



Paradigm Shifts in Preservation of River Water: A Need in Context of Present Water Crisis in India

Monmi Gohain

Asst. Professor of Law, NLUJAA

Abstract--Water is the basic need of life. There are various sources of water and among them river water is one of the most important contributing factor in human sustenance. This is being continued from time immemorial, giving rise to the development of civilization and habitation. However, in the modern times with the population explosion, climate change and various other factors, there is growing impurity and scarcity of water in our country. So adequate steps need to be taken to prevent water quality and bring out appropriate water conservation techniques. This includes efforts on the part of the government as well as the public who are constantly using the river water for decades. So a holistic approach is the need of the hour which will take into account the general interests of the people as well as the conservation of river water. There should be such approaches which also has enough room for adjustability on a broad consensus from a national, regional and local point of view. This will help us to draw a scheme of sound, contemplative, efficient and sustainable use of the existing rivers in our country

Keywords-- Conservation, holistic approach, River water, techniques, scarcity

I. INTRODUCTION

Water is the basic need of life. There are various sources of water and among them river water is one of the most important contributing factor in human sustenance. This is being continued from time immemorial, giving rise to the development of civilization and habitation. Sometimes river water is being used from the source of its origin directly for consumption or sometimes it is physically removed from the place of its origin and taken and used elsewhere. This is generally a practice in the modern times to meet the scarcity of water with various methods. The question arises, how far the methods are successful and what is their level of implementation. In both these ways, river water serves the purpose of fulfilling ever growing human consumption.

There are various ways that the river water can be used. When the water remains in the place of its origin and it is not used anywhere else, it is called instream use and when the flowing water is used for various purposes, it is called upstream uses.

The conservation of water is more required with instream use of water.¹ Large quantities of water must remain in place to safeguard instream uses.² Increasing human activities and increasing demand of water available for consumption are reducing the instream flow of water for a large extent. This has led to a reduction of water levels of rivers and lakes to an alarming level in various places.

As regards to our country, rivers can be said as the common heritage of India. This is true of the fact that the growth of civilization in our country depended on availability of life and livelihood on the banks of some of the mighty rivers, for instance the Indus Valley Civilization. It was a situation where in people had unlimited rights to use river water and they utilized the same for their maximum benefit and also people have the right to use river water without any obstruction. At that stage of human civilization, people also had several conservation techniques of river water and there was no exploitation of river water as such. There were various socio-economic aspects attached with the use of river water which motivated the people in the consumption of river water and its proper use. Rivers were considered as an important part of prospects of Indian people's society, antiquity, perception and as a cherished source of water intermingled in some kind of divinity. There were less human interventions and many a times it hardly affected the availability of river water. This has also hugely impacted the flow of river water and helped in the maintenance of the quality of water.

However, in the modern times with the population explosion, climate change and various other factors, there is growing impurity and scarcity of water in our country. So adequate steps need to be taken to prevent water quality and bring out appropriate water conservation techniques. This includes efforts on the part of the government as well as the public who are constantly using the river water for decades.

¹ Richard Ausness, 'Water Rights, The Public Trust Doctrine and the Protection of Instream Uses', 1986, U.I.II Law Review 407(1986).

² Teslock, 'Recent Developments in recognition of Instream Uses in Western Water Law, 1975, Utah Law Review, Pg. 871-874.



The people living in and around the river, whose livelihood depends on the sustenance of the river has vested responsibility of preservation and protection. However, it is seen that there has been different opinions and attitudes regarding use and protection of river water. Various schemes have been proposed so far regarding the preservation of river water but there are discrepancies in schemes and actions and other settlements. The preservation of river water has to be in a holistic way and it includes the effort of all the stakeholders in this regard. It includes use of water without the element of exploitation.

Various human activities in the name of development is abetting the intrusion and destruction of river ecosystems around the world. In our country, since the rivers play a very important role in various sectors of economic development, adequate protection of the river ecosystems is the need of the hour. There has to be legislative and executive interventions in this regard. Various environmental and socio-cultural factors are to be considered when mechanisms have to be formulated on the protection and preservation of the river ecosystem. Climate change is one of the main factors in causing degradation and alteration to the river ecosystems. It has various impacts on the availability of water. It is very important to know that the magnitude of these alterations so that rivers can be saved from its aftereffects.³

So a holistic approach is the need of the hour which will take into account the general interests of the people as well as the conservation of river water. There should be such approaches which also has enough room for adjustability on a broad consensus from a national, regional and local point of view. This will help us to draw a scheme of sound, contemplative, efficient and sustainable use of the existing rivers in our country.

