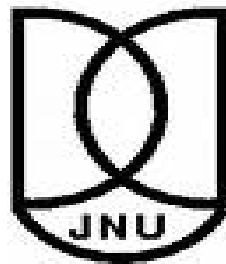


**POLITICAL ECONOMY OF WATER CONFLICTS IN SOUTH ASIA:
A CASE STUDY OF INTER-PROVINCIAL WATER CONFLICTS IN
INDIA AND PAKISTAN**

*Thesis submitted to Jawaharlal Nehru University
for the award of the degree of*

DOCTOR OF PHILOSOPHY

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2012



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DECLARATION

I declare that the thesis entitled “Political Economy of Water Conflicts in South Asia: A Case Study of Inter Provincial Water Conflicts in India and Pakistan ” submitted by me for the award of the degree of Doctor of Philosophy of Jawaharlal Nehru University is my own work. The thesis has not been submitted for any other degree of this University or any other university. I am responsible for all shortcomings.

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CERTIFICATE

We recommend that this thesis may be placed before the examiners for evaluation.

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IN SEARCH OF COOPERATION

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CHAPTER ONE

INTRODUCTION

1.1. Background

Two of the most significant developments of human civilization were agricultural activities and industrial revolution. Both changed the facet of human history. Agricultural activities led to start of settled life while industrial revolution kicked off processes of economic development and modernisation. Both of them could not be possible without water. River water provided irrigated land to practice agricultural activities. Beside being used for industrial activities, in past, it also acted as mean of transportation to carry out trade of raw materials and finished goods. At present also, despite all sorts of development, agriculture practices and industrial activities are highly dependent upon water resources.

Explaining the role of water in human development Karl Wittfogel stated that every society is based on hydrogeopolitics. It was the distribution of water which laid the foundation of society, state and empire in the east. (Wittfogel, 1957). His thesis on the all powerful, centralized, despotic state has been subsequently refuted through historical and sociological studies pointing to the peasant and communal control of hydraulic property. (Singh, 1997). On the issue of ownership of water resources, one may engage into a debate with other, but its role in building empires and development of states cannot be ruled out. Even the process of colonialism was supported by the rivers. It helped the colonial government to produce commercially viable raw materials for their industries. Also, by serving as mean of communication, it helped the colonial rulers to penetrate into hinterlands and establish their sovereignty over the locals. (Connard, 1999).

But now things have changed. With declining sources of water, due to climate change, and constant increase in population the developmental role of water is under question mark. This situation is severely affecting food production and industrial activities, which are posing threat to security of living being by blocking their chances for survival. In

order to meet their security related threat there is no difference between Hobessian individual ,in state of nature,¹ and state in anarchical international system.Both reacts in same ways but with different means.It is the reactions by individuals and states to overcome their security related perceived blockages,which gives rise to conflicts.(Wolf,1995,87).

Conflict is actual or perceived opposition of interests, understandings and values.It explains various aspects of social life such as social disagreement, conflicts of interests and fights between individuals, groups and organizations.(Druckman,Daniel &Paul,2006;xii).Interests refer to preferences for particular outcomes.Different preferences for scarce resources are sources of conflict that result in competition that often takes the form of contests.Understanding refers to meaning or the way that situations are conceived.Different understandings are sources of conflict that often take the form of debate in which convergence or further divergence of viewpoints result.Values are regarded as more fundamental dissensus on the normative status of a social object or on goals.Conflicting values often keep the parties apart,making it more difficult to find a resolution through contest,debate or other form of interaction.(ibid).

It is not that conflicts cannot be resolved rather they can be, but not the one related to primary issues of concerns or core values. As security is the primary issue of concern, conflict is difficult, though not impossible, to resolve. On matters of secondary issues of concern conflicts can be sorted out or resolved through negotiations and dialogue, in which the engaged actors are ready to make few compromises and adjustments. The problem is about recognition of values,which in international politics keeps on changing according to contemporary importance of those concerns or values.At present

¹ In his ideal state of nature,social contract thinker,Thomas Hobbes described every one was against the other.The most important right according to him was right to life.To meet that anarchical situation in state of nature and protect one's life, he advocated for an absolutist and totalitarian state,which he called *leviathan*.He gave all rights to the that state.But in case the *leviathan* fails to protect the life of an individual then,he says, individuals have right to dissolve and abrogate their contract and re-establish or re-enter into a contract with the other *leviathan*.(Hobbes,1615/1962).

the growing scarcity of natural resources has made them primary issues of concern because on its availability depends security of individual, group and state.

Even though, scarcity of natural resources had never posed any serious threat to one's security but, since ages, it had been an important source of power.² In past European powers fought among themselves to establish their control over rich sources of industrial raw materials like coal etc. The process of colonialism and imperialism began in search of availability of natural resources. The two world wars were also result of the European's greed to possess more and more resourceful colonies. These resources were means to provide security and enhance economic power which was proportionally related to their military power. (Kennedy, 1987). A recent study by David Zhang in the journal of the US National Academy of Sciences, which analysed more than 8,000 wars in the past, establishes that the main triggers for those wars was resource shortage. (Menon, 2012). Even, at present, the reason for the United States adventure in west Asia is to establish and maintain its control over the oil and natural gas resources.³

Predicting about water conflicts, Homer Dixon argued that all the past and present resource related conflicts have taken place for scramble over the non-renewable natural resources; the renewable resource, which is all likely to result into a conflict is –water. (Dixon, 1994). Peter Gleick has presented various examples of wars, where water had played a decisive role. According to him the first and only recorded water war occurred over 4500 years ago between the city-states of Lagash and Umma in the Tigris-Euphrates region. (Gleick, 1993, 2006).

² Hans J. Morganthau, enumerating the elements power has considered and included natural resources as an important element through which nations can enhance and establish their power over the others. Paul Kennedy, in his work, has aptly explained the role of resources in rise and fall of great powers. The two world wars took place mainly because the competing countries wanted resources to enhance their industries. In ancient times and also in medieval times the resource rich area of Alsace-Lorraine was the bone of contention between Prussia and France. In India the Mauryan empire, one of the strongest empire, was set up in near resource rich area of present Bihar and parts of Jharkhand.

³ Resource war is going on among the countries and also among the communities. Countries fighting for its possession because the modern industrial economy is highly dependent upon the non-renewable sources of energy. Even the communities, within the state are fighting among themselves to establish their power through having control over natural resources. The insecurity dilemma, which the African states are facing today is due to fighting over rich sources of natural resources. In India and Pakistan one of the major grievances of the separatist leaders is that their resources are being exploited and used by the "mainlanders".

Conflict on water is all likely to occur because the gap between supply and demand is constantly increasing. To measure this gap, Mallin Falkenmark, coined the term “water stress” and in 1989 developed the Water Stress Index, which is calculated by dividing the volume of available freshwater resources in a country with its population. By factoring in water requirements for food self-sufficiency, the index treated the countries with 1,666 cubic meters of water per capita or less were said to be chronically water stressed. Countries with less than 1,000 cubic meters of water per capita were said to be chronically water stressed, or in a state of water scarcity. (Falkenmark, 1990). This quantity is decreasing every year for almost all countries. For example from 1999 to 2008 the volume of internal renewable water resources decreased from 2,220 to 2092 cubic meters per capita in China and from 1,762 to 1,631 cubic meters per capita in India. (Holslag, 2011).

This ,constantly increasing, supply-demand gap is source of tension because on water depends the food, industrial and individual’s security. In order to secure their self-interest countries are competing against each other to possess or to establish their sovereign control over large quantity of available sources of water. This competition⁴ leads to conflict among them. It is also that during times of conflict, water can be a highly contested arena for negotiation even though it may not be a proximate cause of the conflict. For instance, despite the presence of the 1960 Indus Waters Treaty, water is still highly contested issue between India and Pakistan. Yet it pales in comparison to far more incendiary issues such as the status of Kashmir or perceived religious differences between Hindus and Muslims. Consequently, water has been a special focus in the bilateral negotiations between India and Pakistan. (Alam, 2002).

Contrary to all these discussions and arguments at present countries are cooperating with the other riparians over the issue of water sharing. Measures have been taken up to address the transborder water conflicts. Co-riparians have signed treaties and institutions have been set up to regulate and manage transborder river waters. These institutions, more or less, till now, have been successful in managing water conflicts, through various

⁴ Aron Wolf defines competition as two or more, entities, one or more of which perceives a goal as being blocked by another entity. For sociologists scarcity always leads to competition between the individuals or groups.

means. Also, there are international laws and principles, which are, more oftenly, followed by the riparian states while dealing with sharing of water from transborder rivers. Two examples for global water regimes are the 1992 United Nations Economic Commission for Europe Convention for Protection and use of Transborder Watercourses and International Lakes (EUCPTUW) and building up on 1966's The Helsinki Convention⁵, the 1997 United Nations convention on the law of the non-navigational uses of international watercourses. (Human Development Report, 2006; 218). The aim of both these conventions is to establish general principles for the use of transborder water resources. Although the UN convention has been ratified by only fourteen states and is not in force, these principles are increasingly becoming shared norms for transborder water relations. Among south Asian states, Bangladesh and Nepal voted for the convention while, India and Pakistan abstained, albeit for different reasons. (Qutub & Prajauli, 2004; 13). In general, there are four water-sharing principles:

Absolute Territorial Sovereignty: The fundamental principle of international law is the absolute sovereignty of every nation as against all others, within its own territory..... "All exceptionsto the full and complete power of a nation within its own territory must be traced up to the consent of the nation itself. They can flow from no other legitimate source" (McCaffery, 2001). This is also called Harmon principle after late US Attorney-General, Judson Harmon, who denied the general rules of international law impose any obligation on the United States to restrict its inhabitant's use of the portion of Rio Grande within United States territory, even if that use would cause adverse effects in Mexico. (HDR, 2006 & Qutub & Prajuli, 2004; 12).

Absolute Territorial Integrity: It establishes the rights of a riparian to demand continuation of the natural flow of waters to other lower riparian. At most, this principle tolerates only minimal uses by an upstream state, and in that respect it has similarities

5 The convention was signed by the European Community (now European Union) in Helsinki on 18 March 1992. It establishes a framework for cooperation between the member countries United Nations Economic Commission for Europe (UNECE) on the prevention and control of pollution of transboundary watercourses by ensuring rational use of water resources with a view to sustainable development. In 2003, the water convention was amended to allow accession for countries from outside the UNECE region so that the other countries too can draw benefit from its experience. (Source: www.internationalwaterlaw.org).

with the common law doctrine of riparian rights. In essence of this principle is the exact opposite of the principle of absolute territorial sovereignty as it is intended to favour down stream riparian, often by protecting existing uses or prior appropriations. (ibid).

Limited Territorial Integrity: It combines the principles of limited territorial sovereignty and limited territorial integrity. It restrict both principles, asserting that every riparian state has a right to use the waters of the international river, but is under a corresponding duty to ensure that such use does not significantly harm other riparians. In essence this principle establishes the right of every riparian state over the shared river. (ibid).

Community of Interests: This has its antecedents in Roman law. It derives from the idea that a community of interest in the water is created by the natural and physical unity of a water course. According to this principle the entire river basin is an economic unit and the right over the waters of the entire river are vested in collective body of the riparian states or divided among them either by agreement or according to proportionality. This principle tends to overlook the political boundaries in favour of the optimal and integrated development of the entire basin.(ibid). However nationalism, absence of political will, lack of trust between and among the riparian states and the varying degrees of development of the different basin states are all factors that could undermine this idealistic principle .(Crow & Nirvikar Singh;2008).

Hence, the present hydro regime is proving water as as a unifier instead a cause for conflict between the states. Historical records show, that the co-riparian states have cooperated with each other rather than engaged in conflicts over sharing of waters from the transborder rivers. Records also suggest that international water disputes do get resolve even among traditional enemies. (Wolf,2008). To substantiate the hypothesis that states do cooperate rather than engage in conflicts over sharing water from transborder rivers, researchers at Oregon State University (OSU) ⁶ undertook three years research

⁶ This project was on theme cooperation or conflict over transborder river water.Researcher studied all the water sharing treaties and also the conflicts. In last fifty years,they found,the cooperation has dominated over conflict.The conflicts have taken place mainly in middle east(west Asia) between Israel and one of its neighbour.

project and came out with a conclusion that violence over water is strategically irrational, hydrologically ineffective and not economically viable.(ibid).

Even some of the world's most vociferous enemies have negotiated successful water agreements or are currently in the process of doing so. The institutions they have created often proved to be resilient, even when relations are strained. For example, the Mekong committee-established by the governments of Cambodia, Laos, Thailand and Vietnam in 1957, is an inter-governmental agency -exchanged data and information on water resources development, even, during the Vietnam War. Israel and Jordan have held secret "picnic table" talks to manage the Jordan River. As a result, in 1994, they signed a treaty to share the water from Jordan river.(ibid). Indus Water Treaty (IWT) of 1960 too has survived major wars between India and Pakistan.

Citing Fredrick Frey, Aaron.T.Wolf writes, the choice between ever-increasing conflict or cooperation in hydropolitics can be explained by E.Zeeman's "Catastrophe Theory" of sociology, which describes how small changes in a social structure, once begun, can develop and increase quickly, much like the effects of resonating sound waves amplifying to shatter a wineglass:

The tension and threat (of transnational water shortage) can apparently be resolved either by sharply escalating the conflict or by accepting the necessity of some form of cooperation. Dire conditions promote cooperation, but those same conditions also make severe conflict more likely.(Frey as cited by Wolf, 1995;88).

But in international politics nothing is permanent except self-interest. Cooperation among the riparians are going on because these cooperations, till now, has not affected their interests, and states are yet to feel threatened due to it. The moment this sort of engagement start jeopardising their security concern, cooperation will turn into conflict.

States in international politics are rational actor. Their actions are guided by self-interest and survival in anarchical international system. They are pre-occupied with autonomy, power and security, which predispose them toward conflict and competition. They also maintain a fear that if they were to cooperate, their partners could eventually turn out to be better off than by virtue of having achieved relatively greater gains. As a result given the right set of circumstances, the advantaged partners would then be in a position to use

its superior power resources to inflict harm. This fear distracts the states from cooperation with each other.(Waltz,1979).

Against the neo-realists narrative of anarchical international system and fear of cooperation,Robert O. Kehone and Robert Axelord argues, that even in anarchical international system co-operation between the actors is possible through what ,Kehone termed, “iterated or repeated prisoner’s dilemma game”⁷.(Axelord&Kehone,1993).But defensive neo-realist, Joseph Grieco maintains that it’s not only relative gains rather their relative positions, which as defensive positionalists, states seek to, defend. They do not want to upset the perceived power balance, through cooperation, that states are sensitive to.(Grieco,1993;128).

Till now, cooperation over water resources is not posing threat to the position of the powerful actors, so it is going on, but the dying sources of water, may make cooperation a history and compel the states to engage into a conflict over its possession. Water will become a strong political tool to express power over others. Vivid signs of that situation can be imagine by looking into present hydro behaviour of powerful regional actors. China has built dams along the borders of all its neighbouring countries to establish its hydro-hegemony in Asia.(Chellenay,2011).Israel has occupied most of the rich water sources in middle-east and it has deliberately failed the peace talks with Syria over the issue of lake Tiberia.(Dauody,2008).Many political and militarily weak countries have expressed their fears over the multipurpose projects on transborder rivers and (un)successfully tried hard to stop them.

It is being predicted by almost all research findings that by 2025, two-thirds of the world’s population is likely to live in countries facing severe shortage of water-which could lead to large-scale conflict. (Menon,2012).The possibility of water wars occurring in this century has been forecasted earlier, by Ismail Serageldin, vice president of the World Bank in the 1990s,former UN secretary-general Kofi Annan,and the current UN

⁷ Prisoners dilemma is a situation,where the actors are in state of confusion over cooperation with each other.They do not trust the other so they do not like to cooperate. Robert Keohene maintains that if the situation keeps on repeating then the actors will ready to cooperate. He feels that this can be possible only through setting institutions which will create favourable situation for cooperation.

Secretary General Ban-ki-Moon. It is not that in past wars had not taken over water resources rather they had.

Then in international politics laws and norms play important role in settling down conflicts and animosities among the states. These laws and norms are expected to be followed by every member-state of the global society but the powerful countries tend to circumvent them. Historically, many times international bodies have been set up to manage inter-state conflicts but they had failed to stop the powerful states from going on war, to secure their interests or fulfill their whims. Also the norms, treaties and values are for weak, powerful actors have violated them and re-set the norms according to their own terms and conditions.(Mearshemier,1994/95 &2001). On the issue of water sharing too there are laws and norms, which the riparian states are expected to follow but the powerful does not. The upper riparian countries generally violates the rights of the lower riparian but in case the lower riparian is materially powerful than the upper, it regulates the water flows from the upper riparian according to its own wishes and guidelines.Classic example to later is India's water behaviour with Nepal and Bhutan.

At turning point of the second world war someone asked to ,then British Prime minister Sir Winston Churchil, whether the battle marked the beginning of the end.He replied,no,it might be the end of the beginning.....(Ahmed,2006).Likewise, the growing water scarcity and increasing water-stress is going to be the end of the beginning of new cooperation among the riparian states over transborder river water.The moment problem gets out of control conflicts will rise and even smooth going water-sharing treaties will face problems. Countries, in order to secure their water interest, will, all likely, scrap or abrogate these treaties.

Reading between the lines, Human Development Report,2006 has given following reasons which are obstacles for deeper cooperation between the countries over transborder rivers ;

(a)*Competing claims and perceived National Sovereignty Imperatives.*Many countries remain deeply divided in the way they view shared water.India sees the flow of the Brahmaputra and Ganges rivers as a national resource.Bangladesh sees the same water as

a resource that it has claim to on the grounds of prior use patterns and needs. The differences are more than doctrinal: they relate directly to claims that both countries see as legitimate and necessary to their national development strategies.

(b) *Weak Political Leadership.* Political leaders are accountable to domestic constituencies, not to basin-sharing communities and the governments that represent them. In countries where water figures prominently on the political agenda, domestic factors can create disincentives for water sharing and associated benefits: more equitable water sharing might be good for human development in a basin, but it might be a vote loser at home. There are also time-horizon problems: the domestic benefits of sharing are unlikely to come on stream during the term of office of any one government. Incentives for cooperation are strengthened when leaders can see some immediate political gain.

(c) *Asymmetries of Power.* Rivers flow through countries marked by large disparities in wealth, power and negotiating capacity. It would be unrealistic to assume that these disparities do not shape the willingness to cooperate, negotiate and share benefits. There is also stark asymmetry across many shared water sources, in some cases with one overwhelmingly dominant actor: Egypt in the Nile Basin, India in the Ganges catchment area, Israel on the Jordan River, South Africa in the Incomti Basin and Turkey in the Tigris-Euphrates water shed. Unequal power relationships can have the effect of undermining trust.

(d) *Nonparticipation in basin initiatives.* Perceptions of the benefits of participating in multilateral basinwide initiatives are influenced by membership. That China is not a party to the Mekong River Commission is seen by some parties as a source of potential weakness of the commission. Downstream countries such as Cambodia and Vietnam see upstream dams constructed by China as a threat to the “flood pulse” of the river and the livelihoods it sustains. The Mekong Commission is not useful forum for negotiating on the problem because of China’s absence. (HDR, 2006, 223).

Cooperation and conflicts over transborder water also depends upon the nature of political relationship between two countries. Countries having good relations, generally, cooperate while rivals lock their horns over acceptance and implementation of water sharing principles. Indus Water Treaty of 1960 was signed because, when the negotiations over it started, India and Pakistan were engaged into a bilateral dialogue to resolve contentious issues between them.⁸ The mediation of the World Bank too was a factor for the signing of this treaty. But when countries do not share good political relations, it becomes very difficult to negotiate water sharing treaty. Classic example of it is, despite having great economic and trade relations, India and China does not have good political relationship. This has kept the two countries away from accepting and signing transborder water sharing treaty. They have only signed Memorandum of Understanding (MoU) on hydrological data sharing with each other.

Water conflicts also exists among administrative units of the state. These conflicts are more difficult to resolve because here the conflict is not between the two sovereign states rather its between the two parts of a single state. The conflict is there because of nature of existing socio- political system and ways adopted by them to address the water sharing issue. Sometimes these conflicts create parochial hatred or ethnic clashes among different groups. The common complaint of the units are that, the politically important regions in democracy and the militarily important in dictatorship, indulge in act of diverting the water flow to favour a region or a group, without showing any concern for others.

It has been an accepted axiom that equitable distribution of resources is possible and conflict resolution is easier in democratic form of government. Writing about famine in Ethiopia, Amartya Sen has proved this hypothesis. (Dreze and Sen, 1989). But growing shortage of water has made the democratic institutions ineffective in resolving their intra-unit disputes. In India there are constitutionally mandated and authorized institutions to look after and settle down water sharing disputes among riparian states but they have been hardly successful in their effort to resolve even a single dispute. Many

⁸ Indian Prime Minister Pandit Nehru and his Pakistani counterpart Liaqat Ali Khan, on 8 April 1950, signed a pact in New Delhi to provide equal rights to minorities and avert another war between them. Then in 1953 Indian Prime Minister was engaged in talks with Pakistani Governor General Ghulam Mohammad. The talks continued until Iskander Mirza took charge as Governor General.

disputes, which were thought to be resolved are re-emerging. States are also challenging the final verdict of water tribunals.

In non-democratic political set ups the problem is grave. There the government takes all decisions without any care for its impact on people. In former USSR waters from Amu and Syr Darya were diverted to Aral Sea, in order to support irrigation in the new catchments areas but it did not work out and all three lakes are on the verge of extinction. (Dash, 2007). In Pakistan the Punjab province diverts Indus river water for its own use at the cost of other provinces which too are facing water problems.

Writing about causes for water conflicts at local level; Ken Conca, groups them into three categories: capital-intensive water infrastructure projects, impacts on critical socio-ecological systems and changes in community access to water supplies. (Conca, 2006; Bencala and Dabelko, 2008). The first category is of displacement of local people due to construction of water projects. It includes dams and water diversion projects. (ibid). The relocations fundamentally disrupt lives and are plagued by corruption among officials in charge of relocation. A good example is the relocation of people from Narmada's catchment areas due to construction of a dam, to Gujarat. This type of forced movement may or may not constitute violence but can lead to mass demonstrations by including various segments of society. This is a cause for new social movements.

The second category, negative impacts on vital socio-ecological systems, is extremely important to those who depend on natural resources for their livelihoods. The contamination of a river from an upstream activity such as deforestation or large-scale pollution can leave families unable to feed themselves or to derive an income. Increasingly large scale pollution of rivers or lakes from spills or industrial activity is endangering conflict. (ibid). Pollution of water and deforestation leading to a change in ecological balance has attracted social conflict. The tension over water in the deserted area of Darfur had been exploited by the managers of conflict by instigating violence in that region over water issues.

Third category is protests over privatization of water. (ibid). Cochabamba has become an example to the entire world community to fight against the state-led policy of privatization of

water resources. After that at many places communities have come together to fight against privatization of water resources. Some protests were successful while others are still going on.

Then there is an issue of privatization of water resource, which is creating conflict between the haves and have nots. Working on or taking clue from the Garrett Hardin's famous paper *Tragedy of Commons* published in 1968 in journal *Science*, many countries are started privatizing their water sector. In her paper Hardin asserted that making the common use of resources is the reason for its depletion because there is no check on its overuse and abuse. She asserted that by providing individuals with private rights of resources he/she will take care of it and thus there won't be overexploitation of resources. Thus depletion of resources can be stopped.

As a torch bearer of privatization of the natural resources the International Monetary Fund (IMF) and World Bank's through Structural Adjustment Programme (SAP) encouraged the Multi-National Companies (MNCs) to invest in every sector of the developing countries. In developed countries the water sector has been , almost, privatized but it is not possible in developing countries because large number of poor people lives in these countries. The private companies tend to charge more which cannot be afforded by the poor. Efforts have been made in many countries to privatized water supply but it has met with strong resistance by the poor people.(Barlow,2006).

To arrest the situation of water conflicts , post-materialist⁹ society has started taking up the issue seriously and various global meetings were arranged, institutions and Non-Governmental Organizations(NGOs) have been started to seek solution to the problem. Some of the prominent institutions and NGOs are; United Nations Environment Programme, World Water Council , Water Resource Group, International Water Management Institute etc. These institutions and organizations, though, are working with their own ideologies and views to mitigate conflicts but they have failed to find satisfactory results. Many works in alliance with or as a client of Multi National

⁹ Post Materialism , as a concept , was developed by Ronald Inglehart in 1970s. The basic feature of it was to come out of materialist life and emphasise on self-expression and autonomy. This concept strongly emerged in post-cold war world. Due to their focus on environment they have been criticised by the minorities, who were struggling for civil rights in developed countries particularly in the USA.

Companies and so promote their business interest in water.(Barlow,2007 &Varghese,2012)However there are some organisations which are working at grass root levels to promote idea of water conservation and water management.

At their own level countries and communities ,in order to meet their future water demand are taking certain steps.Some are positive because they won't disturb the natural imbalance;while others going to have negative impact on nature.New less water-intensive seeds are being developed in order to have good harvest with less use of water.The irrigation practices are also being changing from intensive one to use of drip-in and sprinkling methods.(HDR,2006).States are also following practice of conservation of rain water.Then there is a technique of desalination of sea water to meet the water demands of coastal areas.These are positive ways to meet water-scarcity.

Negatively, privatization of water resource is being carried on, which is further intensifying water conflicts between the rich and poors. The states are also engaged into practice of transferring of large scale of water from water-rich areas to water-stressed areas through canals and by inter-linking major water bodies.This has the impact on nature and also socially depriving the indigenious people for whom water is not only economic resource rather is also symbol of their culture.Then there is a practice of cloud seeding¹⁰ to fulfill the demands of urban areas by having artificial rain in cities.(Barlow,2012).This practice is generating clashes between urban and rural areas.

Situating the mentioned reasons for water conflicts in area opted for study one finds that all variables for water conflicts are present here. In South Asia, water has been an important resource for contestation, which over time has taken on local, provincial and international dimensions.(Hill,2008;61).Conflicts over transborder rivers usually results from power imbalance amongst riparian states, where one state or region is sufficiently influential to exert its hegemonic power over the others. Generally, upstream states are considered to be in a more influential position as they can control the water source, but power imbalances may also make it possible for downstream riparian to exert influence

¹⁰ This is an artifcal precipitation by using silver iodide and dry ice(sold carbon dioxide).This plantation is done mainly through air planes or rockets.This leads to rainfall in desired areas by attracting the clouds in those areas.

over upstream states. Similar conflicts may also occur within states where river crosses borders of administrative political units within the state.(World Commission on Dams,2000;252). Such conflicts are often caused by proposals to store or divert water by constructing dams, barrages or canals. States, regions and communities engage themselves in the water related conflicts, in order to provide water-security to their people.

Almost half of south Asia's 1.3 billion people depend on river systems for their water needs. Some of the world's largest rivers lie in this region. They flow throughout the political region constituting south Asia and are the source of tension. In monsoon floods are normal phenomenon but at other times there is too little water available leading to intense competition between the countries, between upstream and downstream provinces or states within the same country.(Qutub & Prajauli,2004;i).

Due to increasing population and phenomenon of climate change annual water availability in south Asia has plummeted by nearly 70 percent since 1950, and from around 21,000 cubic metres in 1960s to approximately 8000 in 2005. If such patterns continue, the region could face 'widespread water scarcity'(that is per capita water availability under 1,000 cubic metres) by 2025.(As cited by Kugelman,2011;16) .

In south Asia, transborder water conflicts are re-emerging. In past the treaties were being signed between the water-sharing neighbours but as water-stress is increasing the situation is becoming murkier. Countries are coming up strongly to oppose the projects in upper riparian and also the terms of the treaties are being constantly challenged. The institutions set up to manage and regulate the treaties are under constant pressure to work amicably due to shortage of running water in transborder rivers. The conflict and competition over water is also affecting the bilateral relations between the two states.

Transborder water conflicts is a regular feature engaging India with one of its water sharing neighbour. Decreasing rate of precipitation and melting of source of river Indus is a big challenge to continue with the Indus Water Treaty between India and Pakistan.

Almost all multipurpose projects in upper riparian are being challenged by Pakistan.¹¹ The right wing radical groups from the two countries are constantly attacking the provisions of treaty and advocating for scraping it. The problem is similar with India's water conflict with Bangladesh and Nepal. Both have concerns about their water security. They too have raised water issue against India from, almost, all available platforms.

But in comparison to India-Pakistan water rivalries, pitch of the later rivalries between India-Nepal and India-Bangladesh is low because the nature of political relationship India has with Nepal and Bangladesh. That does not mean conflicts are not there, rather there are. Nepal always has a problem over the water sharing and other treaties with India. Maoists are one of the major opponents of India's policies towards Nepal. They demand for re-visiting the Indo-Nepal friendship treaty of 1950 and Mahakali treaty. They feel that these treaties has given advantageous position to India in comparison to Nepal. (26 December, 2009, DNA). Though, after coming into power they have changed their mind because of complexity of Indo-Nepal relations. With Bangladesh, after lots of procrastination and ad hoc arrangements in 1996, India signed Ganga river water-sharing with it. Earlier in 1977 they signed water sharing agreement and not a treaty. But conflicts still lie. Bangladesh alleges India for releasing water during monsoon and stopping it during the agricultural seasons. The projects over transborder rivers have met with controversies and present crisis on Teesta water sharing is yet to meet with its conclusive fate.

However, in case of water conflicts with Nepal and Bangladesh, the issues, to large extent, are manageable. This is mainly because of political power and accepted hegemony of India. The real problem is with Pakistan which has constantly tried to counter and check India's regional hegemony. Despite asymmetry in power it has fought wars and has engaged India by different means like institution backed terrorism, proxy war etc. It has also brought outside powers in south Asia to check influence of India. Though Nepal and Bangladesh too have welcomed China and extra-regional powers to check India but they have not been successful owing to their over-dependence on India.

¹¹ According to provisions of the Indus Water Treaty Pakistan has right to move to the arbitration court if the issue fails to satisfactorily resolved by the two countries. Questions can be put upon the political motives but not on the technical grounds.

Water conflict is more intense within the administrative units of the state than between two sovereign countries. Despite having two different set of political system both India and Pakistan suffers from the problem of internal water conflicts. Though Pakistan too have its experiences with democracy and at present its under civilian rule but the process of democratization has not taken place. This make it different from its arch-rival India, Still, there are certain convergences and divergences in nature of conflicts. In India political party or parties in power at centre manipulates the verdict of the tribunal for political benefits.

In Pakistan there is regional favouritism. Federal government never goes against the interests of Punjab, which has its deep influence over political, civil and military institutions. Almost all decisions taken and policies formulated in Pakistan are Punjab-centric. (Samad, 2007). All other provinces have their grievances against Punjab due to its over-use of water resources, at the cost of others. In both countries there are groups who suffers a lot due to water policies of their respective government. There is lack of transparency and people's participation in water related decision-making processes. Finally in both countries the water bureacracy is colonial in nature and structure. It relies on supply-side management of water resources¹².

Divergences between the two countries over issue of water conflicts are due to the nature of political system. Being a practitioner of democratic polity, since independence, political and social institutions are very strong in India. These institutions help in diffusing the tensions and give voice to people to stand against the water policies of the government. On the other hand, Pakistan has been under the military rule for a long period of its existence, therefore it has weak political institutions and underdeveloped civil society.

¹² There are two ways to mange water resources-Supply –side and Demand –side. Supply side management is done through constructing multipurpose projects to divert and store water resources for their efficient use. The demand side way of management means managing one's demand by not wasting and proper utilization of the available water resources.

These convergences and divergences explicitly explains the nature of two states-India and Pakistan.They also give ample reasons to not to have a common outlook over the persisting internal water conflicts in both countries.They can not be universalized or generalized. Hence, they have to be treated differently.In Pakistan the search for identity is still going on.Through federal system, groups want to establish their identities.On contrary, in India this thing, more or less, has been resolved.Hence, in chapters discussing the federal system in Pakistan and India two different approaches has been adopted.Dealing with federalism in Pakistan the identity and regional politics has been focused upon; in case of India its technicalities of federal system.

Also,in south Asia ,like many other facets of development strategy,water resources policy has been shaped by the influence of dominant classes such as industrialists,rich farmers and urban elites.In some cases,this has been through an unwillingness to monitor the wasteful and inefficient use of water by industry.In other,cases it has been by supporting large landholders at the expense of the rural poor.(Hill,2008;61).This situation has led to conflict between the indigenous groups and others.All multipurpose projects are being opposed due to non-participation of locals in decision making process.Ken Conca's reasons for water conflicts at local level prevail in this region.

1.2. Review of Literature

In carrying out this research various existing literatures in form of reports, books, papers and articles have been consulted.Many of them are based on a single theme, so, does not fully address the issues of the present study. Some have dealt with only technical aspects of water; while others have made an attempt to analyse social and political aspects of it.This study is an attempt to fill those gaps in existing literatures, by juxtaposing the both issues.

(a) Political Economy of Water Conflicts

Maude Barlow,one of the leading authority on water issue,in her works *Blue Gold:The Fight to Stop the corporate Theft of the World's Water*(co-written with Tony Clarke) in 2002 and *Blue Covenant :The Global Water Crisis and the Coming Battle for*

the Right to Water(2006), has analysed all aspects of conflicts over water.She has been very critical about the world bank led structural adjustment programmes,which encourages for the privatisation of water resources in developed and developing countries. For her, solution to water scarcity is to let the communities manage their water resources and government must take care of this resources.She has also discussed about transborder water conflicts,dam spree and efforts to control the nature through cloud seeding for precipitation and artificial ways to channelise water resources from one area to another.

Jossep Connard in his novel *Heart of Darkness*(1899), written in the background of colonialism in Africa,has talked how river congo became a mean for the colonial masters to penetrate inside Africa.They also engaged into conflict with each others and with local communitites to dominate over river Congo,in order to establish their rule in African countries.

Inter-state or trans-nation boundary water disputes are present throughout the globe. The nation-states try to establish their authority over free flowing natural rivers. Colorado's dispute between USA and Mexico, Israel's capture of Golan Heights for fresh water, dispute over river Nile between Egypt and Sudan are famous disputes over sharing and controlling over water resources. Europe has its problem over Trans-boundary flow of river Rhine and Danube. This has been analyzed by Helga Haffendom(2004) in his article *Water and International Conflict*.

Journal of International Affairs in its 2008 issue titled "Water: A Global Challenge" has focussed on water issue.It contains research papers by scholars dealing with various aspects of water issues.

Brahma Chellaney(2011)*Water:Asia's New Battleground* has written about the ongoing water conflicts in Asia.He has dealt with transborder and intrastate water conflicts in Asia.The focus of his study is mainly on China,given its size and act to capture this precious resource to secure its future water interests.

P.L. Dash's (2007) article *Central Asia's Water Dispute* analyses the Water Disputes in Central Asia and environmental concern in the Amu Darya and Syr Darya valleys. The diversion of rivers draining into Aral Sea during the Soviet regime has contributed to the slow death of Aral Sea. Uzbekistan, Turkmenistan, Kazakhstan, Kyrgyzstan and Tajikistan are having problems due to declining capacity of Aral Sea.

China, too, is facing an acute water problem. It is one of the fastest growing economies in the world. Water demand has sky rocketed, growing at 10.1 per cent annually for cities, 5.4 per cent for industry nationally and even higher for specific places. Kathleen A Cannon(2006) has analysed the growing water shortage and problems due to it in China's economic development and growth, in her article, *Water as a Source of Conflict in China*. Elizabeth .C. Economy(2007) in her article *The Great leap Backward* has mentioned about the environmental degradation in China.

Rachel Crasson wrote her classic "*Silent Spring*" in 1962. A trained biologist wrote about the ill-effects of DDT, DDH sprays etc on the environment. She was one of the first, in modern world, to write on this issue. She was for banning the use of all these sprays in order to protect ecology and prevent declining number of species by human activities. Following her masterpiece various committees were set up and various reports came up giving a red- signal to human being, on environmental front. Garret Hardin wrote an article "*Tragedy of Commons*, (1968)" later developed in book, titled, *Managing The Common (1969)*. She was for the privatization of resources, so that it's over use can be minimized to large extent.

Institutional Economics of Water: A Cross Country Analyses of Institutions and Performance is a report prepared by, Institutional Economist in International Water Management Institute, Colombo. This report highlights the role of political and social institutions in management of water resources.

Ken Conca in his work(2006) *The New Face of Water conflict* has given three reasons for all on-going internal conflicts over water resources.Homer Dixon in his paper,which was part of his research findings,has argued that environmental conflicts are due to socio-economic imbalance of power within the groups.Jeniffer Clapp and Peter Dauvergne in

their work *Paths to a Green World :The political economy of the global environment* has talked about the three schools of thought on green movement , how these schools came to existence and how they are promoting their ideas for the cause of environment.

B.G. Varghese (1990) in his work *Waters of Hope*, shares the same sentiment. He also wants the policy makers to play vital role in water-management. He talks about the Himalayan Rivers. Management of water resources is linked to its political-economy. Water management is important because of emerging water dispute due to scarcity of water. In an edited book by Kamta Prasad (2003) titled *Water Resources and Sustainable Development*, paper or chapters by Y.K.Alagh, William, J Cosgrove and M.A. Chitale talks in volume about management of water resources. In an edited book *Managing Scarcity: Experiences and Prospects*, A. Vaidyanathan and M.M. Oudhoom(2004) talk about problems relating to working on laws, regulations and institutions in managing water and resolving water conflicts in international context.

As the water related problem have increased and climate change is one of the major source to it ,United Nations, came out with its 2006 and 2007/08 issue of *Human Development Report* focusing on water scarcity and climate change respectively. 2006's Human Development Report talks about equality, justice, right to life etc in regard to water availability to all. The 2007/8 report warns the world about impact of climate change. It blames "human activity for it." It also shows its concern about the fast depleting glaciers which International Panel on Climate Change, too warns about climate change's impact on human being. In its assessment report it talks about food insecurity, water-crisis, extinction of various animals etc due to climate change. It also talks about the differences between developed and developing countries over the issue of climate change.

(b) Transborder Water Conflicts in South Asia

In *Conflict and Cooperation on South Asia's Interntional Perspective:A Legal Perspective*(2002) Salman M.A.Salman and Kishor Uprety has dealt with transborder water conflicts in south Asia.They have highlighted about the treaties and the conflicts

between the transborder water sharing neighbours of India. All water sharing treaties and its background has been objectively dealt in this book.

Water Conflicts in South Asia: Managing Water Resource Disputes Within and Between Countries of the Region (2004). This is a report prepared by water experts and sponsored by Carnegie Corporation of New York. This report has taken into account transborder and internal water conflicts in south Asia. In this report it is being maintained that although there are some arrangements presently exist to share the waters between the respective countries, their implementation has not always been satisfactory, and there is a widespread perception that these arrangements could be inadequate in times of increased water scarcity.

In his article, *Questioning the Water Wars Rationale: A Case Study of the Indus Water Treaty*, Undala. Z. Alam (2002), has talked about rational use of transborder water by India and Pakistan. Michael Kugelman in his paper *Safeguarding south Asia's water security* analysed the water conflicts in south Asia. He has given few reasons for its existence. Reeta Choudhari and Julian Schofield in their paper "Institutional causes of the India-Pakistan rivalry" has talked about role of institutions in India Pakistan rivalry. They have mentioned negative as well as positive roles.

Prof. John Briscoe is one of the leading expert on water conflicts in south Asia. He has written books and papers on this issue. In *Troubled Waters : Can a Bridge be Built over River Indus*. He talked about India Pakistan conflict over Indus river system and blames both of them for the water crisis.

Kuntala Lahiri-Dutt and Robert J. Wasson (2008) in their edited book *Water First: Issues and Challenges for Nations and Communities in South Asia*, covers all the on-going water conflicts in South Asia from different perspectives. The articles in the book talk about both inter-provincial and trans-boundary water conflicts in South Asia. In his book *Indus Water Treaty*, N.D. Gulahti (1973) writes in detail about the processes and phases of negotiations that took place before the signing of the Indus water treaty in 1960 between India and Pakistan.

Ramaswamy R. Iyer(2005) in his article *Indus Treaty: A Different View* presents to the readers an understanding of the Indus Water Treaty (IWT) of 1960 that is somewhat different from the generally prevalent views and shows that differences relating to Baglihar and other issues are almost built into the treaty. In another articles titled *Three Water Treaties*(2002) and *India's Water Relations with her neighbours*(2008),he mentions about the India's water treaties with Bangladesh,Pakistan and Nepal. He also focuses on areas of concern and co-operation between India and the other countries over sharing the transboundary river water. In his article *From Indus-I TO Indus -II*,B.G. Varghese(2008) blames Pakistan for cracking up political "disputes" on the Indus by raising objections to India's baglihar and Kisenganga projects on the Chenab and Jhelum. Tapan R. Mohanty and Adil Hasan Khan'(2005) in an article *Dam of Division: Understanding the Baglihar Dispute* writes that the complaint of Pakistan on the Baglihar project is that the design permits India to potentially cause a lot of harm by storing water during the dry season. If India had provided the design information earlier rather than stonewalling Pakistani queries it could have saved the country from some embarrassment.

Sangeeta Thapliyal (1996) in her article titled *Water and Conflict: The South Asian Scenario* highlights the Indo-Bangladesh dispute over Ganga-Brahmaputra-Meghna basin. Harun Noor Rashid, in his book *Indo-Bangladesh Relations; An Insiders View*, writes about the 1977 and 1996 Ganga water treaty between India and Bangladesh. He writes about his views on the treaty as a former diplomat and a key participant in the two negotiations.

Tushaar Shah in *Taming the Anarchy:Ground Water Governance in South Asia*(2009) have talked about the under ground water resources.He has sketched out the history ,politics,economics and cultural aspects of the underground water management in south Asia.He has also mentioned the reasons and ways with the change of regime and rulers, how, the irrigation system went through transition.

(c) Inter-Provincial Water Conflicts in Pakistan

A.Faruqui (2004) in his book, *Rethinking National Security in Pakistan*, have talked about various threats to the national security of Pakistan. He has also included the water distribution among the provinces as one among the many threats. Rogger Ballard (1991) in his article, *Kashmir Crisis: View from Mirpur*, writes about the problems of Mirpuris, who are strong supporters of their Kashmiri identity. The construction of Mangala dam in Mirpur has made them strong critics of the Pakistani state and its political-machinery. They feel that the dam was constructed due to political reasons and not for the purpose to develop their region.

In his article, titled *Sindh's Struggle for Control of the Indus*, Hasan Mansur (2002) gives a detailed analysis of squabbling between Punjab and Sindh over the control on water from river Indus. He has also presented an analytical view on 1991 water apportionment accord. Zaigham Habib (2005) in her article *Water Management and Reservoirs in Pakistan* analyses the role of water reservoir in modernizing water systems. Dr. Habib mentions about the political angle, which has deepened the problems between the provinces of Pakistan.

