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Conflict and Co-operation in the Sharing of Waters of Interstate Rivers: Remodeling the Indian Experience Based on International Law

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ABSTRACT: A majority of rivers in India, coursing across its geographical contours, are interstate rivers. The sharing of water amongst riparian states has grown to become a major source of conflict within the hydro-regime in India. With none of the States willing to forgo its share and the failure of the existing water dispute mechanisms to effectively provide resolution, an urgent need is felt to re-visit this issue. Against this backdrop, the primary agenda of this research paper is to hypothesize the concern of resolution of interstate river disputes in India, drawing heavily from the principles underlying international water-sharing laws in relation to the same.

As a preliminary underpinning, the Part I of the paper initiates the debate of sharing of waters and water rights entitlement of states, in the light of the mounting trans-boundary river disputes in India. Part II of this paper evaluates the domestic model of resolution of inter-State water disputes, with emphasis on the relevant provisions of the Constitution, legislations including the Inter-State River Water Disputes Act, 1956, (ISRWD Act, 1956) and River Boards Act 1956 and the related process of tribunalisation. Part III of the paper critically appraises the international water-sharing laws applied in the resolution of international river disputes. Part IV thrusts upon the viability of application of aforementioned international law theories in the Indian scenario. Part V deals with the final recommendations to strengthen the dispute resolution mechanism, with the aim to minimize discrepancy between the statutory machinery and its operational environment.

PART I: INTRODUCTION

The Water Catastrophe: A General Overview

Water is bountiful; covering more than 70% of the surface of the earth. Water is pervasive; flowing in oceans and the rivers, residing underground and permeating the air which we breathe. Water provides sustenance for life; for human, plant and animal forms. Water is utilized for household, agricultural, industrial, recreational and environmental activities. Access to secure water reduces vulnerability, assuages indigence and boosts livelihoods thereby entitling population to capital accrual and contributing to human development.

Virtually all of the uses of water aforementioned are only realized by fresh water, which constitutes a meager 2.5% of water on the earth, further of which over two thirds is frozen in glaciers and polar ice caps. Supply of fresh water is largely dependent on surface water sources—rivers and lakes—and ground water.

With the onset of 21st century, an age of rapid industrialization and urbanization accompanied by the population upsurge, the demand for water has intensified. However, the supply of water maintains status quo. The situation is further aggravated by the uncertainty of rainfall and imbalanced spatial distribution of water, making the harnessing of water a cause of widespread disquiet and distress. Issues relating to water allocation have fermented social tensions and created political skirmishes in the past, especially when sharing of water related to two or more political units. Viewed in this backdrop, it is pertinent to realize that preservation, management and allocation of water resources amongst water users deserves our closest scrutiny. There is an urgent need for a full proof strategy to amicably settle disputes regarding sharing of water between riparian states both nationally and internationally, lest the Third World War would be fought over water. In the submission of the authors that an effective form of scrutiny and solution finding to the water issues in this framework is through the perspective of law. The authors will seek to bring this to forefront in the Indian paradigm.

The Dynamics of Conflict in the Sharing of Water

Before proceeding to the specifics, a conceptual clarity is required of the dynamics of conflict in the sharing of

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water. There are essentially four heads of water related issues that are deliberated upon in discussions on water related problems. These are: (1) technical, managerial and institutional issues (2) governance and political issues (3) productivity, equity in access and sustainability issues and (4) rights issue. These conflicts are staged at a range of levels: international, national, state, district or village.

In similar mode, causes of conflict may be catalogued into four major groups. The first cause is attributable to nature controlled disparity that gives abundant water in some areas and inadequate supplies in the others. In India, rivers, while charting their natural course, often traverse political state boundaries, which are subject to change. The incidence of rainfall, the crucial source of water, is uncertain and regionally unequal. Sometimes a river may even alter its course.

The second cause is attributable to human intervention, primarily man made barriers in the natural flow of water and creation of new demands. It results from human efforts to harness available water in rivers. The upshot is pre-empting water use by first users. Technology has played the role of double-edged tool in the context of water use. Not only does it provide new techniques for harnessing water, but also creates new and ever escalating demands for water in all productive sectors of the economy.

The third cause is the assertion on water, buttressed by either laws in force or prior claims that deny others from using the water. The use of river water in a historical area is partially a historical accident and partially the outcome of policies and decisions about economic pursuits taking place over a long time. This generates conflict at various levels.

The fourth cause is that many conflicts relating to water of interstate rivers is rooted in mistrust and political strategy (Rathore, 2006).

