mutual distrust and suspicion regarding the sharing of 'benefit' between India and Nepal have delayed the joint efforts to develop and utilise the hydropower potential. Initial projects on Kosi and Gandak gave an impression to Nepal that it did not receive a fair share in irrigation in lieu of its agricultural land or compensation paid to its farmers. It was considered advantageous to India in terms of its control during construction, operations and maintenance. The feeling of unfair treatment has acted as a precedent for all the projects and agreements signed henceforth.

The problems related to riparian rights have further hampered progress in harnessing of water resources as all the major rivers of Nepal are international rivers flowing towards India thus making the former as the upper riparian and the latter as the lower riparian country. Issues associated with the international rivers in terms of riparian rights, understanding on water sharing, concept of Common River, Border River, International Rivers etc keep cropping up during negotiations. For example Nepal had shown apprehension on the concept of 'Common River' contained in the Joint Communiqué signed between the two countries during the visit of Prime Minister K.P. Bhattarai in June 1990. It was considered as a surrender of Nepal's rights on water resources. Apprehensions of such nature whether justified or not affect joint cooperation. In the new constitution of 1991, Nepal adopted a cautious approach in managing its water resources and thereby incorporated article 126 that obligates all agreements on natural resources signed with a foreign country to get ratification by two- thirds majority in the Joint session of the parliament. Still, the treaty on Mahakali that was signed after an all-party consensus faced controversy with in Nepal at the time of ratification in the Parliament. The Detailed Project report of the Pancheshwar multipurpose project is yet to be completed which further complicates the matter. Narrow political interests, petty party politics and lack of mutual trust between the two countries are some of the reasons for the tardy growth of the developmental projects. Fears of unfair treatment based on asymmetrical relationship can dissipate if emphasis is placed on mutual benefits accrued through development projects.

India-Nepal River Water Sharing: Issues, Problems and Concerns

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The sharing of the Himalayan river waters forms an important segment of the India-Nepal relations. It has also become a contentious issue between the two countries resulting into loss of precious natural wealth. It is said that the unutilised river waters is a loss for ever and this is what has happened in the case of Nepal.

The nature has placed India and Nepal in a peculiar position as far as the mighty rivers of the Himalayas is concerned. Nepal's rivers flow from north to south and they all enter into India after flowing through the Nepalese territory. Thus Nepal's three major river systems: Kosi, Gandaki and Karnali form major tributaries to the Ganges river system. Both India and Nepal share these river waters and hence they offer tremendous scope for hydro-power generation and irrigation in both the countries. Nepal's is next to Mexico in terms of hydro-power potential with a capacity to generate 83000 M.W. hydro-powers. The geography has placed both the countries in a situation that India alone can take benefit of the hydro-power generation from the Nepalese rivers. The other countries of the South Asian region may seek this advantage only through India. This has been an important issue from the Nepalese perspective. However, India alone suffers from the sorrow from these rivers in the form floods, sedimentation, water logging and water borne disease. Therefore, it is not any an issue of water sharing but water management as well.

Unfortunately even the early river water resources development projects like Kosi and Gandaki raised controversy in Nepal. The Mahakali Treaty which was concluded in 1997 is yet to be implemented. There are three projects which have also not been it appears that Nepal has become over conscious about its water wealth. The Nepalese ruling elite understand neither it very well that the country can neither exploit its water wealth on its own nor it can consume the whole of the hydro-power. India can be a useful partner as she can purchase the surplus energy as well as provide financial and technical assistance for the exploitation of river waters. Nepal's own development rests upon building energy pool. However, the river water issues between the two countries are highly politicised. Nepal is sensitive about its water wealth and has proved to be trust deficit vis-a-vis India. Since India forms a lower riparian state in the context of Nepalese rivers it has its own interests, particularly in terms of flood management. Nepal has pleaded for equitable distribution of water resources, equitable share in water management etc., but India has not accepted Nepalese approach that her surplus water after equitable sharing is purchased by India that Nepal would not be able to utilize on its own. Nepal looks forward to follow a multilateral approach to which India does not agree as there are specific bilateral interests' involved in water sharing. Both the countries have also failed in evolving a common flood management policy.