Zaigham Habib (2005) in an article *Water: Issues and Politics in Pakistan* has talked about water related politics in Pakistan. The dominant Punjab gets unfair share in comparison to all due to its domination over political and social institutions of Pakistan. I. Alam (2004) in his article 'To Build or Not to Build Kalabagh Dam' highlights the fact that Punjab wants it so that it can tighten its grip over Sindh, Baluchistan and NWFP furthermore. Kalabagh, for Alam, is the most political project in Pakistan. *In the line of Fire*, former military ruler and head of the state, Parvez Musharraf (2007), has given support to Kalabagh dam. For him the dam is important for the development of Pakistan. Anyone opposing the dam, he feels, is enemy of the country.

In chapter six of his book *Idea of Pakistan*, Stephen Cohen (2005) writes about the problems of regionalism in Pakistan. He mentions about the sectarian and regional clashes in Pakistan since its birth. In his book *Pakistan: failure of integration*, Raunugh Jahan (1973), writes that over centralisation process started by the rulers of Pakistan from

the beginning have led to emergence disillusionment among the regional elites, which further led to demand of autonomy, followed by demand for independence. Raunugh Jahan wrote in context of liberation of Bangladesh. But the book ends with a caveat that the over centralisation of power and ignorance of local political elite may make other provinces also to start demanding for independence.

In *Goodbye Shehjadi*, Shyam Bhatia (2008) writes that Benajir was unable to take a tough stand against the military and civilian bureaucracy during her tenure as Prime minister, because of domination of Punjabi elites over the political and military structures. In her autobiography *Daughter of East*, Benajir Bhutto, also accepted the fact that her father got executed by the military ruler, mainly, because of his Sindhi origin. In *Politics of Identity*, Adil Khan (2005) gives an analytical and critical look towards the issue of ethnic problems in Pakistan. Punjab's domination over the politics of Pakistan leads to its domination over all other aspects like, cultural, social etc and on resources also. In an edited book *Pakistan: Nations without Nationalism*, Christophe Jafferlot (2002), presents a picture of fragmented nations in Pakistan. They are indulged in conflicts with each other to gain power.

(d) Inter-State Water Conflicts in India

Ramaswami Iyer (2007) in his books, *Towards Water Wisdom: Limits, Justice, Harmony* and *Water: Perspective, Issues, Concern*, talks in detail about the water related problems in federal set up. He talks in detail about the Kaveri and Narmada water disputes. He talks about the ill-effects of the privatization of river-beds and of water in India. He wants that the Indian policy-makers must be rational enough to take such decisions which have its impact on large number of poor people. He is against the Government's proposal for inter-linking of rivers. In articles, titled *The Cauvery Debate*, *The Supreme Court & Water Dispute* and *Karnataka & the Cauvery Judgement*, he explains about the various angles on the water dispute between the two Dravidan neighbours. Late S. Guhan, former civil servant and academician, had proposed his solution to the problem of dispute in his précised work *Cauvery Water Dispute : Towards Conciliations*. His solution is similar to what Helsinki accord elaborates on the issue of trans-boundary water disputes.

In an edited book *Inter-Linking of Rivers in India, Overview of Ken-Betwa link*, Yoginder K. Alagh, Ganesh Pangare and Biksham Gujja(2006), along with other contributors have rejected the Government proposal of interlinking of rivers in India. They have taken into consideration cost-benefit ratio, ecological viability and issue of rehabilitation and resettlement of local people etc, in their analysis about it.

Most of the water disputes in India have their emergence during the colonial rule when various canals and dams had been constructed to divert water from major river basins in order to benefit the Britishers. Alan Richard and Nirvikar Singh(1996) in their article, *Inter-State Water Disputes in India: Institution and policies* have mentioned about entry 17 in state list entry 56 in Union list and article 262 of the Indian constitution. They have also highlighted the major inter-state water disputes in India viz., Beas River, Krishna-Godavari dispute and Kaveri dispute.

Water-Conflicts in India by K.J. Joy, Biksham Gujja, Suhas Paranjape , Vinod Goud and Shruti Vispute(2008) give a detailed analysis of the water conflicts in India. It takes into account all the major and minor conflicts, about which we do not have much information. Radha D'Souza (2006) in her *Krishna Water: Laws, Imperialism and Science* has discussed in depth about the problems of Krishna water sharing between the disputant states. She appreciated the role of people in sorting out the problems. Gail Omvedt(2002) has also written an article on *Krishna Valley Water Problem* . She has compared the dispute with Narmada dispute. She has criticized the Narmada Bachao Aandolan and its leadership in her article. She has taken a sociological approach and appreciates the role of local people, belonging to different caste and class group, in solving the problems.

Amita Baviskar's(2007) edited book, *Waterscapes* , talks about various aspects of domination over water resources. The contributors talk about domination on the line of caste, class, region etc. It also focuses on the role played by the state to placate local elites.

In *Subaltern Studies (VIII): Essays in Honor of Ranjit Guha* author David Arnold and David Hardiman(1994) writes about the first environmental movement in India by the *bishnois* to protect the tree-cutting activities by the British rulers. Ramchandra

Guha's(2002) work on *Chipko Movement* gives a detailed analysis of that environment movement in present day Uttarakhand. Guha appreciates the role of Chandi Prasad Bhatt, S.L.Bahuguna and above all the role of common people in stopping deforestation activity in their areas. In his, another work '*Environmentalism*' Guha (2000) compares the role of Gandhian, liberal and Socialists environmental movements.

The Dam and the Nation is an edited work by Jean Dreze, Meera Samson and Satyjit Singh(1996). The contributors from Arch-Vahini, Narmada Bachao Andolan, MARG, Centre for Social Studies and Tata Institute for Social Sciences have contributed in it. They have put up their views in this edited work. It is interesting to note that Arch-Vahini Narmada Bachao Andolan and MARG are opposed to each other. Amita Baviskar (1995) in *The Belly of River* highlights, about the Bhil (Baisva) tribes in Narmada valley. For Amita these tribes had suffered a lot due to Sardar Sarovar Project. She also mentioned about the dominant farming caste, whose interest was served, by the state, by decreasing the height of dam.

Rohan D'Souza,in *Damned or Drowned* (2006) has talked about the colonial eastern India and how river Mahanadi was exploited to promote British rule in present Orissa.The dams were built to channelise water from one part to another to fulfill the water needs of agricultural and industrial areas.He has talked about political economy of Hirakund dam.Satyajit Singh ,in his book *Political Economy of Large Dams* (1997) has talked about Bhakra-Nangal dam,which was considered as the "temple of modern India".This dam at present is source of soil erosion due to silting in areas near to it in Punjab. He has also discussed about the politics over building in India since the colonial times.

Vandana Shiva's (2005) work, *Globalizations New Wars: Seeds, Water and Life Form* analyses the issue of privatization of water supply in Delhi and groundwater exploitation and pollution by the cold drinks company in Kerala and Ghaziabad. In *Politics and Poetics of Water*, Lyla Mehta (2005) talks about the gender issue, caste factors and politics over groundwater exploitation in Gujarat.

1.3. Research Method

Coming to research methods applied in this study. Research design of thesis has adopted explanatory and not descriptive methods. This study is mainly based on Methodological Individualism, Qualitative Method and Case study methods. Methodological Individualism focuses upon individual being. This method is being used by the neo-realists and liberals, where centre of study is an individual or a state. Qualitative method has passed through two phases and in its third phase it talks about the importance of drawing theory from the facts. Case study method is being taken up to avoid ideographic explanations and instead focusing upon configurational analysis and making contingent generalisations.

It has used the research methods propounded by Imre Lakatos. He maintained that correctness of hypothesis depends upon the research programme one has adopted. He differed from Karl Popper and Thomas Kuhn. Karl Popper advocated the idea of falsification by which he meant that the theories and hypothesis set up by earlier scholars, if found, not-suitable then should be rejected. On the other hand, Thomas Kuhn maintained an idea of progressive change over the time in the theories and hypotheses. Unlike Popper, Lakatos was for shielding the theory and looking out for rational basis to draw hypothesis and research programme. He also rejected the idea of Kuhn because he is open to the probabilities and possibilities for new theories.

The reports and documents by the state's institutions and other organisations have been extensively used. Wherever such thing is not possible, secondary sources have been used. This study has also tried to present a theoretical angle to the whole water related controversies and conflicts. The theories of international politics, political science and other disciplines have been made use in discussing the problems.

As the visit to one of the area of study i.e Pakistan could not be fructified so the researcher could not collect first hand data and report. In order to avoid that handicap the materials were collected through contacts in Pakistan and also through reading on-line Government reports available on that topic. Pakistani newspapers, journals and

magazines proved to be quite helpful in getting useful information on the topic of research.

Even though in the title of this thesis “inter-provincial” word is being used, in the text the word “province” is used to refer the federal units in Pakistan while for India the word “state” is being used. It’s because, Pakistan still uses the term “province”, for federal administrative units; while India gave up using this term, since its constitution came into force, on 26 January 1950. Indian constitution uses the term “state” for its federal administrative units. Also throughout the thesis, unless it’s not mentioned, the word “water” indicates fresh (surface) water and not sea or other saline forms of water.

Finally, this thesis is case study of inter-provincial water conflicts in India and Pakistan. Both cases have been treated as independent entities. Though convergences and divergences are there, giving ample reasons to do a comparative study. Still, reasons for conflicts are *sui generis*, so no comparisons have been made.

1.4. Conclusion

The question arises why this study or what is the rationale of this study? This study has been done or carried on not because water is an important issue in present time rather to highlight and analyse conflicts due to global, regional and internal scramble for it. This study, from theoretical point of view, has analysed the technical, political and sociological aspect of conflicts on water issue. In past, studies on this issue have been done by various scholars but those have taken up either from technical or socio-political approach. This study is an attempt to look both sides and also try to discover “why” water conflicts are existing among the riparian states. As the main theme of this study is conflict over water issue, on contrary, its cooperation which dominates. Here the theoretical reasons for that cooperation and the challenges which cooperating actors are going to face in coming decades will be explained.

Not only transborder water conflicts but also internal water conflicts like between the groups and administrative units have been analysed in this study. The sociological factors

and political relationships among the groups and administrative units have been re-visited to delve into the reasons for water conflict.

CHAPTER TWO

POLITICAL ECONOMY OF WATER CONFLICTS: AN OVERVIEW OF TRANS BORDER WATER CONFLICTS IN SOUTH ASIA

2.1. Introduction

Growing scarcity of water has put it into security discourse. It is related with security of the individual, group or state because scarcity leads food and economic insecurity. Water is also a mean for establishing power because anything which is globally scarce or less available provides power to one, who has it in abundance. This power can be political or economic in nature. In near future, due to growing water scarcity, countries having abundant water resources in their sovereign territory will enjoy power over the others. To attain that power countries are engaged in water conflicts. To attain status is also innate quality of individual and group. Hence, they too have been engaged in conflicts to control water resources.

In addition to west Asia and Korean peninsula¹, south Asia is another most tensed region of the world where three nuclear powers form a strategic triangle.² Also, it is marred with intermittent conflict and political tensions between India-Pakistan and India-China. In future, beside many reasons, sharing of water from common rivers is going to be an important source of tension among them. Conflict will aggravate because of decreasing per capita availability of water³ in this region. United Nations Environment

¹ In west Asia the presence of belligerent Israel and its Arab neighbours have kept the region engaged into war, since 1950s. The deep involvement of the USA and other powers for oil and gas resources has further added the problem. At present Iran crisis and civil war in Syria are major international problem which has attracted the attention of global citizens. In Korean peninsula the north Korea with its nuclear capabilities keeps on threatening south Korea and Japan. Talks over nuclear disarmament had held but failed to deter the north Koreans to give up their nuclear weapons.

² Geographically, China is not a part of the south Asia but its continuous interference in this region, gives many reasons to analyse south Asian politics by including it. India Pakistan and China forms a strategic triangle, where China and Pakistan are on one side trying to deter India. see Kapur, Ashok (2011), *India and south Asian Strategic Triangle*; London & New York: Routledge.

³ In India per capita water availability is 1,631 cubic metre, in Pakistan its 1000 cubic metre, in Nepal its 8,500 and Bangladesh its 7320. By 2030 the availability is further going to decline. The table of per capita water availability varies from report to report because of their inclusion of sources of water. see www.strategicforesight.com. This report mark per capita availability at present in India is 1,730 cubic meter while at other places its 1,631. Anyway fact of the matter is its declining and will decline

Programme(UNEP),based on a variety of measures-including ecological insecurity, water management problems and resource stress-characterizes-two key water basins of south Asia(the Helmand and Indus) as ‘highly vulnerable’.(UNEP,2009,Kugelman,2011;16).

Due to territorial contiguity, India shares border with all south Asian states, except Afghanistan⁴.It also shares river water with four (Pakistan,Nepal,Bangladesh and Nepal) of its regional neighbours. Although, treaties have been signed to distribute and jointly manage the common rivers, still water conflicts between the co-riparians have not been completely resolved.

This chapter will discuss the political economy of water, reasons for conflicts and cooperation on common river water and look into the persisting transborder water conflicts in south Asia, with focus on India-Pakistan river water sharing.

2.2. Political Economy of Water

Defining ‘resource’, Zimmerman said that they are fundamentally a matter of relationships, not things. They do not exist outside the complex relationship between societies, technologies, cultures, economies and environments in some pre-ordained form, waiting to be discovered. They are created by these relationships (As cited by Howitt, 2001). The geo-politics of resources therefore is not simply about access to and trade in pre-existing things called resources. Rather it is about fundamental transactions of power, wealth and privileges. (Howitt, 2001).

Zimmerman and Howitt have generalized the natural resources but nowhere the dependence of society and the economy upon environment is seen more clearly than in relation to water. (Green, 2003; 1).Possession or having hold over rich water sources had been mean to establish power over the others.In almost all countries social stratification exists according to which people are divided into various groups.The dominant group also have its hold over water resources. Punjabis in Pakistan, upper castes in rural India

substantially by 2030.The water availability at that time according to this report is 1,240 cu.mt for India,5,500 cu.mt for Nepal and 5,700 for Bangladesh.

⁴ The part of Jammu and Kashmir which touches border with Afghanistan is under the administrative control of Pakistan. Therefore, at present India does not have its border with Afghanistan.

etc have water resources under their virtual control. This control gives them power vis a vis other groups. The reasons for continuing their control has been further boosted due to depleting water resources. Similar stratification is there among the countries. The dominant one also dominates over the natural resources due to its material power. As water resource will be an important source for attaining status of social and political power, the dominant groups in society and countries in international system will leave no chance to establish their hold over the available surface water bodies.

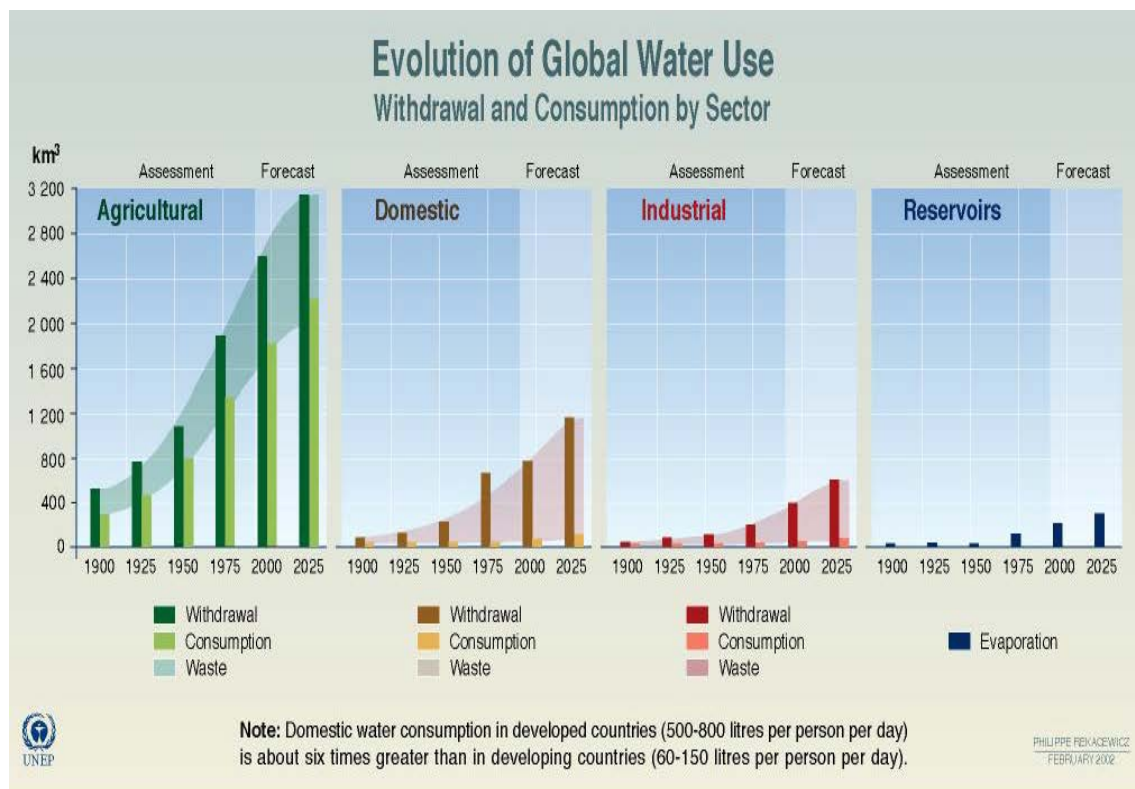
It is not that the quantity of water on planet earth is less rather it is the most ubiquitous resource on earth, but 97.5 percent of the world's water is too salty for human consumption and crop production. Even the rest of the fresh water, an estimated 35 million cubic kilometers (million cu km)/year, cannot be fully accessed; most of it is locked either in the ice cover of Arctic and Antarctic regions or in deep underground aquifers. (Saleth & Dinar, 2004; 3). Thus, the physically accessible fresh water potential of the world is only 90,000 cu km/year. This amount represents just 0.26 percent of global fresh water reserves. (As cited in Saleth & Dinar, 2004).

Close to the two-thirds of available water known as *green water* evaporates back to the environment and responsible for rainfall and balancing the ecological system. Even the rest, known as *blue water*, which can be used cannot be fully utilized due to economic, technological and environmental limitations, spatial and temporal mismatch between fresh water availability and demand, and pollution-induced quality deterioration. (Saleth & Dinar, 2004; 2). The spatial distribution is grave problem as water resources are not available where or when needed. Brazil with small fraction of global population has one-fifth of world's water resources whereas India and China, the two "thirsty powers"⁵ with more than a third of population have only one-tenth of global fresh water resources. (ibid).

Food security and industrial growth is fully depended upon its availability. Sector wise, consumption of water resources shows that its largest consumer is agriculture sector. It accounts for about 67 % of withdrawals, industry uses 19% and municipal and domestic uses account for 9%. (Report of the World Commission on Dams, 2000; 5). However, with

⁵ Jonathan Holslag has used this word to describe water situation in India and China.

the rapidly increasing global population, climate change and uneven distribution of water sources there will be difficulty in satisfactorily fulfilling the water demands of these three water consuming sectors. To meet the food requirements, water used in agriculture may have to increase by 15 to 20% by 2025, even with improvement in irrigation efficiency and agronomic potential. (ibid).



Source: Igor A. Shiklomanov, State Hydrological Institute (SHI, St. Petersburg) and United Nations Educational, Scientific and Cultural Organisation (UNESCO, Paris), 1999.

If it continues to be business as usual, one-third of the countries like China, India, Yemen Mexico etc, in water stressed regions of the world are expected to face severe water shortages in this century and within these regions there is going to be great disparities in access to fresh water. A significant number of less developed countries, including regions of India and China are already facing severe shortages. With population growth and climate change, the number of countries in this category is increasing and by 2025 there will be approximately 6.5 times as many people—a total 3.5 billion—living in water stressed countries. (ibid).

Economic growth has two implications. The first is that increased economic activity will increase the demand for water-related services-regardless of whether the demand is satisfied by more efficient use of the existing supply. The second is that both the development brought about by economic growth and technological changes that accompany it will lead to structural changes in the pattern of goods and services that society produces and in the way these services are provided. The water demand per unit of Gross Domestic Product(GDP) will depend on how these two components of economic growth are combined.(World Commission on Dams,2000).

As the water resources are depleting, debates are going on over adoption of methods to manage its decline. One way, which has been suggested and widely accepted is the role of epistemic communities in decision-making activities. As the epistemic communities develop common understandings of problems and solutions cross-nationally, they may help their respective governments reach convergent solutions. They help to integrate environmental concerns into economic and political decision-making. It thinks outside the box.(Kibaroglu,2008;192).But individuals make decisions regarding resource use by weighing numerous and varied options depending on their particular circumstances and social context. Uncertainty has always been a key factor in decision-making.(Sick,2007;81).This uncertainty is because of growing scarcity, which has potential to destabilize or fail even the best form of water management system.

Anticipating the future challenge, the United Nations Development Programme(UNDP) , published its annual Human Development Report (HDR), 2006, with title *Beyond Scarcity: Power, Poverty and the Global Water Scarcity*. Releasing the report former UN Secretary-General Kofi Annan has put it “Access to safe water is a fundamental human need and therefore, a basic human right.”Ensuring that every person has access to at least 20 litres of clean water each day to meet basic needs is a minimum requirement for respecting the right to water-and a minimum target for governments.(ibid).

In this report the focus is on the sustainable management and judicious use of water. It has carried the spirit of Dublin and Bonn principles.⁶ Focusing upon the importance of water resources and the problems arising due to it the report says:

Unlike wars and natural disasters, the global crisis in water does not make media headlines. Nor does it galvanize concerted international action. Like hunger, deprivation in access to water is a silent crisis experienced by the poor and tolerated by those with the resources, the technology and the political power to end it. Yet this is a crisis that holds back human progress consigning large segments of humanity to lives of poverty, vulnerability and insecurity. This crisis claims more lives through diseases than any war claims through guns. It also reinforces the obscene inequalities in life chances that divide rich and poor nations in an increasingly prosperous and interconnected world and that divide people within countries on the basis of wealth, gender and other markets for disadvantage. (Human Development Report, 2006; 1).

The HDR further adds that overcoming the crisis is one of the greatest challenges of the 21st century. Success in addressing that challenge through a concerted national and international response would act as a catalyst for progress in public health, education and poverty reduction and as a source of economic dynamism. (ibid).

Water security is an integral part of the broader conception of human security. It is about ensuring that every person has reliable access to enough safe water at an affordable price to lead a healthy dignified and productive life while maintaining the ecological systems that provide water and also depend on water. When these conditions are not met, or when access to water is disrupted, people face acute human security risks transmitted through poor health and the disruption of livelihoods. (ibid).

According to Human Development Report, 2006, water insecurity violates some of the most basic principles of social justice. Among them:

⁶ In 1992 United Nations International Conference on Water and Environment was held in Dublin, Ireland. It was preparatory water event for the Rio-de-Janeiro's earth summit. The resolutions adopted at Dublin is known as Dublin principles; 1. Fresh water is finite, vulnerable, and essential resource, which should be managed in an integrated manner; 2. Water development and management should be based on a participatory approach, involving users, planners, and policy makers at all levels; 3. Women play a central role in the provision, management and safeguarding of water; 4. Water has an economic value and should be recognized as an economic good, taking into account affordability and equity criteria. As the Dublin Conference prepared agenda for Rio, the Bonn freshwater Conference of December, 2001 did the same for the Johannesburg Summit IWRM was also on agenda, as condensed in the so called five Bonn keys: (i) The first key is to meet the water security needs of the poor; (ii) Decentralisation is key. The local level is where national policy meets community needs; (iii) The key to better outreach is new partnerships; (iv) IWRM is needed to bring all water users to the information-sharing and decision-making tables; (v) The essential keys are stronger and better performing governance arrangements. (Ollis, 2005).

1. Equal Citizenship: Every person is entitled to an equal set of civil, political and social rights, including the means to exercise these rights effectively .Water insecurity compromises these rights .A woman who spends long hours collecting water, or who suffers from constant water-related illness, has less capacity to participate in society, even if she can participate in electing her government
2. The social minimum: All citizens should have access to resources sufficient to meet their basic needs and dignified life .Clean water is a part of the social minimum, with 20 litres per person each day as the minimum threshold requirement.
3. Equality of opportunity: Equality of opportunity, a key requirement for social justice is diminished by water insecurity. Most people would accept that education is integral to equality of opportunity. For example, children unable to attend school when they are afflicted by constant bouts of sickness caused by unclean water do not in any meaningful sense, enjoy a right to education.
4. Fair distribution: All societies set limits to the justifiable extent of inequality. Deep in access to clean water in home or in the field does not meet the criterion for fair, distribution especially when linked to high levels of avoidable child death or poverty (ibid).

2.3. Conflicts over Water Resource

Worldwide there are 263 major river systems⁷ that cross national boundaries and are responsible for 85 percent of the earth's runoff.(Aron T.Wolf ,1995,as cited by Swain,2008;201).One of the most difficult conflict between two countries,to resolve, is over transborder river water sharing.Governments and most people think of the water that flows through their countries as a national resource.Legally and constitutionally,that may be accurate.But much of what is perceived as “national water” is in fact shared

⁷ According to World Commission on Dams the number is 261.(WCD,2000;252).

water.(HDR,2006,210).It is these shared rivers which gives rise to water conflicts between the two countries. For some 39 countries, with a population of 800 million, at least half their water resources originate beyond their borders. Iraq and Syria rely for most of their water on the Tigris and Euphrates Rivers flowing out of Turkey. (ibid).

Countries are taking all measures to control the transborder rivers,so that they can reap benefit out of it.Israel in 1981 formally annexed the strategic Golan Heights,which controls its major water sources, including those that feed its main freshwater lake,Tiberias. One of the developments leading to the Six-Day War ,in fact was Israel's completion of its so-called National Water Carrier, a major water transfer network linking most of its water projects and taking surface water from the northern lake Tiberias-now the source of one-third of its fresh water supply-to the deep south, including groundwater admixed en route.(Chellaney,2011;251).

Due to contiguous border with almost all south Asian states, China shares natural resources with them. It is upstream to most of the important south Asian river systems like Indus,Karnali ,Brhamaputra etc.Its upstream activities flows in these river. India-China conflict over Brahmaputra is worldly known affair. Its activities on Brhmaputra are not only affecting north-east India rather also posing challenge to Bangladesh. India's water release to Bangladesh from the river Brahmaputra depends upon the quantity it receives from China.

Not only Brahmaputra but other northern flowing rivers, like Indus River System (IRS) too originates in Tibet and play important role in economic activities in upper Himalyan states of India and Pakistan . They too have been eyed upon by China for its long-term water security plan. China is playing important role in development of multipurpose hydro-projects in Pakistan administered Kashmir. These projects are also going to benefit China, since it is upper riparian and has part of that area under its sovereign rule. But there are also latent projects about which both India and Pakistan get aware only after certain media reports produced it. One such project that shocked both India and Pakistan was a large Chinese dam on a tributary of the Indus River near Shiquanhe, less than one hundred kilometers from Jammu and Kashmir.(Holslag,2011).

One of the major reasons for almost all inter and intrastate water related conflicts is construction of multipurpose projects to exploit the river water. Riparians ,in order to,use maximum quantity of water are constructing dams over the common rivers. Medium and short height dams are not very problematic .The cause of worry is the larger dams. According to International Commission on Large Dams(ICOLD),large dam is a dam with a height of 15m or more from the foundation. If dams are between 5-15 m high and have a reservoir volume of more than 3 million cubic metres, they are also classified as large dams. Using this definition, there are over 45,000 large dams around the world. The world's two most populous countries-China and India, have built around 57% of the world's large dams-and account for the largest number of people displaced. In China 10.2 million people are officially recognised as 'reservoir settlers' while in India its 16 to 38 million people .(World Commission on Dams, 2000;11).

Almost all dams have attracted opposition by the lower riparians as through it the waters to the lower riparian can be easily regulated and so is their water security.The co-riparian countries have always criticised and sometimes have used legal methods to stop the construction of dams on transborder rivers. Pakistan has opposed the Kishanganga project because it feels that through it India would be able to regulate water from river Jhelum, which according to Indus Water Treaty of 1960 falls under its utilization control.⁸ It has moved to court of arbitration, which is an arrangement made in Indus Water treaty signed between India and Pakistan to share waters from Indus River System(IRS).On Baglihar too it had moved for arbitration but that issue has been resolved now. Bangladesh was opposed to Tipaimukh project but after twenty eight years of diplomacy it has agreed now. Nepal has its concern over the Mahakali project. Likewise, there are many projects where the weak upper riparian and lower riparians have shown their dissent. Some of these projects have been with held for longtime while some have been politically given up.

Even within state the multipurpose projects have created rift among the people from different federal units. In India the Mullaperiyar project has created controversies

⁸ Though the area where the river flows, before entering in Pakistan, is not under political control of Pakistan but according to the Indus Water Treaty of 1960 it has got right to utilize the maximum quantity of water from this river. Hence it has only utilization control and not political one.

between Tamil Nadu and Kerala. Tamil Nadu has raised strong objections over it while Kerala considers it as an important for its economic purposes. In Pakistan, Sindh and other provinces and federal territories have always expressed their concerns over the projects on the river Indus. They allege that Punjab, through those projects, diverts water of river Indus at the cost of others. These projects are source of violence also. In India, over the issue of height of Mettur dam people from Karnataka and Tamil Nadu have used violent means on each other. (Qutub and Prajauli, 2004). The costly built dam becomes victims of politics. The intra-federation conflict is a source of great concern for federal leaderships because the bond of federalism is weak and also developing countries have witnessed secessionism. Also many separatist movements are going on in India, Pakistan and other developing countries. In light of those movements this resource can be a morale booster for separatist forces, who justifies their demands in name of resource grabbing by the “mainlanders” or dominant regions. (Baruah, 2005).

These projects are also being criticised and opposed by the people staying near to the site because they causes displacement, floodings and submergence of the land of indigenous people. Few projects may have been beneficial but many had not. The Bhakhra Nangal in India was considered as the “temple of modern India” in 1950s but at present it is harming the agricultural lands in nearby areas by accumulating silt. (Singh, 1997). Three Gorges Dam built by China produced devastating results to the people staying near to it. Likewise many more dams are there, which have created havoc. In India the victims of Sardar Sarovar Project (SSP) over river Narmada are still fighting against the state apathy. In Myanmar the people have opposed the construction of Myistone dam by China. This project has been stopped by the junta government under their pressure. The case is similar in Pakistan, Nepal and Bangladesh etc, where it's the local people, who has to pay the cost for these sorts of development projects.

Besides inter-state and intra-state water conflict is severe among the groups and communities in society. As a political resource, struggles over water are simultaneously struggles for power over symbolic representations and material resources. (Baviskar, 2007). This power is being used by the dominant group to capture or to dominate over the sources for water resource. Though water-stress is reality due to

increasing water resources but at access to and control over water at certain place is usually linked to prevailing social and power relations, and thus scarcity can be constructed differently by different political and social actors.(Mehta,2005).

Domination over the water resources have led to wars and even protest movements.The crisis in Darfur began with an attempt by the non-christian dominant muslim groups from Sudan to capture the source of water.The less powerful were forced to move away from the source of water to almost deserted part of Sudan.(Glieck,2006).Colonial rulers in India, through canals and dams, used to divert water to the regions ,where dominant castes indulged in commercial farming.(Singh,1997). In Gujrat the dominant caste has constructed the notion of water-shortage to divert Narmada waters into their sugarcane fields. (Mehta,2005).

Class disparity is wider in urban areas. There the dominant class gets more water in compare to the poor. The pricing of water has further increased the gap between the two groups in procuring water. The Human Development Report, 2006 mentions that some 1.1 billion people in developing countries have inadequate access to water. The report stresses that in many places despite of large quantity of water people facing water-scarcity due to power-imbalance. The scarcity is being manufactured by the institutions in order to make rich consume more water while the poor suffers due to unavailability of water for daily consumption. The report says;

The deficit is rooted in institutions and political choices, not in water's availability. Household water requirements represent a time fraction of water use, usually less than 5 percent of the total, but there is tremendous inequality in access to clean water and to sanitation at a household level. In high income areas of cities in Asia, Latin America and sub-Saharan Africa people enjoy access to several hundred liters water delivered into their home at low prices by public utilities. Meanwhile, slum dwellers and poor households in rural areas of the same countries have access to much less than 20 liters of water a day per person required to meet their basic human needs. Women and young girls carry a double burden of disadvantage, since they are the ones who sacrifice their time and education to collect water. Simultaneously in agriculture and industry sectors too the rich are getting more than the required water while the poor are suffering.(HDR,2006;2).

Many European and North American MNCs have made profitable investment in developing countries water sector and are front runner in grabbing this natural resource. Suez, Veolia and Thames are the leading companies of the world ,which has influenced all water related decisions in favour of privatization.(ibid).They draw favour from the domination of the first world countries in the decision making process of the World Bank. Out of \$20 billion a year loaned out to poor countries \$ 3 billion are for water and sanitation. In 1993 the World Bank adopted the *Water Resources Management* policy paper, which noted the “unwillingness” of the poor to pay for water services and stated that water should be treated as an economic commodity, with an emphasis on efficiency,financial discipline and full- cost recovery.(ibid;39). In race to get the allocated amount almost all countries from south have fallen into line of World Bank’s diktat.

Despite the fact that India voted in favour of the United Nations General Assembly resolution on Right to Water,in 2010 ,its new draft National Water Policy(NWP) circulated by the Ministry of Water Resources to water experts suggests that the government is poised to withdraw from its responsibilities of water service delivery, and that multinational corporations and financial institutions have too big a say in water allocation policy.(Varghese,2012).This is not only in India rather the MNCs are very active to control water resources ,in order to get benefit out of water-business. They are at some places constructing the crisis and present themselves as a saviour. Water Resource Group(WRG) via International Finance Corporation is systematically trying to influence how the world’s water will be allocated in future. It is seeking to influence the water policy in India, South Africa, Mexico, Jordan, China and Mongolia, where it is targeting public officials in water and environmental ministries.(ibid).

In 2000 under pressure from the World Bank, Bolivian government privatized the water supply in Cochabamba city. The protesters under the leadership of Oscar Olivera formed a front, named *Coalition in Defense of Water and Life*. They continued to protest until status qua was maintained in Cochabamba.(Sainath,2006). In India, in 1998, the government of Madhya Pradesh handed over a stretch of Sheonath river to Radius Water Limited for 22 years in lease, to complete Sheonath River Project. The government cited

the reason for it was the lack of funds. Later on when Chattisgarh was carved out of Madhya Pradesh, the government has to pay to the company for the deal, which it has never signed. The communities staying near the river have been worst affected because they do not have right to draw water from the river for their personal use.(ibid). In many other cities the Governments of respective states have invited the private sectors to make water-supply. These are just two examples many more examples of the privatization of water supply and water resources are there in developing countries. The poor people have successfully resisted the government's decisions, in some places but in many places they have failed to do so and still resisting.

With rising demand of water the conflicts are erupting. It is not possible to stop them, but they can be managed by judicious distribution of this resource.

2.4. Transborder Water Conflicts in South Asia

Michael Kugelman has talked about four reasons for the existing transborder water conflicts in south Asia.*Firstly*, World Bank has declared south Asia as the world's least integrated region.This prevents the member states from taking collective decision on water issues.

Secondly,many of the regional countries depend on the same rivers and, by extension,neighbouring upper riparians -for their water supply.India and Bangladesh depends upon Brahmaputra while both India and Pakistan are beholden to the rivers of the Indus basin.China ,not a geographical part of south Asia,holds key to all important sources of south Asian rivers.Its hydro activities in in upper part can be threat to entire region.It can create hydro domino effect:one nation's water policies can spark a chain reaction throughout the region.

Thirdly,south Asia's interconnected water geography is that major rivers originate in or pass through politically contested or tense areas.Brhamaputra,Salween,Indus ,Sutlej etc originates in Tibet plateau.The Indus River System pass through Kashmir.

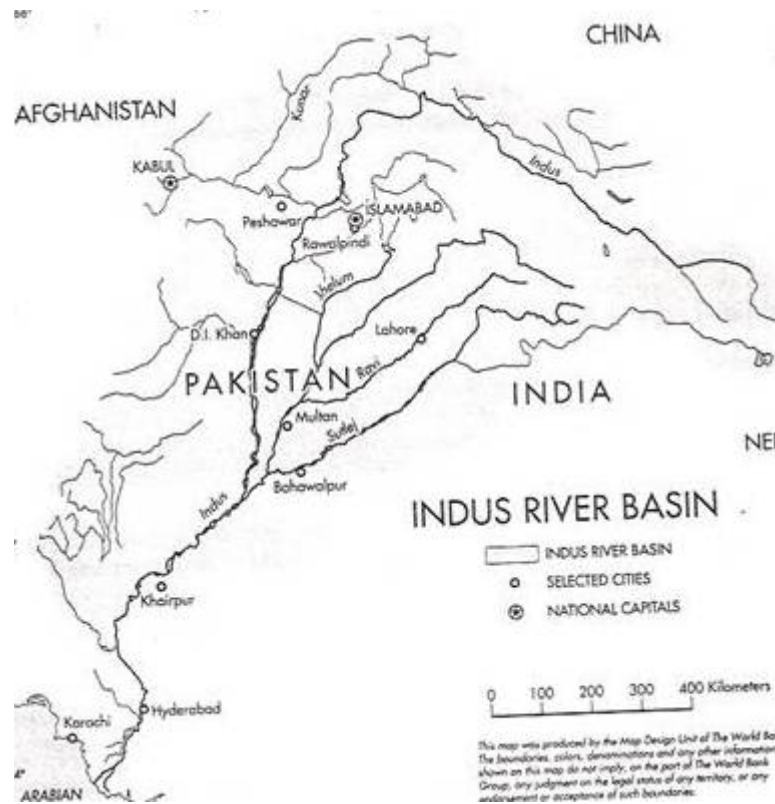
Lastly, both upper and lower riparians have engaged in building multi-purpose projects to secure their respective water interests and use it for productive purposes.(Kugelman,2011;16-18).

He further argued that the combustible mix of water vulnerability,geopolitical tensions and supply-side responses with ripple effects across borders constitutes a recipe for disaster-and figures to become even more explosive in the coming decades as the region's population growth soars and Himalyan glacial melt accelerates.(ibid).

As Kugelman has mentioned that south Asia is the least integrated region but the efforts towards regional cooperation is going on.In recent years regional collaboration has progressed,though with tortoise pace,in the arena of free trade,economic relations etc.But in case of shared water,the progress has been slowed down by what can be called,the dominance of hydrological nationalism in the negotiating postures of various governments.(Bandopadhyaya,2007).This is making the countries to adopt conflict posture against each other.The representatives of nationalism and right wing radical elements always attack on the implementation of the treaties and make public cries against their implementation.

2.4.1. *Water Conflict between India and Pakistan:* Like many other things for example language, culture, history etc India and Pakistan also shares rivers between themselves. To resolve the problem over the Indus River System(IRS) the two countries signed Indus Water Treaty (IWT) in 1960.The IRS comprises Indus,Sutlej,Ravi,Beas,Chenab and Jhelum.India and Pakistan, despite having three full wars (1948, 1965and1971) and one limited war in Kargil sector (1999), adheres to the IWT. The great example of their cooperation on this treaty is; even in the midst of the 1965 war,Indian payments to Pakistan as part of the Treaty,continued uninterrupted,as did the works of engineers of both countries to control the opening and closing of sluices(Tremblay and Schofield,2006;244).Even during the Kargil war and political-cum –military tensions

afterwards⁹ India has fulfilled its water commitment with Pakistan. But now the future of this treaty is question marked.



(Source: Salman,M.A.Salman &Kishor Uprety(2002); *Conflicts and Cooperation on South Asia's International Rivers; a Legal Perspective*.Washington D.C.;The World Bank)

The conflict over water sharing between India and Pakistan started soon after the partition of India in 1947. The two Punjab's i.e. eastern(Indian side) and western (Pakistani side) were at loggerheads over sharing of water from the river Satluj. As the boundary issue between India and Pakistan was not demarcated till July 1947 and so it was impractical to deal with the allocation of waters . (Salman & Uprety,2002;42). To

⁹ After Kargil various incidents have taken place,which had adverse impact on India-Pakistan relationship.One was operation Parakram , amilitary stand-off ,as a result of attack on Indian Parliament by Pakistan based terrorist group.Then Mumbai carnage carried out by the same group.During both major incidents, voices in India were raised to stop flow of Indus river to Pakistan. (Akhtar,2005). But despite all those cries India never stopped it.In Pakistan the terror groups always threaten to blow up hydel projects in Indian side of kashmir.IWT has faced all these challenges.

remedy the legal vacuum created by the partition the chief engineers of East Punjab (Indian side of Punjab) and West Punjab(Pakistani side of Punjab) signed a standstill agreement on December 20 1947 providing, interalia that until the end of current rabi crops on march 31,1948,the status quo would be maintained with regard to water allocation in the Indus basin irrigation system(Alam,2002). On April 1, India discontinued the delivery of water from the Ferozepur headwork to Dipalpur canal and to the main branches of the Upper Bari Doab Canal.(Gulhati,1973).

To resolve the impasse, an Inter-Dominion Conference held in New Delhi on May 3-4 1948,where a new agreement was signed (commonly called the Delhi Agreement) on May 4, 1948.Under the terms of that agreement, East and West Punjab recognized the necessity to resolve the issues in spirit of goodwill and friendship. Although the Inter-Dominion Agreement did not settle many of the issues, it at least blocked out the argument and provided modus vivendi until, 1960 when it was formally superseded by the IWT .(Salman & Upreti,2002;44).According to the agreement east Punjab promised to keep on supplying water to west Punjab for irrigation until the later complete an alternative canal system. In return west Punjab had to pay the east Punjab the cost of water it was getting from the later.(Yammoto,2009).

As the problem over water sharing could not be solved permanently the two countries decided to resolve it through bilateral dialogue. But aware about India's strength Pakistan proposed that the issue be submitted to the International Court of Justice or the United Nations Security Council. India, categorically rejected any third party involvement in dispute settlement and urged that Inter-Dominion Agreement be made permanent.(Salman&Upreti,2002;44). But the visit to the basin area by David Lilienthal, former chairman of Tennessee Valley Authority and the United States Atomic Energy Commission, made the World Bank to show its interest in the dispute between the countries. After his visit Lilienthal wrote an article and made certain recommendations to resolve the water dispute between India and Pakistan.(ibid). Eugene Black, the President of the World Bank at the time, acquiesced to Lilienthal's recommendations and decided to react positively and his decision led to offering of good offices of the World Bank to

break the ensuing stalemate between India and Pakistan over the water sharing from river Sutlej.(Undala ,2002).