The Great Indian Saga

In India, over 85 percent of Indian Territory lies within its major and medium inter-State rivers. India has 14 major rivers (A "major" river is a river with a catchment area of 20,000 square kilometers or more), which are all inter-State rivers and 44 medium rivers (A "medium" river is one with a catchment area of between 200 and 20,000 square kilometers), of which 9 are inter-State rivers. Water sharing conflicts of these rivers ranges from local to interstate and encompass issues pertaining to allocation of water and others. In this paper, the authors seek to lay emphasis on the interstate river conflicts and their resolution. Interstate river conflicts mostly occur where the river basins cut across state boundaries. There are also cases involving inter basin transfers and non riparian beneficiaries (Rathore, 2006).

Numerous inter-state river-water disputes have erupted since independence. Table 1 below is a telling account of the interstate rivers embroiled in water sharing conflict over the years.

Table 1: Interstate-State River Disputes in India

States in the Dispute	*Name of River*	*Nature of Dispute*
Maharashtra, Karnataka, Andhra Pradesh, Orissa, Madhya Pradesh	Krishna	Dam Construction, Sharing of Waters
Maharashtra, Andhra Pradesh, Madhya Pradesh	Godavri	Sharing and utilization of water
Madhya Pradesh, Maharashtra and Gujarat	Narmada	Dam Construction, sharing of waters, Hydro Electric Power Generation
Punjab, Haryana, Rajasthan	Ravi-Beas and Sutlej	Allocation of water, share for irrigation
Kerala, Tamil Nadu and Karnataka and Union Territory of Pondicherry	Cauvery	Allocation of water, share for irrigation
Karnataka, Andhra Pradesh	Telugu Ganga	Allocation of water, share for irrigation
Goa, Karnataka and Maharashtra	Madei/Mandovi/ Mahadayi	Dam construction and other water diversion projects, Irrigation
Andhra Pradesh & Orissa	Vamsadhara	Construction of barrages, irrigation projects

In case of interstate disputes, a variety of instruments have been used for conflict resolution, ranging across judicial, semi judicial, administrative, semi autonomous, negotiations and political branches of the government and comprising regular courts, special tribunals, control boards, river basin authorities, development corporations , ministerial and expert committees and sub committees and apex political leadership. Despite all this only a few cases of satisfactory solutions are agreeable to affected parties (Bakshi).

PART II: THE DOMESTIC MODEL OF RESOLUTION OF INTER-STATE WATER DISPUTES

Constitutional Provisions

The Constitution describes India as a Union of States, conforming to a contentious federal structure. The Constitution is often referred as quasi federal or "*federation sui generis.*" It establishes a dual system of polity at Centre and the State level, with an undeniable strong unitary bias. The Centre and the States enjoy powers and rights demarcated by Constitution. In pursuance of this unique federal principle, the Constitution provides for a scheme of distribution of legislative powers and responsibilities by placing them in three lists namely: the Union List (List I), containing subjects on which the Centre can exclusively legislate; the State List (List II), containing subjects on which the States can exclusively legislate; and the Concurrent List (List III), containing subjects on which both the Centre and the State can legislate. These lists are present in the Seventh Schedule.

With respect to trans-boundary water courses, two regimes are created, one in favour of the Centre and the other in favour of the States.

State List, Entry 17

States have power to legislate with respect to *"Water, that is to say, water supplies, irrigation and canals, drainage and embankments, water storage and water power, subject to the provisions of Entry 56 of List 1."*

Union list, Entry 56

The Union has the power to legislate with respect to *"Regulation and development of inter-State rivers and river valleys, 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."*

Concurrent List, Entry 20

There is no such entry on water in the Concurrent list, but there is an entry on planning under "Economic and Social Planning". Rathore takes the view that since water is a significant input in agricultural and industrial development and a primary need for drinking and sanitation for social planning, water resource development could be covered under the Concurrent List also. However, it is primarily only entry 17 of List II that has been in operation all along (Rathore, 2006).

Article 262

Another principal constitutional provision dealing with water is Article 262. It provides the mechanism for adjudication of disputes relating to waters of inter-State rivers or river valleys. Clause (1) of Article 262 empowers the Parliament by law to provide for the adjudication of any dispute or complaint with respect to the use, distribution or control of the waters of, in any inter-State river or river valley. Clause (2) of Article opens with a *non-obstante* clause. It provides that notwithstanding anything in this Constitution, Parliament is empowered to oust the jurisdiction of Supreme Court or any other court in respect of any such dispute or complaint as is referred to in clause (1). This can be done by means of enacting a law.

Other constitutional provisions also tangentially affect the water dispute resolution mechanisms. These include Articles 253, 73, 162 and 131.