II. IMPORTANCE OF RIVER AS AN ECOSYSTEM

The rivers and various water bodies which are considered as important source of water are part and parcel of human habitation, sustenance and livelihood. Ecologically, they are one of the important ingredients of the hydrological cycle which ensures that there is exchange of water between the surface of the earth, evaporation into the air and back to the water sources. The precipitation in the catchment areas of the river and the drainage systems are interconnected with a network of natural streams and channels which are a part of a greater body of river water known as river ecosystem.

³ Jens Kiesel, "Protecting the Consequences of Climate Change on the River Ecosystems" Multiple Stressors in River Ecosystems: Status, Impacts and Prospects for the Future", 2019, Pg.281-301

The preservation and maintenance of proper river ecosystem plays a very important role in the life and health of the river. This is because the surface water resources are mostly preferred locations for life on earth and for settlements.⁴ The river ecosystem refers to the physical conditions in and around the river which is being used as a mode of sustenance by animal and humans. It also refers to certain characteristic features such as flora and fauna in and around the river, water quality, biological components, wet lands, sandy banks etc.⁵ which are adjacent to the river. River ecosystems play a crucial role in the habitat preservation and the life sustenance of the people living in and around the river.

River ecosystem can also be stated as a complex structure of formation of various habitats for various organisms and it helps in the formation of food web from which the human beings are also benefited equally. Rivers as a transporter of various nutrients and sediments which results in the geographical enrichment of various areas such as flood plains, enriching deltas and also improvement of coastal stability. The river water also helps in the generation and purification of ground water and adds to the nutrients. River water also prevents erosion of the soil and also prevent floods if the banks of the same are being maintained well. This also helps in the irrigation of agricultural fields and adds to the fertility of the soil.

The flow of river water, due to its multifarious use and the extent of exploitation of the same has attracted various interventions and never ending research. Nevertheless, more attention is needed towards socio-legal dimensions and how the common people actually contribute to the conservation of river water. Geographical factors and hydrological factors also has a role to play in the present day development of legislations concerning preservation of river water. This is primarily because rivers have complex histories with the development of civilization and culture as stated above.⁶ Nonetheless, technological development, urbanization, pollution, population growth, growth in consumption has brought the rivers ecosystems in the verge of serious consequences. The rivers are to be considered precious assets of the habitats and so appropriate legal directives, awareness and participation of the people should be considered while devising policies.

⁴ A. Blasubramanian, "River as an Ecosystem" Project Report, University of Mysore, 2005

⁵ Daneil Von Schiller, "River Ecosystem Processes: A synthesis of Processes, criteria of use and Sensitivity to Environmental Stressors", Science of Total Environment, Vol.596-597, Pg. 465-480

⁶ Strang, 2005.



International Journal of Recent Development in Engineering and Technology
Website: www.ijrdet.com (ISSN 2347-6435 (Online) Volume 15, Issue 03, March 2026)

III. PROTECTION OF RIVER WATER: AN
INTERNATIONAL PERSPECTIVE

Water resources are astounding and ever increasing pressures throughout the globe. This has led to increasing water scarcity as mentioned above and this is readily increasing water disputes. Such disputes are multiparty disputes involving states, legal entities, corporations, and individuals against other states.⁷ So there is a need of both practical and theory based approach for settlement of water disputes which is posing a serious threat to the peace among the nations of the world. An institutional framework has to be established which takes care of settlement of disputes. The already established international rules and regulations have to be domestically implemented in the countries for better results. The International Law commission in its 32nd conference at Helsinki enunciated the major developments in water disputes. In the furtherance of that Conference, many new principles have been developed over the years

Rivers as hydro commons:

One of the recent and emerging ideas regarding the importance of river water is that it is regarded as a hydro common. The idea of river water being a hydro common emerged with the approach of social values concerning natural resources and this idea was mainly imposed on the rivers and river basins. The social values concerned are about inspection, determination, development and protection of rivers⁸ and the involvement of the general public and local techniques in the preservation of river water and considering it as a rights based approach.

The theory of river water being a hydro common is based on the idea of water utilization and quality management of the river as an ecosystem. This is a area based approach concerning a particular river where better rights are provided to the people living in and around the river for protection and maintenance of the same. It establishes a link between the geographical region which receives water, its environmental condition and the policies for governance. This approach also talks a link about establishing the role of people living in water transfers, preventing water pollution and ecosystems degradation.