India's objection were remedied by the World Bank's insistence that it would not adjudicate the conflict but instead work as conduit for agreement. It made clear distinction between the "functional" and "political" aspects of dispute and asserted that the dispute could be solved if functional aspects of disagreement were negotiated apart from political consideration. (Salman &Upreti,2002;46).

During the negotiations Pakistan insisted that the negotiations have to be limited to water distributions from river Sutlej only but due to India's insistence the IRS were included and negotiations started on all the rivers, which are tributary of Indus. (Gulhati,1973).The bank told the representatives of the two countries to present their plan, which they presented in 1953.Both plans were contradictory to each other. In order to settle the issue through bargaining the Bank presented its own plan on 5th February 1954.India accepted the plan on 22nd March 1954 while Pakistan asked for a delay in making its decision, in order to obtain an independent report on the proposals from a US firm of hydraulic engineers.The report announced that the plan was inadequate and would cause serious water shortages for irrigation developments. Hence the ad hoc agreement on water sharing were kept on renewing until Pakistan accepted the plan.(Yamamoto,2009). Finally, after eight years of negotiations finally the treaty was signed between India and Pakistan in 1960 at Karachi, then capital of Pakistan. The negotiations took place in different parts of the world in order to avoid any sort of direct public pressure on negotiators and to make the treaty as judicious and neutral as possible.(Gulhati,1973).

The treaty allocates the three western rivers to Pakistan - Indus ,Jhelum and Chenab plus Kabul- barring some limited uses for India in Jammu and Kashmir(Indus Water Treaty,1960&Verghese,2006). India got the entire waters from three smaller rivers (Ravi, Beas and Sutlej), less some minor irrigation uses for Pakistan from four nullahs that joins the river Ravi.(Iyer,2005). India was also permitted to develop additional irrigation of 1.34 million acres in J&K against which only 642,477 acres has been achieved so far ,leaving a balance of over half a million acres .Further India is allowed 3.60 MAF of

storage (0.40 MAF on Indus, 1.50 MAF on the Jhelum and 1.70 MAF on the Chenab). Sector wise allocation is: 2.85 MAF for conservation storage (divided into 1.25 MAF for “general storage” and 1.60 for “power storage”) and an additional 0.75 MAF for “flood storage”. (IWT, 1960 & Varghese, 2006).

In the final reckoning, Pakistan got 80 percent of the Indus and India 20 percent. India has limited rights on the western rivers and cannot undertake projects on those rivers without providing all the details to Pakistan and dealing with Pakistan’s objections. Why did India put itself in that position? The answer is that if Pakistan got the near exclusive allocation of the three western rivers, India for its part got the eastern rivers. This was important from the point of view of the Indian negotiators, because the water needs of Punjab and Rajasthan weighed heavily with them in seeking an adequate allocation of Indus waters for India. (Iyer, 2005).

The demand of Kutch (in Gujarat) was not taken into consideration despite many petitions, arguing about their historical claim on water of river Indus, sent by the prominent Kutchi leaders, in 1950s, to the Ministry of Irrigation and Power, Government of India. (Mehta, 2005; 91). Also the people from Indian side of Kashmir always show their ire against this treaty. On 3rd April 2002, the Jammu & Kashmir legislative Assembly, cutting across party affiliations, called for a review of the treaty. The State government has been contending that in spite of untapped hydro electric potential of 15,000 MW; the state has been suffering from acute power deficiency due to restrictions put on the use of its rivers by the Indus Treaty. They claim that their interests were not taken into consideration and their views were not taken while signing the treaty. Baglihar’s judgement is considered as blessing in disguise for the people from the Jammu & Kashmir. (Warikoo, 2005). This is because the run-of-the-river dam can produce 450 Megawatt of hydro electricity, which can be utilized by the people from the state.

Despite differences and grievances, on paper, IWT is one of the best treaty, which has potential to resolve many water related woes in India and Pakistan. Conflicts over the water sharing and IWT, is due to, its politicization by the two countries. According to the

treaty India is bound to inform Pakistan or consult on planned withdrawals and works on the western rivers and to ensure no harm or derogation of its water rights. There have been 27 times when such information has been passed or consultations organised and the record shows that Pakistan has raised objections in virtually all cases, even with regard to mini /micro hydro plants with miniscule pondages in respect of which “adverse comments” have been passed and matter dropped if below 1 MW capacity .The objections have generally been qualitative (“Treaty violation”) without quantification and substantiation. (Verghese,2006;IWT 1960).

Apart from the question of the sharing of the waters in terms of percentages, the real difficulty from the Indian point of view is that certain projects that India has planned on the western rivers are stalled because of Pakistan’s objections. It mandates broad Pakistani approval for Indian works on the western rivers in J&K, which has led to considerable delays in progressing Sallal, Uri, Dul Hasti, and Baglihar¹⁰, all run-of-river hydel schemes with diurnal peaking “pondage” to drive the turbines, but no “storage”. The design objections to Baglihar, finally cleared in India’s favour with minor modifications by the neutral expert. (Verghese, 2010). One such project, the Salal Hydro electric Project on the Chenab,after prolonged discussions at the commission level and later between the two governments and was eventually accepted by Pakistan(with some agreed changes) in the 1970s. However, differences over other projects-Tulbul or Wullar¹¹ and Kishenganga-are still unresolved. (Vardharajan,2010). The Tulbul flood detention barrage across the Jhelum has been stymied for 18 years. Long existing dispute between India and Pakistan over the question of Kishanganga has been finally directed for arbitration in court of arbitration. Tension between the two was also over Pakistan’s decision to construct the Dimar-Bhasha dam. Construction of Dimar-Bhasha dam was feared by India because it will inundate substantial portions of (Pakistan side) Jammu and

¹⁰ Salal,Dul Hasti and Baglihar is on river Chenab,Uri on Jhelum,Dul Hasti while Kishan Ganga and Baglihar are on river Jhelum.These projects are run-of-the –river dam multipurpose projects.Technically,according to the treaty India can built dams over them.Pakistan fears that these projects can tap their share of water and help it to regulate Pakistan’s agricultural based economy.

¹¹ Tulbul or Wullar is a navigation lock-cum control structure project.A barrage is to be constructed to store water by releasing waters from river Jhelum to the Wullar lake.Pakistan have objections over it.The work began in 1984 but yet to be commissioned.

Kashmir, which is legally claimed by India as its territory and no project work can be carried on without its permission.

Meanwhile, even as Indian utilisation of its water entitlements in J&K encounters Pakistani objections, the latter has no control over the upper catchments of the three western rivers. If these waters are to be optimally utilised, the key lies in chapter VII of the treaty, “Future Cooperation”, that envisages joint studies and engineering works in the upper Indus catchment’s on both sides of the LoC.(Verghese,2006).

It is not that Pakistan is always at fault by not agreeing to or by creating hurdles in the fulfilment of the terms and conditions of IWT, India too makes fault. Writing in *Times of India* dated 17 May 2010, former cabinet minister, Sherry Rehman, blames both India and Pakistan for the IWT crisis. She wrote “India can technically remain right side of the IWT, if it builds hydropower dams on the rivers Chenab and Jhelum ,but it is not allowed to use storage , timing to render downstream farmers destitute, nor to divert tributaries as indicated by the Kishanganga plan.” She even blames Pakistan for wasting 35 percent of water from the IRS. Even former foreign minister of Pakistan and now leader of Tehrik-i-Insaf, Shah Quereshi avowed that Pakistan wastes 35 percent of its share from IRS and so India should not be blamed for its water woes.

Professor John Briscoe, who has worked for more than 30 years on south Asia’s water issue and is currently at Harvard, on the basis of his study claims that the dams India is building will give it “the ability to choke off water if it wanted to pressure its neighbour.” He has also suggested that India should provide water flow data to Pakistan. He has also warned Pakistan against the heated rhetoric on water issue and slipping the issue in the hands of the terrorist groups(Briscoe,2010). Though Briscoe’s allegation may be correct for some incidents but cannot be generalized. In 2010, India allowed Pakistan to inspect several under construction Indian hydropower projects on the western rivers. The two nations have also agreed to set up a telemetry system to measure river flows.(Kugelman,2011;18).

Due to improved political relations, in 2010 Pakistan gave green signal to India’s project – Uri-II and Chutak(run –of-the river project on river Suru, tributary of river Indus, in

Kargil).Also both government concurred that Baglihar dispute had been definitively resolved.(ibid).But still fate of few projects are hanging and problem remains. As the problems are cropping with due to politicisation of the IRS projects the people in catchment areas are facing the real heat. The best way,though impossible, is to consider the IRS as a single unit and develop it for use by people living in catchment areas. Even David Lilienthal, on his first visit to the Indus region proposed for this sort of solution. But the relationship between two countries is such that conflict is bound to occur. The growing pressure on IRS will pressurize the two to further engage against each other on the issue of sharing of IRS water.With rise of Islamic fundamentalist groups in Pakistan and their cry of launching “water jihad” (Vardharajan,2010) against India will further complicate the problem and make the conflict remain intact despite agreements and mutual understanding on specific projects.

2.4.2. *Water Conflicts between India and Bangladesh:* Fifty-four rivers, including the three large ones, the Ganges, Brahmaputra and Meghana (GBM), are shared between India and Bangladesh. The total catchment area of the GBM river system is 1.75 million sq.kms of which Bangladesh accounts for 7%,Bhutan 3%,India 63%,Nepal 9% and Tibet (China) 19%.(Ahmad,2005). Of the three large river basins that are shared, the Ganges river has been the most contentious. This is also one of the most densely populated basins in the world, with a total dependent population of about 600 million, almost one-tenth of the world population. (ibid).

The dispute over the Ganges erupted as a result of India’s decision to construct a barrage in West Bengal, known as the Farakka Barrage, about 11 miles from the borders with Bangladesh that was then east Pakistan.(Rashid,2002).The decision for it was first mooted by the British engineers in the nineteenth century. (Iyer, 2002).However, due to various reasons it could not be fructified and again the decision to construct the Farakka barrage was made in 1951, actual work on the barrage started in 1961 and it was completed in 1971.The barrage is about 2,240 meters long. The feeder canal from the barrage, which is about 25 miles long, was completed in 1975 and the barrage came into operation on April 21, 1975.(Salman & Upreti, 2002;136).The purpose of barrage was to ensure that the Hooghly River would receive, however low the flow of the Ganges may

be, up to 40,000 cubic feet per second (cusecs) of water diverted from the Ganges.(ibid).That was the reason for conflict because in worst season Bangladesh's share of water would be much lower than the satisfactory.

During the 1950s and 1960s, Pakistan strongly opposed the construction of the barrage, and tried different diplomatic channels to stop its construction. In opposing the barrage, Pakistan insisted that the lean flow of the Ganges of 50,000 to 55,000 cusecs constituted its normal and basic requirements for irrigation, domestic, municipal and other uses and any decrease in the flow of the Ganges would negatively affect irrigation, water supply, fishery production, groundwater tables and river navigation which is the most common mode of transportation in East Pakistan, and would worsen the problem of salinity.(ibid). Though, talks between India and Pakistan over the Farakka Barrage took place, but no serious discussion or negotiations at high level were conducted. India has maintained for much of the dispute that the Ganges is not an 'international river'. This claim was based on the fact that 80 percent of the Ganges Basin area lies in India.(ibid).

To resolve the issue here also like Indus Water Treaty, Pakistan, enthusiastically wanted to draw United Nations, but this time India succeeded in keeping away the third party in bilateral problem between the two countries.(Verghese & Iyer,1994).After coming into existence as a sovereign state ,in 1972, Bangladesh signed the treaty of Friendship with India and tried to look out for an amicable solution on water-sharing .The joint declaration issued at the end of the visit of the Prime Minister of India, Mrs.Indira Gandhi, to Bangladesh on March 19, 1972 included the decision "to establish a Joint Rivers Commission comprising the experts of both countries on a permanent basis to carry out a comprehensive survey of the river systems shared by the two countries in the fields of flood control and to implement them" .(Bhasin,1996;88).

Bangladesh contested that due to existence of Farraka Barrage, it had to face multiple problems. During the dry season from January to May every year, drought prevails in Bangladesh because of diversion of some of the waters from the Ganges through the Farakka Barrage and its feeder canal. On contrary, during the monsoon which lasts from June to September, Bangladesh faces severe flood,when the melting snow of the

Himalyas and the heavy rain in the region reach Bangladesh through the three mighty rivers and the smaller rivers, on their way to drain at the Bay of Bengal. About 2.6 to 3 million hectares (in Bangladesh) were flooded annually. In an abnormal year, when there is a synchronization of very heavy rainfall with peak discharges simultaneously in the Ganga and Brahmaputra, this figure may reach 6.5 million hectares or some 45 percent of the total area as happened in 1955 and 1974. (ibid).

To address the issue in 1975 a partial accord was signed under which India's share during each of the four 10-day periods was far less than the 40,000 cusecs it initially demanded. The share of Bangladesh ranged between 75-80 percent of the available water, while the share of India for the same period was about 23 percent. The Accord lasted only for 41 days of the lean season of 1975. It expired on May 31, 1975, and was not renewed or replaced by another agreement. India started withdrawals to the full capacity of the feeder canal of 40,000 cusecs after expiry of the Accord. (ibid).

Political honeymoon between India and Bangladesh, abruptly, ended after the assassination of Sheikh Mujib-ur-Rehman, in an army coup. Under General Zia-ur-Rehman, Bangladesh used international platforms to raise India's water hegemony. The seventh Islamic Foreign Ministers' Conference, which was held in Istanbul, Turkey expressed its deep concern over the problem of sharing equitably the distribution of the waters of the (international) river Ganges. A joint communique issued at the end of four day meeting (May 12 to May 15, 1976) said the problem arising out of India's unilateral withdrawal of Ganges waters only resulted in the aggravation of economic hardship and the retardation of the process of national reconstruction in Bangladesh, a riverine country. (Khan, 1976; 152). Then, on August 21, 1976, against India's insistence, Bangladesh decided to take up its dispute with India over Farakka Barrage to the United Nations (UN). It claimed that it was facing water shortages and thus had no other viable option. Thus the issue was internationalized. Both sides prepared their own White papers to respond each other in the UN. (Rashid, 2002; 58).

In the UN India referred to the Helsinki Rules and cited Article IV that "each basin state is entitled within its territory to a reasonable and equitable share in the beneficial use of

the waters of the Ganges River and claimed that those were existing uses that have been made of the Ganges for centuries, resulting in a pattern of interdependence between land, water and human life. Helsinki Rules does not oblige the upper riparian to leave intact the existing quantum of flow, and that insistence on the historical or natural flow was a total denial of the principle of equitable sharing enshrined in the Helsinki Rules, and amounted to an exercise of a veto on the rights of the upper riparian's right to a reasonable and equitable share.(Salman & Upreti,2002). Bangladesh also invoked the theory of injury claiming that the injury caused to Bangladesh through the diversion of the waters to the Hooghly River was clear and substantial, quoting Principle 21 of the Declaration on the Human Environment.(ibid).However, Bangladesh was not able to muster enough support for this resolution. Instead, a Consensus Statement was adopted on November 26, 1976.(Bhasin,1996).

The Consensus Statement adopted by the United Nations General Assembly on November 26, 1976, proved to be a jump starter to the Indo-Bangladesh negotiations over the Ganges. The change of Government in New Delhi played important role in 1977 Indo-Bangladesh agreement on Ganga water sharing .The Janta Party was not shackled by previous positions and did not have close ties with Sheikh Mujib.They wanted to open a new chapter in the relations with Bangladesh , bearing in mind the perceived embarrassment emanating from the United Nations Consensus Statement.(ibid).

In 1977 the two countries signed an Agreement to share water from the Ganges.The agreement was for five years but for all practical purposes expired on May 31, 1982, at the end of the dry season for that year. This is because the sharing arrangements under the Agreement ended on May 31 and the mandate for the Commission with regard to the augmentation proposal ended in 1980 and was not renewed.(ibid). Meanwhile in India, congress backed into power and in Bangladesh there was another military coup led by General H.M.Earshad. He visited India and discussed the issue of water sharing from river Ganga before the expiry of 1977 agreement but rather than agreeing to extend the 1977 Agreement the two countries concluded a new agreement. Memorandum of Understanding on the sharing of the Ganges was signed in New Delhi on October 7, 1982

by the two Ministers of Foreign Affairs. Except for deleting the guarantee clause , the MoU was, by and large, similar to the 1977 Agreement.(ibid).

It was the best possible deal that Bangladesh could obtain.(Salman&Upreti,2002;158). Another shared river, the Teesta which is also International River shared by India and Bangladesh ,also came into focus,during their talks. In its twenty-fifth meeting held on July 20, 1983, pending completion of such studies, the Commission reached ad hoc arrangements over the Teesta whereby India would receive 39 percent of the flow and Bangladesh would receive 36 percent while 25 percent would stay unallocated. Those amounts would be revisited after completion of the scientific studies. This adhoc accord was to remain in force for two years, until 1985.(ibid).

But it did not provide any momentum to the stalled augmentation discussion, and the meetings of the Commission did not bring any changes to the positions of the two countries. The dry season of 1984 ended, and with its end the 1982 MoU expired. India refused to extend the arrangements under the 1982 MoU for three more years as proposed by Bangladesh(ibid). No new agreement was reached during the monsoon season of 1984, and the dry season of 1985 started without an agreement in place.(ibid).

President H.M.Earshad and the Prime Minister Rajiv Gandhi, met at Nassau, in the Bahamas in November 1985, while attending the Commonwealth Heads of Government/State Summit.They agreed that the two countries would sign a memorandum of understanding, for three years, reiterating the water allocation for each country under the 1982 MoU, and setting out the terms of reference of a joint study to be undertaken by experts from the two sides on the available water resources common to both countries. The two Irrigation Ministers met in New Delhi from November 18-22 and agreed on a new memorandum of understanding that was signed on November 22, 1985. This agreement used the name Ganga/Ganges , throughout the paragraphs of the MoU.(ibid).

After all these adhoc arrangements, the treaty between two countries,to share waters, were finally signed in 1996.This treaty was result of Mr.I.K.Gujral's,then minister for external affairs of India, policy of extending stretched friendly arm towards the neighbours. This was also supported by then chief minister of west Bengal,Jyoti Basu.

This is the first time an agreement on the Ganges between India and Bangladesh was called a Treaty; the previous agreements were called “Partial Accord,” “Agreement” and “Memorandum of Understanding (MoU).” The choice of the term “Treaty” should be seen as implying a stronger political commitment on the part of the signatories. Moreover, whereas the 1977 Agreement and the two MoUs of 1982 and 1985 were signed by ministers, either of irrigation or foreign affairs, the Treaty was signed by the two Prime ministers at that time Mr. H. D. Deve Gowda, Prime minister of India and Sheikh Hasina Wajed, Prime Minister of the People’s republic of Bangladesh. This sent a stronger political commitment to the treaty. (Salman & Uprety, 2002). In addition, the Treaty was to remain in force for a period of thirty years, and “.....shall be renewable on the basis of mutual consent”. (1996 Ganga water sharing treaty).

1996 Indo-Bangladesh Ganga water sharing treaty addressed the two concerns- Farakka and the idea of ‘augmentation’. The Indian proposal was for the augmentation of the water-short Ganga from the water-surplus Brahmaputra through a huge link canal from Jogighopa to Farakka, running right across Bangladesh. The Bangladesh proposal was for the augmentation from within the Ganga system by storing its monsoon flows behind seven high dams in Nepal. Each side had serious reservations on the other’s proposal and endless discussions produced no agreement. This disagreement was addressed by the 1996 water-sharing treaty between the two countries. (Iyer, 2002 & 1996 Ganga Water Sharing Treaty).

Despite having a treaty to share water between them India and Bangladesh still have disputes over sharing water from river Teesta. During his visit to Bangladesh in September 2011 the Indian Prime minister Manmohan Singh was all set to sign a treaty on sharing of water from river Teesta¹² but could not because west Bengal chief minister Ms Mamta Banerjee refused to release that much water to Bangladesh, while chief ministers from other riparian areas- Sikkim, Tripura and Meghalaya- had no problem. (Chandrasekharan; 2012).

¹² This treaty would have raised the share of Teesta river to Bangladesh from 36 to about 50 percent.

Another irritant in India-Bangladesh river dispute is over construction of 163 meters ,run-of-the river,multipurpose project-Tipaimukh dam over river Barak.This project was first discussed in 1972 than in 2005 and again it's in news since 2011.The deal to construct this 1,500 MW project was signed among National Hydro Power Company,Sutlej Jal Vidut Nigam Ltd and Manipur government.(The Hindu dated 21 November,2011).There is wide opposition to it in Bangladesh where its felt that with the help of it India will divert water flow from India to Bangladesh. Indian Prime Minister Manmohan Singh during his visit to Bangladesh in September 2011 had assured the political leadership that India will not harm Bangladesh's water interests. But at civil-society level this project is meted with strong protests.Environmentalists and agricultural experts have warned that the twin dams at Tipaimukh and Phulartel would dry up the rivers and water-bodies down stream,rendering vast farmland arid ,hitting agriculture and threatening food security in northeastern districts of Bangladesh.(ibid).This project is also being opposed by the local populations in Manipur ,who maintain that they will face challenges like displacement,submergence of land etc due to construction of this project.

2.4.3. Water Conflict Between India and Nepal: Nepal is rich with water-resources and an upper riparian to all Indo-Nepalese Transborder rivers. It is estimated that these Nepalese rivers could generate up to 83,000 MW of hydroelectric power, which is more than the combined total hydroelectric power produced by USA,Canada and Mexico.(Subedi,2005).To harness the hydro power the two countries have concluded various water-sharing treaties. The public opinion in Nepal has always been very critical of Kosi and Gandak agreements. As the barrages were constructed quite close to the Indian border, Nepal was unable to benefit from them. Had the projects been located further up in Nepal,it could have received a fair share of waters for irrigation from them. What is more ,a large area of Nepal bordering India was submerged by the execution of these projects meant to benefit India,with Nepal on the receiving end of the negative impact of the projects.(ibid).These river water treaties have negatively affected the relationship between the two countries.Nepalese holds a belief that India is all out to exploit their water resources.

The Kosi¹³, Nepal's largest river, originates in Tibet, is called Sapta Kosi after the Tribeni confluence, from which point it starts its southwesterly journey. With seven main tributaries, it is the largest tributaries of the Ganges. It enters India near Hanumangarh, and 20 km further downstream it joins the Ganges near Khursela in the state of Bihar. It is the wildest river and has devastating effects in the Indian state of Bihar, where it brings flood every year.

Kosi project, aimed to control its wildness, was initiated by Indian Prime Minister Pandit Jawahar Lal Nehru. It is a multipurpose scheme that includes flood control, hydropower generation and irrigation. Historically, the idea of tapping the waters of the Kosi had been discussed in India as early as 1896. But because of the absence of serious feasibility studies no immediate decision was made. This idea resurfaced in the 1930s, but again because of political uncertainties in both India and Nepal, no concrete decision was made. The scheme was endorsed by Nepalese government in 1954 and hence the Kosi agreement was signed. (Subedi;2005).

After the signing of Treaty on Kosi River System in 1954 the agreement was criticized by the opposition political parties in Nepal. They asserted that the Project did not benefit Nepal in any manner, whatsoever, and that it granted extraterritorial rights to India for an indefinite period without providing Nepal with adequate compensation. Nepal would receive only a minute proportion of the total irrigated land and India would benefit more from the power resources developed by Nepal. (ibid). Also alleged was that Nepal had to lose its fertile land without equivalent gains in exchange of it, and that the scheme was actually designed for the furtherance of India's own interests without paying proper attention to the well being of the Nepalese people. (Salman & Upreti,2002). There was widespread Nepalese resentment about the Project.

During the early 1960s when the political relations between India and Nepal had deteriorated severely there was pressure on the Government of India to revise the Kosi

¹³ River Kosi is also known by a sobriquet 'sorrow of Bihar'. Every year it creates heavy flood in its catchment areas. In 2008, it led to a devastation because Kosi changed its course, which all rivers do in every 200 years of their flow. The Government of Bihar and Government of Nepal blamed each other for sheer negligence.

Treaty. In 1966 the Treaty was re-visited and amended, which took care of Nepal's all concerns that were present in the earlier treaty like compensation, water use, land lease, construction, fishing rights etc. (ibid). But still all differences could not be ironed out by the 1966 treaty.

It is widely perceived in Nepal that the 1954 Agreement on the Kosi Project severely limited Nepal's freedom to develop the Kosi River system. The revised Agreement improved the position of Nepal but slightly. Few articles were completely deleted. Nepal entered into the Kosi Agreement under lot of internal pressure attributable to the prevailing political instability, as well as external pressure from India. The first agreement was negotiated without enough homework on the part of Nepal. (ibid). The uproar against the agreement taught Nepal to be more cautious in the future on issues concerning water and related negotiations. The Agreement taught India to be more cautious and careful in the future on issues concerning water and related negotiations. It also helped India to understand that negotiations with its tiny neighbour needed to focus more on consensus-building approach, particularly taking into account the uneven understanding of national interests and dynamics among the different political actors in Nepal. It used its lessons while negotiations on Gandak Agreement that India and Nepal entered in the same decade (ibid).

The Gandaki River, also called the Narayani, originates in the Tibetan plateau and drains the central mountains of Nepal. It crosses the Nepalese border near Tribeni Bazar, and is called the Gandak in India, where after running a course of about 250 km, it joins the Ganges River at Sonapur near Patna in Bihar. Efforts toward harnessing the large irrigation potential of the river Gandaki had been made as early as 1871, although through informal channels. Formally, it was initiated in 1947 with the construction of a canal in Tribeni. The proposal to construct canal was accepted in 1959 and an Agreement was concluded on this river. (Upreti, 1993; 103). Similar, to the Kosi Agreement, the conclusion of this Agreement sparked protests from the political parties in Nepal. The construction of the barrage in the Nepalese territory was propagated as Indian encroachment on Nepal's sovereignty and territorial integrity. It was also stated that the

agreement had undermined the interests of the Nepalese people in general and that they were unfairly treated.(ibid).

Like Kosi agreement, there was also Dispute Resolution Mechanism(DRM) to resolve any project related disputes. If not settled by dispute, it shall be determined through arbitration. But like the Kosi Agreement here also the Dispute Resolution Body was marred by problems. First there is no provision for the appointment of an arbitrator if one of the states fails to nominate a member of the arbitration panel. Second if the two arbitrators fail to agree on the disposition of the issue in dispute, the two parties then may “consult each other and appoint an umpire whose award shall be final and binding them”. In other words there is no obligation to appoint an umpire.(Salman & Upreti,2002).

There were differences between the Kosi and Gandak Agreement although both were entered into relatively similar objectives. From Nepal’s perspective this was favourable with those of the Kosi Agreement for instance, while Article 4 of the Kosi Agreement gave Nepal 50 percent share of the hydroelectric power that India generated as a result of the Project,it did not require India to produce any power. In fact , India has not generated any such power,thus depriving Nepal of the promised benefit. Again article 10 of the Kosi Agreement stipulated that provision shall be made for free and unrestricted navigation at and around the barrage “if technically feasible,” the qualifying conditional words providing a justification for India’s doing nothing about navigation as required by the Article.(ibid;Kosi Agreement,1966).

With regard to compensation for Nepal for the land that it transfers to India for Project purposes, Article 3(i) and (ii) requires India to pay “reasonable compensation”. Unlike the Kosi Agreement, the Gandak Agreement, in Article 3 (iii) also provided that the lands vested in India as proprietor would be subject to payment of land revenues at the at which it is leviable on agricultural land in the neighbourhood.(ibid). This provision means that India is required to pay land taxes similar to those payable by any other proprietor of lands in the area. (ibid).

In the Gandak Agreement, India owns the land under a lease for 199 years commencing on December 19.1966, where there is no fixed term for the Gandak Agreement. In the

Gandak case, thus there is the possibility of the termination of the Agreement after the expiry of a reasonable time in the context of irrigation schemes would likely to be a controversial question. (Salman&Upreti,2002). A fixed term or atleast some mechanism for review if not termination for this type of agreement would have been desirable.(ibid).

The Gandak Agreement, like the Kosi Agreement, was wholly financed by India in the Nepalese territory. (ibid). Both Kosi and Gandak projects involved substantial submergence of scarce agricultural land coupled with the problem of rehabilitation of displaced people, an issue that has neither been studied in depth to assess the full costs nor resolved fully to date .Some displaced people have still not been compensated even after decades, and some resettled people seem to still suffer. Obviously, there were shortcomings to both Kosi and Gandak treaties but it is laudable that both India and Nepal attempted to tackle non-consumptive use of water. During the Kosi treaty the inexperience of the Nepalese diplomats were quite visible but later on they learnt a lot and gaining from past improved their bargaining power with India. (ibid).

The most controversial treaty between India and Nepal is Mahakali river treaty,which was signed in february 1996.The Mahakali River begins where two rivers,the Kali originating in the Taklakot area in the east,and the Kuthi-Yanki originating in the Zanskar range of the Himalayas, meet at Kawa Malla in the Darchula District in Nepal. Both merges to form Mahakali river and flows southwest,where it makes numerous oxbow lakes and is joined by many tributaries,the largest of which are the Chamlia River and the Chavandigad River.(ibid). It drains an area of 188 sq.km.in Nepal and serves as a western boundary for long distances between India and Nepal along the Indian province of Uttar Pradesh.It is called the Sarda River in India,and after it is joined by the Ghaghra river in the province of Uttar Pradesh,it is called the Ghagra river and finally joins the Ganges River in Bihar.(ibid).

The efforts towards exploitation of the Mahakali River waters began before India's independence from Britain. The colonial government formalized with its Nepalese counterpart in 1920, the negotiations of the Sarda Treaty in the form of an Exchange of Letters. The treaty provided for the construction of a barrage on the Mahakali River

(which is known as the Sarada River in India) at Banbassa bordering the present Mahendra Nagar in Nepal.(Mahakali Treaty,1996). The Treaty also provided for the construction of a power station at Khatima in connection with the Sarada Canal Project in the state of Uttar Pradesh in India. Under the Sarada Treaty, the Government of Nepal agreed to exchange 4,000 acres of its territory for construction purposes with an equal amount of land from the British Indian Government. Nepal also obtained the right to use a minimum of 400 cubic feet per second (cusecs) and maximum of 1,000cusecs of water from the Sarada Canal for irrigation purposes. The British Indian government built the Banbassa Barrage across the Sarada River. Nepal had objections with this treaty and it constantly tried to renew this treaty but it could not and the treaty continued for 76 years ,from 1920 to 1996,when it was replaced by the Mahakali Treaty.(ibid).

In the spirit of furthering cooperation within the Mahakali River area, the Governments of India and Nepal entered into a Memorandum of Understanding (MoU), commonly referred to as the Tankapur Agreement, on December 6, 1991.The Agreement provided for the construction of the left afflux bund (the retaining wall) on Nepalese territory for which the Nepalese provided 2.9 hectares of land.(MoU on Tanakpur Barrage Project,1991). Unlike the Sarada Treaty,however, the Tankapur Agreement did not provide for an even exchange of land from India. The Agreement, instead, provided for an installation of a head regulator (main part of the reservoir regulating the water flow) at the Tankapur Barrage with a capacity of 1,000 cusecs and required India to construct a canal so that 150 cusecs of water could be delivered to Nepal.India was further required to provide Nepal.India was further required to provide Nepal with 10mgawatts of electricity.The Tanakpur Agreement also stated that when there was an increase in the water supply at the Pancheshwar Reservoir,the supply of water to Nepal would also be increased. The provision of water and electricity by India to Nepal was seen *quid pro qua* to Nepal for providing India with 2.9 hectares of its land needed to construct the afflux bund.(ibid).

Entering into the Tanakpur Agreement with India in December is now considered as a hasty decision. The Nepalese Government of that time,led by Girija Prasad Koirala, did not appreciate the legal,socio-economic,and political ramifications involved in the

issue, or decided to overlook them to appease India. The deal, which relinquished 2.9 hectares of land to India to build a dam and a 120 megawatt power station in return for a share of the water and power, was criticized by the most of political parties of Nepal. (Iyer, 2002). The issue raised in the objections dealt primarily with a concern for Nepalese territorial sovereignty and a belief that Nepal had not benefited from the Project as much as India had. Those opposing the agreement argued that because the agreement dealt with natural resources it fell under the articles of the constitution and required ratification by a two-thirds majority of Parliament. A writ petition was filed in the Supreme Court, with the Prime Minister as one of the respondents, challenging the validity of the Tanakpur Agreement. The petitioner maintained that the agreement should have been presented to Parliament for ratification prior to its enforcement in accordance with the provisions of the Constitution. (ibid).

The Prime Minister argued that the decision to give 2.9 hectares of land to India was merely part of a memorandum of understanding signed by the Nepalese Minister of Law and Justice and the Indian Foreign Minister, and therefore was not a "Treaty" that was subject to the Constitutional provisions requiring ratification. This argument was rejected by most of Nepalese who saw the Tanakpur Agreement as another concession to India regarding water resources issues (ibid). The issue became very complicated and controversial. The Supreme Court issued its verdict in December 1992, and concluded that the Tanakpur Agreement was indeed, a Treaty that required ratification by the Parliament, and was not a mere Memorandum of Understanding. (ibid).

The terms 'pervasive, serious and long-term' in the constitution's article 126 were not defined and the period of the treaty as well as mode of implementation and institutional arrangements specified, so that Tanakpur agreement could be placed before the parliament for ratification by simple majority. Nepal's rights over Mahakali have been limited to as low as four percent, it is quite clear that much has been lost in this agreement. To hide their failure the political parties passed a stricture on the treaty through *sankalpa prastav* in parliament. (Gywali, 2007; 54).

The two countries are trying to settle down this dispute. In February 2012 in the first meeting of Joint Ministerial Commission on Water Resources in New Delhi, the move was made to set up Pancheshwar Development Authority to break the deadlock over construction of the multipurpose 6000 –MW Pancheshwar dam. The two sides agreed to fast track completion of the Detailed Project Report of Sapta Kosi High dam and the Sun Kosi Storage-cum-Diversion scheme by February 2013. India will also “study” the demand for compensation sought of crops and damage to land for water resources projects. India also responded positively to Nepal’s request for power from India. It was agreed to expedite the process for implementation of medium-term strengthening works for additional power supply to Nepal. (The Hindu ; 17 February ,2012).

2.5. Conclusion

The political economy of water conflicts is such that it cannot be either solved or resolved; only option left is to manage these conflicts by proper utilization of the available water resources. The onus to manage the conflicts and also water resource lies upon the stake holders. To do this is difficult so is to manage the conflicts. Conflicts over water resources is gradually picking up. Predicting their future need and economic insecurity countries around the world have started measures to ensure required supply of water. At community and individual level too measures are being taken to face the future challenges due to paucity of water.

CHAPTER THREE

INTER-PROVINCIAL WATER CONFLICTS IN PAKISTAN

3.1. Introduction

There are two major river systems in Pakistan: rivers flowing into Arabian sea and Endorheic river basin. The former comprises; Indus river basin, Lyari river, Hingol, Hub rivers. Later comprises of: Mashkal, Siastan basin, Indus plain etc. Among all, its river Indus, due to its wide reach is considered as the “lifeline” of Pakistan. Entire economy of Pakistan is dependent upon it. About two-thirds of water supplied for irrigation and for domestic consumption in Pakistan, come from river Indus and its tributaries. Therefore, there is conflict over the issue of water-sharing from this river.

Sindh, Balochistan, Khyber-Pakhtunkhwa (earlier known as North West Frontier Province), almost province-like unit, Gilgit-Baltistan¹ and federal territory of “Azad” Kashmir (Pakistan side of Kashmir) always allege that Punjab steals their share of water by diverting the water from river Indus and its tributaries to provide benefit to its farmers. They have resisted strongly against almost all multipurpose projects over river Indus due to that reason. Some projects like Kalabagh are still pending due to strong resistance from the provinces other than Punjab; while few like Mangala (1954) came up after suppressing strong anti-project voice by the people affected from its construction.

This chapter will discuss water between Punjab and Sindh. In this chapter the new names of the provinces have been used, even for their past references.

3.2. Water Conflicts in Pakistan

¹ According to Gilgit-Baltistan (Empowerment and Self-Governance) Order 2009; Gilgit-Baltistan will have a Governor as Pakistan has in the other four provinces. The leader of the legislative assembly will be known as chief minister; the Assembly will have 33 members, of whom 24 are to be directly elected and have powers to legislate on 61 subjects. The territory will have its own Chief Election Commission and Public Service Commission. (Subramaniam, 2009). This arrangement is almost what provinces in Pakistan have, sans the formal constitutional status.

In Pakistan only three percent of the total available water is used by industries,so the sharing problems are predominantly within agricultural or environmental domains.(Qutub&Prajauli,2004,71) Per capita availability of water , in 1951 was 5210 cubic meter,it reduced to 1100 cubic meter in 2006.(www.wapda.gov.pk).In 2010 it was 1038 cubic meter and is being projected to be 877 cubic meter by 2020.(As reported in Xinhua news service).Thus according to Water Stress Index developed by Mallin Falkenmark Pakistan, is already a water stressed country and by 2020 it will fall in category of country with acute water shortage.(Falkenmark,1990).

Other than population growth due to phenomenon of climate change, reduction in forest resources could reduce carbon sinks in upland areas and drive the temperatures up. Increased temperatures from diminishing carbon sinks and global warming could speed up snow melt in the summer and increase of flows being discharged during short periods in the Indus River System. Increased seasonal variability will increase drought during winter and flooding during the summer.(Asian Development Bank Report,2000). Both are portentous indicators for Pakistan's future water security.

Besides this demand-supply problem over the water sharing, there is also political discrimination, in terms of reasonable sharing of water resources. This has led to virtual "construction" of water scarcity by the dominant group. Due to "Punjabisation of Pakistan", even the legal demands of the other provinces have been either overlooked or just ignored.(Samad&Pandey,2007). Even Homer –Dixon, while being a part of a research project on *Environmental Change and Acute Conflict*,² which took up Pakistan as a case study, argued that in Pakistan resource war leads to tensions and competition among the groups. (Dixon, 1994).

Taking stock of global inequality,Human Development Report of 2006 says "Access to piped water into the household averages 85percent for the wealthiest 20 percent of the population,compared with 25 percent for the poorest 20 percent.....The perverse principle

² This was three years research project carried out by a team of thirty researchers from ten countries.It was sponsored by the American Academy of Arts and Sciences and the Peace and Conflict Studies Programme at the University of Toronto.It argued that the environment scarcity and unequal access to resources lead to conflicts between countries and among the communities.

that applies across much of the developing world is that poorest people not only get access to less water, and to less clean water, but they also pay some of the world's highest prices".(HDR,2006). This is also applicable in case of Pakistan. The dominant group or region gets more water than the others. All of the state's resources are effectively placed at disposal of the landed elite. If the poor want to save themselves or access these resources they could only do so through feudals in their district. The system in Pakistan at the best times is based on political patronage.(Ali,2011).

As a praetorian state there is a deficit of democratic-decentralization in Pakistan which leads to feud among the provinces on the issue of water sharing. Regionalism is growing very strongly due to this deficit of democratic-decentralization. The civil-society has failed to engage into a serious debate over the issue of water, which gives ample space to the politicians to exploit parochial and regional sentiments.(Habib,2005).

The root to all political problems that flares up water conflicts lies in lack of opportunities provided to the regions other than Punjab or groups other than Punjabis to participate in decision making process. This had caused emergence of regionalism and separatist movements. Soon after its birth in 1947, secessionist movements were started in all parts of Pakistan, except Punjab. Till 1980s separatist movement was alive in Sindh and Khyber Pakhtunkhwa³.(Cohen,2005). East Pakistan separated from the west in 1971. In Balochistan and northern areas⁴ secessionist movements are still going on. One of the main reasons for all these movements is disproportionate distribution of resources and exploitation of natural resources from the regions to develop Punjab.

³ Sindhis had problem with Mohajir and then Punjabi dominated Pakistan. Imposition of Urdu as national language angered them. They got right to use Sindhi only after Zulfikar Bhutto, became the Prime Minister. Jiye Sindh is a prominent underground secessionist movement in Pakistan. Legendary G.M.Sayed, till his death in 1995 called on for a separate Sindhi "nation". See (Cohen,2005). Khyber Pakhtunkhwa, earlier called NWFP, under the leadership of Khan Abdul Gaffar Khan wanted to be part of India but lost the stake in referendum. After 1947 due to ethnic closeness it wanted to be part of Afghanistan. The movement was there but gradually came to an end with rise of Islamic militantism. The issue got diluted because the tribal and secular Pakhtuns got larger issue i.e. to save Islam.

⁴ The northern areas contain a high percentage of Shia, some tribal in their ethnic origin and many Ismaili. The Northern Areas Thinkers Forum advocates for formation of two independent states in the northwest region of the subcontinent. The first would include Indian administered parts of Kashmir, minus Ladakh; the second would include the Gilgit-Baltistan-Ladakh areas. Another group seeks to create "Balwaristan" and wants statehood for Baltistan, Gilgit and Dardistan.(Cohen,2005;223).

Gellener maintains; reason for nationalism is the denial of economic resources by a dominant region or group to the others. This leads to a revolt by the deprived group or region against the dominant groups. They use racial or ethnic inferiorities as a reason for this sort of discrimination. Their discontent can find “national” expression: the privileged are manifestly different from themselves, even if the shared “nationality” of the under-privileged starts off from a purely negative trait, i.e. shared exclusion from privilege and from the “nation” of the privileged. It is in these situations that ‘culture, pigmentation, etc., become important: they provide means of exclusion for the benefit of the privileged and a means of identification etc., for the under-privileged (...). (as cited in Jafferlot, 2002; 10 & Gellener, 1964).

To bridge the differences and distribute natural resources most nation-states, at present, have some institutional mechanisms. One of the most effective institutions to address the conflict is federal system. This helps the modern nation states to manage their internal differences by giving equal representation to all groups in the decision-making process. This institution, in its genuine form, is absent in Pakistan. This is the reason of not settling down of decades old political controversies and conflicts over resource sharing.

3.3 Federal System in Pakistan

Since 1947, Pakistan has witnessed three written constitutions i.e. in 1956, 1962 and 1973.⁵ Besides these constitutions, due to its fragile political system, which kept on swinging between democratic and military regimes, it has witnessed promulgation of various martial law orders, which had acted as constitution during the military regimes. At present Pakistan is under the civilian led democratic government which is functioning under the guidelines of 1973 constitution.