India- Nepal relations are a complex issue and the sharing of waters also becomes a victim of these complexities.

Nepal needs to look at its water wealth from a commercial point of view and trust India. The two countries can still evolve a mutually acceptable water sharing policies with India's initiatives and magnanimity.

Peace through Water Sharing in South Asia: A Case of Bhutan

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“Water is life,” is said in every language in the world. And yet water is threatened today: rampant demographic growth, anarchic urbanization, disturbed climate, pollution, etc. These threats are caused by human and their erratic behavior, which is water’s primary enemy. We are, thus, confronted by a major challenge: the demand for water is ever-increasing and, at the same time, we must protect, value, stock and even re-use water resources. We must establish harmonious sharing of water between man and nature.”

Loic Fauchon

President of World Water Council

A Study of Water Sharing Issue between India and Bangladesh Since 1996

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After the primary survey of the history of pre and post-independent states of South Asia, it has been identified that the contesting identities have been inflamed by other crucial issues viz. *water sharing* which has a vital socio-economics implication for the country and annoyed the people of lower riparian to build a hostile perception towards upper riparian. Particularly, the construction of Farakka barrage across the Ganges River was the epicenter of the entire water dispute. Attempts at unilateral exploitation of the trans-boundary water resources led to inter-state conflicts that spilled over to other areas of bilateral disputes between the states.

The significance of water in shaping up lives and civilization has been globally recognised. Growing scarcity of water resources, increasing population and poor water management in developing countries have increased the demand for water resources, which in terms became a ground for breeding conflict among nation states. These conflicts are manifested at inter-state and intra-state levels, but resolving conflicts over its equitable share and its management still remains a challenge before the world community. The nature of trans-border rivers between India, Pakistan and Bangladesh and the river basin management have given rise to several disputes between these riparian countries after the partition of India in 1947. As countries struggle over the already existing conflicts, in the absence of any regional effort, approach and understanding, new conflicts (viz. Tipaimukh) are also cropping up. However, in the process of developing security of water resources, these states have reached on major treaties viz. Indus Water Treaty with Pakistan (1960), Mahakali Treaty with Nepal (1996) and Ganges Water Treaty with Bangladesh (1996).

Ganges river is the largest trans-boundary river in South Asian region. Its basin spreads over Nepal, India and Bangladesh. The Ganges originates from the southern slope of the Himalayas. It flows through seven Indian states before entering into Bangladesh. The inhabitants of the Gangetic plains

in Bangladesh and India are dependant on this river for agriculture, domestic and municipal uses of water, fisheries, industries, forestry, and navigation which is most common mode of transportation. Ganges case represents the world's largest contentious river disputes and it involves the fate of the world's greatest concentration of the poor people living in the catchments area of the river.

India and Bangladesh are sharing 54 trans- boundary rivers. The water dispute starts from the Indian decision to construct a barrage across the Ganges at Farakka in 1951. This is in order to divert water to the Hoogly (Bhagirathi) by a 42-kilometer long feeder canal to maintain its navigability, which is being hampered due to siltation in the lean season. The then Pakistani government also resisted that the project would prevent the actual flow of Ganges and would have serious repercussions in its territory. Things had changed after the liberation of Bangladesh in 1971 where the two governments were pre-occupied with the Ganges water sharing issue and signed a partial accord in 1977 followed by Memorandum of Understandings in 1982 and 1985.