This theory also states that the river water is valued to be the reason of fundamental existence in the society and so it is believed to be common to all. This expands the idea of public use of river as matter of right. This is a technique which encourages the use of river space for the common good of mankind in new perspective. Traditionally, river water was thought to be a source of human consumption which included activities such as irrigation, navigation, fishery, transportation etc. But with the emergence of the concept of rivers being hydro commons, new kind of water space has been developed. This new rights-based approach has the following facets:

- a. Ownership which is vested on the people who are the end users of river water which includes proper use and conservation of river water.
- b. Abstraction which is focused upon the sustainable use of river water. This includes various techniques and utility methods which will be suitable for sustainable use of river water.
- c. Supply and recycling of the volume of water in connection with the environmental conditions in and around the river. This again focuses upon treating the river as an ecosystem and providing suitable conditions in and around the river so that the quality of the water can be maintained.

Tradition of public Excess and river water:

During the last decade, there was a profound upheaval for the concept of public for access to river water. This can be explained in terms wide range of activities taken up by the government which is as a part of right of public access to water. This can be greatly linked with the developmental works which are generally taken by the government in an around the river banks like parks and other heritage sites through the process of enclosures. Right of public access to water includes both consumptive and non-consumptive uses. Some of them are stated as under:⁹

- ❖ Diversion, conversion and restriction of natural flow of water of a river which can be done by creation of river beds, modification of river banks, building structures for public use which may alter the use of water and adjacent land
- ❖ Extraction of gravel and other mineral from rivers and the lands adjacent to them which can be used for various productive purposes on one hand but on then other also lead to the degradation of river water and loss of sediments.

⁷ M.A. Salman, "International Water Disputes: A new Breed of Claims, Claimants and Settlement Institutions, Member, International Water Resource Organization, Water International, Vol.31, No.1, Pg. 2-11, 2006.

⁸ Gary D. Weatherford, "From Basin to "Hydrocommons": Integrated Water Management Without Regional Governance, Natural Resource Journal, Natural Resources Law Centre, University of Colorado, School of Law, 1990.

⁹ Stephen Hodgson, "Modern Water Rights: Theory and Practice", Food and Agricultural Organization(FAO) Legislative study, 2006



International Journal of Recent Development in Engineering and Technology
Website: www.ijrdet.com (ISSN 2347-6435 (Online) Volume 15, Issue 03, March 2026)

❖ Irrigation, navigation and aquaculture activities which will result in various productive activities, provide livelihood for the people and help in the overall development of the area around the river.

Notion of public access to water under English Common Law: The notion of public access to river water as a right can be dated back to the initial development of English common law with the evolution of Magna Carta, 1215 which codified the law relation to navigation in English rivers. It was argued that navigation and other activities as part of using the river water will be as matter of assumed right which can be exercised by the people every now and then and it can be exercised as given in law. It was also stated nobody can be obstructed from using the waters in English rivers and there will also be appropriate measures by the government measures for protecting this right.

Notion of public access to water under Roman law: Under the Roman law also the right to public access to water existed. It was stated that some inherent right should be given to the people in the context of inter-generational equity. It was also argued that there is sanctity of the right to use water freely as commons and the rivers are public spaces. It was believed a common property by the virtue of natural law includes air, running water, sea and consequently the sea shore. All the river banks and the land in and around the rivers like ports, harbors etc. should be open to public access. It is as a part of greater law of nations. The protection of the rivers was also linked with the doctrine of *res publicae* which literally meant common property or people's thing in relation to the use of rivers and river water and it was followed for the greater benefit of people.¹⁰

Doctrine of Equitable Apportionment in Interstate Rivers

Equitable apportionment of river water means equitable distribution of river water among the competing parties.¹¹ The integration of the equitable apportionment doctrine into river water is a very complex concept. It has to be a multifarious approach which takes into account the concept of fairness in the use of river water as well as the notion of proportional entitlements.¹² This is also necessary in view of growing competition for use of river

water across boundaries. This doctrine includes the notion of fairness and equitability in the decision making regarding the use of river water. It also highlights the fact that there should be distributive fairness the proportional entitlements of river water which includes various hydrological, geographical and ecological factors.¹³ The legal principle that governs the view of equitable apportionment of river water in India is based on three facets:

- a. Every state by virtue of its sovereignty can harness the river water within its territorial jurisdiction.¹⁴ This will again depend on the proportional use of river water in both upstream and downstream regions.
- b. Any kind of activity that may result in some kind of harm to the neighboring state is out of the purview of this doctrine. This holds true of the fact that the doctrine has to be seen from avoiding conflicts between various territorial regions and the idea of egalitarianism should prevail.
- c. Every state has the right to use water according to its needs through which the river flows. However the idea of procedural fairness cannot be ignored considering the fact that each state should allowed allocations of water through which a river flows according to various identified factors and quantitative determination of fair share of the states.