Historically, in 1940's the Muslim League high command shunned the territorial conception of federalism because it did not control the Muslim-majority provinces. Lahore resolution underlined (con) federalist ambitions of Bengali, Sindhi, Balochis and

⁵ The first Pakistani constituent assembly was elected in 1947 and after eight years it drafted constitution for Pakistan. General Ayub Khan, after coming into power through a coup against his political patron, Iskander Mirza, issued a decree, which was served as constitution of Pakistan till 1969. It was abrogated by Ayub Khan, when he handed power to General Yahya Khan. 1973 constitution came into effect after secession of east Pakistan from the west. The constitution framing body had wide representation and was result of democratic election. Whenever civilian government has got a chance to come into power they have ruled according to this constitution.

Pakhtun nationalisms, who interpreted it as the foundation of a new social contract among provinces to become part of the new state. (Waseem, 2011).

Since its birth in 1947, federalism and provincial autonomy have been political catchwords in Pakistan. No constitutional matter has bred such a controversy as did the central unit relationship. But the principles of federalism have been undermined. (cited by Kundi, 2002). As dismissal of Dr. Khan's ministry in NWFP (present Khyber Pakhtunkhwa) and emergence of Jagto front in Bengal created dissension between centrifugal and centripetal forces over autonomy issue. A large number of provincial leaders hoped from the new nation that entrenched role of the central government would decrease after independence. However to their dismay it was reverse. The central government's role was increased. (Kundi, 2002).

Pakistan's first constitution was promulgated on 23 March 1956. It had 234 articles and 6 schedules and established parity between two wings, which were created as a result of adoption of one unit scheme. Provinces and territories of West Pakistan, were merged to achieve parity with East Pakistan. This constitution comprised of three lists: Central list had sixty one subject, Provincial list had ninety four and concurrent list had nineteen subjects. The residual powers were with the provinces. This constitution could not last long, martial law was imposed in 1958. As a result this constitution was abrogated and new constitution came into effect on 8th June 1962. (Saleem, 2010).

General Ayub and Iskander Mirza in particular, championed the cause of one unit and steamrolled opposition from Sindh, NWFP (now Khyber Pakhtunkhwa) and Balochistan. West Pakistan had its capital in Lahore, in Punjab moved from Karachi then to Islamabad, also in Punjab. (Waseem, 2011). This has further boosted the constituent units, who considered this as a way to subjugate their identities. National integration of the territory had been the rationale behind the adoption of one unit but it led to fierce backlash in the form of ethno-nationalist movements in Sindh, Balochistan and Khyber Pakhtunkhwa. The erstwhile province of West Pakistan was restored in 1970, when Balochistan was created as a province for the first time. (ibid).

In Pakistan two-third majority in both houses of parliament is needed to create new province. In 1972 Sindhi was recognized as official language of Sindh and Urdu was de-recognized followed the ethnic conflict between the two communities. The federal structure of 1973 constitution exacerbated ethnic conflict by creating a *de jure* recognition of more linguistic communities identified with their respective federating units. Thus Sindhis, Punjabis, Pathans and the Balochis got their 'homelands' legally acknowledged as federating units of Pakistan under their respective provincial governments. (ibid). There are still more like Mohajirs, Seraiki, Hindko and Hazaras, who are fighting for an identity or language based provinces. The incumbent government has shown desire to look after the issue of creating new provinces but it is yet to take up the matter seriously.

1973 constitution contained a new power arrangement to redefine the principles of federalism under the term "Maximum Provincial Autonomy". It had divided the subjects into federal and concurrent with residual powers lying with provinces. Federal list comprised sixty seven subjects, while concurrent list had forty seven. This constitution also set up a senate, whose members are to be elected by the provinces. Each province has to elect fourteen members for the senate. (Kundi, 2002). It was a process to give parity to other provinces in legislative matters, which was tilted in favour of Punjab, due to majority it holds in national assembly. To give additional powers to the provinces Council of Common Interest (CCI) was created to discuss any issue and take decisions on the second part of federal list (Saleem, 2010).

Still, federation penetrated deep into the concurrent list. The central and provincial government could make law on subjects under concurrent list, but in case of conflict over the power the central government's right prevailed (article 143) (Kundi, 2002). The promotion and development of federalism was marred under General Zia-ul Haq, who set up unitary form of structure and ruled through the military orders. Even after coming back of civilian rule, first under Mrs Benazir Bhutto and then under Mian Nawaz Sharif have nothing substantive to accommodate the aspirations of provinces. In Pakistan, the centre operated, in an even more penetrative and commanding way. However, the weakness of mainstream federal parties Pakistan People's Party (PPP) and Pakistan Muslim

League(PML-N) vis-à-vis army has opened up space for their coalitional partnership with ethno-regional parties that made it possible to weaken the hold of the federation over provinces in recent years.(Waseem,2011).

The incumbent government under President Asif Ali Zardari, which replaced the military regime in 2008, been marred with corruption and venality⁶, has one achievement to its credit. Through amendments it has tried to address the grievances of provinces and reset better federal order in Pakistan. Eighteenth amendment abolished the concurrent list in principle and transferred forty out of forty-seven subjects to provinces. This amendment has accepted many demands that were made from decades by the states. It has also a step towards decentralization and devolution of power by the Pakistani government. The names of provinces were changed according to the amended article 1 the new names are Sindh (for Sind), Balochistan (for Baluchistan) and Khyber Pakhtunkhwa (for NWFP). (Eighteenth Amendment to Pakistan's Constitution, 2010).

It was passed, in 2010, by two third majorities in the Pakistani Parliament. It had been coupled with first proper award of the National finance Commission (NFC) in thirteen years which has increased economic and political weight of Balochistan, Sindh and Khyber-Pakhtunkhwa vis-à-vis the federal government. The provinces had been awarded a greater share of tax revenues moving away from population being the sole criterion for allocation.(Waseem,2011). According to amendment of article 161 (a)the net proceeds of the Federal duty of excise on natural gas levied at well-head and collected by Federal Government and of royalty collected by Federal Government shall not form part of Federal consolidated fund and shall be paid to the Province in which the well- head of natural gas is situated.:(b) the net proceeds of federal duty of oil excise on oil levied at well-head and collected by the Federal Government shall not form part of the Federal consolidated fund and shall be paid to the Province in which the well-head is situated.

⁶ President Asif Ali Zardari is known by his nick name "Mr.10 percent"because he used to charge ten percent of all business related activities in Pakistan during Premiership of his wife late Benazir Bhutto.He had spent eight years in prison because of it.There are evidences that he has siphon off state's money and has maintained them in his personal account in Swiss bank.Under National Reconciliation Order President cannot face charges when he is in office.This law has become cause for tussle between the judiciary and executive.His appointee Yusuf Reza Gillani was ousted from the post of Prime Minister by the order of Pakistan's Supreme Court for not acting against his political boss.

.This amendment also makes the provinces co-owners of the oil and gas reserves under their soil and their provincial share in the NFC cannot be reduced.(Eighteenth Amendment to Pakistan's Constitution,2010).

On one of the most contentious issue that is language this amendment has made certain changes. In Pakistan Punjabi is spoken by forty eight percent of people followed by Sindhi spoken by twelve percent; while only eight percent of Pakistani converse in their national language-Urdu.(Cohen,2005&Viewpointonline,2012).1973 constitution 's article 251 says "Any section having a distinct language ,script or culture shall have the right to preserve and promote the same and subject to law establish institutions for the purpose".(Constitution of Pakistan,1973).Now with the amendment article 251(3) establishes "without prejudice to the status of national language,provincial assembly may by law prescribe measure for the teaching, promotion and use of a provincial language in addition to national language". This makes a change and will give the provinces to calm up on the issue of use of their provincial languages.(Eighteenth Amendment to Pakistan's Constitution,2010).

Some of the promises made in eighteenth amendment are finally beginning to come to fruition.One of them is making the provinces more autonomous and powerful. In this regard the federal government has decided to transfer five federal ministries to the provinces: Special initiatives, Zakt and Ushr,Population Welfare,Youth Affairs and Local Government and Rural Development. This is just a beginning by June 2011 total 18 ministries are slated to be transferred from federal government to the provinces. (Daily Times,3 December,2010).

In this sort of federal set up, which is dominated by one group or province, others are all likely to have genuine grievances. Lack of representation has led to non-democratic ways to make laws and legislation. This relationship has also affected the water sharing policies in Pakistan. The provinces other than Punjab feel neglected and being exploited by Punjabis, who have high representation in Pakistan's institutions and state- structures.

3.4. Water Conflicts Between Punjab And Sindh

The problem over sharing water from the Indus River Basin in areas, which constitutes Pakistan, since 1947, is not a new phenomenon. The conflict is there since colonial time. As a major agriculture-driven economy this region required rational amount of water through out the season .In order to provide that amount, under the leadership of Lt.General Sir Cotton, water-bureaucrats had invested a lot on Supply-Side hydrological projects.(D'Souza,2003). The dams, canals, barrages etc were constructed to channelise and distribute water to make maximum use of it.

After partition in 1947, following the , Tennessee Valley Authority (TVA) model, many multipurpose projects came up in order to use water resources to meet water demands of agricultural and industrial sectors. (ibid).Positively, these projects have proved beneficial in changing shape of many regions by controlling floods, producing clean electricity etc but they have side-effects also, in form of people's displacement, environmental disasters etc. The biggest one out of all side-effect of supply-side hydrology is regional and provincial conflicts because with the help of these projects water can be diverted from one side to another or electricity produced can be used by one region or province at cost of another. This generates regional tensions among the provinces.

Entire Pakistan is drained by the tributaries of the river Indus. Construction of dams canals or barrages to either divert or stop the natural flow of the Indus River Basin(IRB) water, affects the entire Pakistan, therefore each and every project is marred by controversy .

The source of Indus is in the Nyari province, of western Tibet, in the Kailash Mansarovar region, which is also a source of origin for rivers Brahmaputra,the Sutlej and Karnali . From hydrological point of view, the northwest of the Indian sub-continent is



(Source; World Atlas. Com)

Map 2.1. map of Pakistan

dominated by the Indus River System. The central section comprises the Indus flood plain and it is ringed in the north and west by mountains. Overall Indus River covers 9,45,350 kilometers, but only 60 percent (5,62,030 kilometers) lies in Pakistan. The main hydrological arteries of Pakistan are; the Indus, fed from the east by its tributaries: Jhelum, Chenab, Ravi and Sutlej and from west by Kabul, Khurram and Gommal. All these rivers join the mighty Indus in the northern parts of the floodplain. Their headwork and catchment area of these rivers covers 5,51,700 kilometers of which 7 percent lies in Afghanistan, 10 percent in Tibet and 15 percent in the Indian side of Kashmir. (Yamamoto,2009).

Among the large nations of the world, perhaps only Egypt is more dependent than Pakistan on a single river-basin. Ninety percent of the country's agricultural output, which represents about one-quarter of the Gross Domestic Product of Pakistan and most of the export earnings, depends on irrigation water from the Indus. (Faruqui,2004).

3.4.1. History of Water Conflicts between Punjab and Sindh

Due to 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 disputes of the world have been amicably settled. The cardinal principle of the river water law that has merged out of 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 from the common river if it causes loss or injury to a party at the lower side (legally known as lower riparian). (Qutub&Prajauli;2004). But in Pakistan this law has been flouted during colonial time and also, more or less, today. The authorities from the province of undivided Punjab started diverting water from Indus basin against the interests and rights of the Sindh province and this started, nearly a century and half long, Sindh- Punjab water dispute. (ibid).

Historically, water dispute between Punjab and Sindh had its beginning during the British rule in 19th century. Due to loyalty of Sikh soldiers in suppressing 1857 war of independence and other British wars colonial rulers rewarded them by setting up canal colonies near Indus basin in Punjab, where the retired soldiers could be

settled.(Singh,1997). The waters of the five rivers were harnessed in an ambitious irrigation development. The transformation of six million acres of desert into one of the richest agricultural regions in Asia was seen as stupendous engineering feat that was seen as colonial government's biggest achievement.(Talbot,2007).

This was also an attempt by the colonial government to establish loyalty among the soldiers staying in that area and dilute the rising tide of nationalism .As Sir Charles Aitchison maintained that “ It is of greatest importance to secure for these tracts manly peasantry capable of self-support and of loyal and law-abiding disposition”.(Ali,1988 & Talbot,2007).But in early decades of 20th century these colonies too came under impact of growing nationalist movement and revolts took place there too. Afterwards Britishers changed their policies.In 1914 Michel O Dwyer developed the scheme for grant of land in colonies to the ‘landed gentry’.Their holders were to provide natural leadership to the settlers.Seven and half percent of Lower Bari Doab colony were reserved in this way.The main beneficiaries were large land holders such as Noons and Tiwanas,who were loyalist military contractors to the Raj.(ibid).This process had led to emergence of feudals in Punjab,who were dependent upon waters from Indus to enrich and support their lavish life-styles. And thus conflict for getting more water through diversion projects began.(ibid). After the British left the subcontinent and Pakistan came into being, the water from the IRS still occupied same importance and is being a source for inter-provincial confrontation in Pakistan.

The construction of mega projects, which is source of tension in Pakistan, started in 1859 when the authorities of undivided Punjab, constructed the central Bari Doab canal on the river Ravi, adversely affecting water supply of Sindh. That was the beginning of ensuing water conflict between Punjab and Sindh. After the central Bari doab, the upper riparian, constructed three more canals viz. Sidnai, lower Chenab and lower Jhelum without the consent of Sindh. Paharpur canal in 1908 and upper Swat canal in 1914 followed. (Memon,2002).

The conflict came to the fore in 1901, when the Indian irrigation commission prohibited Punjab from taking even a drop of water from Indus without the approval of the Sindh.In

1919 the Cotton Committee appointed by the Government of British India to settle the Sindh-Punjab water dispute held that Punjab should not be given any water from Indus river system, till the results of the projected Sukkur Barrage does not become evident.(ibid). The 1919 Government of India act lays down that matters regarding Sindh-Punjab water dispute should be decided by no less as authority than the Viceroy of India. In 1925 ,Lord Reading ,then Viceroy of India, rejected Punjab's request for Thal canal from Indus considering the undue deprivation of Sindhi lower riparian rights .(ibid).

To establish some sort of claims on Indus waters the Government of the undivided Punjab, in November 1924, once again reopened the question of Thal project, this time with a proposal to construct a small experimental canal involving 750 cusecs. This was withdrawn later by the Government of Punjab as they were waiting for the final decision.(ibid). In 1926 Lord Reading announced the final decision which mentions:

That until such time as Sukkur Barrage scheme comes into operation and further experience of perennial irrigation in Sindh is available the question of the volume of water required for that scheme cannot be re-opened. (ibid).

The Government of Bombay had the right to object to further withdrawals from the Indus unless and until definite proof can be given that the supplies necessary for the Sukkur Barrage project will not be endangered thereby. That such proof must be based upon the result of more accurate gauging of the river and its tributaries which were instituted as a result of Sir Thomas Word's note of the 10th December 1929.(ibid).

In spite of it the Punjab government protested against the verdict. The government then referred the matter to the Secretary of State and asked for his instructions. The Secretary of State replied that he was fully convinced of the report of the commission and the announcement made by the Viceroy. But the problem remained far from getting solved.(ibid). The water dispute between Sindh and Punjab had by this time reached such proportions that Government of India was forced to constitute an eight member committee under the Chief Engineer of United Provinces, Mr. Anderson, with the clear and express direction that no fresh authorities (by the upper riparian the province of Punjab) be recommended which may be detrimental to the other riparian or may adversely affect

not only the existing but also the future rights of such riparian over the waters of the Indus. One of the terms of reference Anderson committee was “ the possibility of finding such supplies without detriment to the parties interested in the waters of the Indus and its tributaries and the effect upon the existing or prospective rights of those parties of any fresh withdraws the authorization of which committee may recommend.” (www.worldsindhi.com). In the meantime the (undivided) Punjab authorities who seem to have made mass manufacture of schemes and projects for taking away as much water from the Indus system as possible, their permanent occupation as long as there is even a single cusec of water left in the system for going down-stream to the lower riparian, produced yet another massive project for the purpose, the Bhakra dam project. (ibid).

Since the Punjab authorities continued to plan for further extensive withdrawals’ and storages ,the Government of Sindh was compelled to lodge a complain in 1939 before the Government of British India under the provisions of the GOI act 1935. The complaint in its final form submitted to the Governor-General appointed a commission under Justice B.M.Rao to look into the matters. (ibid).

The GOI Act of 1935 section 131 and section 131(6) laid down the principle that no province can be given an entirely free hand in respect of a common source of water such as an inter-provincial river. Examining the riparian rights and the claims of the authorities of the (undivided Punjab, that an upper riparian province in India may take as much water as it needs from rivers flowing throughout it, the Rao Commission⁷ headed by justice Sir B.M.Rao of the Calcutta high court opined in the “Report of Indus commission”(Rao Commission Report, ibid) “pushed to its logical conclusions ,this means that a province in which the head-waters of a great rivers are situated ,can abstract any quantity of water and make a desert of the provinces or states lower down. This view was against the trend of international law and that in any event so far as India is concerned ,it would conflict with the manifest intention of section 130 and the succeeding section of the Government of India act 1935.”(ibid).

⁷ Rao Commission was the basis of water distribution between Punjab and Sindh till 1991. *see* Issues in Pakistan, PILDAT Briefing paper 7 september 2003. [http://www.pildat.org/issue/waterResources in Pakistan.pdf](http://www.pildat.org/issue/waterResources%20in%20Pakistan.pdf).

The commission concluded that the withdrawals necessary for the Punjab projects mentioned in the complaint when super-imposed upon the requirements of other projects already in operations or about to be completed were likely to cause material injury to Sindh in the month of September.(ibid). It recommended that only way to prevent any such injury is construction of two barrages in upper Sindh and other in lower Sindh costing about Rs six crores.The commission further found that Sindh would not be able to finance the projects without borrowing. The assumption that the Punjab would make a contribution of Rs two crores,which the commission considered to be a not unreasonable sum for her to pay as compensation on for the damage to Sindh irrigation.(ibid).

But it was not until 1945 that an equitable solution was found when the ‘Sindh –Punjab Agreement’ regarding the sharing of the river Indus and the five Punjab rivers was signed.(www.sindhiworld.com). The agreement was the result of the initiative of Rao commission .The chief engineers from Punjab and Sindh had negotiations under the guidance of sir Claude Angles ,director of central Irrigation and Hydro Dinlock Research at Poona,Bombay Presidency.The draft was finalized on 28th September 1945. According to that agreement, at ghazi Ghat Punjab was to take one share from the Indus and Sindh was to get three shares. Articles of the agreement lay down that in future Punjab could not construct any dam on river Indus or any of its tributaries without the consent of the Government of Sindh.(ibid).

After the partition of India in 1947, “Committee B” was established to resolve the water issues related to partition by March 31, 1948, as the location of two canals in the Pakistani Punjab side had their headwork in Indian Punjab.(Memon,2002). In the final analysis, the Pakistani side agreed, to the astonishment of everyone, to pay for the right to use waters of the two canals. In 1948, an agreement was signed at Shimla to that effect. After loosing its own water to India, Punjab targeted Indus to siphon off its waters in violation of the existing agreements between Sindh and Punjab. Punjab constructed a link canal called as “Bambanwala-Ravi-Bedian (BRBD) link canal” without the consent and approval of Sindh in a clear violation of Sindh - Punjab Agreement of 1945. (ibid).

After the partition of India and birth of Pakistan, in 1947, the Indus river system became a bone of contention between the two sides. Both India and Pakistan wanted to absorb maximum water from the river Indus. (Garg,1999).A Committee was formed consisting of chief engineers of both India and Pakistan. After eight years of talks in 1960, under the auspices of the World Bank, the Indus Water Treaty (IWT) was signed between India and Pakistan. This treaty was not accepted in positive mood by Pakistan in general and Sindh in particular. Sindh's perception was water of Indus would reach to lesser amount to Sindh because India would divert its share in midway from Tibet to Pakistan. (Gulhati,1973). There was an appellate tribunal headed by the chief justice of India, Sir Patrick Spenser to hear the appeal by the dissatisfied party.(Garg,1999).

The IWT gave three eastern rivers, i.e., Bias, Sutlej, and Ravi to India and three western rivers, i.e., Chenab, Jehlum and Indus to Pakistan. India was, however, allowed to irrigate 1.3 million acres of land from the western rivers. In return, India to pay fixed amount to Pakistan for the exclusive rights on the rivers allotted to her and irrigation rights on the western rivers. Also, the World Bank and other donor countries contributed money for development of the water projects in Pakistan.(Gulhati,1973).

Pakistan established Water and Power Development Authority(WAPDA) as a responsible body for development of the water resources . No Sindhi was made a member of the negotiating team or the advisory board that was established with respect to IWT. Dr. Saleh Qureshi, a Sindhi, was initially made a member of the negotiating team but was promptly removed when the One unit system was imposed before the serious negotiations on Indus water sharing began.(Memon,2002).It is being alleged by the Sindhis that after this treaty, Punjab was hell bent on diverting Indus waters for Punjab in violation of the 1945 Sindh-Punjab agreement and with total disregard for the lower riparian rights of Sindh.(ibid).

Many multipurpose constructions came up on river Indus after the birth of Pakistan in 1947.Before partition, there was only one barrage, the Sukkur barrage, on the River Indus built in 1932. In the last 65 years, there are about 19 barrages and 43 canal systems with 48 off-takes on the Indus Basin System in Pakistan, creating world's largest contiguous

man made system of 61,000 km of canals and 105,000 water courses, irrigating 35 million acres of land.(ibid). Three storage reservoirs were also built, Mangla on River Jehlum and Tarbella and Chashma on River Indus, with total storage capacity of 20 MAF. 3 Additionally, 12 link canals were built to transfer water from western rivers to eastern rivers or the tributaries of the River Indus.(ibid)..

As the problems over Indus water sharing gravitated, in 1968,the government of Pakistan,under the chairmanship of Akhtar Hussain ,constituted the Water Allocations and Rates Committee to review the barrage water allocations, reservoir release patterns and drawdown levels and use of undergroundwater in relation to surface water deliveries. The committee submitted its report on July 1,1970 when the provinces were revived. No attention was paid to this report.(Hasan,2002).

Again in 1970 Justice Fazal-e-Akbar committee was constituted to recommend apportionment of water of river Indus and its tributaries. The Committee submitted its report in 1971.During same time, an ad hoc arrangement was made to distribute water from Chasma barrage. Later on the government also issued an order to distribute water from Tarbela reservoir storage. No substantive decision was taken on Fazl-e-Akbar committee recommendations and water continued to be distributed on ad hoc orders by the government of Pakistan (ibid).In same year Justice Halim Commission too was set up.(Feyyaz,2012).

In 1977,the government of Pakistan established another commission comprising the chief justices of the High Courts of the Province,headed by the chief justice of Supreme Court to examine the issue of water apportionment. The report is pending with the Government of Pakistan.(ibid). Though it came out with some useful recommendations but failed to influence the policy makers.In 1981 Justice Anwar-ul-Haq Commission was set up then in 1983 Justice Haleem committee was set up.(Feyyaz,2012).But no formula was accepted and being implemented.All these committees and commissions worked ostensibly to keep the water conflicts under control. Their reports were never discussed and no serious action was taken up by the government of Pakistan to address the political reasons for water conflicts.

Remaining under the carpet from long time, things became very serious and compelled the government of Pakistan to look into the matter. Acting accordingly, in 1991, Nawaz Sharif government, took step to discuss the water sharing issue with provinces. After discussions an accord was signed on 16th March 1991 at Karachi, in a meeting of the chief ministers of Punjab, Sindh, Balochistan and Khyber Pakhtunkhwa. IRSA or the Indus River System Authority was established to implement the accord. Total water available in the system was estimated to be 114.35 MAF below rim stations. It was allocated as 55.95 MAF for Punjab, 48.76 MAF for Sindh, 5.78 MAF for Khyber Pakhtunkhwa, and 3.87 MAF for Balochistan. The accord provided for the distribution of any surpluses and the shortages as well. The agreement left water discharge to the sea unresolved subject to a study; however, it allocated 10 MAF in the interim for discharge to the sea. (1991 Indus Apportionment Agreement).

After that accord also Sindh alleges that Punjab continues to violate even this one-sided agreement with open connivance of WAPDA, IRSA, and the federal and Punjab governments. Sindh's share of water is being diverted to Punjab unabashed under one pretext or another. Any objection from Sindh is muzzled forcefully with no recourse left for Sindh to safeguard her due share of the Indus water. (Memon, 2002).

Instead of resolving the issue this accord of 1991 further intensified the conflict between Sindh and Punjab. The dispute arose over the clause 14(a-b) of the agreement concerning the system-wise allocation on the basis of 1977-82 water sharing arrangement. (Hasan; 2002). The problem emerged when country first experienced severe shortages of water in 1994 and by then the shortfall of water in the system simply precluded the operation of the 1991 principle. Acrimonious exchanges resulted, with Sindh attributing the charges of water profligation against by Punjab. As the lower riparian Sindh traditionally has had two complaints against Punjab that in the dry season when it needs water, Punjab does not release enough downstream; and during floods when it does not needs water, Punjab flushed surplus water downstream. (ibid).

Since the allocation principle of 1991 was instrumental in accentuating an existing problem it obviously had to be superseded and a new compromise arrived

at. Consequently, a ministerial level meeting took place in 1994, presided over by federal Minister Gulam Mustafa Khar, and formulated the principle of historic use as the new basis of allocation. Under the scheme the provinces would share water according to the record of aggregate use in the seven years prior to 1991. This new arrangement favoured Punjab while Sindh repudiated it on the grounds of bias from the time it was introduced. (ibid).

In 2000 in a circulated paper titled , “Kharif 2000 River Water Distribution and Management” some leading Sindhi experts ,called ‘the Reformers’ , have taken the position that in the shortage year no water should be given to the two Indus link canals, which irrigate southern Punjab. They have asked not to fill Tarbela and Mangala reservoirs during the summer (Kharif) in case of water shortages. (Qutub & Prajauli, 2004).

As the new water situation showed no sign of improvement, matters got out of hand, even resulting in street riots. In fact the situation deteriorated to a point where the federal government found it necessary to had in-camera meeting of provincial representatives in 2002. The meeting failed to find a solution and the IRSA secretary Hussein Ali Khan, conceded “ Both Punjab and Sindh have out rightly rejected each other’s proposals to resolve the water dispute” (ibid).

It’s not only that only Sindh has its complaint against Punjab but also Khyber Pakhtunkhwa and Balochistan too have their complaints against Sindh over the issue of release of water to their provinces. The Balochistan –Sindh dispute has acquired such serious proportions that an Advisory Committee meeting of 2002 of the Indus River system Authority (IRSA) was called off by the representatives of Balochistan and Khyber Pakhtunkhwa and Punjab walked out in protest over the issue. Balochistan’s irrigation secretary, Abdus Salam, said that the Government of Sindh had released only 2000 cusec out of its IRSA allocated share of 6100 cusec a day ,a 40 percent reduction in supply. (ibid). Though the representatives from Sindh countered this allegation by scooping that they themselves are at receiving end and they blame Punjab for all this

.Interestingly ,this has opened a new dimension in Indus-water sharing problems where Balochistan has come up against the Sindh.

In 2005 New Water Policy was formulated, in which proposal was made to set up permanent National Water Council led by the Prime Minister to take decision on water-related issues and inter-provincial water conflicts.(The Dawn,12 December 2006).Things changed after civilian government came into power. Amendments have been made to look into water related issues.

In July 2010 both Punjab and Sindh once again came up against each other on the issue of opening up Chashma -Jhelum(CJ) Link Canal.The order was arbitrarily issued by the acting chairperson of IRSA,Shahfaqt Masood(a Punjabi).Sindh wanted reversal of the decision removal of Shahfaqt Masood as a chairman,while Punjab stated it would not compromise with its due share of water.An intervention by the former Prime minister Yusuf Reza Gillani settled the issue and Raqueeb Khan from Khyber Pakhtunkhwa was appointed as chairman of IRSA.This situation is an example of not only water shortage in Sindh but also inefficiency of the IRSA to implement the 1991 Water Apportionment Act.(Daily Times 14 July,2010).

3.5.Controversies over Multipurpose Projects

The first post- partitioned project was the construction of Mangla dam in Pakistan side of Kashmir in 1954. This created ruckus in Mirpur region because the Mirpuris considered it as a ploy to divert their legal water resources to Punjab and also to flood their region in order to control their demand for an independent Jammu & Kashmir, by the Pakistani political establishment. To Pakistan Mangla is a vital asset which brings many benefits: second only to mighty Tarbela .As a source hydroelectric power, it also serves as the principal water-storage reservoir for the entire canal system of West Punjab.Mangla is thus critical to the success of the Pakistani economy as a whole.(Ballard,1991).

At present also the people inhabiting in Gilgit-Baltistan, Potohor and Mirpur have their share of complaints against the federal government. They are demanding their due share in the profits from hydel power generated from the region. A long standing wrangle over

the Mangla dam has found new voice with the demand that Pakistan side of Kashmir should get royalties just as Khyber Pakhtunkhwa province is being duly compensated from the Tarbela dam. They are concerned also about two more power projects being constructed by Chinese companies on Neelum-Jhelum confluence and Kohala with a capacity of over 2,000 MW each. They fear that what they see as their just compensation will be looted from them.(Bukhari,2011).

In August 2000 the federal cabinet of Pakistan approved the Vision-2025 programme to develop its water infrastructure. It has to be implemented in three phases.Under phase I of the three phase programme the government has given go-ahead to undertake detailed engineering and feasibility studies for Basha dam and the greater Thal canal ,as well as for kachi canal in Balochistan the chasma right bank canal in Khyber Pakhtunkhwa, Thal reservoir project in Punjab and three projects in Sindh;Sindh riverine area development,Thar canal and Sehwan barrage.The total cost of projects is estimated at \$11.71 billion. Priority hydroelectric generations project in phase I includes;Jinnah, Malankhand-III,Allai Khaman,Golen Gol,New Bong,Khan Khawar,Duber Khawar,and Pehur high level.(Ahmad ,2001).

In January 2001 the federal government also approved phase II and phase III of the vision 2025 programme. Hydro projects under phase II includes:raising of the height of Mangla dam to increase its reservoir storage and power generation capacity,Thal Reservoirs, Doylan, Neelklum-Jehlum,Kohali Matitan,Gulpure,Abbasian,Rajdhani and several combined cycle power generation projects.Phase III includes sixteen schemes,including Dasu,Pata, Tahakot, Bunji,Munda,Chakothi,Naran,Suki Kina,Patrind,Azad Pattan,Karol.Thar coal project,lakhna coal project and several combined cycle power generation projects.(ibid). The World Bank, Asian Development Bank,China,Saudi Arabia and United Arab Emirates(UAE) are the main financing agencies and the countries.

This drafted and the finalised Vision-2025 by the federal government has been criticised by the federal provinces in general and Sindh in particular.The provinces feel that most of

these projects have been designed to benefit the Punjab. Sindh is protesting vociferously against the Vision-2025.

The recent debate, which has emerged between Punjab and Sindh over water conflict is over the federal government's project on river Indus named Kalabagh dam and Diman-Basha dam. The Kalabagh dam is mega water reservoir that Government of Pakistan planning to develop across the Indus River, one of the world's largest rivers. The proposed site for the dam is situated at Kalabagh in Mianwali district of the north-west Punjab province, bordering Khyber Pakhtunkhwa.

According to the PC-II of the project, Kalabagh dam was initiated by GOP in 1953 and until 1973, the project was basically considered as a storage project for meeting the irrigation needs and consequently rapid increases in the cost of energy have greatly enhanced the priority of the dam as a power project. (Abbasi & Kazi, 2000). The project's paperwork was finalized in March 1984 with the assistance of the United Nations Development Programme (UNDP); supervised by the World Bank, for the client WAPDA of Pakistan. (ibid).

The proposed construction of the Kalabagh Dam (KBD) triggered an extremely bitter controversy among the four provinces of Pakistan, namely Punjab, Sindh, Khyber Pakhtunkhwa and Balochistan. The only province which is in favour of this dam is Punjab that is the most strong among all four provinces, as usually the government is mainly centralized in it. The other three provincial assemblies pass unanimous resolutions condemning the proposed dam. Hence, the project is still under consideration.

The delay is also being caused by the fact that according to international water distribution law, the tail ender has a legal and natural right on river and that is why no mega construction or reservoir can be built without permission and endorsement of the tail ender i.e. Sindh. In case where the tail ender is not using water i.e. building a water reservoir, a reservoir can be made in upstream.⁸

⁸ After Bradford Morse commission, set up by the World Bank to look into Sardar Sarovar Project, the bank made it a rule to not fund the projects, which are being opposed by the people staying in catchment

Impact assessments of the proposed dam have shown that while it will provide storage and electricity, the dam will also have adverse impacts on the environment, as can be expected from any large dam. It will also displace a large number of people. While proponents point to the benefits, the dam has been stalled by claims and counter-claims since 1984. The controversy can be best understood by looking at the viewpoints of each of the four provinces.

3.5.1. Punjab's Viewpoint

Punjab-the granary basket of Pakistan-desperately need more water to keep up with the growing population and industrial demands on its agriculture. A dam at Kalabagh would also supply cheap hydro-electric power.

The annual outflow of water into the Arabian Sea is considered a “waste” in Punjab, which feels that water can be used to irrigate Pakistani infertile lands. Punjab wants just Kalabagh, but also two more large dams on the Indus, at Bhasha and Skardu/Katzarah. It feels that the Kalabagh site is the most favourable, compared to the other two, and that it should be built finally.(Abbasi &Kazi).The Lahore Chamber of Commerce and Industry has estimated that the dam would produce enough energy to obviate the need to import twenty million barrels of oil.(as cited by Vaughn,2010).

3.5.2 Sindh's Viewpoint

Sindh, the first province to point KBD project a blame game, is the lower riparian and strongest opponent of KBD. But its case mainly against Punjab is more on a conceptual basis of what Sindh thought it to be “theft of water by Punjab” rather than locating actual incident of theft. Sindh supports its argument by stating that by virtue of its name and history of water rights of the province, Indus River belongs exclusively to it. Therefore, claiming the construction of dams, Tarbela and Mangla and now KBD actions of theft water at the irrigation cost of Sindh.Further, Sindh presents many objections at the

areas.This was reason for the delay of clearance of even Dimar-Bhasha dam.The Bank started funding only after the provinces other than Punjab agreed for it.

proposed dam, some of the important are as follows;
(www.wapda.gov.pk/pdf/KADAM.pdf and Qutub & Prajauli ,2004)

1. Sindh objects that their share of water of the Indus water will be curtailed as water from the Kalabagh will go to irrigate farmlands in Punjab in Punjab and NWFP at their cost.Sindhis hold that their rights as the lower riparian have precedence according to international water distribution law.(ibid).
2. The coastal regions of Sindh require a constant flow of water down the Indus into the Arabian Sea so that the flowing water can keep the sea water from intruding inland. Such seawater intrusion would literally turn vast areas of Sindh's coast into an arid saline desert and destroy Sindh's coastal mangroves.(ibid).
3. With the construction of dams, such as Mangla Dam and Tarbela across the Indus, Sindhis have seen the once-mighty Indus turned into a shadow of its former glory downstream of the Kotri Barrage up to Hyderabad.They fear that there simply is not enough water for another large dam across the Indus, let alone three.(ibid).
4. The Kalabagh site is located in a highly seismic zone near an active fault and the underlying rocks are likely to contain numerous fractures, causing the reservoir water to seep through the catacomb of fractures and discharge at the lowest point around the reservoir and the Indus River.(ibid).
5. Damming the Indus has already caused a number of environmental problems that have not yet addressed.Silt deposited in the proposed Kalabagh dam would further curtail the water storage capacity of Manchar Lake and other lakes and of wetlands like Haleji Lake.(ibid).
6. General Musharraf and other leaders, such as Prime Minister Shaukat Aziz, have promised 'iron-clad' constitutional guarantees to ensure that Sindh gets its fair share of water. However, these assurances mean little to most Sindhis.(ibid).

Even the earlier 1991 Indus Water sharing Accord, which is a document already guaranteed by the constitutional body, council of common interest, has been violated and

that Punjab has “stolen” their water. (ibid). The objection to Kalabagh in Sindh is widespread.

3.5.3. *Khyber Pakhtunkhwa’s Viewpoint*

The Khyber Pakhtunkhwa has two main objections to the dam:

1. While the reservoir will be in the Khyber Pakhtunkhwa, the dam’s electricity – generating turbines will be just across the provincial border in Punjab. Therefore Punjab would get royalties from the federal government for generating electricity. Contrary to this; however Punjab has agreed not to accept any royalties for the Kalabagh dam. The fact that the Khyber Pakhtunkhwa will suffer the adverse consequences of the reservoir but not get royalties is seen as unfair.(ibid).
2. Concerns that large areas of Noushera district would be submerged by the dam and `even wider areas would suffer from water logging and salinity as has occurred with Tarbela dam.(ibid).

3.4.4. Balochistan’s Viewpoint

The Baloch are not directly affected by the dam as such. Rather, most Baloch see the dam as another instance of Punjab lording it over the smaller provinces. By opposing the dam they are signaling their disaffection with being the poorest province and most neglected of all in development.(ibid).

The Government of Pakistan is yet to take final decision on Kalabagh project. By 18th amendment the new civilian government of Pakistan has empowered the non-functional Council for Common Interest. The government has also promised to amicably resolved all persisting inter-provincial water conflicts. It has started with resolving Diamer-Bhasha project, another centre for conflict among the provinces.

Much debated project after Kalabagh, Diamer Bhasha was approved by the Council for Common Interest, which held its first meeting after getting more power through 18th

amendment. This project is expected to finish by 2019. Its storage capacity would be 6.4 million acre feet and would likely to produce 4,500 megawatt of electricity. (The Dawn;2010). It will be world's highest roller compacted concrete dam. In this project Pakistan would be assisted by the World bank and China. China in addition to funds, will send 17,000 of its workers engaged in building three Gorge dam, to build this dam. (www.internationalrivers.com).

3.5. Constitutional and Institutional Arrangements to Address Water Conflicts

Constitutionally, Pakistan has a federal system of government, where both federal and provincial government shares power. But in practice it's the Federal Government, which dictates its terms over the provinces. The main reason for it is the Pakistan has been mostly under the military rule, which require a unitarian system to maintain its hold. In its Constitution, a Council of Common Interests is prescribed to formulate and regulate policies for matters in Part II of the Federal Legislative List such as railways, mineral oil, natural gas and the water & power development authority. (1973 constitution of Pakistan) The Federal Ministry of Water and Power is responsible for water sector policy formulation. This ministry has set up an autonomous agency, The Water and Power Development Authority (WAPDA), for the development of water resources, including main dams; barrages link canals, public tube wells and drainage projects, across the country. However, WAPDA retains the management of the multipurpose reservoirs on the Indus and its tributaries and operates them in consultation with the Indus River System Authority (IRSA) and Provincial Irrigation Departments (PIDs) according to the water rights and seasonal allocations to the provinces. (Qutub,2004).

Despite this constitutional and institutional arrangement the water-conflict exists, in order to address it, the incumbent government led by Pakistan People Party has passed 18th amendment in 2010. This amendment has tried to constitutionally resolve the increasing inter-provincial water conflicts by inserting provisions like: Article 157 (i) "Provided that the Federal Government, prior to taking a decision to construct or cause to be constructed hydro-electric power stations in any Province, shall consult the Provincial Government concerned and;

(3) In case of any dispute between the Federal Government and a Provincial government in respect of any matter under this Article, any of the said Governments may move the Council of Common Interests for resolution of dispute.”(Eighteenth constitutional amendment,2010).

This amendment has tried to decentralize the water-administration and also strengthen, the weak CCI, to resolve inter-provincial water conflicts in Pakistan.

3.6. Conclusion

Genuine federal structure can address many grievances, but not all, which exists in Pakistan, since its birth in 1947. The embedded regional inequality has created two groups-the dominant and the discriminated. This has created regional tensions and rise of separatists and regional movements in Pakistan. In order to resolve this crisis the dominant group has to give due share to other groups. Eighteenth amendment is a positive but baby step towards this direction. It has taken bold step to decentralize and give rights to the provinces over their resources. In water sector also the present Government, through amendment, has given scope to fairly address any form of conflicts among the provinces. Sindh and Mirpur, in particular, were very critical about the hydroelectric projects over river Indus. They allege that through mega projects, the federal Government, under influence of Punjab, diverts their water for the benefit of Punjabi farmers and urban middle class.

CHAPTER FOUR

INTER-STATE WATER CONFLICTS IN INDIA

4.1 Introduction

Inter-state water conflicts in India are posing continuous challenge to the federal fabric of the Indian constitution. The states are up-in arms against the others in order to utilize the most of the share from the inter-state rivers. Constitutionally, there is a provision to set up a tribunal in order to resolve this sort of dispute but due to political interference and tardy verdict delivering process not a single, water sharing conflict has been fully resolved. Few which, were considered to be resolved have re-surfaced.

In one of the most daring step by a state, the Punjab legislative assembly ,in 2004 unanimously adopted and passed Termination of Agreement Act, to withdraw from all sort of inter-state river water sharing agreements. This act was signed by the Governor. It has given a new angle to centre-state relations. Besides having its impact upon water sharing with its neighbours ,it has also challenged the legality of central government mediated agreement between the states. Though, other provinces have refrained from going upto that limit but nothing can be predicted, absolutely.

This chapter will focus upon centre-state relations and inter-state water conflicts in India. It will also highlight the constitutional aspects of Indian federalism, emerging trends and the constitutional mechanisms to deal with this challenge. The case study of Cauvery water dispute and Narmada water disputes will be discussed in detail. The political and sociological aspects of conflicts will be point out to forward the debate that why the conflicts have been unresolved despite various steps taken to solve them.

4.2. Nature of Indian Federalism

Indian constitution defines India as union of states but in practice it's a federal system.Its being defined as union of state because ;(a) that the Indian federation is not the result of an agreement by the units ,and (b) that the component units have no freedom to secede from it.(Basu,2009). The constitutional system of India is *basically* federal, but of course,

with striking unitary features. Anxious to devise a durable system sufficiently responsive to the distinctive needs of specific units and to process of change, the constituent Assembly retained the essence of what Daniel Elazer has termed “decentralized imperialism” that sought to combine it with a tolerance of diversity of far reaching proportions.(as cited in Arora &Verney,1995). Prof. Wheare calls it a quasi-federal state while Prof .Alexendrowicz and D.D.Basu calls it federal system with strong union .(Basu,2009). For Granville Austin it’s an example of “cooperative federalism” where both central and state governments cooperate between themselves on various issues.(Austin, 2000).

The legislative and executive powers have been divided between both central and state governments. There are three lists¹ containing various subjects to define the legislative and executive areas of both central as well as state governments.Still , there are arrangements in the Indian constitution, which makes India a unitary state. The emergency powers under articles 352,356 and 360 to transform the nature of the Indian state. Further there are institutions like bureaucracy, paramilitary forces, Union Public Service Commission, University Grant Commission, with whose help union government easily dictate its terms over the states. Since 1989 power relationship between centre and states have changed, still Indian federalism is biased towards the union government.