The post-1990 era witnessed a remarkable shift in India's neighborhood policy. The mutual animosity was replaced with the idea of mutual cooperation. The former Indian Prime Minister I K Gujral was the forerunner of this idea. The propound idea of mutual co-operation without expecting reciprocal response from the neighbors laid down the foundation of two river treaties viz. *Mahakali* and Ganges Water Treaty with Nepal and Bangladesh respectively. The signing of the Ganges Water Treaty in 1996 has concluded four-decade long water dispute. Even though, in Bangladesh, the civil society groups, media and academicians are participating in the whole discussion regarding the provisions and working of the treaty and sharing of other trans-boundary rivers viz. Teesta. In their perception, the treaty did not consider the 1972 World Bank study about big dams and its downstream impacts. The first lean season flow of Ganges river also created scepticism among the Bangladeshis about the treaty. Many of the Bangladeshis believe that India is still 'unilaterally' withdrawing water from Farakka barrage.

In fact, the treaty has secured more or less 50:50 sharing formula and also created a platform for discussion about other trans-boundary rivers. Bangladesh did not demand to review the treaty in last thirteen seasons, the Joint River Commission (JRC), which is supposed to meet four times a year, although failed to keep the meeting schedule. It appears that the lack of political will to deal with the emerging issues impacted the smooth functioning of the JRC. Moreover, Indian river linking project has created strong fear and scepticism among Bangladeshis. Due to this issue, the 36th JRC meeting crumbled down. In a nutshell, the people's perception and the fluctuating political relationship between India and Bangladesh seems to be working as a stumbling block for trans-border water management.

Bangladesh-India Water Negotiations: Political and Institutional Challenges

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Bangladesh and India share 54 common rivers in the Himalayan system. For thousands of years these rivers are the life line of the people of Bengal. But, the scarcities of water and diversion by India have raised fear and security concerns among the people of Bangladesh. In this respect, Bangladesh-India formed Joint River Commission (JRC) in 1972. After a long debate, both the countries signed the Gangese Water Sharing Treaty in 1996; it resolved the debate of water sharing of the river of Ganga. The water sharing of other rivers is one of the contentious issues between Bangladesh and India. Moreover, India's proposed dams and river linking projects instigates concerns in Bangladesh. Indian authorities assure Bangladesh that they would not do anything harmful for the lower riparian country, Bangladesh. But, both the countries fail to formulate any effective approach for addressing the concerns of other country. In this respect, the objective of the paper is to evaluate the existing political and institutional challenges for water sharing negotiations between Bangladesh and India. At the same time, the paper tries to propose policy recommendations for promoting viable and effective institutional frameworks to find out a successful negotiation frameworks between the countries.

Water Sharing in South Asia: A Case of India's Emerging Water Challenges with Bangladesh

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Rising population, scanty rainfall, disregard for environmental resources and their mismanagement, have put huge pressure on availability of water in the world. This is especially true in South Asia, which holds less than 5 percent of annual global renewable water resources that too is endangered due to spread of irrigated farming, water intensive industries and demand of rising middle class. With over 400 million people living in the basins of Ganga, Brahmaputra and Meghna region, and no agreement in 53 out of 54 common rivers across India and Bangladesh, water sharing is a contested issue. Water woes necessitated India to initiate construction of Farakka barrage, sometimes called "Kashmir of India-Bangladesh relations", as early as 1951. Similarly disagreements have been hovering over proposed Tipaimukh dam, negotiation over Teesta sharing. This has not been appreciated in Bangladesh. Further, existing agreements have also not been welcomed in both countries.

Surprisingly, however, despite the growing prospect of conflict between India and her neighbours over water resources, a systematic effort has hardly been done in this regard. The proposed paper is intended to fill this void. This paper attempts to understand the role of

international rivers as a source of conflict between India and Bangladesh and to determine status of water resource in the concerned areas, causes and consequences of water scarcity, and alternatives available to deal with the problem.