This theory¹⁵ also states that that an international or interstate water course should be used in just and equitable manner. To determine the concept of just and equitable manner, various factors unique to each watercourse should be considered. It allows the state to use the water and also prefers that status quo should be maintained between the uses of the river from the time of its origin and the changing uses of water. The states can establish prior rights over the river water.

Winters Doctrine in USA

In relation to the use of river water, Winters Doctrine¹⁶ was developed in relation to use and allocation of water in United States of America. This doctrine highlights a right which is more specific about the reserved rights of the people living in and around the river for protection, use and maintenance of river water.

¹⁰ Getzler, "History of Water Law", 2004.

¹¹ Daneil Seligman, "Resolving Interstate Water Conflicts : A Comparison of the Way India and the United States Address Disputes on Interstate Rivers", Working Paper Series, Institute of Water Policy, June 2011.

¹² K. Ravikumar and Rakesh Khosa, Fair and Equitable Allocations of Cauvery River Waters, International Water Resources Association *Water International*, Volume 32, Number 4, Pg. 571-588, December 2007

¹³ Ibid.

¹⁴ V. Ramaswami, "Law Relating to Equitable Apportionment of the Waters of interstate Rivers in India", Journal of Indian Law Institute, Vol.20, No.4. 1978.

¹⁵ United Nations Convention on the Law of Non Navigational Use of International Water Courses, 1997, Art.6

¹⁶ In the case of *Winters vs. United States*, 1908.

Through this doctrine, the state cannot restrict the change in the uses of water from the originally designated purpose for the betterment of the people living near the river whose habitat depends on the river.¹⁷ It highlights upon the principle that the people have implied reservation on the use of water for the betterment of the land and the water bodies. This right was upheld in the case of *Winters v. United States*¹⁸, wherein it was stated that the people living in and around the river has reserved rights of use of river water and it cannot deviate from the allocated purposes. This doctrine is based on the social aspects of the legislation which are necessary for preservation of river water and the participation of local people for the same.

Principle of Absolute Territorial Sovereignty or Harmon Doctrine: This doctrine propounds that state is a sovereign entity and thus it enjoys absolute rights to utilize rivers and other sources of water in their one way without paying heed to the consequences. Since the aspect of responsibility and accountability is not attached with this doctrine, it failed to gain much importance. This principle is read with the principle of no significant Harm, better known as ‘*sic utere tuo it alienum non laedas*’ which means that people can make use of their own property with the condition that the use is not detrimental to others.¹⁹

Hormon Doctrine and Rio Grande Rive Dispute

The Hormon Doctrine is one of the important milestones regarding the sharing of river water. This doctrine originated from the water sharing dispute over Rio Grande river.²⁰ This doctrine states that a state has absolute sovereignty over the river water in its territory and the water can be utilized according to the needs of the state even if it has negative impact on the lower riparian states. This doctrine was also silent the water sharing of transboundary rivers. This doctrine was heavily criticized and not accepted by the world community and was stated that this doctrine is an anachronism in today’s interdependent water-scarce world.²¹

¹⁷ Cynthia Brougher, “Indian Reserved Water Rights Under *Winters* Doctrine: An Overview”, Congressional Research Service Report for Congress, June, 2011.

¹⁸ 207 U.S. 564 (1908).

¹⁹ A.Singh and A.K. Gosain, “Resolving conflicts over Transboundary Water Courses: An Indian Perspective”, Land Use and Water Resources Research 4(2004) 2.1-2.5, Department of Civil Engineering, Indian Institute of Technology, New Delhi.

²⁰ S. C. McCaffrey, (1996). The Harmon Doctrine One Hundred Years later: Buried, not Praised. *Natural Resources Journal*, 549-590, p. 549.

²¹ Spiegel, C. (2005). International Water Law. *Duke Journal of Comparative and International Law*, 333-361.

*Water Framework Directive as a part of European Law (WFD)*²²

This particular initiative under the European Water Law states that there should be some ordinance which establishes a scheme which provides for protection of various water sources including rivers which involves both the state and other stakeholders including the public for the greater protection of water. The main purpose was to achieve a ‘good status’ objective for all water bodies in the European Union.²³ Some of the highlights of the same are given as under:

- a. Water Framework Directive is based on Article 174 of the European Union Treaty states that there should be a community which takes care of the basic objectives of preserving, protecting and improving the quality of environment of which water is a major component and should be based on precautionary principle and polluter pays principle.
- b. There should be a protocol in framing policies which takes into account the role of the community