4.3. Water in Indian Constitution

Indian constitution gives power to both Union and provinces in matters related with administration and management of water resources .Under entry 17 in the state list, entry 56 in the Union list, entry 20 in concurrent list, article, article 253 and article 262, of the Indian constitution, water is being dealt. Entry 17 in the state list says; water, that is water supplies ,irrigation and canals, drainage and water power are state subject. (Basu,2009).

¹ The union list containing 99 subjects gives power to the union government to make laws on those subjects; there are 66 entries in state lists, giving powers to the state government to make laws while there is concurrent list containing 47 items where both central and state governments make laws. The residuary power is with the union government.

But it is not unqualified entry, water is indeed in the state list but this is subject to the provisions of the entry 56 in the Union list, which runs as follows:

Regulations and development of the inter-state rivers valley, to the extent to which, such regulation and development under the control of the union is declared by parliament by law to be expedient in the public interest.(ibid).

The legislative competence of the State government under entry 17 of the state list remains unfettered only because parliament has not made much use of the powers vested to it by entry 56 of the union list. It is therefore, not quite right to say simply that water is a state subject; it is potentially as much a central subject as a state subject. Particularly when country's most important rivers are Inter-provincial.(Iyer,2003).

Acting on the basis of entry 56 of the Union list , Parliament passed the Rivers Board Act (RBA) under entry 56, but this provides only for advisory boards and not for river basin authority vested with power of management. In fact no river boards, even of an advisory kind, have been set up under this act. The River Boards Act, 1956 and the Inter-State River Water Disputes Act,(ISWDA) 1956 were made under provision of entry 56.The Inter-State River Water Disputes Act empowers the Union government to set up tribunals to adjudicate disputes over water sharing between riparian provinces. Though this act gives more power to Union government in regulating the water resources of country but states have legislated Irrigation acts, which in effect give their governments the power to regulate development and use of surface water within their territories.(Vaidyanathan & Jairaj,2009). The act has virtually remained a dead letter when National Water Policy (NWP) was being formulated in 1985-87, the question of river basin authorities came up but most states were apprehensive of their own powers being eroded and eventually the NWP made only a vague reference to appropriate organizations.(Iyer,2003).

In 2002 the Inter-State Water Dispute Act of 1956 was amended and the recommendations of the Sarkaria Commission were incorporated. The amendments made are (Sarkaria Commission Report,1980)

- (a) One year for the establishment of a tribunal by the Central government on a request from a state Government;

- (b) Three years for the tribunal to give its award (extendable, if found necessary, by a further period not exceeding two years by the Central government); and
- (c) One year for the tribunal to give a further report if a reference is made to it as provided for in the ISWDA (this one year being further extendable if necessary, with no limit specified for such extension).
- (d) A further amendment states that the decision of the tribunal shall have the same force as an order or decree of the Supreme Court.

The National Commission to Review the Working of the Constitution(NCRWC) ,which was set up during the Atal Behari Vajpayee led union government to review various important provisions of the Indian constitution, recommended that the RBA 1956 be repealed and replaced by' another comprehensive enactment under entry 56 of list I. The Commission goes on to say: "The new enactment should clearly define the constitution of the River Boards and their jurisdiction so as to regulate, develop and control all inter-state rivers keeping intact the adjudicated and the recognized rights of the states through which the inter-state rivers passes and their inhabitants while enacting the legislation, national interest should be the paramount consideration as inter-state rivers are "material-resources" of the community and are national assets. Such enactment should be passed by Parliament after having effective and meaningful consultation with all the state governments". (NCRWC,2002&Iyer,2003)

Under entry 20 of concurrent list there is no entry on water, but is on planning, under "Economic and Social Planning". Since water is a significant input in agricultural development and industrial development, which are indicators of economic development, and since water is a primary need (drinking and sanitation) for social planning, water resource development could be covered under Concurrent List also. This entry have operated indirectly, in view of the fact that the Central Government, through the Planning Commission, has to clear Water Resources Development projects for investments, if these projects are to be eligible for central funds.(Iyer,2003).

According to article 246

“Subject –matter of laws made by Parliament and by Legislatures of States”

- (1) “Notwithstanding anything in clauses(2) and (3) ,Parliament has exclusive power to make laws with respect to any of the matters enumerated in List I in the Seventh Sechedule(in the Constitution referred to as “Union List”)”
- (2) “Notwithstanding anything in clause (3), Parliament and subject to clause any of the matters enumerated in List III in the Seventh Schedule (in the Constitution referred to as the “Government List”).
- (3) “Subject to clause (1) and (2) ,the legislature of any State has exclusive power to make laws for such State or part thereof with respect to any of the matters enumerated in List II in the Seventh Schedule (in the Constitution referred to as “State List”)”
- (4) “Parliament has power to make laws with respect to any part of the territory in India not included (in a State) notwithstanding that such matter is a matter enumerated in the State List”.(ibid)

In accordance with the existing constitutional provisions relating to ‘water’, the primary responsibility for development rests with the State Governments. However,if water is transferred from List II to List III-Concurrent List,as per Article 246(2),Parliament as well as the legislature will have the power to make laws with respect to water.(ibid)

Then there are provisions in article 262, which deals with, adjudication of disputes relating to waters of inter-state rivers or river-valleys. According to the provisions under this article;

1. Parliament may by law provide for the adjudication of any dispute or complaint with respect to the use, distribution or control of the waters of, or in, any inter-state river or river valley.

2. Notwithstanding anything in this Constitution Parliament may by law provide that neither the Supreme Court nor any other court shall exercise jurisdiction in respect of any such dispute or complaint as is referred to in clause (i). (ibid)

Article 253 says “Notwithstanding anything in the foregoing provinces of this chapter, Parliament has power to make any law for the whole or any part of the territory of India for implementing any treaty, agreement or convention with any other country or any decision made at any international conference, association or other body” (Qutub & Parajuli, 2004; 79 & Basu, 2009). This article makes it clear that the power to enter into treaties conferred on Parliament, carries with it, as incidental treaties, a power to override the State list, to enable the Union to implement the treaty. Thus a law passed by the Parliament to ratify an international convention shall not be invalidated on the ground that it contained provisions relating to the state subjects. (ibid). Under the powers conferred under this article, the Union of India signed the Indus Water Treaty with Pakistan, Treaty with Nepal on the Integrated Development of the Mahakali, 1996 and the Treaty on Ganga Water Sharing at Farakka, 1996 with Bangladesh.

Entry 10 of the Union List I under Seventh schedule confers on the Union Parliament right on ‘Foreign affairs; all matters which bring the Union to “Enter into treaties and agreements with foreign countries for implementation of treaties, agreements and conventions with foreign countries”. (ibid)

As these above mentioned laws, provisions and institutional bodies have more or less failed to tackle the inter-provincial water conflicts the Union government is looking out for another option i.e. to bring water into concurrent list. The Union Ministry of Water Resources has for long been arguing for a shift of water to the Concurrent List without any serious expectation of its happening, but has now begun to pursue the idea more actively. The Ashok Chawla committee, which was primarily concerned with the question of rationalizing the allocation of natural resources with a view to reducing the scope for corruption, have also recommended for of shifting of water to the Concurrent List. This question was also being there in front of Sarkaria Commission but it felt that a change was unnecessary. (Iyer, 2011)

Arguing against this change Ramaswamy R. Iyer feels that *.First* ,a move to put water to the Concurrent List at this stage will be generally regarded as a retrograde step that runs counter to the general trend towards decentralization and enhanced federalism, and it will face serious political difficulty because there will be stout opposition from the States. *Secondly*, an entry in the Concurrent List will mean that both the Centre and the States can legislate on water, but the Centre can already do so in respect of inter-State rivers under Entry 56 but has not used that power. (ibid).

Iyer also argues that the Union Government has wide-ranging powers under the Environment (Protection) Act 1986 (EPA) which is being extensively used by the Centre for water-related action. For instance, the Central Groundwater Authority was set up in 1998 by a notification under the EPA. More recently, when it was considered necessary to set up a National Ganga River Basin Authority this was done under the EPA, instead of following the right but difficult course of enacting legislation under Entry 56 .(ibid).

He also feels that putting water into the Concurrent List is not necessarily an act of centralization, though it could lead to such a development, which must be avoided in favour of the subsidiarity principle ,i.e. the principle that decisions must be taken at the lowest appropriate level. (ibid).

But despite of all laws and subtly demarcated areas for ,interferences by the provincial and the Union governments, the disputes over the water resources is widely persisting in India. Various tribunals have been set up to look into the conflicts, some got success in resolving the dispute while others are either still working or not given satisfactory verdicts. One of the major lacunas of the tribunals is that they take decades to come out with their final verdict. Further more time is consumed, when unsatisfied states moves to the Supreme Court to challenge the verdict of the tribunal. This they can do under the provisions of articles136. (Nariman,2009;32).Under the guise of this article the state can move to the apex court and change the nature of dispute by making it dispute between the two states,which falls in original jurisdiction about which only Supreme Court can take decision.

4.4. Inter-State Water Conflicts in India

Inter-state water conflicts is not a new phenomenon in India, rather this has been a regular feature even during the British colonial days. After independence this problem has not been sorted out and due to that this problem is still persisting. Contemporarily, due to growing pressure on water resources because of increase in demand and limited supply the problem has become grave.

Nirvikar Singh and Alan Richards have given four reasons for continuing Inter-State River Disputes in India.(Singh & Richard ,2001).

- (i) Indian water dispute settlement mechanisms were ‘ambiguous and opaque’;
- (ii) In situations of pure conflict where the initial allocation of rights was at stake ,a search for a negotiated solution had become ‘futile’
- (iii) The adjudication process prescribed under the Inter-State Water Disputes Act,1956,was ‘slow and cumbersome’; and
- (iv) The entanglement of Inter-State Water Disputes with more general Centre-State conflicts had compounded the problem of Inter-State Water management.

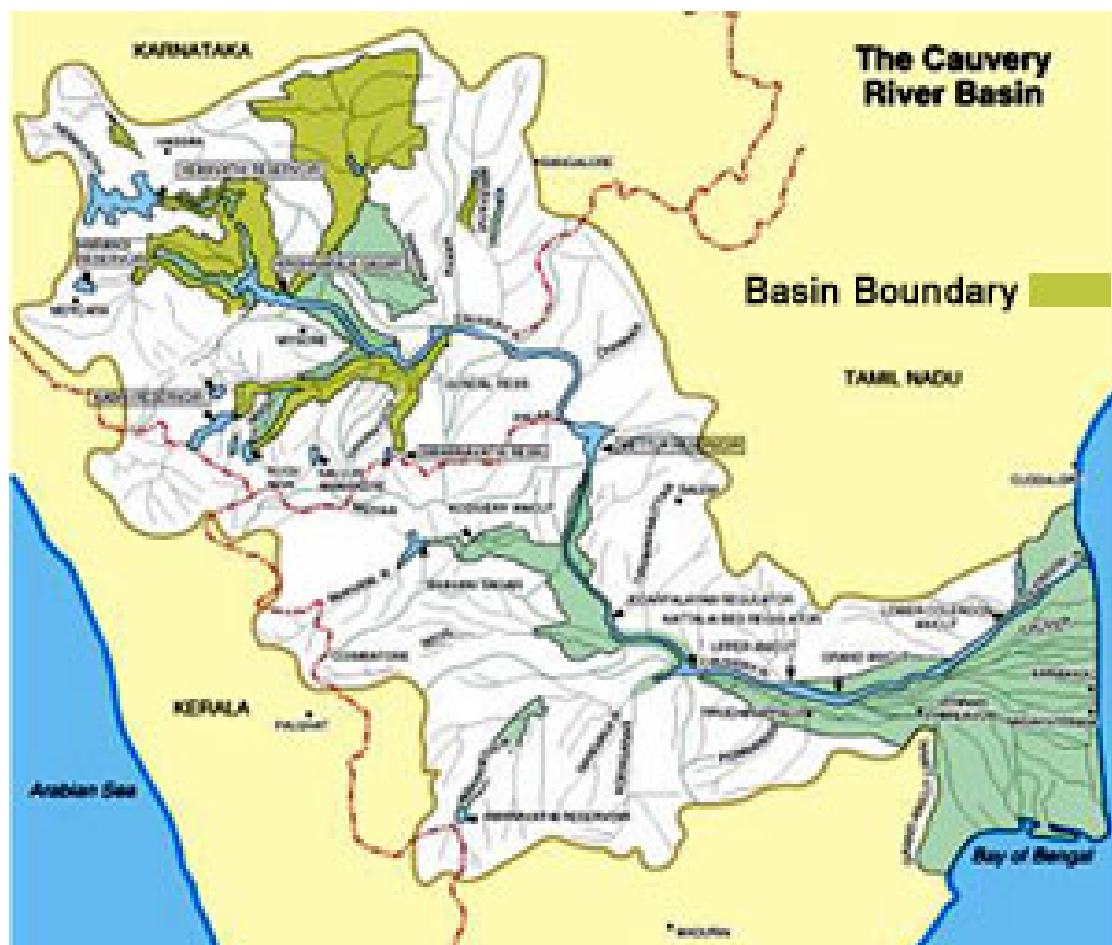
Talking about problems in Indian democracy Atul Kohli uses the phrase “crisis of governability”.(Kohli ,1991) This can be clearly evidenced in water conflicts because the constitutional institutions have repeatedly failed to address the inter-state conflicts over the water issue. Democracy gives space to negotiations, debate and dissent ,which are being practiced by the states ,when they find that the decisions are not in their favour but due to self-interest of few parochial parties or parochial leaders the common people sometimes become victims.Lack of participation of the weaker or marginalised group in decision making process has been a feature of Indian democracy.This condition generates conflicts between people and the state.

Post-1990 coalition politics has given greater space to the regional political parties.They ,using their numbers in Parliament or their role in formation of the union government, bargains in their own favour. They accept what they want to, at cost of other provinces.

The decision sometime takes an ugly turn and exploited by political demagogues, as after interim orders on Cauvery dispute in 1991, the Tamilians in Karnataka were violently attacked by the Kannidagas.

4.5. Cauvery Water Dispute

Cauvery river originates in western Karnataka and flows 381 km through that state, then forms the boundary of Karnataka and Tamil Nadu for 64 km and finally descends to its huge delta in Tamil Nadu flowing 357 km through that state on its way to the Bay of Bengal. Kerala is a party to the dispute because it contributes to the catchment area of three of Cauvery's tributaries, and so is Pudduchery because sub-branches of the river irrigate its Karaikal area before reaching the sea. With its basin famous as 'the rice bowl of the south' the Cauvery is one of the most utilised rivers in the world barely 5 percent of its water flows into the Bay of Bengal. (Wood, 2007; 69).



(Source:www.indianetzone.com/30/kaveri_riverbasin.htm.)

The dispute over the sharing of Cauvery water has a long history going back to nineteenth century. To resolve this water conflict the colonial government took first step as a result to it in 1892 an Agreement was signed between the conflicting parties. Appeal against that agreement was made to the Secretary of State, led to resumption of mutual negotiations between the two parties leading to an agreement in 1924. (Iyer, 2003). This agreement was for fifty years. As a result to that agreement two important storage projects were constructed Krishana Raj Sagar dam (1931) in Karnataka and Mettur dam (1934) in Tamil Nadu. (Qutub & Prajauli; 2004).

In 1974 the problem re-emerged. Tamil Nadu government asked the central government to appoint a Tribunal to settle the dispute. But on advice of then Prime Minister Mrs Indira Gandhi, Tamil Nadu withdrew its request and began participating in fresh negotiations. Two draft agreements offered by the Union government were rejected by the state in 1974 and 1976, hence conflict linger upon. A desperate system of crisis management ensued for the next 15 years. The distribution as decided then was; out of 671 Thousand Million Cubic feet (TMC) 489 TMC for Tamil Nadu, 177 TMC for Karnataka and 5 TMC for Kerala. Savings were to be made in water use by both Tamil Nadu (100 TMC) and Karnataka (25 TMC) over a period of fifteen years. Those savings were to be redistributed as 4 TMC to Tamil Nadu, 87 TMC to Karnataka and 34 to Kerala. The Inter State Cauvery Valley Authority was to be established. (Iyer, 2003).

At the time of this arrangement Tamil Nadu was under the President's rule and after election the assembly did not ratify because it was considered not satisfactory. Thus the prospect of resolution of conflict receded. (ibid). Still the water-sharing arrangement was intact. Tamil Nadu annually demanded that Karnataka be made to let down enough water to save withering crops in its delta areas, and the later, after protesting that its own needs were unmet, would finally relent and release water considered inadequate by the former. Meanwhile, Karnataka, by adopting the delaying tactic of prolonging negotiations, was gaining time to enlarge or build new dams upstream. (Wood, 2007).

Finally, in 1990 Tamil Nadu's demand for a tribunal could no longer be resisted. The Supreme Court, while disposing of a petition from a group of Tamil Nadu farmers, ordered that a tribunal be set up within a month. The central government, under the leadership of Prime Minister V.P. Singh and the National Front, dragged its feet but finally appointed a tribunal, headed by an SC judge Justice Chittatosh Mookerjee as the chairman and Justices S.D. Agarwala and N.S. Rao as members. In May/June 1996 Justice Chittatosh Mookerjee resigns and in 1997 June Justice N.P. Singh becomes Chairman of the Tribunal (ibid).

After the Cauvery Waters Dispute Tribunal was accordingly set up in June 1990 for adjudication of the dispute, the disputing parties presented their cases before it. The cases made by the Party States were; (Qutub & Parajuli, 2004);

Karnataka

- (i) The Agreements of 1892 and 1924 are void since they were 'imposed' by the British on the 'vassal Princely State' of Mysore;
- (ii) The 1924 Agreement has expired in its entirety in 1974 at the end of the 50 year period, the 1892 agreement placed restrictions on Karnataka for the development of irrigation, while Tamil Nadu had no corresponding restrictions;
- (iii) Tamil Nadu has the benefit of being exposed to both the South-West and North-East monsoons;
- (iv) Tamil Nadu's canal systems are to be modernized;
- (v) Karnataka's drought prone area is almost double that of Tamil Nadu and has therefore a right to use of more water;
- (vi) Trans-basin diversions for irrigation or power should not be permitted;
- (vii) The ground water resources in the Delta region are to be taken into account for the purpose of equitable distribution.

Tamil Nadu

The Central fact-Finding Commission's(CFFC) reports of 1972 and 1973 with regard yield and utilization should be revised.The average annual utilization is already higher than the yield ,even at 50% availability,and hence there is no scope for savings.The 1892 and 1924 agreements are considered inviolable,binding on all the States.There is thus little to be gained from working out any fresh allocation of waters in terms of actual amount or periodic releases.(ibid).

Kerala

The allocation of Cauvery waters should be made taking into consideration the amount and percentage contribution of each State.(ibid).

Pudduchhery

The full allocation of a minimum quantity of 9.355 TMC of water for irrigation and drinking water purposes should be made during normal years.(ibid).

After listening the cases and going through the matters the Cauvery Water Disputes Tribunal (CWDT) passed an interim order on June 25, 1991.Karnataka was directed to release 205 TMC of water from its reservoir so as to ensure that it is available in Tamil Nadu's Mettur Reservoir in a year from June to May,effective from 1 July 1991,in accordance with the monthly inflows schedule. Restrictions were also placed on Karnataka not to increase its area under irrigation by the waters of the Cauvery beyond existing 11.2 lakh(100,000)acres.(ibid) Karnataka felt aggrieved and reacted very strongly to the above order and raised several legal and technical lacunae,some of which are mentioned here;the interim relief is arbitrary ,granted without prima facie assessing the yield ,utilization, basin needs and other relevant matters;unworkable schedule for the

release of water arbitrary since it operates irrespective of availability of waters in Karnataka etc. It also represented to the Central Government not to implement the Tribunal's order, and to stay all the proceedings of the Tribunal until a National Water Policy was formulated and an appropriate amendment was brought to the Inter-state Disputes Act of 1956, and the Tribunal given clear guidelines. (ibid). Due to the urgent nature of the matter, GOI approached the Supreme Court seeking clarifications. The interim order had a negative repercussion in Karnataka. Various groups criticized it and also indulged in physical attack on Tamils residing in Karnataka.

Sensing public outrage and public support during 1992 to 1995 Karnataka delayed implementation of the Interim Order but no negative effect was felt in Tamil Nadu because rainfall was plentiful in those years. However, in 1995-96 the monsoon failed and once again the issue cropped up. Tamil Nadu went to the SC asking for immediate release of 30 tmcft to save rice crop. The Court directed Karnataka to release 11 TMC, being the cumulative deficit up to mid December 1995, and to keep up further release of 17.4 TMC until end of May. When this was ignored by Karnataka, the court requested the Prime Minister to intervene. Then after consultation with the Chief Ministers of the States, the Prime Minister P.V. Narasimha Rao called for a release of 6 tmcft of water and set up a committee to see to its implementation. He also announced three-point package, to defuse an otherwise explosive situation (ibid).

- (i) Prime Minister requested Karnataka for immediate release of 6 TMC of Cauvery waters, against 11 TMC as per the Tribunal Order, to Mettur in Tamil Nadu. (In subsequent years, this is being done under a formalized institutional arrangement)
- (ii) A three member Expert Group was set up to make an on the spot assessment of the status of standing crops in Cauvery ayacuts in Tamil Nadu and Karnataka and their water storage levels and immediate requirement of water to save standing crops in both the States. This was only an interim action to defuse an otherwise sensitive situation.
- (iii) This addressed the larger issue of sharing of river waters at policy level by

proposing to hold a meeting of the National Water Resources Council (NWRC), on which all the Chief Ministers are represented, to evolve guidelines for sharing of Inter-state river waters.

Despite the interim order, PM's intervention and working of the CWDT the matter got complicated and conflict was getting serious. One of the reasons for getting the case complicated was that the Tribunal lost its credibility due to continuous interventions by the SC and also because of Karnataka's non-compliance with its directives. During their short tenure as Prime Minister, H.D.Devegowda and I.K.Gujral maintained status quo and did nothing to address the problem.(ibid). However in August 1998 a new attempt was made by Prime Minister Atal Behari Vajpayee to seek a solution. He convened a meeting ,first of the chief secretaries of the three basin states and one union territory and then of their chief ministers,and secured an agreement whereby there would be an *ad hoc* decision each year based on the recommendation of bureaucratic monitoring committee headed by the cabinet secretary. A Cauvery River Authority (CRA) was set up, headed by the Prime Minister.(ibid).

The CWDT continued to work towards a final solution but its impartiality was continually attacked in Karnataka. In September 2004, when it appeared that the Tribunal's final award was imminent, Karnataka politicians in both state government and the opposition called either for a reconstitution of the Tribunal or total boycott of its proceedings. In August 2005 the term of CWDT was extended for one more year.(Wood,2007).

The final award of the Cauvery Water Disputes Tribunal, announced on 5 February,2007,has come 16 years after the Tribunal was set up. It has been a long wait for the verdict and not all claimants are happy with what they have got. Indeed although there is a provision for the disputants to go before the tribunal for a review or clarification,the final award cannot be revoked or changed substantially.

Three- member Tribunal ,in total 580 sittings,heard and deliberated upon the voluminous evidence and arguments presented by the legal teams of the three riparian States and the Union Territory. Regional chauvinism got a fresh lease of life and many politicians built

their careers around the dispute .In the course of its long life,the Tribunal itself saw a change of Chairman and one member.(Menon,2007).

As the date of the announcement neared,a mood of expectation tinged with some anxiety built up in the States,especially in Karnataka where the interim award of the Tribunal,given in June 1991,had resulted in an upsurge of violence ,directed particularly at Tamil-speaking groups.

In an unanimous award,the Tribunal ,comprising its Chairman Justice N.P.Singh and members N.S.Rao and Sudhir Narain,made allocations to the four disputants based on a total availability of 740 thousand million cubic feet(tmcft) water in the Cauvery (measured at the Lower Coleroon Anicut site) at 50 percent dependibility.The order gives Kerala 30tmc ft,Karnatka 270 tmc ft,Tamil Nadu 419 tmc ft and Puducherry 7 tmc ft.10 tmc ft is allocated for "environmental protection"(a minimum flow to protect flora and fauna) and 4tmc ft for escapages into the sea.(Cauvery Tribunal Order,2007).

The order says that Karnataka must release 192 tmc ft of water measured at Biligundlu on the border with Tamil Nadu.This includes the 10 tmc ft set aside for environmental protection .From Tamil Nadu's share of 182 tmc ft ,it must release Puducherry's share of 7 tmc ft. (ibid).

The arrangement will come into force within 90 days of its notification by the government.Like the interim order,the final order too stipulates a monthly schedule of releases from Karnataka to Tamil Nadu.The major difference between the two orders is that while the interim award stipulated that Karnataka had to make available 205 tmc ft at Mettur,the present order has made Biligundlu,where a Central water Commission gauging station stands,the point of release.The water year begins from June 1 and ends on march 31.(ibid).

The order states that the schedule will be in place for five years and thereafter it could be "reworked in consultation with the party States and help of the Central Water Commission..." Further ,the scheduled deliveries to the lower riparian States, it says, should not be affected by any action takes by the upper riparian State.(ibid).

On the contentious issue of distress-sharing formula, the award is too brief; it merely states that distress shall be shared proportionately. "In case the yield of the Cauvery basin is less in a distress year, the allocated shares shall be proportionately reduced" among the States and Puducherry. (ibid).

Clause 14 of the order stipulated that water taken by any State for domestic and municipal water supply from a reservoir will be reckoned as used by that State from its share. In yet another significant determination, the order permits the disputant States to set up hydro-electric projects provided these do not interfere with the pattern of downstream releases. In clause 18, the order says that the State is free to regulate the use of water within its boundaries provided that is not inconsistent with the order of the Tribunal. (ibid & Menon, 2007).

A significant aspect of the final order is that it lays no cap on the extent of irrigated area in Karnataka, unlike the interim order. That order had said that Karnataka could not extend its irrigated area beyond 11.2 lakh acres (one acre is 0.4 hectare), an imposition that Karnataka had argued was unfair and against the interests of its farmers. (Cauvery Tribunal Order, 2007).

The Tribunal has put in place new mechanisms for implementing the accord and for determining distress. It has set down detailed directions on setting up a Cauvery Management Board (CMB), which in turn has to set up a Cauvery Water Regulation Committee. (ibid) The Cauvery Regulatory Authority and the Cauvery Monitoring Committee will cease to exist. The new Committee will have a chairman, four members and a member-secretary. It will "ensure the implementation of the final order with the directions of the CMB to collect daily water levels, inflows and storage position at each of the following reservoirs—Hemavathy, Harangi, Krishanarajsagar, Kabini, Mettur, Bhavani Sagar, Amaravathy and Banasurasagar to ensure 10 daily releases of water on monthly basis from the reservoirs as directed by the Board....and to collect and compile weekly information about important rain gauge stations of the Meteorological Department to assess the position of monsoon and keep the board informed about the status of the monsoon". (ibid).

It is board that will determine the distress caused by decreasing water flows. At the start of the irrigation season on June 1, the party-States must indent for supplies at each reservoir site for June. After determining the reasonableness of the demand, the committee will release water on a 10-day basis. (ibid). If there is deficiency in rainfall, the Board will consider reducing the indent proportionately.

If the tribunal took 16 years to come to its final award, the implementation of the award will hopefully be swifter. The disputant-states have already indicated that they will go before the Tribunal on what they perceive as the shortcomings of the award. Karnataka has not yet officially responded to the award. Once appeals are filed, the Tribunal will have to hear them and issue further orders. In the interim period, the earlier order will prevail. (ibid).

Kerala has been given more water than it can handle but denies it permission for its dream trans-basin projects in Mananthavady (16 tmc ft) and Banasurasagar (Kuttiyadi power augmentation scheme-5 tmc ft) in Kabini basin and Kerala Bhavani (14 tmcft) in the Bhavani basin. (Krishanakumar, 2007).

All except a few of the proposed medium and minor irrigation projects have been granted allocation of water from the Cauvery sub-basins, with riders on the kind and number of crops proposed. In almost all projects the Tribunal has proposed two instead of three or one instead of two crops of paddy and the cultivation of less water-intensive varieties and has refused sanction for irrigated summer crops. (ibid). The Tribunal also put limits on the State's demand for drinking water at 120 litres per capita a day (LPCD) for the entire population in the three sub-basins and allowed this only for the 30 percent urban population. For the 70 percent it has restricted the requirement to 70 LPCD. (ibid).

In Cauvery Water Dispute, the question as to whether pre-Constitution Agreements (of the years 1892 and 1924)-'treaties'-between the Princely state of Mysore and the Provinces of Madras as to the flow of Cauvery waters from the upper riparian Indian State of Mysore to the lower riparian British Indian Province of Madras had lapsed after the British Parliament enacted the Indian independence Act 1947, or whether they continued and were binding on the successor States under the Constitution of India 1950

and whether in any case the provisions of those agreements could be reviewed or altered after the stated period of their operation had expired, engaged much of the time and attention of the (Cauvery Water Disputes) Tribunal. (Wood, 2007).

When after nearly 20 years a final decision was handed down by the re-constituted Tribunal (on 5 February 2007), it was immediately subjected to a challenge in the Supreme Court by the States of Karnataka and Kerala; challenges that have been accepted and admitted to a hearing by a larger Bench: since constitutional questions raised can be finally pronounced upon only by the country's highest court. Special Leave Petition has been admitted under article 136 and referred for hearing to a larger bench of the Court. (Nariman, 2009).

Besides the legal tangle there have been efforts to resolve this conflict by the civil society from the two states. In 1993, S. Guhan published a book titled "The Cauvery River Dispute: Towards Conciliation", a definitive guide to the dispute. In this book he traced down the history of inter-State relations over the Cauvery on matters of irrigation and water sharing, and the practice and principles of Indian and international law in resolving water disputes. His lasting contribution to the resolution of the dispute, however, lay in his firm belief that even as governments fought their cases at official meetings and in courts and tribunals, a non-official, people-to-people track in dispute resolution had to be initiated in a spirit of reason and non-partisanship. He was for a conciliatory framework to resolve this decade's long dispute. (Menon, 2007).

In 2003 on effort made by Ramaswamy Iyer and Prof. S. Janakranjan of Madras Institute of Development Studies Professor a body called "Cauvery Family" was set up. It consisted of farmers, academics and journalists from Tamil Nadu and Karnataka. (Iyer, 2007, 88). The focus is to understand the problems of two sides of people, who were living in catchment areas and were getting affected by the flow of the river Cauvery. (Menon, 2007). This group favours using a model called WEAP (Water Evaluation and Applied System) developed by the Stockholm Research Institute to resolve problem between two states during stress time.

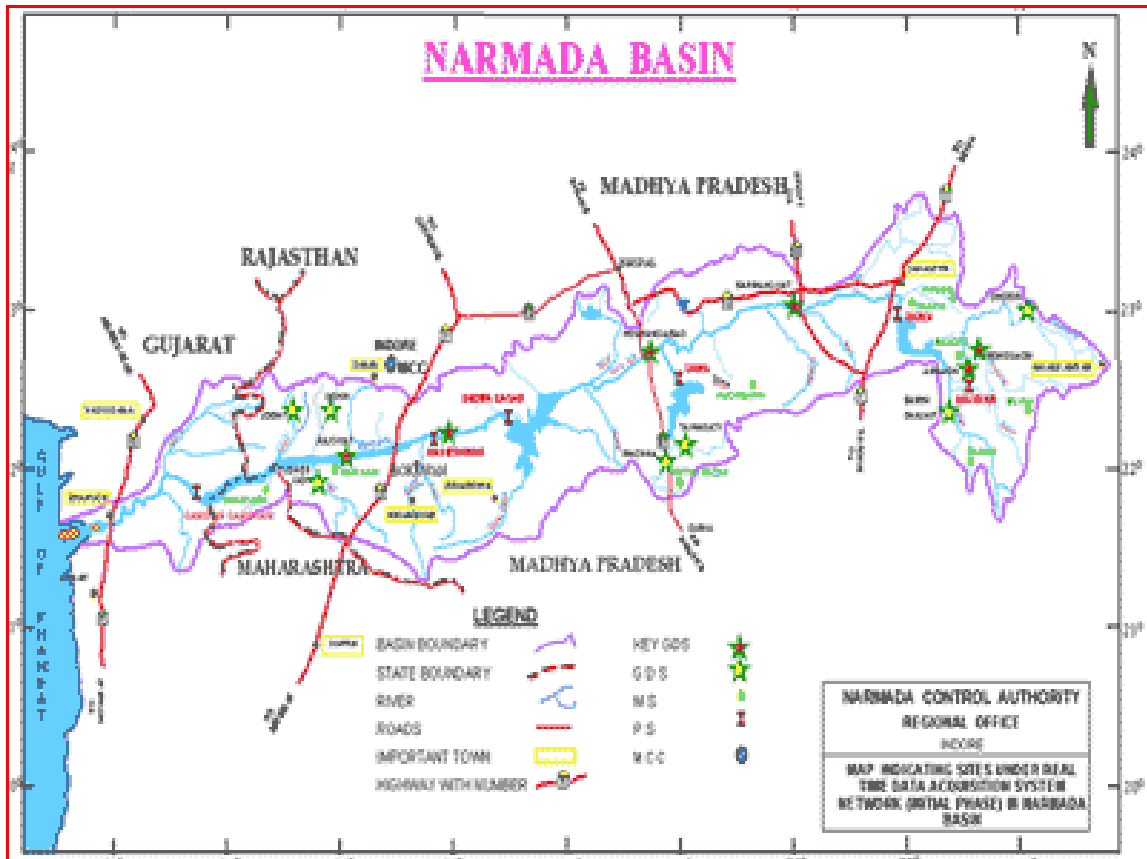
4.6. Narmada Water Dispute

Narmada water dispute is about conflict between two groups over the issue of damming the river Narmada, without taking into account the views of local marginalised groups, who are tribals. Many have been displaced and hazardously resettled in places, far from their native lands. The perception of displacement has generated the conflict between the tribals and state agencies supporting the projects.

According to Cernea's impoverishment Risks and Reconstruction model, displacement epitomizes social exclusion of certain groups of people. It culminates in physical exclusion from a geographic territory and economic and social exclusion from a set of functioning social networks. (Cernea, cited in WCD, 2000; 103). This fear of economic and social exclusion has caused conflict in case of Narmada river. About two lakh people have been displaced from their native place, since 1979, when construction of Sardar Sarovar Project (SSP) began. Conflict too began at that time. In following years this project has attracted the international as well as national attention due to its after effects in the tribal areas. The submergence of tribal areas and the problem over the issue of rehabilitation of tribes has been source of tension between the state government and the enlightened civil society.

River Narmada starts from Madhya Pradesh and journeyed 1,312 kilometres across Gujrat and Maharashtra until it empties itself in Arabian Sea. This river comprises of two mega dams Sardar Sarovar Project (SSP) and Narmada Sagar Dam, 30 large dams, 135

medium dams and over 3000 small reservoirs and dams.(Mehta,2005;93).



(Source:nca.gov.in)

The dispute over sharing of water from river Narmada among Madhya Pradesh (now mainly Chhatisgarh, after it was formed in 2000), Maharashtra, Gujarat and Rajasthan. Water had retarded the progress of water resources development in the basin until a Tribunal was set up in 1969 to adjudicate the basic framework of development in the basin on the basis of the plans prepared by the basin States. The State of Rajasthan, though not a riparian was included as a beneficiary on the grounds of social justice to benefit the desert and arid parts of the State, which had no other reliable source of water.(Wood,2007).

Madhya Pradesh is the upper stream or interior state on through which various rivers flows rivers. Thus in addition to its dispute with Gujarat over Narmada it has had to deal with the ambitions of Rajasthan, Uttar Pradesh and Bihar over the development of several tributaries of the Ganga, which flows through it ,with Orissa over the development of

Mahanadi;and with Maharashtra, Andhra Pradesh and other southern states over the development of Godavari. In most of these cases the people of Madhya Pradesh feel that they have gained little in the allocation of benefits either due to geographical or economic reasons.(ibid). With creation of Chhattisgarh, the river's entire basin that lay within the larger state continues to lie within the smaller but industrially and mineral rich state.

At present the main disputant over water from river Narmada are Gujrat and Chhatisgarh, while others are important party to it but not major claimant of its water. Maharashtra is a minor party to the Narmada dispute insofar as its frontage is only 74 km. The only state district involved, Nandurbar (formerly West Khandesh) ,contains a mere 2 percent of the basin. Nandurbar has been regarded as a backward area because of its large concentration of tribals, who, registers low levels of health, literacy and productivity. In this respect, Maharashtra has shared a common concern with Chhatisgarh, whose adivasis across and up the river from Maharashtra lives in similar poverty-stricken conditions. Together they would suffer the most from the submergence caused by creating the dam's reservoir (ibid). Maharashtra has shown only minimal interest in the irrigation benefits to be gained from developing Narmada's water resources. Like Chhatisgarh it too has other rivers to exploit for irrigation; its main concern has been to acquire hydro-electricity for its industrial corridor which has perpetual energy shortage.(ibid).

Gujarat has lots of interests in development of Narmada resources: it has a chronic need for water, primarily for drinking and irrigation purposes. It also has an interest in hydro-electric energy for its rapidly industrializing cities along the Ahamedabad –Vadodara-Surat corridor and in the flood-control benefits that damming the Narmada would provide. Principally, Gujarat has hoped that development of Narmada water could do for it what the Bhakra –Nangal project has done for Punjab:convert huge tracts of land hitherto dependent on the vagaries of the monsoon and tied to subsistence agriculture into a 'breadbasket' of modern farming methods and year-round productivity.(Mehta,2005).

Mainland Gujarat ,which enjoys, better rainfall has a number of medium-sized rivers such as Tapi,Mahi and Sabarmati,each of whose irrigation potential has been exploited if only to the benefit of one or at most a few mainland districts. Saurashtra, Kachchh and

northern Gujarat, however, receive far less rainfall and have only a few small rivers most of which dry up during the summer months. The only river with enough water to reach beyond the south-central mainland and service the needs of the state's drought-prone districts is Narmada. (ibid).

Rajasthan is not a riparian state of the Narmada river but became a disputant over its water resources in 1969 when it claimed it could and should receive a share by canal. To do this, Rajasthan involved into negotiations with Gujarat over other inter-state shared rivers. It also needed to have canals to transfer water from Gujarat to Rajasthan. It was understood from the outset of its claim that the amount of water that could be delivered would be small and that only two Rajasthan districts at the end of the long Narmada canal-Barmer and Jalore- would be able to receive water. Its claim to Narmada water is primarily based on the relative poverty and drought-proneness of these districts. (ibid).

As the demand of water from the river Narmada was made by various states for their all-round development hence conflict was bound to occur regarding the quantity of water needed and demanded by them. Hence, various steps were taken by the Union and even by the disputant state governments to reach at a formula of Narmada water-sharing.

The process to start exploitation of Narmada river started before independence in 1946 when the Government of Bombay (now Mumbai) asked the Central Waterways, Irrigation and navigation Commission (CWINC) to undertake a basin-wide investigation the river from the standpoints of flood control, irrigation, power and navigation possibilities. The CWINC study revealed excellent storage site possibilities on both the main river and its tributaries and recommended seven sites for intensive study. (Wood, 2007).

In 1948, an adhoc committee reduced the list to four projects to be given investigative priority (i) the Bargi project; (ii) the Tawa project; (iii) the Pansa project and (iv) the Broach project. The Tawa project was on the biggest left-bank tributary of the Narmada while Bargi, Pansa and Broach projects were all in what would eventually become Madhya Pradesh, while what was projected as the Broach Irrigation Project was in part of Bombay province that became Gujarat after 1960. (ibid).

In the mid-1950s ,further studies by CWINC , renamed as the Central Water and Power Commission(CWPC),explored more intensively the river's hydro-electric potential and recommended further investigation of a total of 16 sites for dams calculated to produce altogether 1,300MW.In 1957 a further CWPC recommendation called for detailed study of three sites between Punasa and Broach(the later located at Gora, a village about 4 km downstream from the present site of the SSP)projects, at Barwaha,Harinphal and Keli.(ibid).While these were going on, inspection of the Gora site led to investigation of another site at Navagam village ,4 km upstream ,where the rock formation would allow higher dam.What had initially been conceived as a weir at Gora with a pond level of 160ft(49.3m) became in 1959 a two stage dam project at Navagam with the ultimate height of dam set at 300 ft(91.5 m).In the same year, a team of consultants appointed by the Ministry of Irrigation and Power noted that if the dam were built in one stage and the height raised to 320 ft(97.5m),it might be possible to send Narmada water all the way to the Rann of Kachchh.(ibid).

After the bifurcation of Bombay State and formation of Gujarat the new Gujarat government took up the planning and works associated with the Broach Irrigation Project. By August, the original two-stage plans for the project were approved by the central Planning Commission. Stage I provided for a dam with an FRL(full reservoir level) of 162 ft and a low level canal that would service 389,000 ha in Gujrat.However,the approved plans and estimates provided for dam foundations, masonry and earth work that would facilitate the later building of a Stage II dam with a FRL of 320 ft,thus enabling irrigation of a further 364,000 ha by a high-level canal. Stage II also envisaged a hydro-electric power facility in the dam which would generate 625 MW, providing the upstream Punasa and other dam storages could be completed.(ibid,95).

The Government of Gujarat gave administrative approval to the project in February 1961 and it was inaugurated by Prime Minister Jawahar Lal Nehru on 5 April 1961.In 1963 Gujarat Government engineers revealed a reservoir at Navagam could have greater storage capacity than originally anticipated and that if dam height were raised to 460ft a further 2 million acres of Gujarat farmland could be irrigated. A new dam site was

selected after investigation by the Geological Survey of India, 610 m upstream of the original Navagam site.(ibid).

The two chief ministers in 1963 approved the plan at Bhopal Agreement ,which provided that (i)the Navagam dam should be built to a height of FRL 425 ft(129.5 mt) by the Gujarat government and all its benefits would redound to Gujarat;(ii) the cost and benefits of the Punasa dam in Madhya Pradesh would be shared in ratio of 1:2 between Gujarat and Madhya Pradesh and a further loan covering one-third of the cost of the Punasa Dam would be provided by Maharashtra in return for one-half of Madhya Pradesh's share of hydro-electricity for a period of 25 years and(iii) the Bargi dam project was to be built by the Government of Madhya Pradesh dam with loan assistance of Rs 100million provided by the governments of Gujarat and Maharashtra. This agreement was rejected by the Madhya Pradesh assembly while the Gujarat assembly ratified it. The centre of problem was the height of the dam.(ibid).