The Water Sharing of the Ganga and Teesta Rivers between Indian and Bangladesh: The West Bengal Factor

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Water plays an important role in India Bangladesh relations. Both India and Bangladesh share 54 common international rivers. These rivers provide fresh water for irrigation in both the countries. The availability of fresh water as per as the demand is concerned is low. As agriculture remains one of the major sources of employment and of food security, water sharing between the countries gets utmost importance in bilateral relations. Therefore, sharing the limited water resource between the countries has emerged as a dominant factor in determining the relations. In India-Bangladesh water relations, the Indian state of West Bengal is upper riparian and Bangladesh is lower riparian. Thus, the India Bangladesh water sharing issue ultimately involves West Bengal. As the Indian constitution requires the central government to consult with states with regard to foreign policy related to the states' interest, West Bengal comes to the forefront to the talk of water sharing between India and Bangladesh. Moreover, the coalition government in India has increased the influence of states on foreign policy especially with regard to their interest.

Critiques argue that the benefits of water sharing between India and Bangladesh have been over politicized in West Bengal and Bangladesh. Each country has been trying to get the largest share, leading to more controversies. Most of the negotiation processes have therefore failed to lead to a basic framework for sharing the rivers for peace, security and regional cooperation. Disagreements about how our limited and common water resources should be used are not unusual, but proper solutions must be found through mutual understanding and negotiations that are socially, economically, politically and environmentally acceptable. However, when political altruism and respect for each other concerns is understood, the treaty becomes a reality. In resolving Indo-Bangladesh Ganga water sharing dispute, the then Chief Minister of West Bengal Jyoti Basu had played a very important role. It is argued that without his active cooperation, the treaty would have been very difficult to sign. This become clear when present Chief Minister of West Bengal, disregarded the Indian Union government efforts for sharing the water of Teesta, which resulted into failure of the effort.

In this background, this paper examines the role of West Bengal in influencing India's policy towards Bangladesh with special reference to Ganga and Teesta Water sharing issues. The first section analyses the linkage between federalism and foreign policy theoretically; the second section overviews comparatively the role of West Bengal in sharing Ganaga and Teesta water between India and Bangladesh; and the final section recommends the way through which the influence of West Bengal can be utilized positively for mitigating conflict and enhancing cooperation.

China's Threat to India's Water Security

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India and China are systemic rivals. Their rivalry is clearly visible in all sphere, except in trade and commerce. This is because its in mutual interest to cooperate and gain from it. Also their cooperation validates the neo-realist logic that rival states do co-operate when they have mutual benefit out of that co-operation. Trans-border river water is source for their conflict because its limited and on it depends their future economic growth. As an upper riparian China has an edge and it is using that edge without any care about the middle or lower riparian countries.

Although India has entered into water sharing treaties with all of its neighbours with whom it shares important trans-boundary river systems, it doesn't have one with China, which is an upper riparian on the Indus, Brahmaputra, Mahakali, Gandaki, and Kosi Rivers, all of which originate in Tibet. Public statements indicate that China believes in a policy of absolute sovereignty over these rivers.

Regulation and control of water flows from Tibet to India, however, favour China's strategy. China can fulfil its own water demands by diverting resources from Tibet, also giving China the means to theoretically put a brake on India's economic growth. Thus through its water policies it could easily inflict great damage to India.

In her book, *The River Runs Black*, Elizabeth Economy noted that China's spectacular economic growth over the past two decades has dramatically depleted the country's natural resources and produced skyrocketing rates of pollution. She also points out that almost all of China's important have been badly polluted. According to the World Watch Institute, in 1999 alone, the water table under Beijing fell by 2.5 meters. Since 1965, it has fallen by about 59 meters or nearly 200 feet.

To combat the falling water tables and the draining of the Yellow River, China has been involved for more than two decades in a huge plan to divert water from the rivers originating from Tibet. Damming and diversion of the Brahmaputra is the first step. Already, the Chinese government has been involved in extensive damming of tributaries of the Mekong as well as the main river itself.

In 1999, Jiang Zemin, then China's paramount leader, announced *xibu da kaifa*, or the Great Western Extraction, which would transfer huge volumes of water from Tibet into the Yellow River. The politburo and 118 Chinese generals leant their support to the project, which included the *Shuo-tian* (reverse flow) canal as the solution to chronic water shortages by carrying water hundreds of kilometers to China's dry north and northwest. Some reports indicated that the Chinese planned to use nuclear explosion to blast a tunnel through the Himalayas to facilitate the project.