Article 253

Article 253 provides that 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 country or any decision made at any international conference, association or other body.

Article 73

Article 73 extends the executive power of the Union to the matters with respect to which Parliament has power to make laws; and to the exercise of such rights, authority and jurisdiction as are exercisable by the Government of India by virtue of any treaty or agreement. But the executive power which has thus been co-extensive with the legislative powers of the parliament, shall not, save as expressly provided in this Constitution or in any law made by Parliament, extend in any State to matters with respect to which the Legislature of the State has also power to make laws.

Article 162

Article 162 provides the executive power of a State shall extend to the matters with respect to which the Legislature of the State has power to make laws. Provided that in any matter with respect to which the Legislature of a State and Parliament have power to make laws, the executive power of the State shall be subject to, and limited by, the executive power expressly conferred by this Constitution or by any law made by Parliament upon the Union or authorities thereof.

Article 131

Article 131 relates to the original jurisdiction of the Supreme Court. It provides the judicial mechanism for dealing with inter-governmental disputes involving question of law or fact on which existence or extent of legal right depends between the Government of India and one or more states or between the Government of India and any State or States on the one side and one or more states on the other or between two or more states. However, a few matters are excluded either by express provisions or by necessary implication.

Statutory Measures

There are two main water related Parliamentary Acts governing water disputes in India viz. The River Boards Act, 1956 (hereinafter referred to as "RBA") and The Interstate Water Disputes Act, 1956 (hereinafter referred to as "ISWDA").

The Interstate Water Disputes Act, 1956

Pursuant to the power conferred by the Constitution (article 262), Parliament has enacted the ISWDA, 1956. Its main features are synopsized below:

1. A State Government which has or anticipates having a water dispute with another State Government may request the Central Government to refer the dispute to a tribunal for adjudication.
2. The Central Government, if it is of opinion that the dispute cannot be settled by negotiation, shall refer the dispute to a Tribunal.
3. The Tribunal's composition is laid down in the Act. It consists of a Chairman and two other members, nominated by the Chief Justice of India from among persons who, at the time of such nomination, are Judges of the Supreme Court.
4. The Tribunal can appoint assessors to advise it in the proceedings before it.
5. On the reference being made by the Central Government, the Tribunal investigates the matter and makes its report, embodying its decision. The decision is to be published and is to be final and binding on the parties.
6. Jurisdiction of the Supreme Court and other courts in respect of the dispute referred to the Tribunal is barred.
7. The Central Government may frame a scheme, providing for all matters necessary to give effect to the decision of the Tribunal. The scheme may, *inter alia*, provide for establishing an authority for implementation of award.

The Interstate Water Disputes (Amendment) Act, 2002

The ISWDA was amended in 2002 on the recommendation of the Sarkaria Commission. Some of the key changes bought in by this Act are:

1. The referral of a water dispute to the Tribunal shall be within the period of one year from the date of making a request for such reference.
2. The Central Government may, in consultation with the Tribunal, appoint two or more persons as assessors to advise the Tribunal in the proceedings before it.
3. The Tribunal needs to give its decision on the matters referred to it within a period of three years. However, if the decision cannot be given for unavoidable reasons, within a period of three years, the Central Government may extend the period for a further period not exceeding two years.
4. The Central Government or the State Government may again refer the matter to the Tribunal for explanation/guidance/further consideration within three months from the date of the decision. On such reference, the Tribunal may forward a further report to the Central Government within one year from the date of such reference. This period is subject to extension by the Central Government.
5. The decision of the Tribunal, after its publication in the Official Gazette by the Central Government, shall have the same force as an order or decree of the Supreme Court.

The River Boards Act, 1956

In order to promote integrated and optimum development of waters of inter-state rivers and river valleys, under Entry 56 of List-I of the Constitution, Parliament has enacted the River Boards Act, 1956.

1. The RBA provides for the establishment of River Boards, for the regulation and development of inter-State rivers and river valleys.
2. On a request received from a State Government or otherwise, the Central Government may establish a Board for "*advising the Government interested*" in relation to such matters concerning the regulation or development of an inter-State river or river valley (or any specified part) as may be notified by the Central Government.
3. Different Boards may be established for different inter-State rivers or river valleys.
4. The Board is to consist of the Chairman and such other members as the Central Government thinks fit to appoint. They must be persons having special

knowledge and experience in irrigation, electrical engineering, flood control, navigation, water conservation, soil conservation, administration or finance.