Theory of Good Neighborliness

The principle of limited territorial sovereignty over the river waters took the form of a new theory known as theory of good neighborliness. This theory states that the state can utilize its sovereignty over the river water within its territory but not at the cost of water sharing by the co-riparian states. This theory evolved from the Roman maxim *sic utero tuo ut alienum non laedas* which means the use of property by anyone should not be at the expense of others.²⁴

IV. WATER CRISIS IN INDIA: CAUSES AND MANAGEMENT

Water is one of fundamental resources for the nourishment of each and every person, for sustenance of the health and socio economic wellbeing and continuance of life on the earth. But the sources of water are not ever increasing. Rather they are limited.²⁵

²² 2000/60/EC

²³ Nikolaos Voulvoulis, “The EU Water Framework Directive: From great expectations to problems in implementation”, *Science of the Total Environment*, Vol.575, 2017, Pg. 358-366

²⁴ Tuomas Kuokkanen, *International Law and the Environment: Variations on a*

Theme (Hague: Kluwer Law International, 2002), 57 – 58

²⁵ Jasin Gehrig, Mark M. Rogers, “Water and Conflict:

Incorporating Peace Building into Water Development”, Catholic Relief Services, United Nations Conference of Catholic Bishops, 2009, ISBN 0-945356-53-6



This can be substantiated with the fact that the lakes and rivers found in the world make up only 0.01 percent of the earth's total of 1.4 billion cubic kilometers of water.²⁶ India is also turning into a water stressed countries in spite of the availability of many rivers within its territory. This is again increased by the uneven and unplanned use of water, about 78% of the available water is used in agriculture. This has caused water scarcity and various problems in regards to water use has arisen.²⁷ The growing water scarcity and uneven distribution of river water and presence of interstate rivers in India paved the way for water conflicts in our country.

Causes of water crisis in India

- a. Large parts of the country have become water stressed due to the rapid growth of population, urbanization etc. and the ration of utilization of water.
- b. There has been continuous mismanagement of water resources and this has result in various loopholes in regards to the water governance in our country.
- c. The issues pertaining to resolution of conflicts surrounding transboundary rivers are very complex because of a lack of adequate legal and institutional mechanisms
- d. Many water resource projects are being taken up, but the implementation of those projects are fragmented and least attention is given to the utilization of water in the particular region, environmental condition of the people, ethnic issues and overall benefit to the people.
- e. Low consciousness among the public about the available mechanisms in to regulate and control the territorial distribution of water , which many countries in the world are already following.
- f. Dispute settlement mechanisms lack implementation and in various circumstances the rules and regulations to deal with upcoming issues for the use of river water are not quite clear and explanatory.

Equitable Apportionment Theory in India

In India, it is a knowing fact that there are large number of interstate rivers and Transboundary Rivers flowing through it. It is also true that in spite of many rivers water is unevenly distributed. So this has given rise to number of water disputes every now and then. The theory of equitable apportionment is being followed in India.

Some of the instances are given as under:²⁸The Indus Commission, 1943²⁹ states that the settlement of water disputes through equitable apportionment can be by agreement among the states. So if the agreement fails then the equitable apportionment principle can be used in which each state gets its fair share of water. The application of this theory in India depends upon the notion that there should be fair reasonable and the sharing of water should be beneficial rather than on strict and equal division of the water, which is more applicable to the riparian states. This doctrine is derived from the Helsinki rules on the sharing of International river water which states on fair and reasonable use of river water, management of river drainage systems and river basin. In India, this doctrine is being widely used by the tribunals to settle disputes relating to sharing of river water among the states.

The application of this theory in India is based on various factors some of them are stated as under:

- a. The total flow of river water in a state which will be used to determine the water sharing of that particular state.
- b. The demand of river water in the state which again depends upon drinking water, irrigation and agricultural uses, plant and animal life.
- c. The geographical location of the and the varied availability of water, the state being upper or lower riparian.
- d. The protection mechanisms of river water taken by the state depending upon the use.

Under the constitution of India, all the issues related to the use of the water bodies are vested with the state government to the state list but except regarding and Interstate River. It is stated in entry 17. The central Government is vested the power to regulate the interstate water disputes under entry 56 of Union List. But in the words of Supreme Court Advocate KK Lahiri, the power to legislate on water "*ought not to be confused with ownership or proprietary rights and no State has any proprietary rights in river waters.*" The parliament according to Article 262 can make laws excluding inter-state water disputes from the jurisdiction of the Supreme Court or any other court. The question here arises what are the possible solutions to ownership or proprietary rights of water bodies. Even the constitution of India is silent on these issues.

²⁶ Ibid.

²⁷ Ashok Gulati and Pritha Bannerjee, "Emerging Water Crisis in India: Key Issues and Way Forward", Indian Journal of Economis, 2018.