As the problems ,regarding the projects and water-sharing from river Narmada ,could not be resolved between Madhya Pradesh and Gujarat , A.N.Khosla committee was set up to look into the matters and give its recommendations. In one of its recommendation the committee stressed on the importance of extending irrigated areas to Kutch.It awarded water for irrigating 7.5 lakh acres out of total 45.61 lakh acres allocated to Gujarat i.e 16.45 % of total land irrigated.The 1972 irrigation Commission Narmada Waters stressed on the importance of providing Narmada water to the scarcity areas of Gujarat.(Mehta,2005).

The recommendation of the committee was out rightly rejected by the two parties, but it paved the way for setting up Narmada Water Disputes Tribunal.(Singh in Dreze,Samson &Singh,1997).Then Union Minister for irrigation and Power K.L Rao visited each of the chief ministers of the disputant states in May-June 1966;these meetings were followed up by official-level discussions in Delhi about technical issues arising out of opposing reactions to the Khosla Committee report. On 22 August 1966 ,Rao convened a meeting of chief ministers of the disputant states,this time at Delhi and including the chief minister of Rajasthan. All that they could agree was that the chief ministers of Gujarat

and Madhya Pradesh should meet separately to 'amicably' resolve the dispute. This time also the two chief ministers agreed upon the height of dam that should be 425 ft, as in Bhopal Agreement. But like earlier now too the MP chief minister D.P. Mishra failed to get it approved by his cabinet and stalemate remained. Once again the chief ministers of MP and Gujarat along with their counterparts from Rajasthan and Maharashtra also attended the meeting. No progress was made at this meeting. (Wood, 2007).

As the two states failed to amicably resolve their water conflicts the Tribunal was left with no alternatives except to work out for finding a solution to the problems. It had the advantage of a mutually agreed settlement (1974) worked out through the good offices of the Prime Minister, among the Chief Ministers of the four States on assessment of the total available flows. All the Party States accepted the principle of equitable distribution. (ibid). The Tribunal gave its Award in 1979, after 10 years of deliberations and laid down the basic framework for water resources development in the basin, envisaging detailed directives on the Narmada Sagar Project in Madhya Pradesh and Navagam dam (Sardar Sarovar Project-SSP), the terminal dam in Gujarat. (NWDT Award, 1979).

Twenty-nine major dams on the river and its tributaries, 135 medium reservoirs, and 3000 small size storages for utilizing the available water were proposed by the tribunal. It endorsed the mutually agreed share of water among the States and made it clear that each State has freedom to use the water allocated to it within or outside the basin, as deemed fit. The apportionment of water ordered is to be reviewed after 45 years. The height of the Navagam (Sardar Sarovar) dam, the ruling levels for FRL (455') and MWL (460') and Full Supply Level of the canal (300') were prescribed by the Tribunal after a detailed examination of the claims put forth by the Party States. (ibid).

Detailed guidelines on the Resettlement and Rehabilitation of project-affected people (called "oustees") have been set out based on a land for land package, the first such package for any project in the country. (ibid). The Tribunal also stated that displaced persons in Maharashtra and Madhya Pradesh desirous of resettlement in Gujarat must be rehabilitated there. The Tribunal held that amendments, alterations, and modifications

may be effected by agreement between all the Party States. The Narmada Control Authority(NCA) was established to implement the decisions of the Tribunal. The NCA has structured two high level sub-groups, one for Environment and the other for R&R(Resettlement and Rehabilitation).(ibid).

The review mechanism of the "Review Committee of NCA"(RCNCA) is also made functional. The Sardar Sarovar Project,as conceived and under implementation, envisages a 163 metre high dam(above deepest foundation level) with ruling levels as prescribed in the Award,with two power stations-the Canal Head power Station with an installed capacity of 250 MW and a River Bed Power House with an installed capacity of 250 MW and a River Bed Power House with an installed capacity of 1,200 MW(6 units of reversible turbine generators).(ibid).

Once the tribunal cleared the Sardar Sarovar Project the work on it began. The Sardar Sarovar Project on the river Narmada is one of the largest and most expensive multipurpose river projects ever to be initiated in India. It is claimed that it will irrigate 1.8 million hectares of land in Gujrat and Rajasthan,supply drinking water to 40 million people, and will have an installed capacity of 1450 MW of power during the next 30years.The project cost is about 25,000 crores,more than the combined cost of all major and medium irrigation projects in India since independence. The project has been hailed as the 'lifeline' of drought- hit Gujarat;the state's former chief minister Chimanbhai Patel successfully mobilized bourgeois opinion in Gujarat to succumb all voices critical of the project.(Mehta,2005).

But due to its social consequences this project has become a source of tension,conflicts and all problems. With it the whole debate on water-sharing was transformed and now the questions over the height of dam,resettlement and rehabilitation of the oustees and social consequences of the project had been vociferously raised through various means and on various platforms. Since the 1990s Medha Patekar is aptly leading the Narmada Bachao Andolan(NBA) (Save Narmada Movement).The movement aimed at stopping a massive dam on the Narmada river which would render homeless some 200,000 people,the majority of them adivasi in origin out of which (about 12,000) were in

Madhya Pradesh, about 3,000 in Maharashtra and 5,000 in Gujarat-while the farmers expecting to get water from the dam were all Gujarati.(Ombvedt,2004) Patekar organised the tribals in series of colourful marches: to the dam site in Gujarat, to the city of Bhopal(capital of Madhya Pradesh, the state to which most of those affected belonged), to the national capital, Delhi, there to demand justice from the mighty government of India. The leader herself engaged in several long fasts to draw attention to the sufferings of her flock."(Guha,2010).

As NBA is agitating against the SSP there are groups which are sympathetic to the project and they consider that this project is required for the development and growth of catchment areas. Arch-Vahini is such an NGO which was concerned about the rehabilitation and resettlement of the oustees. They are being critical to the NBA activists because they consider that they are against development of this area. This group functions mainly in Gujarat.

Unfortunately the whole movement has failed to undeter the union and the state government from taking up the project. The movement has done one thing, it has raised the issue and has made the apex court to interfere into the legality and matters of the project. Under their pressure the World Bank, which is one of the major financing agency to the project, was forced to examine the "very basis" of the Project.(Baviskar;1995). The Bank set up a commission under Bradford Morse, to study the project. On the basis of its study the report concluded that the project was badly flawed and advised the Bank to step back. Commission's conclusion was based on extensive travel through the villages of the Narmada valley where they held public meetings, sought out representative bodies of people for in-depth discussion, interviewed project officials as well as Narmada Bachao Andolan activists. The commission also solicited information from sociologists familiar with the project area and those formally associated with monitoring and evaluation of resettlement and rehabilitation.(ibid).

Encouraged by the World Bank's report the activists protesting against the SSP project slapped Public Interest Litigation(PIL) in the Supreme Court in April 1994. The petition sought the stoppage of construction of project work, and a comprehensive review of the

project by an independent expert body. The conflict in this case is not really about water sharing but between the affected people and the States.(ibid).

The PIL filed by the NGO in the Supreme Court was admitted in April 1994 and the case was deliberated and discussed upon in the court for over 6 years(when the construction of the main dam was stopped),a period that was very crucial for achieving the planned benefits from the project,and finally in October,2000,the Supreme Court gave its judgment-- a majority of 2 to 1.

The important aspects of the judgment are.(www.narmada.org/sardar-sarovar_sc_ruling,2000).

- (i) Construction of the dam shall proceed as per the NWDT award;
- (ii) The Narmada Control Authority(NCA) will formulate an Action Plan with regard to R&R,environmental safeguard measures etc.;
- (iii) The construction of the dam shall be worked out by the NCA in consultation with the Secretary(Environment and Forests) and the Secretary (Social Justice and Empowerment) as Chairman of the environmental Sub-Group and R&R Sub-group respectively.The views of the Grievance Redressal Authorities (GRAs) of the States shall also be considered;and
- (iv) The Review committee of NCA(RCNCA) shall meet whenever any unresolved matter is referred to it by NCA,and at least once in three months ,to oversee the progress of the work.

Though not wholly criticized but this judgment was not positively accepted by the activists opposing the project. While the thinking on appointing a new authority for Narmada command area had started in September 2003, Sardar Sarovar Narmada Nigam Ltd (SSNL) had initiated field surveys in November 2003 and there was no master plan covering all the activities to develop the command area,as revealed in the CAG audit report for Gujarat (commercial) for the year ending March 31, 2007.(Upadhyay,2008).

In early August 2004, even as the meteorological department put Narmada district on the border of vulnerability to shortages and the water level at Sardar Sarovar dam had just touched 98.24 metres mark—although the state government had raised the height to 110.64 metres. United News of India reported on August 3, that at least seven villages in Vadodara district were inundated as the flooded Narmada main canal had been breached at two locations. The response of the authority was quite casual. (ibid).

In 2005 too when it rained heavily in the command area, rehabilitation site witnessed waterlogging. Not only did the project authorities ignore these breaches to the canal, they have also been causal in addressing the huge gap that exists between claims on command area development progress and irrigation potential created thereby vis-a-vis the irrigation potential utilised. The figure of irrigation potential utilised has stagnated at 1.53 lakh hectares from June 2006 to June 2007, even as the Gujrat government had raised the dam's height from 110.64 metres to 121.92 mtrs. (ibid).

Then on June 11, 2008 eight villages (Suajatpura, Todmalpura, Bavijpura, Narsinhpur, Nani Kadi, Balasan, Kaswa and Shedadi) in Kadi tehsil of Mehsana district were flooded following a 30-metre long breach in the Narmada main canal. Nearly 2,100 families were forced to shift to safer places after 2,000 acres of farmland was submerged. The NBA leader Medha Patkar stated that the breach exposed the manner in which work on the Narmada dam was being done, at the cost of quality and safety. (ibid).

Disproportionate impact of development projects on tribal groups is a direct consequence of their poverty and powerlessness state has exercised its prerogative of 'eminent domain' to acquire land, forests and water for the 'national purpose' of constructing projects for irrigation, power generation, defence and mineral extraction. Not only have displaced communities been deprived of the fruits of this development, they have not even been compensated for the hardships they have had to endure for the sake of 'the nation'. (Baviskar, 1995). Their economic and political impoverishment has prevented most tribal communities from negotiating a better deal for themselves vis-a-vis displacement and development. Given the utter inadequacy of rehabilitation

programmes, the ability of these groups to cope with changed circumstances is cause for serious concern. (ibid & Mehta, 2005).

The victims of the SSP multipurpose project are from Chhatisgarh, while the chief beneficiary of the project would be Gujarat. Its water strapped areas will get enough water and the urban areas will be the chief consumer of electricity generated by the project. This project is considered as 'lifeline' of Gujarat and is made out to be the only hope for the drought-affected regions of Kutch and Saurashtra. (Mehta, 2005). The work was stopped between 1994-2000 because of stay by the Supreme Court but in 2000 after judgment passed by the SC the work resumed.

In 2006 the Over Sight Group (OSG)-the Shunglu Group-submitted its report on the status of rehabilitation in the Narmada valley. While the report did mention some difficulties, the overall impression that it gave the status of rehabilitation work of Narmada valley was reasonably satisfactory. On the basis of it the Prime minister of India and then Supreme court on 10, July 2006 ordered for resumption of its construction work. (Iyer, 2007). This was criticized by the NBA activists. The Chhatisgarh and Gujarat governments are unanimous in their view to complete it as soon as possible. The work is going on but it is yet to be completed.

Besides the Sardar Sarovar Project other projects like Maheshwar dam project and Omkareshwar projects on river Narmada are also met with stiff resistance by the activists. On 17 July, 2012, hundreds of people affected by the Omkareshwar dam project pledged to start 'Jal Satyagraha' at Ghogalgaon, in Khandwa district of Madhya Pradesh. They argued that the State government's decision to fill the dam up to 193 metres would result in their lands, spread across several villages, being submerged. In that event, they affirmed, they would get drowned but would not move out. (As reported in the Hindu, July 17, 2012).

The method of protest adopted by the NBA led anti-dam group is mainly non-violent one. They call themselves Gandhian and use means like non-cooperation, hunger strikes, sit-in etc to show their resistance against the construction work. Its leader has

formed an organization called National Alliance for People's Movement. This organization lends its support to all grass root democratic movement.

4.7.River Interlinking Project

The growing water conflicts due to water sharing among the states have re-ignited the idea of interlinking of rivers in India. The reason given was that due to uneven water availability some regions are constantly facing floods while others are not getting adequate water for economic and allied activities.

This idea was officially mooted and re-advocated during the BJP led NDA government in 2003. The government blessed by then President Dr.A.P.J.Abdul Kalam ,revived an idea that had been discarded in the 1980s for being too grandiose and costly: the Inter-Linking Rivers Project (ILRP).Originally conceived by K.L.Rao in the 1970s and elaborated by Captain M.N.Dastur in 1982,ILRP envisaged the linking of Indian rivers from north to south so that water surpluses in Himalyan-fed rivers and areas saturated by monsoon rain could be channeled to water-deficit parts of the country.This scheme would involve 16 northern and 14 southern rivers and would irrigate 25 mha at a cost of Rs 560 billion.(Wood,2007).This proposal project had a great political appeal not only for hydrologic but also for nationalist and populist reasons.

The Supreme Court(SC) activated by public interest litigation against delay in carrying out the inter-linking project, directed by the Government of India to inter-link all rivers of India in 10 years. A task force was created and when the Congress led UPA government came to power in 2004 it reiterated its commitment to the project.(ibid).Once again on 27 February 2012 the SC delivered its long-pending verdict over the ILRP.(Iyer,2012).It gave green signal to the government and mentioned the benefits out of it such as flood control and drought moderation.The SC directed the Executive Government to implement the project and to set up a Special Committee to carry out that implementation;it lays down that the committee's decisions shall take precedence over all administrative bodies created under the order of this court or otherwise;it authorises the Cabinet to take all final and appropriate decisions,and lays down a time- limit of 30 days for such decision-making;and it grants "liberty to the learned Amicus Curiae to file contempt petition in

this court,in the event of default or non-compliance of the directions contained in this order”.(ibid).

From the time it was mooted this project has been criticized by environmentalists and social scientists but despite it ,in 2005 the states of Madhya Pradesh and Uttar Pradesh on the one hand and Rajasthan and Madhya Pradesh on the other,moved forward with ILPR projects.The first,the link between Ken and Betwa rivers which rise in Madhya Pradesh and flow into UP would cost Rs19.88 billion and divert 1,020 mcm of surplus water from the Ken to the water-deficit Betwa.Seven dams were proposed,submerging over 9,000 ha in 900 villages in Chhatarpur and Panna Districts of MP.This project threatens tigers and tribals from Panna National Park in MP.(Wood,2007).

Simultaneously, the Rajasthan and Madhya Pradesh governments signed an agreement on linking the Parvati ,Kali Sindh and Chambal rivers.(ibid).This would allow enhanced usage of the waters of the Chambal basin which lies at the border of the border of the two states. A master plan would be drawn up encompassing all existing and incomplete projects on both sides, and expenses would be shared equally between the two states.

This project has been criticized by various environmentalists.Even the 27 February 2012 judgment has not been widely welcomed by the scholars due to their own apprehensions about the ill effects of the ILRP.One of the reason for favouring ILRP by SC was the inter-state water dispute but the SC can at best direct the Executive Government to find early answers to river water disputes and not recommend a particular answer such as ILRP,which may in fact direct new conflicts.The court conviction that country is facing looming water crisis,due to shortage of supplies and in order to overcome ILRP is necessary.Its in national interest.If that view of India’s water crisis and its solution is challenged,the whole basis for the SC order collapses.(Iyer,2012).The problem-free transfer of water from the country’s “surplus” to “deficit” areas simply do not exist.The tensions are likely to be much greaterwhen inter-basin transfers also involve neighbouring countries ,a reality that cannot be avoided in existing geography of national –level links as many rivers pass through other countries.As soon as the grand looking river-linking plans are transferred from paper to reality,we enter the real world of shifting

rivers bringing enormous silt loads,landslides,hills,plateaus, seismic belts, gorges, ravines, bends and curves which make the task of large-scale transfer of water difficult, enormously expensive energy-intensive and hazardous.Rivers do not generally like to abide by the wishes and commands of engineers.Even when,the might of modern technology forces them to do so, they sometimes seek revenge in very destructive ways-breaking free and causing floods(Dogra,2012).

As the inter-state water conflicts are becoming serious there are political ways to resolve it,instead of going for drastic technological changes.The issue related with inter-state water conflict can be taken up in the meeting of inter-state council.²(Mohan and Routray,2011). This council provides ample opportunities to the central and state governments to debate and discuss the problems among themselves. But due to coalition politics the central government avoids any sort of confrontation; hence discourage the state governments to raise confrontational issues in those meetings.

In India generally arbitration and negotiation methods are being used to resolve the water disputes,while mediation process can be a better option. The process of mediation employs a neutral person or persons to facilitate negotiations between the disputing parties so as to arrive at a mutually acceptable solution. Mediators should not have any direct interest in the conflict as they both control the process of meditation and its outcome. In reality,it is the parties or disputants in whom the real power is vested. It is a flexible and informal process and draws upon the multidisciplinary perspectives of the mediators.(ibid).

It's also useful to involve civil-society and representatives from the catchments areas so that the whole process can become more transparent and has have acceptability by the

² Article 263 of the Indian Constitution envisages establishing an Inter-State Council (ISC) with the mandate of inquiring into and advising upon disputes arising between the various states of India,to investigate subjects of common interest amongst the states ,and make recommendations upon such subjects for the better coordination of policy and action. This council ,after a long delay, was finally established on 28 May 1990 as a recommendatory body. The council comprises of the prime minister of India ;chief ministers of all states;chief ministers of union territories; administrators of union territories;six ministers of cabinet rank in the union council of ministers and permanent invitees. Any matter in the Union list,Concurrent list or the state list of the Constitution of India of which there exists a common interest can be considered.

people. This practice is being now followed in various democratic countries, in order to stop the level of damages from the river water projects. This practice is according to the provisions of the Helsinki provisions and also being advocated and used by Late S.Guhan in his effort to resolve the Cauvery water dispute between Tamil Nadu and Karnataka. Whole ongoing controversies in India over multipurpose projects are due to absence of enormous use of this sort of practice to address water conflicts.

4.8. Conclusion

Inter-state water conflicts in India are getting murkier by each passing day. The tribunals are being set up by the union government to look into the dispute and pass their verdicts always come under criticism due to unwanted political reasons. One of the biggest lacuna in India is that here the people's voice are not taken into account before deciding about the projects. The affected people though raise their voices but it is being generally put down, often, by using coercive machineries. In case the people from catchments areas became the policy makers in regard to sharing of water from common rivers it will become pretty easy to resolve the conflicts. Even in regard to the multipurpose projects the affected people's opinion must be taken to get consensus over the project and so completion of project won't face such problems. These project also sociologically describe the gap between the powerful and the weaker class or caste. The dominant castes and class gets their aim fulfilled with the help of those projects while the burden of ill-effects falls on the weaker. Our democracy, it seems is yet to create politically equal citizens.

CHAPTER FIVE

CONCLUSION

5.1. Introduction

Availability of water resources is directly related to human security. As a productive resource water is essential for maintaining the livelihoods of the world's most vulnerable people. But it also has destructive properties, as witnessed by storms and floods. Security in access to water as a productive input and production against the vulnerabilities associated with uncertainty in water flows is one of the keys to human development. (HDR, 2006). Depleting sources of water is challenging its productive capacity while destructive properties are uprooting people from their habitats. Cumulatively, both are posing threat to an individual, group and state's security. To meet challenges and avoid "perceptive" threats, conflicts are taking place between states and among groups.

While introducing the thesis and also in chapters, the role of water in evolution of civilization, building up of empires and acting as catalyst to industrial revolution has been explained. Definitely, water bodies had played all these roles but they were also responsible for the destruction of civilizations. Indus valley civilization-one of the biggest civilizations-with the size of ancient Egypt and Mesopotamia put together-came to an end due to water.¹ This findings,as part of a new study titled "Fluvial landscapes of the Harappan civilization", were published in the *Proceedings of the National Academy of Sciences* in May 2012 have proved it.This study was conducted between 2003 and 2008 by an international team of scientists from United States,India,United Kingdom ,Pakistan and Romania with specialists in geology ,geomorphology ,archeology and mathematics. The study concludes that slow eastern shift of the monsoons is what supported the civilization by encouraging agriculture,but as the monsoon shifted further east, it weakened rain-fed rivers that were the lifeline of the Indus valley civilization.(Basu,2012).

¹ Indus Valley Civilization is considered to be one of the most developed civilization of its time.It was set up in the northern parts of present India and southern part of present Pakistan.Various theories citing its reason of decline have been developed by the historians .According to some it was attacked by the foreigners,for some it was natural hazards like floods and earthquakes.This new finding has given a new angle to all those previous inferences about decline of Indus Valley Civilization.

At present similar things are happening. Due to phenomenon of climate change rainfall is getting scanty. The situation is such that every year the quantity of underground water is getting lower due to non-occurrence or less precipitation. In 2012 an alarming depletion in the water levels (at 57 percent of last year's storage) of important reservoirs, owing to the delayed and weak southwest monsoon, has prompted the Government of India to issue an advisory to States to make "judicious and regulated" releases. Almost all reservoirs are facing deficiency in quantity of water storage.(The Hindu,July 10,2012).

Due to shift in seasonal cycle, rainfall is not occurring at stipulated time and in traditional areas. Year after year it is being witnessed that drought is taking place in traditional crop producing areas and simultaneously floods are creating havoc in so-called fallow areas. Also precipitation is taking place during the months when they are not required and not at the time , when they are much needed for crop production. In 2010 there was massive precipitation in Delhi and adjoining areas for almost two months. That precipitation resulted into floods in river Indus affecting large number of Pakistani population. Even in China the agricultural and industrial areas of 3H (Hai,Hui and Huang) is getting lesser and lesser rainfall than the southern part.(Chellany,2011).

Besides these problems the existing water bodies have been completely polluted. In China eighty percent of the major rivers are so degraded that they cannot support aquatic life, and astonishing ninety percent of all groundwater systems in major cities are contaminated. In Pakistan massive nationwide survey in 2005 revealed that less than twenty five percent of the population has access to clean drinking water due to massive pollution of the country's surface water. Seventy-five percent of India's rivers and lakes are so polluted that they cannot be used for drinking or bathing. The fabled Yamuna river is clinically dead. The sacred Ganges is an open sewer.(Barlow,2006;7).

This is only half of a story because the available surface waters have been polluted and the sources of water are drying up putting up great burden on the countries to meet their water demand. Tibetan glacier is melting very fastly.²Each year enough water melts from the 46,298 glaciers of the plateau to fill entire Yellow river. But rather than adding

² This is one of the most accepted facts though there are claims being made by few glaciologists that the glaciers are thickening.

freshwater resources to a thirsty country, the furious pace of this melting is actually creating desertification. Instead of steadily feeding the great rivers of Asia—the Yangtze, the Indus, the Ganges, the Brahmaputra, the Mekong and the Yellow—as the Himalayan glaciers have done for millennia, the fast-melting water running off the plateau increases soil erosion, allowing the deserts to spread and then evaporates before it reaches the thirsty rivers. (ibid).

To meet the challenge of climate change there are two methods; mitigation and adaptation. Mitigation is an action to decrease the intensity of radiative forcing in order to reduce the potential effects of global warming. Adaptive means to adapt according to the climate changes. Both methods are being advocated in area of water management. By mitigating methods brake can be applied on cycle of climate change and sources of water resources can be stopped from further drying up. By adaptation, agricultural practices and growth patterns are advocated to transform, according to the changing patterns in climate.

Feeling the heat of climate change and its impact the global community has started taking up measures to arrest the situation. Meeting at Stockholm³ in 1972 under the banner of United Nations was the first step and then Kyoto protocol⁴ in 1997 was the bold decision to meet the challenges of climate change. In between the Montreal declaration and Earth summit at Rio-de-Janeiro took place. After Kyoto meeting at Bali, Johannesburg etc took place to implement the decisions taken at Kyoto. But the conflict between the developed and developing countries failed to get any substantial breakthrough over the issue of climate change. As there is lack of control authority over polluting the planet the problem remains. Pollution is resulting climate change, which in turn is affecting availability of water. This further leads to rise of conflict over the water.

³ United Nations Conference on Human Environment also known as Stockholm conference was the first international conference on international environment issue. The meet agreed on 26 principles concerning human and development. It also made an action plan on 109 recommendations and a resolution. Retrieved from www.unep.org/documents/default.asp?documentid=97. Accessed on 19 June 2012.

⁴ Kyoto protocol is a result of the United Nations led met to fight against the climate change with a goal to stabilize the concentration of green house gases. The meet took place in 1997. It came into force in 2005. 191 states have signed and ratified it. The United States of America is the major non-signatory to it. Due to this the problem over its implementation is hanging on. Canada withdrew from it in 2011. unfccc.int/resource/docs/convkp/kpeng.html accessed on 14 January, 2011.

The growing water crisis has also led to innovation of various techniques to address the issue. The concept of sustainable development was coined to work out water related problems and issues. It is considered as key to water resource quantity and quality, as well as, national security, economic, health and societal well being. It means working to improve human's productive power without damaging or undermining society or the environment—that is, progressive socio-economic betterment without growing beyond ecological carrying capacity: achieving human well being without exceeding the earth's twin capacities for natural resource regeneration and waste absorption. (Flint, 2003).

Move in favour of adapting sustainable development began at Stockholm conference. At Rio-de-Janeiro article 21 was adopted supported the idea of sustainable development. In 1998 at UNESCO headquarters in Paris, International Conference on Water and Sustainable Development took place. It emphasized on judicious use of water in order to maintain a natural balance between environment and human being. In 2001 Bonn conference on freshwater took place. In March 2007 Durban conference took place with its focus on improvement of technologies to eliminate various water related problems. But all those conferences and the practice of sustainable development have failed to get implemented at larger scale.

As the supply of water is being affected, conflicts are likely to increase, instead of getting resolved. To address water needs countries have been engaged into various type of water management activities. Through which they want to reduce their conflicts and to manage them. There are two types of water management systems—supply side and demand sides. Both are being simultaneously used by the states. Supply side includes managing water resources through building dams and other projects while demand side relies on managing water demands by using less water for more productive results and also not wasting it.

In compare to the supply side demand side way of management is more effective. It creates less conflict because it does not affect the nature and controls wastage of water.

The use of drip-in and sprinkling methods in agriculture are best ways to reap good harvest by least use of water. There is an increasing trade of what is called *virtual water*. It means export of goods which requires water for production. Water that is used in the production of food is “virtual” because it is not contained anymore in the product, even though a great deal of it was used in production process.(ibid). If a country exports water-intensive product to another country, it amounts to exporting water in virtual form, although no water is technically being traded or sold. This diminishes the amount of water consumed in the importing country. Wealthy countries like Saudi Arabia and Netherlands, import much of their water through food imports from countries that either have lots of water or who are too poor to have a choice but to exploit what is left of their water. (ibid).Also there are countries like United Arab Emirates etc, which are buying or taking water-rich agricultural lands in poor countries, on lease, getting crops produced there and then shipping them to their own countries.

Conflicts, in demand side of management of water, occur, when there is change in water governing bodies and institutions. The shift from public sector to private sector causes conflict because it changes entire water utility discourse. The private sectors, aiming in profit-making start charging for water supply. This leads to class discrimination where the rich gets more while poor does not. This situation leads to conflict between the two classes. Still, sans privatization of water its better way to manage water resources.

The most controversial and conflict laden management system is supply-side. The water projects create ecological, cultural and socio-political conflicts. Even in this form of water management managing water through small projects are considered as good exercise. The real sources of tension are the mega projects.

In south Asia,water is at the heart of politics between the nations as they increasingly face the challenge of meeting the growing needs of their populations. Within nations, the disputes and conflicts over the control of flowing waters are evidences of the growing need for water. Locally, the interconnections and interdependence of hydrology are often interwoven with caste-class identities and micro-politics. (Dutt&Wasson,2008).This

difference becomes source of conflicts at time of water stress and any effort to divert water for the benefits of particular section or group of people.

South Asia, as a region, had a well developed irrigation and water management system in past which was destroyed by the colonial rulers and the subsequent governments, which came into power afterwards. Villages tended to settle at hydraulically most opportune for stable and productive agriculture. Riverine areas that were not so low as to be flooded were preferred. The popular notion that civilisations formed around watercourses aptly described settlement patterns of those times.(Shah,2009;8). Various ways were used to irrigate lands. In northwestern India, farming involved “maximizing the utilization of *sailab*(floods) as well as digging up watercourses and making minor bunds. The idea being....to raise the area as well as the productivity of riverine cultivation.(Agnihotri as cited by ;D’Souza,2006 &Shah,2009). *Ahar-pyne* systems were used for irrigation in eastern India and water tanks of southern India and Bengal had the same purpose. Wells played an important though supplemental role in water-managed agriculture in northern and western India. Well construction was actively encouraged through incentives and tax remissions, but lands irrigated with wells were also assessed at a higher rate than rain-fed lands from the time to Arthashastra(third century B.C.) to the Mughal rulers during the sixteenth to eighteenth centuries A.D. and still later, during the colonial era.(ibid). Wells were preferred because earthen dams were easy prey to marauding armies.(Ludden as cited in Shah, 2006).

The wells dominated the preferred means of irrigation in ancient, medieval and modern India. The 1830s marked a quantum leap in Indian irrigation, pioneered in the south by Sir Arthur cotton and in the north by Major Proby Cautley. The east India Company, which by now ruled over much of India, was beginning to perceive a great opportunity in irrigation to combine the “interests of charity and the interests of commerce”. (Whitcombe,2005). This was the beginning of use of supply side way of management of water resources, which is being still used by the south Asian states to address their water problems. All ongoing conflicts are due to application and use of this management system to manage the available water resources.

British water bureaucracy under Lieutenant General Sir Cotton, destroyed the entire traditional systems of water management. Big projects were promoted upon to divert, channelize and regulate water sources for multi-purpose activities. After decolonization in 1947, the south Asian states failed to get out from the shadows of Lt.General Sir Cotton's ways of water management. The water bureaucracy carried out the colonial legacy by promoting major multi-purpose hydro projects. This is not only south Asian phenomenon rather its prevailing throughout the globe though few countries like the USA⁵ after experiencing miss-happens are shying away from going for mega projects but developing countries are adamant enough to not learn even from unfortunate accidents. Despite reports⁶ about adverse effects of big dams they are being constructed. The Bhakra Nangal has silted the entire region, making the agriculture lands fallow. In China the Three Gorges project has led to displacement of 1,200,000 people. Big dam projects also make region vulnerable to natural disaster like earthquake, drought and floods. They are sole reasons for all transborder and internal water conflicts. The upper riparians use it as a mean to stop, store, channelize and divert waters. This causes tension among the riparians; hence are reasons for water conflicts.

Conflict over water is not going to end due to reasons explained in this work, so the only option left before the global community is to manage the conflicts by properly managing the water resources. The conflict is between two countries over water sharing is due to treating transborder river as two different water bodies so the upper riparian does not care about the impact of its activities, on lower riparians. With increasing water stress the upper riparian is going to be more and more assertive to fulfill its water demand hence the conflict is going to increase by several notches. To manage the water problems and conflicts over river water sharing the best way is to treat the transborder rivers as a single entity and plan accordingly to develop them. This is not going to happen, so there is a bleak chance of mitigating water conflicts.

⁵ Till 2000, total of 467 dams have been removed in the United States, 28 of these are large dams higher than 15 meters. Reasons for removal have included safety concerns restoration of riverine fisheries, financial considerations or removal of unauthorised structures. (WCD, 2000; 92).

⁶ Major report on impact of big dams was published by the World Commission on Dams in 2000. In its report it criticized the big projects. In India in 2006 Parthasarthy Committee was set up by the Government of India, to look into the issues of large dams. The committee in its report have presented negative socio-economic impact of big dams.

After decolonization in 1947 the south Asian states began their journey as an independent sovereign country. Two independent countries were carved out from India in 1947-India and Pakistan. Later on in 1971 Bangladesh, after a successful separatist-cum-liberation movement came into existence. These countries divided the territorial sovereignty and water resources among themselves on basis of treaties they signed between them but could not eke out water-interdependence . The transborder water sharing issue came into question just after independence. In case of India and Pakistan the problem emerged in 1947 and in case of India and Bangladesh it came up in 1972.After long negotiation and mediation by the World Bank India and Pakistan signed Indus Water Treaty in 1960 and in 1977 India and Bangladesh signed Ganga water sharing treaty.Also ,with Nepal India signed treaties to share and jointly develop the water resources. These treaties are still in force.

Two nuclear arch rivals-India and Pakistan- have fought three full conventional wars, one limited war and have series of political and military tensions between them. They have proved Stanley Wolpert correct,who examined that, in 1947 the two countries were born to conflict. But the Indus Water Treaty,they signed in 1960,to share water from the Indus River System is still intact. But as the grim situation of water scarcity is emerging the two countries have engaged into conflicts over the issue of multipurpose projects. The constructions are strongly contested. In few cases like Baglihar and Kishanganga even the help of neutral expert have been sought after. Baglihar has been amicably sorted out but on Kishanganga decision is yet to be taken.

Water issue between the two countries has been entwined with other conflicts, which has complicated the problems.Water sharing between them is generally linked with the Kashmir issue. The religious fundamentalist groups, from both sides of the border, advocate for scrapping it. In case it is considered as a single issue and dealt by looking into pros and cons of water utilization from it, the problem over it water conflict may be sorted out. But as the nature and behaviour of two actors is such that this cannot be

expected, hence conflicts over Indus River System water sharing is all likely to persist, with few signs of cooperation on one or the other project.

Bangladesh came into existence in 1971, after dismemberment of east Pakistan from its parent state i.e Pakistan. Initially, it had a good relationship with India because it was India, which helped the fighting Bengalis to get fulfill their long pending demand of a separate country for this linguistically different area. India and Bangladesh share fifty four rivers between them. In 1977 the two countries signed a treaty to share waters from these rivers but this treaty faced challenged and once again in 1996 they signed another treaty to replace the old one to share water from the transborder rivers. There have been umpteen differences over sharing of quantity of water and also over the construction of multi-purpose projects on these rivers. Bangladesh always criticizes India for not releasing water from farakka during the dry seasons while unleashig flood during the rainy season by releasing more than required amount of water. The conflict between them over sharing water from river Teesta and on construction of Tipaimukh dam is yet to get resolved, despite steps taken by the two governments.

With Nepal India share special bondage. More then million Nepalese are working in India and the two countries share porous borders between them. Also no passport or visas are required to cross into each other borders. This is due to friendship treaty of 1950 between the two countries. Nepal is a water rich country and there goes a saying that *what oil is for Saudi Arabia, water is for Nepal*. India and Nepal share large number of waters. Due to technologically backward Nepal has invited India to provide help in harnessing its water by building hydrological projects, which are in mutual benefit for both India and Nepal. The source of tension for the two countries is India's arrogant behaviour over the Mahakali project. Nepalese thinks that India has crossed its limits and try to exploit its water for its self-interest. Almost all political parties and civil-society groups have been critical of India's attitude on this treaty. Nepalis are yet to come out from the shadow of treatment they met on Tankapur issue and Mahakali multipurpose project. Voices against India's hegemony and dominance are being raised from various platforms in Nepal.

Bhutan is another water-rich neighbour of India. The river waters are being harnessed by building multi-purpose dams and projects to fulfill the needs of the two countries. There has never been any sort of tensions, atleast in public's knowledge, about the use of transborder water resources between the two countries.

By still following the words of treaty between them do not mean that the south Asian states cooperating on water issue. No they are not, problems have erupted. Their record is just better than the agreements signed between the administrative units. The transborder water treaties are functioning smoothly because the actors are two different sovereign states. They have their mutual interests and by giving some extra water to other they make benefit in other sectors of engagement. Thus so far, the conflict has been managed between them. The problem will rife when they will start facing economic problems due to water-crisis.

The real problem is internal water disputes where there are no two different sovereign actors, negotiating or signing on a treaty to resolve the water related conflicts. Here the players are "equal" part of the state. To meet their internal water challenge, countries have been engaged into transferring water from one area to another by building canals or diverting the flow of rivers through dams. China's western canal has been built to serve this purpose. India is all out with inter-linking of rivers project. In Pakistan canals and barrages have been constructed to channelize waters from one area to the other. These projects are seen as methods to resolve internal water conflicts but they have negatively affected the indigenous people. They have also led to massive deforestation and displacement of people. They are also posing danger to river water species.

In both India and Pakistan it's the weaker section or groups which suffer due to state's policy. The powerful groups are using more resources at the cost of the weaker. This gives rise to the social movements and also conflicts among the powerful and weak. India has one advantage that Pakistan has not i.e. its democratic structures are working. But still in far flung areas the resource loot is taking at the will of powerful groups. People's representation in decision making process is neglected in both states.

Conflicts over water are giving rise to regionalism. Regionalism sometimes is negative but at others it is most needed to fight for the rights for the region and people living there. Its negativity and positivity depend upon one's interpretation. From state's perspective it may be wrong but from people's view it is correct. But that does not mean every form of regionalism is correct and is in favour of people from the regions. Sometimes it is being whipped by the political demagogues to fulfill their political motives. Even the leadership sometime takes extreme steps to raise the bogey of regionalism.

Imbalanced regional development and lack of genuine democratic order have given rise to regionalism in India and Pakistan. There are regions and pockets where the resources are in abundant but those are being exploited to fulfill the demands of people and regions outside of the regions; while the locals suffer from poverty. In Pakistan till the formation of Bangladesh, east Pakistanis have grievances that their resources were being used by the west Pakistanis. Regional chauvinism is predominant in almost all regions of Pakistan, though intensity varies from region to region. At its height this feeling, if not properly, resolved turns into nationalism, which demands for a separate state.

In Pakistan, all states are armed up against Punjab because they think that it is using more quantity of water at their cost. Being a dominant province in Pakistan, Punjab does so. Sindh is another dominant state so it has always put up a brave front against Punjab on water issue. Various projects like Kalabagh, Dimar-Bhasha etc have been stopped due to political tensions between the elites of two states. Water sharing agreements have been signed but still the problems have not been resolved.

In both India and Pakistan the growing conflict over the water resources from the common rivers are getting more and more radicalized due to dependence of people from the catchment areas from two different states. In Pakistan the people, other than, from Punjab raises war cry against the Punjabis because they feel that they are being exploited by them. Regional and provincial chauvinism have led to even stopping of various multipurpose water projects, which could have benefited the people from catchment areas. The provinces allege that even their share of waters are being diverted to fulfill

water demands of Punjabi farmers. The multipurpose projects are being used to produce and distribute cheap electricity to Punjabi middle class.

In India the conflict over sharing Cauvery river water has brought people from Tamil Nadu and Karnataka against each other. The physical violence unleashed on the Tamils residing in Karnataka and vice-versa has given a new definition of federalism in India, where though states are considered as cooperative units but they do not cooperate when they find that their self-interests are being attacked by the other. In other cases too like Punjab's termination act of 2004, which had terminated all inter-state water sharing acts with its neighbouring states is another example of regional chauvinism. The central government, in these sorts of situation becomes hapless because of coalition politics at centre. The coalition partners from different states put undue pressure on the central government to intervene in their favour but to save the government, the centre usually maintain neutrality.

Narmada issue is a universally known issue, where the tribals are fighting for their rights in the valley of river Narmada. They are fighting against the state and its agents, who want to exploit the waters from this river by displacing and drowning the locales, who are staying there from historically untraced period of time. People who were pursued to leave their place have been badly rehabilitated in nearby areas. The movement against the Sardar Sarovar Project, is a part of New Social Movement⁷, where even the intelligentsia has extended their support to the fighting tribals.

Relation between groups and community have its impact on water sharing or its utility. The dominant group in society through their sheer power dominates over water resources also. They play important role in its distribution and decision making process related with water. This leads to conflict among the groups. In India the dominant castes due to their possession of land and role in agriculture sector play important role in

⁷ New social Movement is different from earlier social movements in class character and nature. The educated middle class unlike the proletariats are the torchbearers of this movement. The use of communication system makes it more global in nature. Through means of communication even the local issues are being universalized giving wide scale participation and voices in favour of the suffering people.

decisions relating to water issue.They have water bodies under them.Even the projects on rivers are being carried on to fulfill their agricultural interests.This is not a new thing rather has a history.

In ancient times the agricultural lands were donated by the kings to dominant groups in doab region,making them to establish their hold over the water-rich areas.The constructions were carried over to provide them water to fulfill their water needs and carry out revenue generating agricultural practices.The powerless groups were either forced to work in those fields or to stay out from those areas.This practice was carried out even by the Britishers.The major projects were carried out to favour dominant groups.Through them waters from rivers were directed to fulfill agricultural demands of those groups.Koyana dam is classic example .The dam over river Koyana was built to divert the river water to land areas under marathas in Maharashtra.The marathas used the water to irrigate sugarcane fields and commercial crops to prosper the British rule.(Singh,1997).Even in Orissa the dams over river Mahanadi were built to fulfill water interests of dominant groups.The multipurpose dam was built to provide electricity to nearby industrial areas and also water to produce commercial crops.(D'souza,2006).

After independence things were thought to be changed but no substantial transformation has occurred except change in identity of ruling class.There has emerged a notion and concept of 'main landers',who consider themselves as forbearer of nationalism and chief patron of a nation. They have large amount of resources either under them or divert them from hinterlands for their use.The clash between "main landers" and others is over resources has given rise to secessionist movements.The United Liberation Front of Assam(ULFA) and other militant groups are fighting against the Indian state because they think that their resources are being exploited for the use by outsiders.(Baruah,2005). Then there is dominant groups who benefits at cost of the marginalised people in whole developmental process.The absence of bottom-up democratic process has created conflict over water projects.The tribals and marginalised class are being totally ignored from taking decisions related to water projects.This has caused the emergence of conflicts.New

social movements against the dams and other projects has led to conflict between state and civil society.

This is not a process in India only rather a phenomenon in all south Asian countries. In Pakistan, the Punjabisation of Pakistan has made the others marginalised groups. All decisions are being taken to divert resources to Punjab. The on going separatist movement in Balochistan is because of exploitation of resources of Balochis to fulfill economic desires of Punjabis. Sindhis have their share of grievances. Since birth of Pakistan, they feel that they are being treated as second rated citizens. Earlier it was Mohajirs now Punjabis, who dominates over the Pakistani establishment and its resources.

In Bangladesh the conflict is there between the shrimp cultivators and the farmers. The shrimp and prawn cultivation takes place mainly in the southwestern coastal districts (Satkhira, Khulna and Bherghat), and in the Cox's Bazar district of southeastern Bangladesh. The lands have been taken on lease by the shrimp and prawn producers. Tensions exist between the commercial operators and the local rice farmers giving rise to conflict. (Qutub & Prajauli, 2004).

In Nepal the problem over resource distribution has always been a major reason for conflict between hill and non-hill people. Maoist movement in Nepal is the result of conflict over resources between - have and have not. The Madhesis and other groups also have their grievances against the ruling elites.