5. Functions of the Board are set out in detail in the Act. Subject-wise, they are very wide, covering conservation of the water resources of the inter-State river, schemes for irrigation and drainage, development of hydro-electric power, schemes for flood control, promotion of navigation, control of soil erosion and prevention of pollution. But the functions of the Board are advisory and not adjudicatory.
6. The Board is directed to consult all the Governments concerned and to secure their agreement, as far as possible. The Board is empowered to frame schemes, obtain comments of the interested Governments and finalize a scheme. But the schemes do not seem to have a mandatory force. Moreover, the Board can advise the Governments concerned as to execution of the scheme and the Central Government can "assist the Governments interested", in taking such steps as may be necessary, for execution of the scheme.

Comparison between the Interstate Water Disputes Act and River Boards Act

A meticulous inspection of the ISWDA and the RBA reveal the following differences in their provisions:

1. The ISWDA falls under the purview of judicial functions of the government whereas the RBA is an expression of the welfare and developmental functions of the government.
2. RBA provides for a *suo moto* action on the part of the Central Government whereas the ISWDA provides for the action of the Central Government in only those cases in which it is approached by the State Governments of the riparian states concerned.
3. RBA is a comprehensive act that provides for overall development of the river basin as a whole whereas the ISWDA is limited to resolving disputes over the shared water resources (Bhavanishankar, 2004).
4. Under ISWDA, any matter that can be referred to arbitration under the RBA cannot be brought before any Tribunal under the ISWDA. This makes it clear that the intention of the framers of the two laws was to encourage the application of the RBA while the ISWDA was to be used only sparingly and that too as a last resort.
5 The Tribunal created under the ISWDA ceases to function after its decision is made whereas the River Boards created under the RBA are permanent bodies which are involved in all aspects of river basin planning, development and management.

The RBA and the ISWDA were both passed in 1956, but the RBA came into force only in 1957, a little later that ISWDA. It is opined that being a later act on the same subject, it has better validity than the ISWDA. However, this act has remained a dead letter to date and no river boards have been established under this act so far. However, the authors do not suggest that the act suffered from any serious limitations. The fact remains that the various governments which have assumed power at the Central level in the country have directly resorted to adjudication in the event the negotiations fail, without going in for the intermediate step of arbitration as provided in the RBA. The upshot has been an overuse of the ISWDA which has led to delay in finding solutions and depletion of valuable resources of the nation (Gosain and Singh, 2004).

Resolution of Interstate River Dispute in Practice

The disputes relating to sharing of interstate rivers have been briefly discussed in Part I. Taking the discussion forward, the authors divide these disputes into three phases, (1) disputes relating to 19th century, to a period when British India was governed by enactments prior even to the Government of India Act, 1919 (2) disputes relating to the period when British India was governed by the Government of India Act, 1919 or the Government of India Act, 1935 (3) disputes that have arisen after the commencement of the Constitution. Some of these have been adjudicated by Tribunals constituted under article 262 of the Constitution, read with the Inter-State Water Disputes Act, 1956. Some of the disputes were settled by negotiation or await adjudication. But what has been observed is some common features are shared by most of these disputes. They include, amongst others, vagueness regarding the legal doctrine applicable, acrimonious tension between the parties, overall delay in completion of the adjudication, due to various factors.

The authors will now briefly introduce some major interstate disputes, involving large river basins. They were all eventually referred to tribunals, attaining varying degrees of success.

The Krishna-Godavari Water Dispute

The actor states in this dispute were Maharashtra, Karnataka, Andhra Pradesh (AP), Madhya Pradesh (MP), and Orissa. Karnataka and Andhra Pradesh are the lower riparian states on the river Krishna, and Maharashtra is the upper riparian state. The dispute

amongst these states related to inter-state utilization of untapped surplus water. When it could not be resolved through negotiations, the Krishna Tribunal was constituted. It reached its decision in 1973 and the award was published in 1976.

The Krishna Tribunal addressed three issues:

1. The extent to which the existing uses should be protected as opposed to future or contemplated uses.
2. Diversion of water to another watershed.
3. Rules governing the preferential uses of water.

The Tribunal's rulings were as follows:

1. On the first issue, the Tribunal concluded that projects that were in operation or under consideration as in September 1960 should be preferred to contemplated uses and should be protected. The Tribunal also judged that except by special consent of the parties, a project committed after 1960 should not be entitled to any priority over contemplated uses.
2. On the second issue, the Tribunal concluded that diversion of Krishna waters to another waterline was legal when the water was diverted to areas outside the river basin but within the political boundaries of the riparian states. It was silent regarding the diversion of water to areas of non-riparian states.
3. On the third issue the Tribunal specified that all existing uses based on diversion of water outside the basin would receive protection.