²⁸ A Background Paper on Article 262 and Interstate Disputes Relating to Water, P,M. Bakshi

²⁹ The Indus Commission Report, 1943, Pages 5-75

There are various drawbacks to this doctrine in the matters of equitable sharing as the sometimes it is difficult to define what is equitable according to the changing water needs of each and every state.

Implementation Mechanisms for river water sharing in India

- a. Inter-State River Water Disputes (IRWD) Act 1956- Article 262 of the Constitution of India provides for the responsibility of states in respect of interstate river disputes. More specifically entry 56 of the union list prevails over entry 17 of the state list which empowers the centre in resolving interstate water dispute.
- b. Interstate Council- Interstate Council was established under Article 263 of Constitution of India as an advisory body to the water disputes arising between different states in India. It was set up in 28 May 1990.
- c. River Boards Act 1956- This was passed under entry 56 of Indian Constitution of India to set up river boards in different states which will regulate and develop inter-state rivers. The board must comprise of members with expertise in fields such as irrigation, water and soil conservation and finance. But so far river boards have not been established in the country.³⁰
- d. River Basin Organization (RBO): The proposal to set up River Basin Organization was given by the Central Government. These organizations were supposed to be set up under the rivers boards and look after the development of river basins.
- e. Inter-State River Water Disputes (IRWD) Amendment Bill 2019: This Bill provides for settlement of water disputes waters of interstate rivers and river valleys. The main highlights of this new development is the setting up of Disputes Resolution Committee, Interstate River Disputes Tribunal and a Data Bank for storing information regarding river basin at a national level.

Interstate water Disputes in India and its management

The interstate disputes in India mainly arise from the fact that the country comprise of various geographical reasons and the water needs vary according to that.

The conflict regarding the use of water among the states in India dates back to Independence and the reorganization of the states, wherein the management of interstate river basins was ignored, which often lead to conflict among the states for use of water from the interstate rivers. There various conflicts over the use of natural resources including the river water. There is often growing demand for water across different sectors such as irrigation, infrastructure which varies according different level of economies for various states. The disputes sometimes might be quite political when there is rivalry between the upper and the lower riparian states regarding the use of water, construction of dams etc. At this juncture, the lower riparian states are at greater loss.

Many a times it is seen that the interstate water disputes are very difficult to be managed and controlled because of its complex nature. It is very different from any other interstate dispute. Most of the interstate river disputes are not of the nature of judicial nature or do not take the aid and assistance of the court as such. They are mostly settled by adjudication tribunals. In spite of that there has been various reasons for the same. Some of them are stated as under:³¹

- a. The adjudication tribunals involves a very long time bound series of adversarial litigations. Lack of confidence in the series of litigations is causing chronic delays.
- b. The tribunals get dissolved after the decisions are given. So this does not leave any platform for the parties to address their grievances any further. When the supreme court is approaches, it gives direction as per awards.
- c. There is an institutional vacuum for implementation of the arbitral awards. There are no institutions which can implement these awards. States often oppose to implement these awards.
- d. Since the water disputes are concerning different states, it has become more of a politically mobilized problem.

V. EMERGING RIGHTS OVER RIVER WATER IN INDIA

The universal right to water was first of all recognized by United Nations General Assembly through its resolutions. It was recognized as the right to water and sanitation.³²

³⁰ Ramaswamy Iyer, *Towards Water Wisdom: Limits, Justice, Harmony*. Sage Publications, New Delhi, 2007

³¹ Srinivas Chokkakula, "Why interstate water disputes are difficult to manage or control", *TIMES NOW*, Oct 02, 2016

³² July 2010, UNGA 64/292.



The resolution states that the countries and international organizations should strive to provide clean drinking water and sanitation to all as a matter of basic human rights. This also applies to the preservation and protection of river water as river water has been the prime source of human consumption of water and it fulfils the right to water. There has been various international and national rules as well as customary practices regarding water rights. Water rights are the epitome and last word for the successful gratification of the right to an acceptable standard of living and health.³³

As stated by United Nations Development Program, water is the stuff of life and basic human right.³⁴ So this paves the way for the protection and access to the river water from a human rights perspective.