The Brahmaputra, known as the Tsangpo in China, is a trans-boundary river flowing into China, India and Bangladesh. It originates in the Jima Yangzong glacier near Mount Kailash in Tibet where it is called the Tsangpo Yarlung, enters into Arunachal Pradesh, where it is called the

Dihang, then flows to Assam, a very small part of west Bengal and finally enters Bangladesh, where it is called the Jamuna.

At least two potential projects which Chinese are in process of building on the Tsangpo have deep consequences for northeastern India's water supply. One is a 540 megawatt run-of-the-river dam on the great bend of the Tsangpo in eastern Tibet near Mt. Namcha Barwa, where it turns south to enter India. It is expected to be the world's biggest hydroelectric dam, generating 38,000 megawatts of energy – twice the capacity of the Three Gorges Dam. The second is to the east of Lhasa at a place called Shoumatan.

Both of these dams as projected would be multipurpose ones capable of regulating Brahmaputra river flows according to China's needs. Besides producing electricity the dam would also divert water to China's southwest, which requires water for drinking and agricultural activities. They are part of China's US\$62 billion 'South-to-North water diversion project.

India has never made a serious attempt to engage China on water issues, only maintaining a hydrological data sharing treaty with Beijing. India must realize the fact that once the water problem became serious it will be very difficult to engage China because at that point of time China will not get ready to make any compromise with its own water security for India.

China Can be the Cause of South Asian Water Crisis

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China may not be part of political South Asia but geographically it is very much part of it. This is particularly true to China's position in causing natural resource crisis in South Asia. Water, the basic element of human security, is the issue in focus. China (through its TAR) shares Brahmaputra waters with India and Bangladesh. Any use of water from this natural source should be done keeping in mind the requirement of all the stakeholders. Though there are legal norms established by the international community in this regard, some have dared to violate this provision. Thus, thus one cannot guarantee that no nation can violate the international law again. Particularly when one player develops a desperate requirement of water that can be met with Brahmaputra water, he would not hesitate to use major portion of the water without care for the requirement of others.

China, in this case has a clear compulsion in hand. Its northern part is water starved and the intensity of this starvation is only going to increase in the near future. There is only one alternative now available to China is the water tap of Asia, i.e. Tibet. This is one of the most important reasons for China to assert its control over Tibet. The Chinese have been, till date, denying that they have any such plans to divert waters from Brahmaputra right now. But

evidence is there to suggest that the plan has been discussed and even budget has been prepared. The only thing needed is a 'political will' which will come when desperation sets in.

This would have huge humanitarian consequences for South Asia - India and Bangladesh. This, along with direct impact on 40 percent of population of India, would impact the entire Bangladesh. The existing water problem between India and Bangladesh would be more complex. Both India and Bangladesh in a way would be at the mercy of the Chinese, Therefore, there emerges a clear case for South Asia to unite and ensure equitable share from this natural resource.

Politics of Water Sharing in South Asia: Bridging Differences among Nations

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The contemporary debates on water sharing in South Asia have reflected the growing concerns of the nations more particularly Pakistan, Bangladesh, India and Nepal. The existing framework in the form of treaties on water sharing especially at the bilateral level between India and the rest of the countries including Pakistan, Bangladesh and Nepal to a greater extent has raised several questions on the efficacy of mutual understanding. The Indus Water Treaty between India and Pakistan has demonstrated that water gets priority even during the crisis times. Pakistan's linkage of their definition of nuclear threshold with the Indus Water Treaty clearly indicated the primacy which Pakistan puts and expects India to reciprocate. An analysis will be done whether the politics of water sharing have helped in bridging the differences among nations in South Asia.