The Godavari Tribunal commenced hearings in January 1974, after making its award for the Krishna case. It gave its final award in 1979, but meanwhile the states continued negotiations among themselves, and reached agreements on all disputed issues. Hence the Tribunal was merely required to endorse these agreements in its award. Unlike in the case of other tribunals, there was no quantification of flows, or quantitative division of these flows: the states divided up the area into sub-basins, and allocated flows from these sub-basins to individual states. Moreover, this agreement was not subject to review, becoming in effect, perpetually valid.

The Cauvery Dispute

The core of the Cauvery dispute relates to the re-sharing of waters that are already being fully utilized. In this instance, the two parties to the dispute are Karnataka (old Mysore) and Tamil Nadu (the old Madras Presidency). Between 1968 and 1990, 26 meetings were held at the ministerial level but no consensus could be reached. The Cauvery Water Dispute tribunal was constituted on June 2, 1990 under the ISWD Act, 1956. There has been a basic difference between Tamil Nadu on the one hand and the central government and Karnataka on the other in their approach towards sharing of Cauvery waters.

Arguments of the government of Tamil Nadu: Tamil Nadu has argued that since Karnataka was constructing the Kabini, Hemavathi, Harangi, Swarnavathi dams on the river Cauvery and was expanding the *ayacuts* (irrigation works), Karnataka was unilaterally diminishing the supply of waters to Tamil Nadu, and adversely affect the prescriptive rights of the already acquired and existing *ayacuts*. The government of Tamil Nadu also maintained that the Karnataka government had failed to implement the terms of the 1892 and 1924 Agreements relating to the use, distribution and control of the Cauvery waters. Tamil Nadu asserted that the entitlements of the 1924 Agreement are permanent. Only those clauses that deal with utilization of surplus water for further extension of irrigation in Karnataka and Tamil Nadu, beyond what was contemplated in the 1924 Agreement can be changed.

Argument of the government of Karnataka: In contrast, Karnataka raised question the validity of the 1924 Agreement. According to the Karnataka government, the Cauvery water issue must be viewed from an angle that emphasizes equity and regional balance in future sharing arrangements.

This conflict is still not resolved.

The Ravi-Beas Dispute

Punjab and Haryana are the actor States in this dispute. An initial agreement on the sharing of the waters of the Ravi and Beas after partition was reached in 1955, through an inter-state meeting convened by the central government.

The present dispute between Punjab and Haryana about Ravi-Beas water started with the reorganization of Punjab in November 1966, when Punjab and Haryana were carved out as successor states of erstwhile Punjab. The four perennial rivers, Ravi, Beas, Sutlej and Yamuna flow through both these states, which are heavily dependent on irrigated agriculture in this arid area. Irrigation became increasingly important in the late 1960s with the introduction and widespread adoption of high yielding varieties of wheat. Pursuant to the protests by Punjab against the 1976 agreement allocating water from Ravi-Beas, further discussions were conducted (now including Rajasthan as well) and a new agreement was accepted in 1981. This agreement,

reached by a state government allied to the central government, became a source of continued protest by the political opposition, and lobbies outside the formal political process. Punjab entered a period of great strife, and a complex chain of events led to the constitution of a tribunal to examine the Ravi-Beas issue in 1986. Both states sought clarifications of aspects of the award by this tribunal, but the center has not provided these. Hence, the award has not been notified, and does not have the status yet of a final, binding decision (Alan Richards & Nirvikar Singh, 2001).

PART III: DOCTRINES UNDERLYING INTERNATIONAL WATER SHARING RESOLUTION

In this part of the paper, the authors discuss the principles underlying the philosophy of inter state water dispute resolution. The authors attempt first of all, to put down on paper the various doctrines governing water sharing laws internationally and secondly, to critically appraise the theories which are in circulation across the world.

Principle of Absolute Territorial Sovereignty (Harmon Doctrine)

It is this doctrine which was adopted in case of rivers flowing from USA to Mexico. It was evolved by Attorney General Harmon, of the US in 1896, to justify the action of the United States in reducing the flow of the river Rio Grande into Mexico (CPIML, 2002). It exposits that every state is a sovereign entity in itself and thus has the right to do whatever it wishes to with the rivers and other natural resources in its territory without any concern for its neighbouring states. This doctrine, as is clear from the text above, is favoured by the upstream riparian states as it permits them to act according to their whim and fancy.

Gosain and Singh have rightly taken the view that this doctrine is "a very parochial and myopic way of looking at things and can never bring reconciliation between riparian states" (Singh and Gosain, 2004).