In the last decade there has been a paradigm shift over the idea of user's rights over river water owing to the greater demand of the same in our country. There is also a change in the nature of control over the river water. There has been a greater interface between rights and the corresponding regulations concerning protection and preservation. It is also seen that a broadening concept of rights has introduced the concept of collective rights over the river water.³⁵ Various state laws in our country in relation to the use and access to river water has incorporated various newly developed rights in their respective legislations. Some of the new concepts are stated as under:

- a. *Rights of Control*: This particular right has been developed in the context of control and governance over river water and it is being vested upon the Government.³⁶ The state can claim absolute rights over the river water in terms of equal distribution of water, maintenance, protection and preservation. It is the responsibility of the state to devise modalities to give adequate protection and efficient use of river water.
- b. *Rights of Access*: This particular right is in the context of the public using the water. Though the government has vested right of control over the river water but the public also has the right of access to river and the government cannot obstruct the free use of water.

- c. *Right of service*: Another type of right which is emerging is the right of service which is based on the idea that water is an economic good and the use of river water should be based on the principle of full cost recovery, if some damage is done to the river water. According to this principle since there is growing scarcity of river water and it has to be used both for domestic and other purposes, the users have to pay a minimal charge as operation and maintenance charge. This is a very new concept and has been incorporated in some of the state legislations.

- d. *Right of Rehabilitation and Resettlement*: Owing to the Supreme Court Verdict in the case of Narmada Bachao Andolan, a new type of right emerged that is the right to rehabilitation and resettlement of the people who have been displaced and affected by the construction of Big Dams over the river. So it is the duty of the government to resettle and facilitate those people as a matter of right.

It is indeed noteworthy that in addition to the above mentioned rights, there are various other implications to the right of water.³⁷ The term water rights also includes the duty of sustainable use of water so that it can be preserved for the coming generations. In addition to that, in context of river water, the government has exclusive right to regulate the collection, detention and distribution of waters of rivers and streams flowing in natural canals, lakes or water collected in any structure constructed for irrigation at public expense.³⁸

VI. MANAGEMENT OF RIVER WATER: AN INTEGRATED APPROACH

India is one of the geographically advantageous regions of the world. In spite of that, water has become one of the scarce resources of our country. India has more than 18% of the world population but has only 4% of the world's renewable water resources and 2.4 percent of land area. There are also various complications which come in the way of utilizing the available water. Even the river water in our country which is not evenly distributed which has added to the distress of the common people. In some areas there is heavy flood and in some areas there is drought. This results in uneven distribution of water throughout the entire country. Both inland rivers and the transboundary rivers play an important part in the supply of water in our country. The transboundary rivers in India have significant implications for water usage and policy making.

³³ Jayna Kothari, "The right to Water: a Constitutional Perspective" available at

www.ielrc.org/activities/workshop0612/content.

³⁴ UNDP, Human Development Report, 2006.

³⁵ Karen Bakka, "Commons versus Commodities: Debating Human Rights to Water", The Right to Water, Earthscan, Routledge, 2012.

³⁶ Section 3, Madhya Pradesh Regulation of Water Act, 1949

³⁷ Aman Mishra, "The Right to Water in India: Changing Perceptions", International Journal of Research in Humanities and Social Studies, Vol. 2, Issue 4, 2015.

³⁸ Indian Easement Act 1882.



International Journal of Recent Development in Engineering and Technology
Website: www.ijrdet.com (ISSN 2347-6435 (Online) Volume 15, Issue 03, March 2026)

As a developing country India has an optimal use of natural resources and water is not an exception. So this paves the way for a socio-legal framework for water management which will help in preservation of water resources especially water to a great extent.

One of the emerging causes for the water management in India is the extra ordinary speed in which the degradation of river water is taking place along with the projects harnessing the water bodies. But this will not be fruitful unless and until we have particular rules and regulation in this regard. We can also witness very frequent disputes because of the complicate process of cooperation and confrontation depending on the contingent self interests of various state parties. The ultimate role lies on the government which has no answers to the queries of the states as there are no definite rules on it. The Water Policy 2012 has been developed but there has been no serious implementation of the same.

Now when we talk of water it is not only one source of water which has to be protected but numerous sources of water need to be protected which includes river water, lakes, ponds, estuaries, deltas etc. Among these sources, the river water needs greater attention.

International Integrated Water Resource Management Principles (IWRM) and its implementation in India

1. Adoption of principles

The Integrated Water Resource Management Principles was adopted as a result of United Nations Global Conservation on Safe Water and Sanitation in 1990. They are also known as Dublin Principles. The Dublin statement represents a holistic, comprehensive and multi-disciplinary approach to the water resource management problems around the world.³⁹

The important Components of Integrated Water Resource Management Principles are as under:

- a. Legal Policy Framework which will incorporate various plans in the context of laws and acts, national and international cooperation regarding various water sources.
- b. Institutional Framework which will include the level of action which should be taken at a state, regional and local level, management and capacity building programs

- c. Management guidelines which will include various rules and regulations concerning water allocation, regulations, trade and development, prices and tariffs regarding services in the water sources and various economic policies to achieve the same.
- d. Infrastructure which includes various developments in relation to management of floods and droughts, multi-purpose storage facilities and preservation of water quality at source.