Bangladesh seems to be the most enthusiastic about a sub-regional water sharing arrangement. However, this proposal of sub-regional water sharing arrangement includes India, Bangladesh and Nepal. It excludes Pakistan and to a greater extent Pakistan does not seem to be interested in changing the status quo. It has been getting the maximum benefit from the current bilateral framework on water sharing arrangement. The feasibility of a tri-nation initiative (India, Bangladesh and Nepal) on a common basin management of rivers is being debated among the members of academic community. China might be included in this feasibility study because it is the source to the Brahmaputra, which is the mightiest river in the eastern part of the Indian subcontinent. China has been showing absolute unwillingness to discuss any proposal on sharing natural resources.

Unfortunately, India-Bangladesh interim treaty on sharing on sharing Teesta waters has been put in abeyance. Such interim treaty would certainly have enhanced the mutual understanding at the political level and could have made a base for sub-regional water sharing arrangement. India would require assessing the implications of such water sharing arrangement and seeing how best it can bring China under the ambit so that it can help in bridging differences among nations. The paper would make a modest attempt in analyzing the politics of water sharing in South Asia. It

would certainly be a daunting task for India to maximize its interests in water sharing in the current scenario.

Why Provinces Cannot be Ignored in Water Disputes

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Off late, provinces have begun to play an important role in India's relations with neighbours in the East, West and South – albeit in different ways. Some states such as West Bengal and Tamil Nadu have taken a more belligerent line than Delhi while others such as Punjab, Tripura and Meghalaya – to mention a few – have sought to play the role of a bridge with neighbouring countries.

This paper will argue for a greater role for border provinces in water issues, in this changed environment, not just because of geography and a shared culture but also similar agricultural practices as well as poor water practices which have led to water deficiencies. Illustrations will be used, especially from the two Punjab's, to bolster the argument. The paper will also make recommendations for sustainable cooperation and coordination on water issues between these provinces.

Indian Parliament's Role in Sharing River Water in South Asia

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Today, India has earned the glory of being the largest working parliamentary democracy in the world. The founding fathers of the Constitution of India opted for a parliamentary form of Government in which Parliament is the supreme legislative body and the Executive is accountable to Parliament. Parliament wields enormous power in the governance of the country. The actions of government can be questioned and scrutinized by Parliament in its functioning.

Parliament has been equipped with many constitutional provisions to rake up issues concerning the river water sharing with our neighbours. These provisions should be made to more use. Parliament should play an intensive and apex role in the issues like sharing of river water with Nepal, Pakistan and Bangladesh with whom we have an understanding of river water sharing. By bringing up more and more issues before Parliament concerning the water requirement of the country can certain revitalize Parliament's contribution to democracy.

Over the years, Indian Parliament had played its role in taking up the issues concerning share of river water with its neighbours, namely, with Nepal, Pakistan and Bangladesh. The debates that had taken place in Lok Sabha bear testimony to this. Though we can say that the discussions and

debates concerning sharing of river water with its neighbours are few and far, unhesitatingly one can conclude that taking it up with the Government by the Members of Parliament itself shows that there is a concern in the public mind about the perception with which the Government is tackling it and at the same time, public and Members of Parliament too would like to know as to what is the status in regard to sharing of water with its neighbours. Parliament's procedure, debates and extra-Parliamentary activities, however, indicate that Parliament has a definite role in tackling the water sharing issues with our neighbours though foreign policy comes under the purview of the executive.

Apart from Parliament, Parliamentary Standing Committee on External Affairs and Water Resources and Consultative Committees of Ministry of External Affairs and Water Resources too plays its part in taking forward our policy on river water sharing with its neighbours by discussing the policy issues concerning river water sharing in detail, apart from other issues brought up before it from time to time.

Interventions in Lok Sabha had brought to the limelight the issue of river water sharing with our neighbours. This debate has helped India in evolving a strategy to deal with our neighbours. The Government on its part has come out with the factual information on the issues asked by the Members. Debates certainly throws light on the issues in vogue and helps Parliament to know as to what the Government is thinking on an issue and as to how it is going to resolve them.