In the submission of authors, it is best that this doctrine be rejected outright. Rather than facilitating the resolution of disputes, it only foments their creation. It tilts the balance in favour of upper riparian states while greatly disadvantaging the lower riparian states.

Principle of Absolute Territorial Integrity

In absolute opposition to the doctrine of territorial sovereignty is the doctrine of absolute territorial integrity. It gives the downstream riparian states absolute control over flow of water irrespective of any harm that may be caused to the upstream riparian states. (Singh and Gosain, 2004). This approach is perilous as it ignores the interests of upstream riparian states and is very restrictive in nature. Thus, this principle also cannot be applied if one wants to avoid future occurrence of disputes.

Principle of Prior Appropriation

Prior appropriation provides that the state which first utilizes the waters of an river acquires the legal right to continue to receive that quality and quantity of water in future and cannot be deprived of it without its consent. (Trepti, 2006).

This principle states that status quo should be maintained. To put it simply, the riparian state which puts the water to use first gets rights over the water by means of prior use.(Rathore, *et al.*, 2006).

Thus, for the application of this doctrine the date of first use assumes significance. However, in the humble submission of authors even this doctrine is not faultless as it favours the developed states over developing and underdeveloped states. It is the developed states which have the necessary expertise and resources to utilize and develop the river thus giving them an unfair advantage.

In light of the above, it is stated that this doctrine cannot be put to use where there are two states with disparate economic strengths as it will only give rise to discontent and disenchantment.

Principle of No Significant Harm

This principle is commonly referred to as "*sic utere*" and is based upon a Latin maxim "*sic utere tuo it alienum non ladeas*" i.e., one can put his property to any use subject to the condition that any such use does not adversely affect others. This principle when used in international water sharing gives each and every riparian state the right to use the river in whatever way it wants subject to the condition that interests of other riparian states are not harmed.

This principle has been recognized internationally and in the case of *Spain v. France* (Lake Lanoux Arbitration, 1957) the court ruled "*the sovereignty in its own territory of a state desirous of carrying out hydroelectric developments*" along with "*the correlative duty not to injure the interest of a neighbouring state*".

Thus it can be stated that this principle gives a qualified use right to the riparian states and they can use it freely as long as the interests of their neighbouring states are not harmed.

Principle of Equitable Apportionment

This principle exposits that the waters should be shared by all member states in a reasonable and equitable manner (Singh and Gosain, 2004). This is the most widely recognized and practiced doctrine in the resolution of water sharing disputes. It is based on equity, fairness and norms of distributive justice in which the competing claims of all the parties are taken into account. (Upreti, 2006). It advocates sharing of both benefits and distress equitably.

The first known attempt to formulate principles for equitable allocation in the context of international water disputes, is the Helsinki Rules, adopted by the International Law Association in 1966 at Helsinki. The Helsinki Rules extend to 37 articles. Articles 4 and 5 cover procedures for preventing and settling disputes. According to Article 4, "*each basin state is entitled, within its territory, to a reasonable and equitable share in the beneficial use of the water of an international drainage basin.*" Article 5 sets out factors which will determine what is a reasonable and equitable share (Richards and Singh, 1996).

This principle has also been recognized by the UN and in the United Nations Convention on International Watercourses, 1997 which states that:

"(a) Watercourse States shall in their respective territories utilize an international watercourse in an equitable and reasonable manner. In particular, an international watercourse shall be used and developed by the watercourse. State with a view to attaining optimal and sustainable utilization thereof and benefits there from, taking into account the interests of the watercourse States concerned, consistent with adequate protection of the watercourse.

(b) Watercourse States shall participate in the use, development and protection of an international watercourse in an equitable and reasonable manner. Such participation includes both the right to utilize the watercourse and the duty to cooperate in the protection and development thereof, as provided in the present Convention."

In reality, every watercourse is distinct and each needs to be treated differently but taking into consideration all the existent doctrines the doctrine of equitable apportionment seems to be the best suited one. It encompasses equity, rationality, fairness, justice, equality and sustainability. In determining whether a use is equitable or not the following factors which are laid down in Article 6 of the United Nations Convention on International Watercourses should be considered.

Utilization of an international watercourse in an equitable and reasonable manner requires taking into account all the relevant factors and circumstances, including:

1. Geographic, hydrographic, hydrological, climatic, ecological and other factors of a natural character;
2. The social and economic needs of the watercourse States concerned;
3. The population dependent on the watercourses in each watercourse State;
4. The effects of the use or uses of the watercourse in one watercourse State on other watercourse State;
5. Existing and potential uses of the watercourse;
6. Conservation, protection, development and economy of use of the water resources of the watercourse and the costs of measures taken to that effect;
7. The availability of alternatives, of comparable value, to a particular planned or existing use.