Thus there are genuine reasons also for upsurge of regionalism and people against the water related policies in both countries. Also sometimes water related grievances give much-needed opportunities to political demagogues to draw electoral benefit out of it.

Besides technical aspects, water also has a social aspect. It has potential to disturb social fabric and bondings. The first civilizations were spawned in river valleys where the surpluses produced by irrigation and traded through riverine routes enabled complex forms of culture and politics. From Bali, where water temples effected ecological and social regulation until the advent of the Green Revolution, to Bolivia, where street protests over the transfer of the municipal water supply system to the Bechtel

Corporation blossomed into full-fledged critique of neo-liberalism in 2000, diverse array of social relations and processes testify to the centrality of water. Providing sustenance as well as salivation, both spiritual and secular, the power of water cannot be overstated. (Baviskar, 2007; 1).

Post-1991 process of neo-liberal economy has created another fissure in society. The beneficiaries of this process is the urban business class, which due to their money power changed the nature of state. With change in nature of state the changes has also occurred in water sector. Its management has given rise to social conflicts. Neo-liberal state has given rise to privatization of water resources. This has tremendous effect on society. The class difference has its impact on utilization of water resources due to difference in purchasing power capacity. Even democracy has failed to break this structure and free the state from the dominance of particular class. The bureaucratic systems in both democracy and military ruled regimes have almost in similar fashion. The water bureaucracy has dictating role in all policy making processes.

Against the bureaucratic management of natural resources the proponents of New Institutional Economics (NIE) regards the property rights assignment among individual users of the natural resource as central to ensuring efficient resource use and thereby conserving the natural use. NIE thinking, consequently, directs governments and other institutions to give primary importance to the pattern of the allocation of ownership, favouring those individual users who have the greater stake in a resource as priority owners. (Ostrom, 1990 & Fennell, 2011).

Water conflict is a social issue. The society as a whole gets affected due to non-availability or privatization of water resource or construction of mega projects to divert water from one area to another. Water is also part of culture. For people staying near to river banks their cultural traits and habits are shaped by the river. As their lives are fully dependent upon on river so any rational decision-making process demands for their inclusion.

They are being victimized in the name of development. There is need to change the development discourse by making it bottom-up in nature and not the vice-versa, which makes the people at grass root level suffer. Writing foreward for Deepak Gywali's book *Water in Nepal*, Ajaya Dixit writes that development is a journey from one stage to the next that takes time, incurs cost and forces choice. Quoting Ziauddin Sardar he finds "the old paradigm of science which provided certainty and assurance is no longer valid. Science has moved to the post-normal phase in which, to use words of Funtowicz and Ravetz, "facts are uncertain, values in dispute, stakes high and decisions urgent". Decision making therefore is an exercise of collective compromises and would be less prone to surprises if the public dialogue on water issues is pluralistically informed. (Gywali, 2001).

The decision to build a dam is influenced by many variables beyond immediate technical considerations. As a development choice, the selection of large dams often served as a focal point for the interests and aspirations of politicians, centralized government agencies, international aid donors and the dam-building industry and did not provide for a comprehensive evaluation of available alternatives. Involvement from civil society varied with degree of debate and openness to political discourse in a country. (World Commission on Dams, 2000).

In many parts of the world this process is not only followed rather being encouraged. The Mekong River Commission has taken the initiative. The 1995 Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin came out with formula to let people from the catchment areas to participate in decision-making process over construction of water projects on Mekong river catchment areas. In Europe management of the Danube and Rhine rivers have incorporated public participation. The Netherlands has water boards, which are the oldest democratic form of government. In Africa the Lake Victoria Environmental Management Project facilitates the participation of public in decision making process. Even the World Bank, after 1994 has adopted a policy to not fund any development project, if its being opposed by the local people. On

this basis it had stopped funding the Sardar Sarovar Project on river Narmada ,in India ,and Dimar Bhasha project in Pakistan.

Yet the south Asian countries have not understood the importance of people's participation in water related decision making process.The multipurpose projects constructed for water management are source of conflicts. Democratic-deficit and non-representation of local people who are going to suffer due to commissioning of those projects gives rise to the conflict between the water bureaucracy and local people. Sometimes the projects take lots of years and even decades to properly start functioning. Sometimes under pressure projects has to be given up. This leads to mis-use of resource and financial loss.In order to meet these sort of challenges and to avoid conflicts its judicious to consult the local people before going for the projects. In case the project is going to have its impact on neighbouring countries then it is better to consult and take it into confidence, instead of starting the project and stop it in middle due to diplomatic protests.

5.2. Epilogue

In my secondary school English textbook I read a couplet by Samuel Taylor Coleridge the lines were; *Water,water everywhere nor any drop to drink*.At that time it was just a good read but, after I started working on the issue of water conflict the embedded meaning of that couplet became clear. The planet earth has abundance quantity of water but human being cannot use it because of many reasons discussed in introduction of this work. Conflict over the fresh water is increasing due to its less availability .The responsibility for this lies upon the human being who due to his activity has interfered in natural process and has completely damaged the ecosystem. Today the problem, which all of us are facing is the result of past deeds. Water is available but it is being polluted due to human activities. Precipitation is taking place but its people who are responsible for not utilizing it through properly conserving and storing rain water. The lesson is to just mend our ways instead of blaming the phenomenon of climate change or nature for the present and upcoming problems. In case things remain business as usual then conflicts are likely to exist and increase many notches, in future.

There is also problem over distribution of water between the countries and among the groups. The former is due to increasing competition to grab more and more water resource to fulfill the interests, while the later is the result of lack of proper distribution mechanism, as a result of power differences. The lop-sided policy bias in favour of a group is affecting distribution process hence causing conflicts.

Finally to sum up International politics like all politics is struggle for power. (Morgantheau, 1953). This more than half decades old statement of Morgenthau is still valid. Unless this struggle is not stopped conflict won't stop. Water resource is source of future power calculus so any thinking about countries will start cooperation over it is nothing but a day dreaming. In this situation the efforts should not be on looking for solutions to mitigate conflicts or start cooperation rather the focus should be on managing the conflict. This management of conflict is possible only when there is a change in individual's nature and structure of anarchic international system. But both are difficult to happen, hence, conflict will remain.

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APPENDIXES

INDUS WATER TREATY

PREAMBLE

The Government of India and the Government of Pakistan, being equally desirous of attaining the most complete and satisfactory utilisation of the waters of the Indus system of rivers and recognising the need, therefore, of fixing and delimiting, in a spirit of goodwill and friendship, the rights and obligations of each in relation to the other concerning the use of these waters and of making provision for the settlement, in a cooperative spirit, of all such questions as may hereafter arise in regard to the interpretation or application of the provisions agreed upon herein, have resolved to conclude a treaty in furtherance of these objectives, and for this purpose have named as their plenipotentiaries.

THE GOVERNMENT OF INDIA:

Shri Jawaharlal Nehru

Prime Minister of India

and

THE GOVERNMENT OF PAKISTAN

Field Marshal Mohammad Ayub Khan, HP., H.J.,

President of Pakistan;

who, having communicated to each other their respective full powers and having found them in good and due form have agreed upon the following Articles and Annexures:-

ARTICLE 1

Definitions

As used in this Treaty:

- (1) The terms “Article” and “Annexure” mean respectively an Article of ,and an Annexure to ,this Treaty.Except as otherwise indicated,references to Paragraphs are to the paragraphs in the Article or in the Annexure in which the reference is made.
- (2) The term “Tributary” of a river means any surface channel,whether in continuous or intermittent flow and by whatever name called,whose waters in the natural course would fall into that river,e.g. a tributary,a torrent,a natural drainage,an artificial drainage,a *nadi*,a *nallah*,a *nai*,a *khad*,a *cho*.The term also includes any sub-tributary or branch or subsidiary channel,by whatever name called,whose waters,in the natural course,would directly or otherwise flow into that surface channel.
- (3) The term “The Indus,” “The Jhelum,” “The Chenab,” “The Ravi,” “The Beas” or “The Sutlej” means the named river (including Connecting Lakes,if any)s and all its Tributaries :Provided however that
 - (i) none of the rivers named above shall be deemed to be a Tributary;
 - (ii)The Chenab shall be deemed to include the river Panjnad; and
 - (iii)the river Chandra and the river Bhaga shall be deemed to be Tributaries of the Chenab.
- (4) The term “Main”added after Indus ,Jhelum,Chenab, Sutlej,Beas or Ravi means the main stem of that river and such connecting Lakes as form part of the main stem itself.The Jhelum main shall be deemed to extend up to Verinag, and the Chenab Main up to the confluence of the river Chandra and the river Bhaga.
- (5) The term “Eastern Rivers” means The Sutlej,The Beas and The Ravi taken together.
- (6) The term “Western Rivers’ means The Indus,The Jhelum and The Chenab taken together.
- (7) The term “the Rivers”means all the rivers,The Sutlej,The Beas,The Ravi,The Indus,The Jhelum and the Chenab.
- (8) The term “Connecting Lake” means any lake which receives water from ,or yields water to any of the Rivers;but any lake which occasionally and irregularly receives

only the spill of any the Rivers and returns only the whole or part of that spill is not a Connecting Lake.

(9) The term “Agricultural Use” means the use of water for irrigation ,except for irrigation of household gardens and public recreational gardens.

(10) The term “Domestic Use”means the use of water for”:

(a)drinking ,washing,bathing,recreation,sanitation (including the conveyance and dilution of sewage and of industrial and other wastes),stock and poultry,and other like purposes;

(b) household and municipal purposes (including use for household gardens and public recreational gardens);and

(c) industrial purposes (including mining,milling and other like purposes);

But the term does not include Agricultural Use or use for the generation of hydro-electric power.

(11)The term “Non-Consumptive Use’ means any control or use of water for navigation,floatng of timber or other property,flood protection or flood control,fishing or fish culture,wild life or other like beneficial purposes,provided that ,exclusive of seepage and evaporation of water incidental to the control or use,the water (undiminished in volume within the practical range of measurement) remains in,or is returned to,the same river or its Triubtarries;but the term does not include Agricultural Use or use for the generation of hydro-electric power.

(12)The term “Transition Period” means the period beginning and ending as provided in Article II (6).

(13)The term “Bank” means the International bank for Reconstruction and Development.

(14) The term “Commissioner” means either of the Commissioners appointed under the provisions of Article VIII(1) and the term “Commission”means the Permanent Indus Commission constituted in accordance with Article VIII(3).

(15)The term “interference with the waters” means :

(a)Any act of withdrawal therefrom; or

(b)Any man-made obstruction to their flow which causes a change in the volume (within the practical range of measurement) of the daily flow of the waters:Provided however that an obstruction which involves only an insignificant and incidental change in the volume of the daily flow,for example,fluctuations due to afflux caused by bridge piers or a temporary by-pass etc,shall not be deemed to be an interference with the waters.

(16)The term “Effective Date”means the date on which this Treaty takes effect in accordance with the provisions of Article XII,that is ,the first of April 1960.

ARTICLE II

Provisions Regarding Eastern Rivers

(1)All the waters of the Eastern Rivers shall be available for the unrestricted use of India,except as otherwise expressly provided in this Article.

(2)Except for Domestic Use and Non-Consumptive Use,Pakistan shall be under an obligation to let flow,and shall not permit any interference with,the waters of the Sutlej Main and Ravi Main in the reaches where these rivers flow in Pakistan and have not yet finally crossed into Pakistan.The points of final crossing are the following: (a)near the new Hasta Bund upstream Bund of Suleimanke in the case of the Sutlej Main,and (b)about one and a half miles upstream of the siphon for the B-R-B-D Link in the case of Ravi Main.

(3)Except for Domestic Use ,Non-Consumptive and Agricultural Use (as specified in Annexure B),Pakistan shall be under an obligation to let flow,and shall not permit any interference with ,the waters (while flowing in Pakistan) of any Tributary which in its natural course joins the Sutlej main or the Ravi Main before these rivers have finally crossed into Pakistan.

(4) All the waters, while flowing in Pakistan, of any Tributary which in its natural course, joins the Sutlej Main or the Ravi Main after these rivers have finally crossed into Pakistan shall be available for the unrestricted use of Pakistan: Provided however that this provision shall not be construed as giving Pakistan any claim or right to any releases by India in any such Tributary. If Pakistan should deliver any of the waters of any such Tributary, which on the Effective Date joins the Ravi Main after this river has finally crossed into Pakistan, into a reach of the Ravi Main upstream of this crossing, India shall not make use of these waters; each Party agrees to establish such discharge observation stations and make such observations as may be necessary for the determination of the component of water available for the use of Pakistan on account of the aforesaid deliveries by Pakistan, and Pakistan agrees to meet the cost of establishing the aforesaid discharge observation stations and making the aforesaid observations.

(5) There shall be a Transition Period during which, to the extent specified in Annexure H, India shall

(i) limit its withdrawals for Agricultural Use,

(ii) limit abstractions for storages, and

(iii) make deliveries to Pakistan

from the Eastern Rivers.

(6) The Transition Period shall begin on 1st April 1960 and it shall end on 31st March 1970, or, if extended under the provisions of Part 8 of Annexure H, on the date up to which it has been extended. In any event, whether or not the replacement referred to in Article IV(1) has been accomplished, the Transition Period shall end not later than March 1973.

(7) If the Transition Period is extended beyond 31st March 1970, the provisions of Article V(5) shall apply.

(8) If the Transition Period is extended beyond 31st March 1970, the provisions of Paragraph(5) shall apply during the period of extension beyond 31st March 1970.

(9) During the Transition Period, Pakistan shall receive for unrestricted use of the waters of the Eastern Rivers which are to be released by India in accordance with the provisions of Annexure H. After the end of the Transition Period, Pakistan shall have no claim or right to releases by India of any of the waters of the Eastern Rivers. In case there are any releases, Pakistan shall enjoy the unrestricted use of waters so released after they have finally crossed into Pakistan: Provided that in the event that Pakistan makes any use of these waters, Pakistan shall not acquire any right whatsoever, by prescription or otherwise, to a continuance of such releases or such use.

ARTICLE III

Provisions Regarding Western Rivers

(1) Pakistan shall receive for unrestricted use all those waters of the Western Rivers which India is under obligation to let flow under the provisions of Paragraph (2).

(2) India shall be under an obligation to let flow all the waters of the Western Rivers and shall not permit any interference with these waters, except for the following uses, restricted (except as provided in item (c)(ii) of Paragraph 5 of Annexure (C) in the case of each of the rivers, The Indus, The Jhelum and The Chenab, to the drainage basin thereof:

(a) Domestic Use;

(b) Non-Consumptive Use;

(c) Agricultural Use, as set out in Annexure C; and

(d) Generation of hydro-electric power, as set out in Annexure D.

(3) Pakistan shall have the unrestricted use of all waters originating from sources other than the Eastern Rivers which are delivered by Pakistan into The Ravi or The Sutlej and India shall not make use of these waters. Each Party agrees to establish such discharge observation stations and make such observations as may be considered necessary by the Commission for the determination of the component of water available for the use of Pakistan on account of the aforesaid deliveries by Pakistan.

(4) Except as provided in Annexures D and E, India shall not store any water of, or construct any storage works on, the Western Rivers.

ARTICLE IV

Provisions Regarding Eastern Rivers and Western Rivers.

(1) Pakistan shall use its best endeavours to construct and bring into operation, with due regard to expedition and economy, that part of a system of works which will accomplish the replacement, from the Western Rivers and other sources, of water supplies for irrigation canals in Pakistan which, on 15th August 1947, were dependent on water supplies from the Eastern Rivers.

(2) Each Party agrees that any Non-Consumptive Use made by it shall be so made as not to materially change, on account of such use, the flow in any channel to the prejudice of the uses on that channel by other Party under the provisions of this Treaty. In executing any scheme of flood control each Party will avoid, as far as practicable, any material damage to the other Party, and any such scheme carried out by India on the Western rivers shall not involve any use of water or any storage in addition to that provided under Article III.

(3) Nothing in this Treaty shall be construed as having the effect of preventing either Party from undertaking schemes of drainage, river training, conservation of soil against erosion and dredging, or from removal of stones gravel or sand from the beds of the Rivers: Provided that

(a) in executing any of the schemes mentioned above, each Party will avoid, as far as practicable, any material damage to the other Party;

(b) any such scheme carried out by India on the Western Rivers shall not involve any use of water or any storage in addition to that provided under Article III;

(c) except as provided in Paragraph (5) and Article VII(1)(b), India shall not take any action to increase the catchment area, beyond the area on the Effective Date, of any natural or artificial drainage or drain which crosses into Pakistan and shall not

undertake such construction or remodeling of any drainage or drain which so crosses as might cause material damage in Pakistan or entail the construction of a new drain or enlargement of an existing drainage or drain in Pakistan;and

(d)should Pakistan desire to increase the catchment area beyond the area on the Effective Date,of any natural or artificial drainage or drain which receives drainage waters from India ,or except in any emergency,to pour any waters into it in excess of the quantities received by it as on the Effective Date,Pakistan shall,before undertaking any work for these purposes,increase the capacity of that drainage or drain to the extent necessary so as not to impair its efficacy for dealing with drainage waters received from India as on the Effective Date.

(4)Pakistan shall maintain in good order its portions of the drainages mentioned below with capacities not less than the capacities as on the Effective Date:-

(i)Hudiara Drain.

(ii)Kasur Nala.

(iii)Salimshah Drain.

(iv)Fazilka Drain.

(1) If India finds it necessary that any of the drainages mentioned in Paragraph (4) should be deepened or widened in Pakistan,Pakistan agrees to undertake to do so as work of public interest,provided India agreed to pay the cost of of the deepening or widening.

(2) Each Party will use its best endeavours to maintain the natural channels of the Rivers,as on the Effective Date,in such condition as will avoid ,as far as practicable,any obstruction to the flow in these channels likely to cause material damage to the other Party.

(3) Neither party will take any action which would have the effect of diverting the Ravi Main between Madhopur and Lahore or the Suleimanke ,from its natural channel between high banks.

- (4) The use of the natural channels of the Rivers for the discharge of flood or other excess waters shall be free and not subject to limitation by either Party and neither Party shall have any claim against the other in respect of any damage caused by such use. Each Party agrees to communicate to the other Party, as far in advance as practicable, any information it may have in regard to such extraordinary discharges of water from reservoirs and flood flows as may affect the other Party.
- (5) Each Party declares its intentions to operate its storage dams, barrages and irrigation canals in such manner, consistent with the normal operations of its hydraulic systems, as to avoid, as far as feasible, material damage to the other Party.
- (6) Each Party declares its intention to prevent, as far as practicable, undue pollution of the waters of the Rivers which might affect adversely uses similar in nature to those to which might affect adversely uses similar in nature to those to which the waters were put on the Effective Date, and agrees to take all reasonable measures to ensure that, before the Rivers, it will be treated, where necessary, in such manner as not materially to affect those uses: Provided that the criterion of reasonableness shall be the customary practice in similar situations on the Rivers.
- (7) The Parties agree to adopt, as far as feasible, appropriate measures for the recovery; and restoration to owners of timber and other property floated or floating down the Rivers, subject to appropriate charges being paid by the owners.
- (8) The use of water for industrial purposes under Articles II(2), II(3) and III(2) shall not exceed:
- (a) in the case of an industrial process known on the Effective Date, such quantum of use as was customary in that process on the Effective Date;
 - (b) in the case of an industrial process not known on the Effective Date:
 - (i) such quantum of use as was customary on the Effective Date similar or in any way comparable industrial process; or
 - (ii) if there was no industrial process on the Effective Date similar or in any way comparable to the new process, such quantum of use as would not have a substantially adverse effect on the other Party.

- (9) Such part of any water withdrawn for Domestic Use under the provisions of Articles II(3) and III(2) as is subsequently applied to Agricultural Use shall be accounted for as part of the Agricultural Use specified in Annexure B and Annexure C respectively; each Party will use its best endeavours to return to the same river (directly therefrom for industrial purposes and not consumed either in the industrial processes for which it was withdrawn or in some other Domestic Use.
- (10) In the event that either Party should develop a use of the waters of the Rivers which is not in accordance with the provisions of this Treaty, that party shall not acquire by reason of such use any right, by prescription or otherwise, to continuance of such use.
- (11) Except as otherwise required by the express provisions of this Treaty, nothing in this Treaty shall be construed as affecting existing territorial rights over the waters of any of the Rivers or the beds or banks thereof or as affecting existing property rights under municipal law over such waters or beds or banks.

ARTICLE V

Financial Provisions

- (1) In consideration of the fact that the purpose of part of the system of works referred to in Article IV(1) is the replacement, from the Western Rivers and other sources, of water supplies for irrigation canals in Pakistan which on 15th August 1947, were dependent on water supplies from the Eastern Rivers, India agrees to make a fixed contribution of Pounds Sterling 62,060,000 towards the costs of these works. The amount in Pounds Sterling of this contribution shall remain unchanged irrespective of any alteration in the par value of any currency.
- (2) The sum of Pounds Sterling 62,060,000 specified in Paragraph (1) shall be paid in ten equal annual instalments on the 1st of November of each year. The first of such annual instalments shall be paid on 1st November 1960 or if the Treaty has not entered into force by that date, then within one month after the Treaty enters into force.

- (3) Each of the instalments specified in Paragraph (2) shall be paid to the Bank for the credit of the Indus Basin Development Fund to be established and administered by the Bank and payment shall be made in Pounds Sterling or in such other currency or currencies as may from time to time be agreed between India and the Bank.
- (4) The payments provided for under the provisions of Paragraph (3) shall be made without deduction or set-off on account of any financial claims of India on Pakistan arising otherwise than under the provisions of this Treaty: Provided that this provision shall in no way absolve Pakistan from the necessity of paying in other ways debts to India which may be outstanding against Pakistan.
- (5) If, at the request of Pakistan; the Transition Period is extended in accordance with the provisions of Article II(6) and of Part 8 of Annexure H, the Bank shall thereupon pay to India out of the Indus Basin Development Fund the appropriate amount specified in the Table Below:-

Table

<i>Period of Aggregate Extension of Transition period</i>	<i>Payment to India</i>
One Year	Dollar Stg. 3,125,000
Two Years	Dollar Stg. 6,406,250
Three Years	Dollar Stg. 9,850,000

- (6) The provisions of Article IV (1) and Article V(1) shall not be construed as conferring upon India any right to participate in the decisions as to the system of works which Pakistan constructs pursuant to Article IV(1) or as constituting an assumption of any responsibility by India or as an agreement by India in regard to such works.
- (7) Except for such payments as are specifically provided for in this Treaty, neither Party shall be entitled to claim any payment for observance of the provisions of this Treaty or to make any charge for water received from it by the other Party.

ARTICLE VI

Exchange of Data

- (1) The following data with respect to the flow in, and utilization of the waters of, the Rivers shall be exchanged regularly between the Parties:-
- (a) Daily (or as observed or estimated less frequently) gauge and discharge data relating to flow of the Rivers at all observation sites.
 - (b) Daily extractions for or releases from reservoirs.
 - (c) Daily withdrawals at the heads of all canals operated by government or by a government agency (hereinafter in this Article called canals), including link canals.
 - (d) Daily escapages from all canals, including link canals.
 - (e) Daily deliveries from link canals.

These data shall be transmitted monthly by each Party to the other as soon as the data for a calendar month have been collected and tabulated, but not later than three months after the end of the month to which they relate: Provided that such of the data specified above as are considered by either Party to be necessary for operational purposes shall be supplied daily or at less frequent intervals, as may be requested. Should one Party request the supply of any of these data by telegram, telephone or wireless, it shall reimburse the other party for the cost of transmission.

- (2) If, in addition to the data specified in Paragraph (1) of this Article, either Party requests the supply of any data relating to the hydrology of the Rivers, or to canal or reservoir operation connected with the Rivers, or to any provision of this Treaty, such data shall be supplied by the other Party to the extent that these are available.

ARTICLE VII

Future Co-operation

(1) The two parties recognize that they have a common interest in the optimum development of the Rivers, and, to that end they declare their intention to co-operate, by mutual agreement, to the fullest possible extent. In particular:-

(a) Each Party, to the extent it considers practicable and on agreement by the other Party to pay the costs to be incurred will, at the request of the other Party, set up or install such hydrologic observation stations within the drainage basins of the Rivers and set up or install such meteorological observation stations relating thereto and carry out such observations thereof, as may be requested, and will supply the data so obtained.

(b) Each Party to the extent it considers practicable and on agreement by the other Party to pay the costs to be incurred will at the request of the other Party, carry out such new drainage works as may be required in connection with new drainage works of the other Party.

(c) At the request of either Party, the two Parties may, by mutual agreement, cooperate in undertaking engineering works on the Rivers.

The formal arrangements, in each case, shall be as agreed upon between the Parties.

(2) If either Party plans to construct any engineering work which would cause interference with the waters of any of the Rivers and which in its opinion, would affect the other Party materially, it shall notify the other Party of its plans and shall supply such data relating to the work as may be available and as would enable the other Party to inform itself of the nature, magnitude and effect of the work. If a work would cause interference with the waters of any of the Rivers but would not, in the opinion of the Party planning it, affect the other Party materially, nevertheless the Party planning the work shall on request, supply the other Party with such data regarding the nature, magnitude and effect, if any, of the work as may be available.

ARTICLE VIII

Permanent Indus Commission

(1) India and Pakistan shall each create a permanent post of commissioner for Indus Waters, and shall appoint to this post, as often as vacancy occurs, a person who should ordinarily be a high-ranking engineer competent in the field of hydrology and water-use. Unless either Government should ordinarily be a high-ranking engineering competent in the field of hydrology and water-use. Unless either Government should decide to take up any particular question directly with the other Government each commissioner will be the representative of his government for all matters arising out this Treaty, and will serve as the regular channel of communication on all matters relating to the implementation of the treaty, and, in particular, with respect to

(a) the furnishing or exchange of information or data provided for in the Treaty; and

(b) the giving of any notice or response to any notice provided for in the Treaty.

(2) The status of each Commissioner and his duties and responsibilities towards his Government will be determined by that Government.

(3) The two Commissioners shall together form the Permanent Indus Commission.

(4) The purpose and functions of the Commission shall be to establish and maintain co-operative arrangements for the implementation of this Treaty, to promote co-operation between the Parties in the development of the waters of the Rivers and, in particular,

(a) to study and report to the two Governments on any problem relating to the development of the waters of the Rivers which may be jointly referred to the Commission by the two Governments :in the event that a reference is made by one Government alone, the Commissioner of the other Government shall obtain the authorization of his Government before he proceeds to act on the reference;

(b) to make every effort to settle promptly, in accordance with the provisions of Article IX(1), any question arising thereunder;

(c) to undertake, once in every five years, a general tour of inspection of the Rivers for ascertaining the facts connected with various developments and works on the Rivers;

(d)to undertake promptly,at the request of either Commissioner ,a tour of inspection of such works or sites on the Rivers as may be considered necessary by him for ascertaining the facts connected with those works or sites;and

(e)to take ,during the Transition Period ,such steps as may be necessary for the implementation of the provisions of Annexure H.

(5)The Commission shall meet regularly at least once a year ,alternatively in India and Pakistan.This regular annual meeting shall be held in November or in such other month as may be agreed upon between the Commissioners.The Commission shall also meet when requested by either Commissioner.

(6) To enable the Commissioners to perform their functions in the commission,each Government agrees to accord to the Commissioner of the other Government the same priveleges and immunities as are accorded to representatives of member States to the principal and subsidiary organs of the United Nations (dated 13th February 1946) during the periods specified in those Sections.It is understood and agreed that theses priveleges and immunities are accorded to the Commissioners not for the personal benefit of the individuals themselves but in order to safeguard the independent exercise of their functions in connection with the Commission;consequently,the government appointing the Commissioner not only has the right but is under a duty to waive the immunity of its Commissioner in any case where,in the opinion of the appointing government,the immunity would impede the course of justice and can be waived without prejudice to the purpose for which the immunity is accorded.

(7)For the purposes of the inspections specified in paragraph (4) (c) and (d),each Commissioner may be accompanied by two advisers or assistants to whom appropriate facilities will be accorded.

(8) The Commission shall submit to the Government of India and to the Government of Pakistan,before the first of June of every year,a report on its work for the year ended on the preceding 31st of March and may submit to the two Governments other reports at such times as it may think desirable.

(9) Each Government shall bear the expenses of its Commissioner and his ordinary staff. The cost of any special staff required in connection with the work mentioned in Article VII(1) shall be borne as provided therein.

(10) The Commission shall determine its own procedures.

ARTICLE IX

Settlement of Differences and Disputes.

(1) Any question which arises between the Parties concerning the interpretation or application of this Treaty or the existence of any fact which, if established, might constitute a breach of this Treaty shall first be examined by the Commission, which will endeavour to resolve the question by agreement.

(2) If the Commission does not reach agreement on any of the questions mentioned in Paragraph (1), then a difference will be deemed to have arisen, which shall be dealt with as follows :

(a) Any difference which, in the opinion of either Commissioner, falls within the provisions of Part 1 of Annexure F shall, at the request of either Commissioner, be dealt with by a Neutral Expert in accordance with the provisions of Part 2 of Annexure F:

(b) If the difference does not come within the provisions of Paragraph (2) (a), or if a Neutral Expert, in accordance with the provisions of paragraph 7 of Annexure F, has informed the Commission that, in his opinion, the difference, or a part thereof, should be treated as a dispute, then a dispute will be deemed to have arisen which shall be settled in accordance with the provisions of Paragraphs (3), (4) and (5):

Provided that, at the discretion of the Commission, any difference may either be dealt with by a Neutral Expert in accordance with the provisions of Part 2 of Annexure F or be deemed to be a dispute to be settled in accordance with

the provisions of Paragraph (3),(4) and (5) or may be settled in any other way agreed upon by the Commission.

- (3) As soon as dispute to be settled in accordance with this and the succeeding paragraphs of this Article has arisen ,the Commission shall,at the request of either Commissioner,report the fact to the two Governments,as early as practicable,stating in its report the points on which the Commission is in agreement and the issues in dispute,the views of each Commissioner on these issues and his reasons therefor.
- (4) Either Government may, following receipt of the report referred to in Paragraph (3),or,if it comes to the conclusion that this report is being unduly delayed in the Commission,invite the other Government to resolve the dispute by agreement .In doing so it shall state the names of its negotiators and their readiness to meet with the negotiators to be appointed by the other Government at a time and place to be indicated by the other Government.To assist in these negotiations,the two Governments may agree to enlist the services of one or more mediators acceptable to them.
- (5) A Court of Arbitration shall be established to resolve the dispute in the manner provided by Annexure G
 - (a) Upon agreement between the Parties to do so;or
 - (b) at the request of either Party,if after negotiations have begun pursuant to Paragraph (4),in its opinion the dispute is not likely to be resolved by negotiation or mediation;or
 - (c) at the request of either Party,if ,after the expiry of one month following receipt by the other Government of the invitation referred to in Paragraph ,that Party comes to the conclusion that the other Government is unduly delaying the negotiations.
- (6) The provisions of Paragraphs 3,4 and 5 shall not apply to any difference while it is being dealt with by a Neutral Expert.

ARTICLE X

Emergency Provision

If, at any time prior to 31st March 1965, Pakistan should represent to the Bank that, because of the outbreak of large-scale international hostilities arising out of causes beyond the control of Pakistan, it is unable to obtain from abroad the materials and equipment necessary for the completion, by 31st March 1973, of that part of the system of works referred to in Article IV(1) which relates to the replacement referred to therein, (hereinafter referred to as the “replacement element”) and if, after consideration of this representation in consultation with India, the Bank is of the opinion that

(a) these hostilities are on a scale of which the consequence is that Pakistan is unable to obtain in time such materials and equipment as must be procured from abroad for the completion, by 31st March 1973, of the replacement element, and

(b) since the Effective Date, Pakistan has taken all reasonable steps to obtain the said materials and equipment as have been available to Pakistan both from within Pakistan and from abroad, has carried forward the construction of the replacement element with due and all reasonable expedition,

The Bank shall immediately notify each of the Parties accordingly. The Parties undertake, without prejudice to the provisions of Article XIII (3) and (4), that on being so notified, they will forthwith consult together and enlist the good offices of the Bank in their consultation with a view to reaching mutual agreement as to whether or not in the light of all the circumstances then prevailing, any modifications of the provisions of this Treaty are appropriate and advisable and, if so, the nature and the extent of the modifications.

ARTICLE XI

General Provisions

(1) It is expressly understood that

(a) this Treaty governs the rights and obligations of each Party in relation to the other with respect only to the use of the waters of the Rivers and matters incidental thereto; and

(b) nothing contained in this Treaty, and nothing arising out of the execution thereof, shall be construed as constituting a recognition or waiver (whether tacit, by implication or otherwise) of any rights or claims whatsoever of either of the Parties other than those rights or claims which are expressly recognized or waived in this Treaty.

Each of the Parties agrees that it will not invoke this Treaty, anything contained therein, or anything arising out of the execution thereof, in support of any of its own rights or claims whatsoever of the other Party, other than those claims which are expressly recognized or waived in this Treaty.

- (2) Nothing in this Treaty shall be construed by the Parties as in any way establishing any general principle of law or any precedent.
- (3) The rights and obligations of each Party under this Treaty shall remain unaffected by any provisions contained in, or by anything arising out of the execution of, any agreement establishing the Indus Basin Development Fund.

ARTICLE XII

Final Provisions

- (1) This Treaty consists of the Preamble, the Articles hereof and Annexures A to H hereto, and may be cited as "The Indus Waters Treaty 1960".
- (2) This Treaty shall be ratified and the ratifications into force upon the exchange of ratifications, and will then taken effect retrospectively from the first of April 1960.
- (3) 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.
- (4) 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.

IN WITNESS WHEREOF the respective plenipotentiaries have signed this Treaty and have hereunto affixed their seals.

Done in triplicate in English at Karachi on this Ninteenth day of September 1960.

FOR THE GOVERNMENT OF INDIA:

(Sd) Jawaharlal Nehru

FOR THE GOVERNMENT OF PAKISTAN:

(Sd) Mohammad Ayub Khan

Field marshal, H.P., H.J.

FOR THE INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

For the purposes specified in Articles V and X and Annexures F,G and H:

(Sd) W.A.B. Iliff.

(Source: The Indus Waters Treaty 1960, The World Bank, at <http://siteresources.worldbank.org>.)

**TREATY BETWEEN THE GOVERNMENT OF THE REPUBLIC OF INDIA AND
THE GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH ON
SHARING OF THE GANGA/GANGES WATERS AT FARAKKA.**

THE GOVERNMENT OF THE REPUBLIC OF INDIA AND THE GOVERNMENT OF
THE PEOPLE'S REPUBLIC OF BANGLADESH.

DETERMINED to promote and strengthen their relations of friendship and good
neighbourliness.INSPIRED by the common desire of promoting the well-being of their
peoples,

BEING desirous of sharing by mutual agreement the waters of the international rivers
flowing through the territories of the two countries and of making the optimum utilization of
the water resources of their region in the fields of flood management,irrigation,river-basin
development and generation of hydropower for the mutual benefit of the peoples of the two
countries.

RECOGNISING that the need for making an arrangement for sharing of the Ganga/Ganges
waters at Farakka in a spirit of mutual accommodation and the need for a solution to the long-
term problem of augmenting the flows of Ganga/Ganges are in the mutual interests of the
peoples of the two countries.

BEING desirous of finding a fair and just solution without affecting the rights and
entitlements of either country other than those covered by this Treaty,or establishing any
general principles of law or precedent.

HAVE AGREED AS FOLLOWS:-

ARTICLE-I

The quantum of waters agreed to be released by India to Bangladesh will be at Farakka.

ARTICLE-II

- (i) The sharing between India and Bangladesh of the Ganga/Ganges waters at Farakka by ten days periods from the 1st of January to the 31st May every year will be with reference to the formula at Annexure I and an indicative schedule giving the implications of the sharing arrangement under Annexure I is at Annexure II.
- (ii) The indicative schedule at Annexure II; as referred to in sub para [1] above, is based on 40 years (1949-1988) 10-day period average availability of water at Farakka. Every effort would be made by the upper riparian to protect flows of water at Farakka as in the 40 years average availability as mentioned above.
- (iii) In the event flow at Farakka falls below 50,000 cusecs in any 10 –day period, the two governments will enter into immediate consultations to make adjustments on an emergency basis, in accordance with the principles of equity, fair play and no harm to either party.

ARTICLE-III

The waters released to Bangladesh at Farakka under Article I shall not be reduced below Farakka except for reasonable uses of water, not exceeding 200 cusecs, by India between Farakka and the point on the Ganga/Ganges where both its banks are in Bangladesh.

ARTICLE-IV

A Committee consisting of representative nominated by the two Government in equal numbers (hereinafter called Joint Committee) shall be constituted following the signing of this Treaty. The Joint Committee shall set up suitable teams at Farakka and Hardinige Bridge to observe and record at Farakka the daily flows below Farakka Barrage, in the Feeder Canal, and at the Navigation Lock, as well as at the Hardinige Bridge.

ARTICLE-V

The joint Committee shall decide its own procedure and method of functioning.

ARTICLE-VI

The Joint Committee shall submit to the two Governments all data collected by it and shall also submit a yearly report to both the Governments. Following submission of the reports the two Governments will meet at appropriate levels to decide upon such further actions as may be needed.

ARTICLE-VII

The Joint Committee shall be responsible for implementing the arrangements contained in this Treaty and examining any difficulty arising out of the implementation of the above arrangements and of the operation of Farakka Barrage .Any difference of dispute arising in this regard,if not resolved by Joint Committee,shall be referred to the Indo-Bangladesh Joint River Commission .If the difference or dispute still remains unresolved,it shall be referred to the two Governments which shall meet urgently at the appropriate level to resolve it by mutual discussion.

ARTICLE-VIII

The two Governments recognize the need to cooperate with each other in finding a solution to the long-term problem of augmenting the flows of the Ganga/Ganges during the dry season.

ARTICLE-IX

Guided by the principles of equity,fairness and no harm to either party,both the Governments agree to conclude water sharing Treaties/Agreement with regard to other common rivers.

ARTICLE-X

The sharing arrangement under this Treaty shall be reviewed by the two Governments at the five years interval or earlier,as required by either party and needed adjustments,based on principles of equity,fairness and no harm to either party made thereto,if necessary.It would be open to either party to seek the first review after two years to assess the impact and working of the sharing arrangement as contained in the Treaty.

ARTICLE-XI

For the period of this Treaty, in the absence of mutual agreement on adjustments following reviews as mentioned in Article X, India shall release downstream of Farakka Barrage, water at a rate not less than 90% (ninety percent) of Bangladesh's share according to the formula referred to in Article II, until such time as mutually agreed flows are decided. This Treaty shall enter into force upon signature and shall remain in force for a period of thirty years and it shall be renewable on the basis of mutual consent.

ARTICLE-XII

This Treaty shall enter into force upon signature and shall remain in force for a period of thirty years and it shall be renewable on the basis of mutual consent.

IN WITNESS WHEREOF the undersigned, being duly authorized thereto by the respective Governments, have signed this Treaty.

DONE at New Delhi 12th December, 1996 in Hindi-Bangla and English languages. In the event of any conflict between the texts, the English text shall prevail.

Sd. (H.D. DEVA GOWDA)

Sd. (SHEIKH HASINA)

PRIME MINISTER, REPUBLIC OF
INDIA.

PRIME MINISTER PEOPLE'S REPUBLIC
OF BANGLADESH.

ANNEXURE-I

Availability at Farakka	Share of India	Share of Bangladesh
70,000 cusecs or less	50%	50%
70,000-75,000 cusecs	Balance of flow	35,000 cusecs
75,000 cusecs or more	40,000 cusecs	Balance of flow.

ANNEXURE II

Schedule (Sharing of waters at Farakka between January 01 and May 31 every year.).If actual availability corresponds to average flows of the period 1949 to 1988 ,the implication of the formula in Annexure-I for the share of each side is:

Period	Average total flow 1949-88(cusecs)	India's share(cusecs)	Bangladesh's Share(cusecs)
January			
1-10	107,516	40,000	67,516
11-20	97,673	40,000	57,673
21-30	90,154	40,000	50,154
February			
1-10	86,323	40,000	46,323
11-20	82,859	40,000	57,673
21-31	79,106	40,000	39,106
March			
1-10	68,931	39,419	35,000
11-20	82,859	33,931	35,000
21-31	64,688	35,000	29,688
April			
1-10	63,180	28,180	35,000
11-20	62,633	35,000	27,633
21-30	60,992	25,992	35,000

May

1-10	67,351	35,000	32,351
11-20	73,590	38,590	35,000
21-31	81,854	40,000	41,854.

(Source:www.jrcb.gov.bd/attachment/Ganges_Water_Sharing_Treaty_1996.pdf)

AMENDED AGREEMENT BETWEEN HIS MAJESTY'S GOVERNMENT OF NEPAL (HEREINAFTER REFERRED TO AS "HMG") AND THE GOVERNMENT OF INDIA (HEREINAFTER REFERRED TO AS THE "UNION") CONCERNING THE KOSI PROJECT.

WHEREAS the Union was desirous of constructing a barrage, headworks and other appurtenant works about three miles upstream of Hanuman Nagar town on the Kosi River with afflux and flood banks and canals and protective works on land lying within the territories of Nepal for the purpose of flood control, irrigation, generation of hydro-electric power and prevention of erosion of Nepal areas on the right side of the river, upstream of the barrage (hereinafter referred to as the "Project").

And Whereas HMG agreed to the construction of the said barrage, headworks and other connected works by and at the cost of the Union, in consideration of the benefits arising

therefrom and a formal document incorporating the terms of the Agreement was brought into existence on the 25 th April,1954 and was given effect to;

And Whereas in pursuance of the said Agreement various works in respect of the Project have been completed by the Union while others are in various stages of completion for which HMG has agreed to afford necessary facilities:

And Whereas HMG has suggested revision of the said Agreement in order to meet the requirements of the changed circumstances,and the Union,with a view to maintaining friendship and good relation subsisting between Nepal and India,has agreed to the revision of Agreement.

Now THEREFORE,THE PARTIES AGREE AS FOLLOWS:-

1.Details of the Project:-

(i) The barrage is located about 3 miles upstream of Hanuman Nagar town.

(ii) The genneral layout of the barrage ,the ares within afflux banks, flood embankments,and other protective works,canals,power house and the lines of communication are shown in the amended plan annexed to this agreement as Amended Annexure-A.

(iii)Any construction and other undertaking by the Union in connection with this project shall be planned and carried out in consultation with HMG,

Provided that such works and undertakings which ,pursuant to any provision of this Agreement require the prior approval of HMG shall not be started without such prior approval;

And further provided that in situation described in Clause 3 (iii) and Clause 3 (iv) intimation to HMG shall be sufficient.

(iv)For the purpose of Clauses 3 and 8 of this Agreement the land under the ponded areas and boundaries as indicated by the plan specified in sub-clause (ii) above,shall be deemed to be submerged.