Strenuous efforts are on the anvil to make Parliament effective. It is to be noted that Parliament could discuss only five times (1988, 1990, 1992, 2003 and 2010) the Demands for Grants of the Ministry of External Affairs. Considering the importance of nuclear disarmament, renewed efforts should be made to discuss the whole gamut of nuclear disarmament in Parliament more often than not. At present, only a miniscule portion of the policy aspect is scrutinized by the committees with the result majority of the important aspects of different ministries and departments are left out and never come in the domain of discussion and debate in the committees. This trend has to be changed for good. We should also strive for having more number of sittings of Parliament. As is well know, Parliament is bestowed by our Constitution with powers to oversee the functioning of the executive. This very purpose would be defeated if the sittings of Parliament are few and far between.

Parliamentary debates, interventions should be made more effective to protect the interests of the India. Parliament has invariably served the national interests.

Conflicts Associated with Intra-national and International Water-Sharing: Can Science be of Help?

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Beyond what height a dam shall become 'unsafe'? To what extent flow in a river can be reduced by upstream damming without killing the river? Are the adverse impacts of river valley projects greater or lesser than that of thermal or nuclear power projects? How much of 'training' can a river take? Is small hydro a more eco-friendly and 'sustainable' alternative?

For all conflicts associated with intranational or international water sharing, the world seeks answers to these and other related questions from science. It is similar to the way in which the world looks at science to resolve the questions pertaining to the existing and fast-emerging conflicts like global warming: who is heating the planet up more □ the American cars or the rice paddies of India? Like unassailable forensic evidence which solves criminal cases, the world wants cut-and-dried answers on these issues so that the warring states or countries can be told who wins and who loses the extra pail of water.

But does science have the wherewithal to give definite answers? Or, if as of now, science doesn't have the answers, can it have them in foreseeable future? Can certain investiture in R & D take us there by certain date?

This paper explores these questions and comes up with the disturbing conclusion that science is far from equipped to provide sure answers to any of these questions. Nor is it in any position to reach that stage in the foreseeable future. This being the situation, conflict resolutions will continue to occur on uneven playing fields.

Concerns about the Adverse Impact of Damming Rivers: Is Small Hydro an Alternative

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Most of the intranational (inter-state) and international conflicts on water sharing have their origin in the damming of the rivers which enables the dam-maker to appropriate much greater share of the river water than it otherwise would have. The dam-maker also 'exports' a great deal of eco-degradation to those living downstream as reduced flow in the reaches below the dam upsets the river ecology and makes it that much more vulnerable to pollution.

In recent years a number of scientists as well as lay-persons have opined that if instead of a few large dams, several smaller dams are put-up alongside run-of-the-river extraction of hydropower by hydrokinetic devices (i.e use of natural drops in the river elevation to generate power at

small/big waterfalls or high current zones without any damming) the problems of sudden decline in river flow as well as numerous other adverse environmental impacts associated with the 'large hydro' can be eliminated.

This, it is hoped, would greatly reduce the conflicts that presently dog water-sharing not only across the nations but within the states or districts of a nation. The belief that small hydro is a 'clean/green' and 'non-intrusive' source of energy is so prevalent that if any nation says it will employ it instead of large hydro, the others in possible conflict heave a sigh of relief.

But is small hydro really a clean/green substitute of large hydro? The analysis of the authors reveals that if considered on the rational basis of *per kilowatt of power generated*, the adverse environmental impacts of small hydro are not likely to be lesser than that of large hydro. In other words, the overall extent of negative impacts of, say, a 500 MW hydropower plant are not likely to be more than the adverse impacts of 500 small hydropower plants of 1 MW each or 5000 still smaller hydropower plants of 100 KW each, put up on the same stretch of a river to generate an equivalent quantum of power.

In other words the deeply and widely entrenched belief that small hydropower plants can provide power in a cleaner and greener fashion, compared to equivalent amounts of power generated by large hydro, is hugely misplaced and should not be a factor in any conflict-resolution exercise.



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