The doctrine of equitable apportionment has been adopted in the United States, as is illustrated by the decisions of the US Supreme Court in the cases of *Connecticut v. Massachusetts*, (1931) 282 US 670, *New Jersey v. New York*, (1931) 283 US 336 and *Nebraska v. Wyoming*, (1945) 332 US 54. In all these decisions the Supreme Court held that the doctrine of equitable apportionment was to be used to determine sharing of water between different riparian states.

This doctrine seems to be the superlative amongst the doctrines aforementioned with water being shared equitably amongst all riparian states. However, one needs to bear in mind the factual matrix while applying this principle. Ground reality and the application of this doctrine need to be harmonized for efficient working of the water sharing solution reached.

PART IV: INDIA AND APPLICATION OF INTERNATIONAL WATER SHARING PRINCIPLES

Doctrines applied in one part of the world might not be as effective when transported and put in application in different contextual scenario. It is necessary to apply only that doctrine which caters to the needs of the people on whom it is to be imposed. In this part of the paper the authors discuss the viability of application of international water sharing doctrines in the Indian context and also throw light the history of these doctrines in India. In the submission of the authors the doctrine of equitable apportionment is best suited to the needs of our country and the courts and tribunals while dealing with water sharing disputes should resort to this doctrine to amicably settle the dispute. The

authors reject the doctrines of absolute territorial sovereignty, absolute territorial integrity, community of interests and prior appropriation on the basis of their unsuitability in solving inter state water disputes in India and the capability to further inflame communal passions.

The doctrine of absolute territorial sovereignty or the Harmon doctrine as it is popularly called is a divisive doctrine. It advocates the right of upper riparian states to do whatever they wish to do with the watercourse in their territory. In the submission of the authors when there already has been such brouhaha on the issue of the rights of Tamil Nadu over Cauvery waters one does not need a water sharing method which would further anger the lower riparian states. Also, water being a natural resource should be shared equally and the populace of one state should not be left in lurch just because they were ill-fated to be part of a lower or downstream riparian state. This doctrine if applied to India rather than being of any assistance in resolving interstate dispute would do further damage. Thus this doctrine has to be rejected outright.

It is not that Indian policymakers are or were unaware of the risks associated with application of this doctrine. Way back in 1940s this position regarding the non viability of the Harmon doctrine was adopted by the Indus Commission. In the early 1940s, when the question arose as to what is the law to govern the sharing of trans-boundary waters in India, the Indus Commission, after discussing the Harmon doctrine, which enabled the upper riparians to fully control all waters within its territory rejected it (Katarki, 2003).

Proceeding further to the doctrine of absolute territorial integrity, it ensures uninterrupted flow of natural water the downstream states, thereby hindering the right of the upstream states to the utilization of the water. This doctrine is similar in the effects its applicability to the doctrine aforementioned. In this case recognizing downstream states rights result in a crisis with upper riparian states crying hoarse. This again would create more problems than solve the already existent ones.

The Indus Commission, also referred to above, also realized the complications which would arise on application of this doctrine and rejected it.

The doctrine of no significant harm is more of an environmental doctrine and it assures that the activities of one riparian state does cause harm or adversely affect the interests of the other riparian states. It does not prove to be of much use when there are two warring states with conflicting claims over the river in question. Therefore, the authors submit that while this doctrine can be employed to prevent environmental pollution, it cannot be used to decide the shares of each riparian state.

The doctrine of prior appropriation is also not suitable as it favours a state with greater economic resources and technological know how. In a country like India economic disparities are widespread so it would be unwise to put this doctrine to use as it would work in favour of rich riparian states while putting the poor riparian states at a great disadvantage.

Proceeding to the doctrine of prior appropriation and its applicability in the Indian context, it seems to be best suited to tackle the complex issue of water sharing in India as it favours none while working to the best advantage of all.

The use of this doctrine is not new and has been resorted to now and then. The first reported use of this doctrine happened in 1940s when the Indus Commission said that the rule of equitable apportionment recognized by the Supreme Court of the United States of America is the law.

Even the Krishna Water Disputes Tribunal took note of the position, as under: *"In India also, the rights of States in an inter-State water are determined by applying the rule of equitable apportionment, each unit getting a fair share of the waters of the common river."*

But the Krishna Tribunal also noted, that the concept does not lend itself to precise formulations and its meaning cannot be written into a code that can be applied to all situations and at the all times. The standard of equitable apportionment requires an adaptation of the formula to the necessity of the particular situation.