2.Investigations and Surveys:-

(i) Whenever the Chief Engineer of Kosi Project, Government of Bihar may consider any survey or investigation to be required in connection with the said project, HMG shall, if and in so far as HMG has approved such survey or investigation, authorize and give necessary facilities to the concerned officers of the Union or other persons acting under the general or special orders such officers to enter upon such land as necessary with such men, animals, vehicles, equipment, plant, machinery and instruments as necessary to undertake such surveys and investigations. Such surveys and investigations may comprise aerial and ground surveys, hydraulic, hydrometric, hydrological and geological surveys including construction of drill holes for surface and subsurface exploration, investigations for communications and for materials of construction; and all other surveys and investigations necessary for the proper design, construction and maintenance of the barrage and all its connected works mentioned under the Project. However, investigations and surveys necessary for the general maintenance and operation of the project, inside the project area, may be done by the Union after due intimation to HMG.

In this Agreement, the "Project Area" shall mean the area acquired for the project.

(ii) The provisions of sub-clause (i) of this clause shall also apply to surveys and investigations of storage dams or detention dams on the Kosi, soil conservation measures, such as check dams, afforestation, etc., required for a complete solution of the Kosi problems in the future.

(iii) The surveys and investigations referred to in sub-clauses (i) and (ii) shall be carried in cooperation with HMG.

(iv) All data, specimens, reports and other results of surveys and investigations carried out by or on behalf of the Union in Nepal pursuant to the provisions on this clause, shall be made available to HMG freely and without delay. In turn, HMG shall upon request by the Union, make available to the Union all data, maps, specimens, reports and other results of surveys and investigations carried out by or on behalf of HMG in Nepal in respect of the Kosi river.

3. Authority for execution of works and use of land and other property:-

(i) Provided that any major construction work not envisaged in the amended plan (Amended Annexure-A) referred to in clause 1(ii) shall require the prior approval of HMG, HMG shall

authorise the Union to proceed with the execution of the said project as and when the project or a part of the project receives sanction of the said Union and notice has been given by the Union to HMG of its intention to commence work on the respective constructions and shall permit access by the Engineer and all other officers, servants and nominees of the Union, with such men, animals, vehicles, plant, machinery, equipment and instruments as may be necessary for the direction and execution of the respective constructions, to all such lands and places and shall permit the occupation, for such period as may be necessary, of all such lands and places as may be required for the proper execution of the respective constructions.

(ii) The land required for the purposes mentioned in clause 3(i) above shall be acquired by HMG and compensation therefor shall be paid by the Union in accordance with the provisions of clause 8 hereof.

(iii) HMG shall upon prior *notification*, authorise officers of the Union to enter on land outside the limits of boundaries of the barrage and its connected works in case of any accident happening or being apprehended to any of the said works and to execute all works which may be necessary for the purpose of repairing or preventing such damage. Compensation, in every case, shall be tendered by the Union through HMG to the owners of the said land for all accidents done to the same in order that compensation may be awarded in accordance with clause 8 hereof.

(iv) HMG will permit the Union to quarry the construction materials required for the project from various deposits at Chatra, Dharan bazar or other places in Nepal.

4. Use of Water and Power:-

(i) HMG shall have every right to withdraw for irrigation and for any other purpose in Nepal water from the Kosi river and from the Sun-Kosi river or within the Kosi basin from any other tributaries of the Kosi river as may be required from time to time. The Union shall have the right to regulate all the balance of supplies in the Kosi river at the barrage site thus available from time to time and to generate power in the Eastern Canal.

(ii) HMG shall be entitled to obtain for use in Nepal any portion up to 50 percent of the total hydro-electric power generated by any Power House situated within a 10-mile radius from the barrage site and constructed by or on behalf of the Union, as HMG shall from time to time determine and communicate to the Union:

Provided that:-

HMG shall communicate to the Union any increase or decrease in the required power supply exceeding 6,800 KW at least three months in advance:

(iii) If any power to be supplied to Nepal pursuant to the provisions of this sub-clause is generated in a power house located in Indian territory, the Union shall construct the necessary transmission line or lines to such points at the Nepal-Indian border as shall be mutually agreed upon.

(iv) The tariff rates for electricity to be supplied to Nepal pursuant to the provisions of this clause shall be fixed by mutual agreement.

4. Lease of the Project areas:-

(i) All the lands acquired by HMG under the provisions of clause 3 hereof as of the date of signing of these amendments shall be leased by HMG to the Union for a period of 199 years from the date of the signing of these amendments at an annual Nominal Rate.

(ii) The rent and other terms and conditions on which lands for Western Kosi Canal shall be leased by HMG to the Union pursuant to this Agreement shall be similar to those as under sub-clause(i).

(iii) The rent and other terms and conditions of any other land to be leased by HMG to the Union pursuant to this Agreement shall be fixed by mutual agreement.

(iv) At the request of the Union, HMG may grant renewal of the leases referred to in sub-clauses(i),(ii)and(iii)on such terms and conditions as may be mutually agreed upon.

(v) The sovereignty rights and territorial jurisdiction of HMG,including the application and enforcement of the law of Nepal on and in respect of the leased land shall continue un-impaired by such lease.

6.Royalties:-

(i) HMG will receive royalty in respect to power generated and utilized in the Indian Union at rates to be settled by agreement hereafter:

Provided that no royalty will be paid on the power sold to Nepal.

(ii)HMG shall be entitled to receive payment of royalties from the Union in respect of stone,gravel and ballast obtained from Nepal territory and used in the construction and future maintenance of the barrage and other connected works at rates to be settled by agreement hereafter.

(iii)Use of timber from Nepal forests,required for the construction,shall be permitted on payment of compensation .Provided that no compensation will be payable to HMG for such quantities of timber as may be agreed upon by HMG and the Union to be necessary for use on the spurs or other river training works required for the prevention of caving and erosion of the right bank in Nepal.

Provided likewise that no compensation will be payable by the Union for any timber obtained from the forest lands leased by HMG to the Union.

7.Customs Duties:-

HMG shall charge no customs duty or duty of any kind ,during construction and subsequent maintenance,on any articles and materials required for the purpose of the Project and the work connected therewith.

8.Compensation for land and property and for land revenue:-

(i) For assessing the compensation to be awarded by the Union to HMG in cash-

(a)Lands required for the execution of various works as mentioned in clause3(ii)and clause9(i);and

(b)Submerged lands,will be divided into the following classes:-

1.Cultivated lands,

2.Forest lands,

3.village lands and houses and other immovable property standing on them.

4.Waste lands.

All lands recorded in the register of lands in the territory of Nepal as actually cultivated shall be deemed to be cultivated lands for the purpose of this clause.

(ii)The Union shall pay compensation-

(a)to HMG for the loss of land revenue as at the time acquisition in respect of the area acquired,and

(b)to whomsoever it may be due for the lands ,houses and other immovable property acquired for the Project and leased to the Union.

The assessment of such compensation and the manner of payment shall be determined hereafter by mutual agreement between HMG and the Union.

(iii)All lands required for the purposes of the Project shall be jointly measured by the duly authorized officers of HMG and the Union respectively.

9.Communications:-

(i)HMG agrees that the Union may construct and maintain roads,tramways,railways, ropeways,etc.,required for the project in Nepal and shall provide land for these purposes on payment of compensation as provided in Clause 8.Provided that the construction of any roads,tramways,railways,ropeways etc.,outside the Project area shall require the Prior approval of HMG.

(ii)Any restrictions,required in the interest of construction,maintenance and proper operation of Project,regarding the use of the roads,etc.,referred to in sub-clause(i)by commercial or Private vehicles may be mutually agreed upon.In case of threatened bench or erosion of the structures on account of the river,the officers of the Project may restrict public traffic under intimation to HMG.

(iii)HMG agrees to permit ,on the same terms as for other users,the use of all roads waterways and other avenues of transport and communication in Nepal for *bonafide* purposes of the construction and maintenance of the barrage and other connected works.

(iv)The bridge over Hanuman Nagar shall be open to public traffic.With prior approval of HMG.,the union shall have the right to close the traffic over the bridge temporarily if and in

so far as required for technical or safety reasons. In such cases, the union shall take all measures required for the most expeditious reopening of the bridge.s

(v) HMG agrees to permit installation of telegraph, telephone and radio communications of the *bona fide* purposes of the construction and maintenance of the project:

Provided that Union shall agree to the withdrawal of such facilities which HMG may in this respect provide in future.

Further provided that the Union agrees to permit the use of internal telephone and telegraph in the Project area to authorized servants of HMG for business in emergencies provided such does not in any way interfere with the construction and operation of the Project.

10. Navigation rights:-

All navigation rights in the Kosi River in Nepal shall rest with HMG. Provision shall be made for suitable arrangements at or around the site of the barrage for free and unrestricted navigation in the Kosi River, if technically feasible. However, the use of any water-craft like boats, launches and timber rafts within two miles of the barrage and headworks shall not be allowed on grounds of safety, except by special permits to be issued by the competent authority of HMG in consultation with the executive Engineer, Barrage. Any unauthorized water-craft found within this limit shall be liable to prosecution.

11. Fishing rights:-

All the fishing right in the Kosi River in Nepal shall continue to rest with HMG. However, no fishing shall be permitted within two miles of the barrage and headworks except under special permits to be issued by the competent authority of HMG in consultation with the Executive Engineer, Barrage. While issuing the special permits within two miles, HMG shall keep in view the safety of the headworks and permit-holders.

12. Use of Nepali Labour:-

The Union shall give preference to Nepali labour, personnel and contractors to the extent available and in its opinion suitable for the construction of the Project but shall be at liberty to import labour of all classes to the extent necessary.

13. Civic Amenities in the project Area:-

Subject to prior approval of HMG ,the union may,in the project area,establish schools,hospitals,water-supply systems,electric supply systems,drainage and other civic amenities for the duration of the construction of the project.On completion of projects,any such civic amenities shall,upon request by HMG be transferred to HMG,and that in any case,all functions of public administration shall ,pursuant to the provisions of clause 5(v)be exercised by HMG.

14. Arbitration:-

(i)Any dispute or difference arising out of in or in any way touching or concerning the construction,effect or meaning of this Agreement,or of any matter contained herein or the respective rights and liabilities of the parties hereunder,if not settled by discussion shall be determined in accordance with the provisions of this clause.

(ii)Any of the parties may be notice in writing inform the other party of its intention to refer to arbitration any such dispute or difference mentioned in sub-clause(i);and within 90 days of the delivery of such notice ,each of the two parties shall nominate an arbitrator for jointly determining such dispute or difference and the award of the arbitrators shall be binding on the parties.

(iii)In case the arbitrators are unable to agree ,the parties hereto may consult each other and appoint an umpire whose award shall be final and binding on them.

15. Establishment of Indo-Nepal Kosi Project Commission:-

(i)For the discussion of problems of common interest in connection with the project and for purposes of coordination and cooperation between the two Governments with regard to any matter covered in this agreement,the two Governments with regard to any matter covered in this agreement,the two Government shall at any early date establish a joint “Indo-Nepal Kosi Project commission”.The rules for the composition,jurisdiction,etc.,of the said Commission shall be mutually agreed upon.

(ii)Until the said Joint Commission shall be constituted the “Co-ordination Committee for the Kosi Project”shall continue to function as follows:-

(a)The committee shall consist of four representatives from each country to be nominated by the respective Governments.

(b)The Chairman of the committee shall be a minister of HMG,and the Secretary shall be the Administrator of the Kosi Project.

(c)The committee shall consider among others such matters of common interest concerning the Project as land acquisition by HMG for lease to the Union,rehabilitation of displaced population,maintenance of law and order.

(iii)As soon as the said joint Commission shall be constituted,the Co-ordination Committee for the Kosi project shall be dissolved.

16.(i) This present Agreement shall come into force from the date of signatures of

the authorized representatives of HMG and the Union respectively and thereafter,it shall remain valid for a period of 199 years.

(ii)This present Agreement shall supersede the Agreement signed between the Government of Nepal and the Government of India on the 25th April 1954 on the Kosi Project.

In witness whereof the undersigned being duly authorized thereto by their respective governments have signed the present Amended Agreement.

Done at Kathmandu ,in quadruplicate ,this day,the 19th of December 1966.

For the Government of India

For His Majesty's Government of Nepal

SHRIMAN NARAYAN

Y.P.Pant

Ambassador of India in Nepal

Secretary,Minister of Economic,Planning

And Finance.

(Source:www.internationalwaterlaw.org/document/regionaldocs/Amended_Kosi_Project_Agreement_1966.pdf)

TREATY –HIS MAJESTY’S GOVERNMENT OF NEPAL AND THE GOVERNMENT OF INDIA CONCERNING THE INTEGRATED DEVELOPMENT OF THE MAHAKALI RIVER INCLUDING SARDA BARRAGE,TANAKPUR BARRAGE AND PANCHESHWAR PROJECT(1996).

His Majesty’s Government of NEPAL and the Government of INDIA(hereinafter referred to as the “parties”)

Reaffirming the determination to promote and strengthen their relations of friendship and close neighbourliness for the co-operation in the development of water resources;

Recognizing that the Mahakali River is a boundary river on major stretches between the two countries;

Realizing the desirability to a treaty on the basis of equal partnership to define their obligations and corresponding rights and duties thereto in regard to the waters of the Mahakali River and its utilization;

Noting the Exchange of Letters of 1920 through which both the Parties had entered into an arrangement for the construction of the Sarada Barrage in the Mahakali river,whereby Nepal is to receive some waters from the said Barrage;

Recalling the decision taken in the Joint Commission dated 4-5 december,1991 and the Joint Communique issued during the visit of the Prime minister of India to Nepal on 21st October 1992 regarding the Tanakpur Barrage which India has constructed in a course of the Mahakali River with a part of the eastern afflux bund at Jimuwa and the adjoining poundage area of the said Barrage lying in the Nepalese territory;

Noting that both Parties are jointly preparing a Detailed Project Report of the Pancheshwar Multipurpose project to be implement in the Mahakali River;

Now,therefore,the Parties hereto hereby have agreed as follows:

Article-1

1. Nepal shall have right to a supply of 28.35 m/s (1000 cusecs) of water from the Sarda Barrage in the wet season (i.e from 15th May to 15th October) and 4.25 m/s (150 cusecs) in the dry season (i.e. from 16th October to 14th May).

2. India shall maintain a flow of not less than 10 m/s (350 cusecs) downstream of the Sarda Barrage in the Mahakali River to maintain and preserve the river eco-system.

3. In case the Sarda Barrage becomes non-functional due to any cause:

(a) Nepal shall have the right to a supply of water as mentioned in paragraph 1 of this Article, by using the head regulator(s) mentioned in paragraph 2 of Article 2 herein. Such a supply of water shall be in addition to the water to be supplied to Nepal pursuant to paragraph 2 of Article 2.

(b) India shall maintain the river flow pursuant to paragraph 2 of this article from the tailrace of the Tanakpur Power Station downstream of the Sarda Barrage.

Article- 2

In continuation of the decisions taken in the Joint Commission dated 4-5 December 1991 and the Joint Communique issued during the visit of the Prime Minister of India to Nepal on 21st October, 1992, both the Parties agree as follows:

1. For the construction of the eastern afflux bund of the Tanakpur Barrage at Jimuwa and tying it up to the high ground in the Nepalese territory at EL 250 M, Nepal gives its consent to use a piece of land of about 5777 meters in length (an area of about 2.9 hectares) of the Nepalese territory at the Jimuwa village in Mahendranagar Municipal area and a certain portion of the No-Man's land on either side of the border. The Nepalese land consented to be so used and the land lying on the west of the said land (about 9 hectares) upto the Nepal-India border which forms a part of the poundage area, including the natural resources endowment lying within that area, remains under the continued sovereignty and control of Nepal and Nepal is free to exercise all attendant rights thereto;

2. In lieu of the eastern afflux bund of the Tanakpur barrage, at Jimuwa thus constructed, Nepal shall have the right to:

(a) A supply of 28.35 m³/s (1000 cusecs) of water in the wet season (i.e. from 15th May to 15th October) and 8.50 m³/s (300 cusecs) in the dry season (i.e. from 16th October to 14th May) from the date of the entry into force of this treaty. For this purpose of Article 1 herein India shall construct the head regulators near the left sluice of the Tanakpur barrage and also the waterways of the repaired capacity up to the Nepal-India border. Such head regulators and waterways shall be operated jointly.

(b) A supply of 70 million Kilowatt-hour (unit) of energy on a continuous basis annually, free of cost, from the date of the entry into force of this Treaty. For this purpose, India shall construct a 132 kv transmission line up to the Nepal-India border from the Tanakpur power station (which has at present, an installed capacity of 120,000 kilowatt generating 448.4 million kilowatt-hour of energy annually on 90 percent dependable year flow).

3. Following arrangements shall be made at the Tanakpur Barrage at time of development of any storage projects including Pancheshwar multipurpose project upstream of the Tanakpur Barrage:

(a) Additional head regulator and the necessary waterways, as required, up to the Nepal-India border shall be constructed to supply additional water to Nepal. Such head regulator and waterways shall be operated jointly.

(b) Nepal shall have additional energy equal to half of the incremental energy generated from the Tanakpur power station, on a continuous basis from the date of augmentation of the flow of the Mahakali River and shall bear half of the additional operation cost and if required, half of the additional capital cost at the Tanakpur Power Station for the generation of such incremental energy.

Article-3

Pancheshwar Multipurpose Project (hereinafter referred to as the "Project") is to be constructed on a stretch of the Mahakali River where it forms the boundary between the two countries and hence both the parties agree that they have equal entitlement in the utilization of the waters of the Mahakali River without prejudice to their respective existing consumptive uses of the waters of the Mahakali River. Therefore, both the parties agree to implement the project in the Mahakali River in accordance with the Detailed Project Report (DPR) being

jointly prepared by them .The project shall be designed and implemented on the basis of the following principles;

1.The Project shall,as would be agreed between the parties,be designed to produce the maximum total net benefits.All benefits accruing to both the parties with the development of the project in the forms of power,irrigation,flood control etc,shall be assessed.

2.The Project shall be implemented or caused to be implemented as an integrated project including power stations of equal capacity on each side of the Mahakali River.The two power stations shall be operated in an integrated manner and the total energy generated shall be shared equally between the parties.

3.The cost of the project shall be borne by the parties in proportion to the benefits accruing to them.Both the parties shall jointly endeavour to mobilize the finance required for the implementation of the project.

4.A portion of Nepal's share of energy shall be sold to India.The quantum of such energy and its price shall be mutually agreed upon between the parties.

Article-4

India shall supply 10m (350 cusecs) of water for the irrigation of Dodhara chandani area of Nepalese Territory.The technical and other details will be mutually worked out.

Article-5

1.Water requirements of Nepal shall be given prime consideration in the utilization of the waters of the Mahakali River.

2.Both the parties shall be entitled to draw their share of waters of the Mahakali River from the Tanakpur Barrage and/or other mutually agreed points as provided for in this treaty and any subsequent agreement between the parties.

Article-6

Any project ,other than those mentioned herein ,to be developed in the Mahakali River,where it is a boundary river shall be designed and implemented by an agreement between the parties on the principles established by this Treaty.

Article-7

In order to maintain the flow and level of the waters of the Mahakali river, each party undertakes not to use or obstruct or divert the waters of Mahakali River adversely affecting its natural flow and level except by an agreement between the parties provided, however, this shall not preclude the use of the waters of the Mahakali river by the local communities living along both sides of the Mahakali River, not exceeding five(5) percent of the average annual flow at Pancheshwar.

Article-8

This Treaty shall not preclude planning, survey, development and operation of any work on the tributaries of the Mahakali River, to be carried out independently by each party in its own territory without adversely affecting the provision of Article 7 of this Treaty.

Article-9

1. There shall be a Mahakali river Commission (hereinafter referred to as the "commission"). The Commission shall be guided by the principles of equality, mutual benefit and no harm to either party.

2. The commission shall be composed of equal number of representatives from both the parties.

3. The functions of the Commission shall, inter alia, include the following:

(a) To seek information on and if necessary, inspect all structures included in the Treaty and make recommendations to both the parties to take steps which shall be necessary to implement the provisions of this Treaty.

(b) To make recommendations to both the parties for the conservation and utilization of the Mahakali River as envisaged and provided for in this Treaty.

(c) To provide expert evaluation of projects and recommendations thereto.

(d) To coordinate and monitor plans of actions arising between the parties concerning the interpretation and application of this Treaty.

4. The expenses of the commission shall be borne equally by both the parties.

5.As soon as the Commission has been constituted pursuant to paragraph 1 and 2 of this article,it shall draft its rules of procedure which shall be submitted to both for their concurrence.

6.Both the parties shall reserve their rights to deal directly with each other on matters which may be in the competence of the commission.

Article-10

Both the parties may form project specific joint entity/ies for the development ,execution and operation of new projects including Pancheshwar Multipurpose Project in the Mahakali River for their mutual benefit.

Article-11

1.If the commission fails under Article 9 of this Treaty to recommend its opinion after examining the differences of the parties within three(3)months of such reference to the Commission or either party disagrees with the recommendation of the commission,then a dispute shall be deemed to have arisen which shall then be submitted to arbitration for decision in so doing either party shall give three(3)months prior notice to the other party.

2.Arbitration shall be conducted by a tribunal composed of three arbitrators.One arbitrator shall be nominated by Nepal ,one by India,with neither country to nominate its own national and the third arbitrator shall be appointed jointly,who,as a member of the tribunal,shall preside over such tribunal.in the event that the parties are unable to agree upon the third arbitrator within ninety(90)days after receipt of a proposal,either party may request the Secretary-General of the Permanent court of Arbitration at the Hague to appoint such arbitrator who shall not be a national of either country.

3.The procedures of the arbitration shall be determined by the arbitration tribunal and the decision of a majority of the arbitrators shall be the decision of the tribunal.The proceeding of the tribunal shall be conducted in English and the decision of such a tribunal shall be in writing both the parties shall accept the decision as final ,definitive and binding.

4.Provision for the venue of arbitration,the administrative support of the arbitration tribunal shall be as agreed in an exchange of notes on alternative procedures for setting differences arising under this Treaty.

Article-12

1. Following the conclusion of this Treaty, the earliest understandings reached between the parties concerning the utilization of the waters of the Mahakali River from the Sarda barrage and the Tanakpur Barrage, which have been incorporated herein, shall be deemed to have been replaced by this Treaty.

2. This Treaty shall be subject to ratification and shall enter into force on the date of exchange of instruments of ratification. It shall remain valid for a period of seventy-five (75) years from the date of its entry into force.

3. This Treaty shall be reviewed by both the parties at ten (10) years interval or earlier as required by either party and make amendments thereto, if necessary.

4. Agreements, as required, shall be entered into by the parties to give effect to the provisions of this Treaty.

IN WITNESS WHEREOF the undersigned being duly authorized thereto by their respective governments have hereto signed this Treaty and affixed thereto seals in two originals each in Hindi, Nepali and English languages, all the texts being equally authentic. In case of doubt, the English text shall prevail.

Done at New Delhi, India on the twelfth day of February of the year one thousand nine hundred and ninety six.

Sd.....

(P. V. Narasimha Rao)

Prime Minister

Government of India

Sd.....

(Sher Bhadur Deuba)

Prime Minister

His Majesty's Government of Nepal.

(Source: www.internationalwaterlaw.org/document/regionaldocs/Mahakali_Project_Agreement_1996.pdf)

Water Apportionment Accord

Apportionment of the Waters of Indus River System between the provinces

Karachi, dated 16.3.91

APPORTIONMENT OF THE WATERS OF THE INDUS RIVER SYSTEM BETWEEN THE PROVINCES

As a follow-up to the meeting of the Chief Ministers at Lahore on March 3, 1991, a meeting of the representatives of the four provinces was held at Lahore on March 04, 1991. Another meeting was held at Karachi on March 16, 1991. The list of participants is attached.

The participants agreed on the following points-

1. There was an agreement that the issue relating to apportionment of the Waters of the Indus River System should be settled as quickly as possible,
2. In the light of the accepted water distributional principles the following appointment was agreed to

(fig. in MAF)

PROVINCE	KHARIF	RABI	TOTAL
PUNJAB	37.07	18.87	55.94
SINDH*	33.94	14.82	48.76
NWFP(a)	3.48	2.30	5.78
(b) CIVIL CANALS**	1.80	1.20	3.00
BALUCHISTAN	2.85	1.02	3.87

*Including already sanctioned Urban and Industrial uses for Metropolitan Karachi.

****Engaged Civil Canals above the rim stations.**

3.N.W.F.P/Balochistan Projects which are under execution have been provided their authorized quota of water as existing uses.

4.Balance river supplies(including flood supplies and future storages)shall be distributed as below.

Punjab	Sindh	Baluchistan	NWFP	Total
37	37	12	14	100%

5.Industrial and Urban Water supplies for Metropolitan City,for which there were sanctioned allocations will be accorded priority.

6.The need for storages,wherever feasible on the Indus and other rivers was admitted and recognized by the participants for planned future agriculture development.

7.The need for certain minimum escapage to sea,below Kotri,to check sea intrusion was recognized,Sindh held the view ,that the optimum level was 10 MAF ,which was discussed at length,while other studies indicated lowe/higher figures.It was,therefore,decided that further studies would be undertaken to establish the minimal escapage needs down stream Kotri.

8.There would be no restrictions on the Provinces to undertake new projects within their agreed shares.

9.No restrictions are placed on small schemes not exceeding 5000 acres above elevation of 1200 ft SPD.

10.No restrictions are placed on developing irrigation uses in the Kurram/Gomal/kohat basins ,so long as these do not adversely affect the exisiting uses on these rivers.

11.There areno restrictions on Balochistan to develop the water resources of the Indus right bank tributaries ,flowing through its areas.

12.The requirements of LBOD will be met out of the flood supplies in accordance with the agreed sharing formula.

13. For the implementation of this accord, the need to establish an Indus River System authority was recognized and accepted. It would have headquarters at Lahore and would have representation from all the four provinces.

14.(a) The system-wise allocation will be worked out separately, on ten daily basis and will be attached with this agreement as part and parcel of it.

(b) The record of actual average system uses for the period of 1977-82, would form the guide line for developing a future regulation pattern. These ten daily uses would be adjusted pro rata to correspond to the indicated seasonal allocations of the different canal systems and would form the basis for sharing shortages and surpluses on all Pakistan basis.

(c) The existing reservoirs would be operated with priority for the irrigation uses of the provinces.

(d) The provinces will have the freedom within their allocations to modify system wise and period-wise uses.

(e) All effort would be made to avoid wastages. Any surpluses may be used by another province, but this would not establish any rights to such uses.

C.M. Punjab

C.M. Sindh

C.M. NWFP

CM Balochistan

Ghulam Hyder Wyne

Jam Sadiq Ali

Mir Afzal Khan

Mir Taj Mohammad Jamali.

Shah Mehmood Qureshi

Muzaffar Hussain

Mohsin Ali Khan

Mir Zulfiqar Ali Magsi

Minister Finance

Minister Law

Minister Finance

Minister Home

Mazhar Ali

Mohammad Alim Baloch

Khalid Aziz

Mohammad Amin

Advisor

A.C.S(I&P)/Advisor

A.C.S(P&D)

Secretary (I&P)

(Source: www.boell-pakistan.org/.../Water_Apportionment_Accord_1991.pdf).

Eihteenth Amendment to the Constitution of the Islamic Republic of Pakistan.

WHEREAS it is expedient further to amend the constitution of the Islamic Republic of Pakistan for the purposes hereinafter appearing;

AND WHEREAS the people of Pakistan have relentlessly struggled for democracy and for attaining the ideals of a federal, Islamic, democratic, parliamentary and modern progressive welfare State, wherein the rights of the citizes are secured and the Provinces have equitable share in the Federation.

AND WHEREAS it is necessary that Legal Framework Order, 2002, as amended by the Chief Executive's Order No. 29 and the chief Executive's Order No. 32 of 2002, be declared as having been made without lawful authority and of no legal effect. And the Constitution (Seventeenth Amendment) Act, 2003 (Act No. III of 2003) be repealed and the constitution further amended to achieve the aforesaid objectives;

It is hereby enacted as follows:-

1. Short title and commencement:- (1) This Act may be called the constitution (Eighteenth Amendment) Act, 2010.

(2) It shall come into force at once, save as otherwise provided in this Act.

2. Repeal, etc:- Subject to Article 264 and the provisions of the constitution (Eighteenth Amendment) Act, 2010-

(a) the Legal Framework Order, 2002 (Chief Executive's Order No. 24 of 2002), the Legal Framework (Amendment) Order 2002, (Chief Executive's Order No. 29 of 2002) and the Legal Framework (Second Amendment) Order 2002, (Chief Executive's Order No. 32 of 2002), are hereby declared to have been made without lawful authority and of no legal effect, and therefore, shall stand repealed ;and

(b) the constitution (Seventeenth Amendment) Act, 2003 (Act No. III of 2003), is hereby repealed.

3. Amendment of Article 1 of the Constitution:- In the Constitution of Islamic Republic of Pakistan, hereinafter referred to as the constitution in Article 1, in clause (2), in paragraph (a), for the word "Baluchistan" the word "Balochistan", for the words "North West Frontier" the word "Khyber Pakhtunkhwa" and for the word "Sind" the word "Sindh" shall be substituted.

4. Substitution of Article 112 of the Constitution:- In the Constitution, for Article 112, the following shall be substituted namely:-

"112. Dissolution of Provincial Assembly:- (1) The Governor shall dissolve the Provincial Assembly if so advised by the Chief Minister; and the Provincial assembly shall, unless sooner dissolved, stand dissolved at the expiration of forty-eight hours after the Chief Minister has so advised.

Explanation- Reference in this Article to 'Chief Minister' shall not be construed to include reference to a chief minister against whom a notice of a resolution for vote of no-confidence has been given in the Provincial Assembly but has not been voted upon or against whom a resolution for a vote of no-confidence has been passed.

(2) The Governor may also dissolve the Provincial Assembly in his discretion, but subject to the previous approval of the President, where a vote of no-confidence having been passed against the Chief Minister, no other member of the Provincial Assembly summoned for the purpose."

5. Insertion of New Article in the Constitution:- In the constitution, after Article 140 amended as aforesaid, the following new article shall be inserted, namely:-

"140 A. Local Government: Each province shall, by law, establish a local government system and devolve political, administrative and financial responsibility and authority to the elected representatives of the local governments

(2) Elections to the local governments shall be held by the Election Commission of Pakistan".

6. Amendment of Article 142 of the Constitution:- In the Constitution, in Article 142:-

(i)for paragraph (b) the following shall be substituted namely;-

(b)Majlis-e-Shoora (Parliament)and a Provincial Assembly shall have power to make laws with respect to criminal law,criminal procedure and evidence.”

(ii)for paragraph (c) the following shall be substituted namely:-

(c)subject to paragraph (b),a Provincial Assembly shall,and Majlis-e-Shoora(Parliament) shall not ,have power to make laws with respect to any matter not enumerated in the Federal Legislative List.”

(iii)for paragraph(d)the following shall be substituted namely:-

“(d)Majlis-e-Shoora(Parliament) shall have exclusive power to make laws with respect to all matters pertaining to such ares in the Federation as are not included in any Province.”

7.Substitution of Article 143 of the Constitution:-In the constitution ,for Article 143,the following shall be substituted namely;-

“**143:-Inconsistency between Federal and Provincial Law:-**If any provision of an Act of a Provincial Assembly is repugnant to any provision of an Act of Majlis-e-Shoora(Parliament)which Shoora(Parliament)is competent to enact,then the Act of Majlis-e-Shoora(Parliament),whether passed before or after the Act of the Provincial Assembly shall prevail and Act of the Provincial Assembly shall,to the extent of the repugnancy ,be void.”

8.Substitution of Article 156 in the Constitution:-In the Constitution,for Article 156,the following shall be substituted ,namely:-

“**156 National Economic Council:(1)**The President shall constitute a National Economic Council which shall consist of-

(a)the Prime Minister,who shall be the Chairman of the Council:

(b)the Chief Ministers and one member from each Province to be nominated by the chief Minister;and

(c)four other members as the Prime Minister may nominate from time to time.

(2)The National Economic Council shall review the overall economic condition of the country and shall for advising the Federal Government and the Provincial governments,formulate plans in respect of financial,commercial,social and economic policies;and formulating such plans it shall amongst all other factors,ensure balanced development and regional equity and shall also be guided by the Principles of Policy set out in Chapter 2 of part –II.

(3)The meetings of the Council shall be summoned by the chairman or on a requisition made by one-half of the members of the council.

(4)The Council shall meet at least twice in a year and the quorum for a meeting of the council shall be one-half of its total membership.

(5)The Council shall be responsible to the Majlis-e-shoora(Parliament)and shall submit an Annual Report to each House of Majlis-e-Shoora(Parliament).”

9.Amendment of Article 157 of the Constitution :-In the Constitution,in Article 157:

(i)in clause (i)for the full stop at the end a colon shall be substituted and thereafter the following provisio shall be inserted namely:-

“Provided that the Federal Government ,prior to taking a decision to construct or cause to be constructed,hydro-electric power stations in any Province shall consult the Provincial Government concerned.”and

(ii)after clause (2)the following new clause shall be added namely:-

“(3) “In case of any dispute between the Federal Government and a Provincial Government in respect of any matter under this article ,any of the said Governments may move to the Council of Common Interests for resolution of the dispute.”

10.Amendment of Article 160 of the Constitution:-In the Constitution ,in Article 160,after clause(3) the following new clauses shall be inserted ,namely :-

“(3A) The share of the Provinces in each Award of National Finance Commission shall not be less than the share given to the Provinces in the previous Award.

(3B)The Federal finance Minister and Provincial Finance Ministers shall monitor the implementation of the Award biannually and lay their reports before the Houses of Majlis-e-Shoora(Parliament)and the Provincial Assemblies.”

11.Amendment of Article 161 of the Constitution:In the Constitution,in Article 161,for clause(1)the following shall be substituted namely:-

“(1)notwithstanding the provisions of Article 78,-

(a)the net proceeds of the Federal duty of excise on natural gas levied at well –head and collected by the federal government and of the royalty collected by the Federal government shall not form part of the Federal Consolidated fund and shall be paid to the Province in which the well –head of natural gas is situated;

(b)the net proceeds of the Federal duty of excise on oil levied at well –head and collected by the Federal Government,shall not form part of the Federal consolidated Fund and shall be paid to the Province in which the well-head of oil is situated.”

12.Amendment of Article 167 of the Constitution:In the constitution ,in Article 167,after clause(3)of the following new clause shall be inserted,namely:-

(4)A Province may raise domestic or international loan or give guarantees on the security of the Provincial Consolidated Fund within such limits and subject to such conditions as may be specified by the National Economic Council”.

(Source: www.comparativeconstitutionsproject.org/files/Pakistan_2010.pdf).

Final Order and Decision of the Cauvery Water Disputes Tribunal

The Tribunal hereby passes, in conclusion the following order:-

Clause-I

This order shall come into operation on the date of the publication of the decision of this Tribunal in the official gazette under Section 6 of the Inter-State Water Disputes Act, 1956 as amended from time to time.

Clause-II

Agreements of the years 1892 and 1924:

The Agreements of the years 1892 and 1924 which were executed between the then Governments of Mysore and Madras cannot be held to be invalid, specially after a lapse of about more than 110 and 80 years respectively. Before the execution of the two agreements, there was full consultation between the then Governments of Madras and Mysore. However, the agreement of 1924 provides for review of some of the clauses after 1974. Accordingly, we have reviewed and re-examined various provisions of the agreement on the principles of just and equitable apportionment.

Clause-III

This order shall supersede –

i) The agreement of 1892 between the then Government of Madras and the Government of Mysore so far as it related to the Cauvery river system.

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ii) The agreement of 1924 between the then Government of Madras and the Government of Mysore so far as it related to the Cauvery river system.

Clause-IV

The Tribunal hereby determines that the utilisable quantum of waters of the Cauvery at Lower Coleroon Anicut site on the basis of 50% dependability to be 740 thousand million cubic feet-TMC (20,954 M.cu.m.).

Clause-V

The Tribunal hereby orders that the waters of the river Cauvery be allocated in three States of Kerala, Karnataka and Tamil Nadu and U.T. of Pondicherry for their beneficial uses as mentioned hereunder:-

- i) The State of Kerala - 30 TMC
- ii) The State of Karnataka - 270 TMC
- iii) The State of Tamil Nadu - 419 TMC
- iv) U.T. of Pondicherry - 7 TMC

726 TMC

In addition, we reserve some quantity of water for (i) environmental protection and (ii) inevitable escapages into the sea as under:-

- i) Quantity reserved for environmental - 10 TMC protection.

- ii) Quantity determined for inevitable - 4 TMC escapages into the sea. 14 TMC

Total (726 + 14) 740 TMC

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Clause-VI

The State of Kerala has been allocated a total share of 30 TMC, the distribution of which in different tributary basins is as under:

- (i) Kabini sub-basin - 21 TMC
- (ii) Bhavani sub-basin - 6 TMC
- (iii) Pambar sub-basin - 3 TMC

Clause-VII

In case the yield of Cauvery basin is less in a distress year, the allocated shares shall be proportionately reduced among the States of Kerala, Karnataka, Tamil Nadu and Union Territory of Pondicherry.

Clause-VIII

The following inter-State contact points are identified for monitoring the water deliveries:

- (i) Between Kerala and Karnataka : Kabini reservoir site
- (ii) Between Kerala and Tamil Nadu
 - a) For Bhavani sub-basin : Chavadiyoor G.D.site

It is reported that Chavadiyoor G.D. Site was being earlier operated by the State of Kerala which could be revived for inter-State observations.

b) For Pambar sub-basin : Amaravathy reservoir site

(iii) Between Karnataka and : Billigundulu G.D.site/ any
Tamil Nadu other site on common border

(iv) Between Tamil Nadu and : Seven contact points as
Pondicherry already in operation

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Clause-IX

Since the major shareholders in the Cauvery waters are the States of Karnataka and Tamil Nadu, we order the tentative monthly deliveries during a normal year to be made available by the State of Karnataka at the inter-State contact point presently identified as Billigundulu gauge and discharge station located on the common border as under:-

Month TMC Month TMC

June 10 December 8

July 34 January 3

August 50 February 2.5

September 40 March 2.5

October 22 April 2.5

November 15 May 2.5____

192 TMC

The above quantum of 192 TMC of water comprises of 182 TMC from the allocated share of Tamil Nadu and 10 TMC of water allocated for environmental purposes.

The above monthly releases shall be broken in 10 daily intervals by the Regulatory Authority.

The Authority shall properly monitor the working of monthly schedule with the help of the concerned States and Central Water Commission for a period of five years and if any modification/adjustment is needed in the schedule thereafter, it may

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be worked out in consultation with the party States and help of

Central Water Commission for future adoption without changing the annual allocation amongst the parties.

Clause -X

The available utilisable waters during a water year will include the waters carried over from the previous water year as assessed on the 1st of June on the basis of stored waters available on that date in all the reservoirs with effective storage capacity of 3 TMC and above.

Clause-XI

Any upper riparian State shall not take any action so as to affect the scheduled deliveries of water to the lower riparian States. However, the States concerned can by mutual agreement and in consultation with the Regulatory Authority make any amendment in the pattern of water deliveries.

Clause-XII

The use of underground waters by any riparian State and U.T. of Pondicherry shall not be reckoned as use of the water of the river Cauvery.

The above declaration shall not in any way alter the rights, if any, under the law for the time being in force, of any private individuals, bodies or authorities.

Clause-XIII

The States of Karnataka and Tamil Nadu brought to our notice that a few hydro-power projects in the common reach boundary are

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being negotiated with the National Hydro-Power Corporation (NHPC).

In this connection, we have only to observe that whenever any such hydro-power project is constructed and Cauvery waters are stored in the reservoir, the pattern of downstream releases should be consistent with our order so that the irrigation requirements are not jeopardized.

Clause-XIV

Use of water shall be measured by the extent of its depletion of the waters of the river Cauvery including its tributaries in any manner whatsoever; the depletion would also include the evaporation losses from the reservoirs.

The storage in any reservoir across any stream of the Cauvery river system except the annual evaporation losses shall form part of the available water. The water diverted from any reservoir by a State for its own use during any water year shall be reckoned as use by that State in that water year. The measurement for domestic and municipal water supply, as also the industrial use shall be made in the manner indicated below:-

Use Measurement

Domestic and municipal By 20 per cent of the quantity of water supply diverted or lifted from the river or any of its tributaries or from any reservoir, storage or canal.

Industrial use By 2.5 per cent of the quantity of water diverted or lifted from the river or any of its tributaries or from any reservoir, storage or canal.

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Clause-XV

If any riparian State or U.T. of Pondicherry is not able to make use of any portion of its allocated share during any month in a particular water year and requests for its storage in the designated reservoirs, it shall be at liberty to make use of its unutilized share in any other subsequent month during the same water year provided this arrangement is approved by the Implementing Authority.

Clause-XVI

Inability of any State to make use of some portion of the water allocated to it during any water year shall not constitute forfeiture or abandonment of its share of water in any subsequent water year nor shall it increase the share of other State in the subsequent year if such State has used that water.

Clause-XVII

In addition, note shall be taken of all such orders, directions, recommendations, suggestions etc, which have been detailed earlier in different chapters/volumes of the report with decision for appropriate action.

Clause XVIII

Nothing in the order of this Tribunal shall impair the right or power or authority of any State to regulate within its boundaries the use of water, or to enjoy the benefit of waters within that State in a manner not inconsistent with the order of this Tribunal.

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Clause-XIX

In this order,

- (a) "Normal year" shall mean a year in which the total yield of the Cauvery basin is 740 TMC.
- (b) Use of the water of the river Cauvery by any person or entity of any nature whatsoever, within the territories of a State shall be reckoned as use by that State.
- (c) The expression "water year" shall mean the year commencing on 1st June and ending on 31st May.
- (d) The "irrigation season" shall mean the season commencing on 1st June and ending on 31st January of the next year.
- (e) The expression "Cauvery river" includes the main stream of the Cauvery river, all its tributaries and all other streams contributing water directly or indirectly to the Cauvery river.
- (f) The expression "TMC" means thousand million cubic feet of water.

Clause-XX

Nothing contained herein shall prevent the alteration, amendment or modification of all or any of the foregoing clauses by agreement between the parties.

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Clause-XXI

The State Governments of Kerala, Karnataka, Tamil Nadu and Union Territory of Pondicherry shall bear the expenses of the

Tribunal in the ratio of 15:40:40:5. However, these parties shall bear their own costs before this Tribunal.

Sd/- Sd/- Sd/-

Sudhir Narain J. N. S. Rao J. N. P.Singh J.

MEMBER CHAIRMAN

New Delhi.

(Source:www.mowr.gov.in)