The said doctrine was also noted by the Godavari Water Disputes Tribunal.

The Narmada Water Disputes Tribunal accepted the doctrine of equitable apportionment as applicable. The Narmada Tribunal Report contains an elaborate discussion of the doctrine and its application. Various competing doctrines and principles were examined. With regard to the Harmon doctrine, it was said that it professes absolute territorial sovereignty of the upper riparian State, which could abstract any amount of water at the head reaches of a great river and make a desert of the State that was situated lower down. Referring to the doctrine of absolute territorial integrity, it stated that it would on the other hand authorize a lower riparian to exercise a veto against abstractions upstream. It further stated that the Doctrine of Equitable Apportionment is midway between the two.

Bakshi in his Report on "*Article 262 and Inter-State Disputes Relating to Water*" has divided the passage regarding equitable apportionment into four propositions for the purpose of clarity and convenience and the propositions are stated below:

1. The doctrine of equitable apportionment cannot be put in a narrow strait jacket of fixed formula.
2. In determining the just and reasonable shares of the interested States, regard must be had, in the first instance, to whatever agreements, judicial decisions, awards and customs that are binding upon the parties.
3. As to any aspects not covered by these factors, the allocation may be made according to the relative economic and social needs of the interested States.
4. The other matters to be considered, include the following:
   (a) The volume of the stream;
   (b) The uses already being made by the concerned States;
   (c) Respective areas of land, yet to be watered;
   (d) Physical and climatic characteristics of the States;
   (e) Relative productivity of the land in the States;
   (f) State-wise drainage;
   (g) Population which is dependent on the water supply and degree of their dependence;
   (h) Alternative means of satisfying the needs;
   (i) Amount of water, which each State contributes to the inter-State stream;
   (j) Extent of evaporation in each State; and
   (k) Avoidance of unnecessary waste in the utilisation of water by the concerned States.

Therefore it can be seen that the use of equitable apportionment is not a new thing and has been used in India in the past to deal with the issue of sharing of trans-boundary waters in India, The tribunals appointed to resolve Krishna, Godavari and Narmada inter-State water disputes have all reiterated the position that the rule of equitable apportionment is the governing principle in the allocation of trans-boundary waters in India. The Supreme Court of India in the case of *Special Reference No. 1 of 1991*, 1993 Supp (1) SCC 96 (II) at p. 138, para 71 while dealing with the ordinance passed by the Government of Karnataka in 1991, has finally set at rest the doubts by accepting the rule of equitable apportionment as "*true legal position about the inter-State river water and the rights of the riparian States*" (Katarki, 2003).

The doctrine is on the face of it thus effective as it protects the rights of all the parties having an interest in inter-state waters. Under this doctrine it is a win-win situation for all with everyone heading towards home with beaming faces. Therefore, the authors humbly submit that the doctrine of equitable apportionment is the best among the doctrines currently existent.

PART V: CONCLUSION AND SUGGESTIONS

With availability of even drinking water becoming a major problem, it is essential that all the disputes regarding water sharing be resolved as soon as possible. There is a need to take long term measures and resort to short term solutions as is done normally should be avoided at all costs. There is a need to focus on reducing conflicts and political considerations should be kept aside while looking for solutions.

Having said this, the authors would like to state they agree to equitable apportionment being the preeminent doctrine for resolving inter state water conflicts amongst those available, a word of caution must be added: this doctrine must not be applied blindly. With change of circumstances the once equitable distribution does not remain that equitable. For example, in case of Cauvery dispute, Tamil Nadu got a bigger share of water because it was a leading irrigated state. In Karnataka, irrigation developed later and so there was a major problem.

Each inter-state water dispute is distinct in itself. To find out equitable share of each state would require a thorough analysis of data and balancing of conflicting claims so that all the parties are satisfied with the distribution. Also, the demand for water is different for different states at different times. Therefore there is a need to lay a stress on more economic usage of water, conjunctive use of ground water and surface water and conservation of water, etc. Methods like water harvesting should be given impetus to so that the dependence on rivers at least for domestic purposes is brought down. This would help in putting the river water in use for irrigation so that the crops don't fail which usually triggers mass suicides by farmers. Judicious use of the available water resources is the need of the hour.

Furthermore there is a need to adopt a balanced approach which would involve using new, alternative forms of irrigation, alternative cropping patterns involving usage of crops needing less water and the networking of rivers.

Finally the authors would like to submit that there is a need to find long term solutions and emphasis must be laid on water efficiency, regularized use of water and control of wastage of water.

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