Integrated Water Resource Management Principles:

India has also taken a pioneer step in implementing the Integrated Water Resource Management Principles in resemblance to the Dublin Principles. Some of the key points of the Indian Draft of the Dublin Principles are given as under:

- a. Establishment of independent water regulatory authority in every state for carrying out water policies.
- b. To establish a holistic and integrated approach towards inter sectoral management of water based on the idea of ecological balance.
- c. The need of a joint participation of the institutions engaged in water resource development and general public.
- d. The recognition should be given to the role of women in the policies concerning management of water resources.
- e. The recognition of the fact that water has an economic value and economic good.

2. River Basin Management Plan:

The river basin management plan is a part of the Integrated Water Resource Management Principles (IWRM) which aims at providing a holistic and sustainable water management for future protection and effective compliance of many policy areas. The highlights of this policy is given as under:⁴⁰

- a. Protection and enhancement of river ecosystems with regard to the water needs.
- b. Promotion of sustainable use of water.
- c. Enhancement of aquatic environment in and around the water sources through various measures such as prevention of emissions and discharges of affluent in the water.
- d. Various steps towards mitigation of floods and droughts.

³⁹ Miguel Solanes and Fernando Gonzalez, "The Dublin Principles for Water as reflected in a Comparative Assessment of Institutional and Legal arrangements for Water Resource Management", Global Water Partnership and Technical Advisory Committee, TAC Background Papers, No. 3

⁴⁰ River Basin Management Planning, A Practical Guide for Public Authorities, Department of Environment, Heritage and Local Government, Dublin, 2008.



River Basin Management Plan in India:

The river Basin Management plan in India context was developed by the Central Water Commission which resulted in National Water Policy 2002. The need for an integrated River Basin Management was needed because of the proportionate relation of availability of river water and its uses. It also includes economic, social and environmental dimensions as well. This has also resulted in the integration of various other aspects such as technology and information.

Some of the important developments in India as a part of the River Basin Management Plan in India are as follows:⁴¹

- a. Decision Support System (DSS): It is a computerized program to support course of action by compiling data and information.
- b. Geographical Information System (GIS): It is a system that provides means to collect analyze and manage geographical data.
- c. Graphic User Interfaces (GUI): It is a system for interaction with different electronic devices using icons and visual indicators.
- d. Water Resource Information System (WRIS): The India-WRIS has special modules for live telemetry data and reservoir module with daily level and storage data of reservoirs. Automatic map generation and automatic report generation Module can cater the need of area specific maps and reports.⁴²

Steps to make water navigable in India

In the recent times various initiatives are taken by the government to make the rivers water more useful and productive for human consumption. It is very important to have awareness about the scientific and socio-economic importance of the rivers which rich the sea. It is sometimes believed that the river water which rich the ocean or the sea should be made more navigable because it cannot be harnessed after that. Various activities have been taken such as diversion, river interlinking etc. in the furtherance of greater navigation of river water. Under the Environment Protection Act, 1986, the Environment Protection Rules notify eco-sensitive zones around the protected areas. The approach can also be taken in case of rivers by declaring certain areas as eco-sensitive areas in and around the rivers and give adequate protection. S.19 of the Act empowers the local officers to look into local complaints. The same protection can be given to the rivers.

Under the Wildlife Protection Act 1972, under section 29 and 35(6), the rivers which stretches through the national parks and wildlife sanctuaries are legally protected. Similar kind of protection should be given to other areas of the passage of river as well.

Making water more navigable also requires developing infrastructure like terminals and jetties and taking up dredging of rivers at a national scale so as to maintain adequate water depth, prevent soil erosion and other unwanted calamities. There is also a requirement of providing training to the human capital involved in maintaining the health of the river. There is also the need to use advanced technology in this regard such as to improve safety and maintain the efficiency of navigation. What is most important at this juncture is to provide adequate environment in the country for attracting investments in construction and operation of waterways. There can be development of concepts like dry ports which intermodal terminals directly connected by roadways or railways to the seaports which helps in the transshipment of cargo from the seaports to the inland destinations.⁴³

VII. CONCLUSION

The development of legislation regarding rivers in India is generally very slow and has not been quite transparent and accessible to the common people. There has also been lack of water governance in the country. Even the existing laws are not implemented to the fullest. This has brought about various setbacks towards protection and preservation of rivers. So it is the need of the hour to devise legislations at national, regional as well as state levels to protect our rivers from further deterioration. The maintenance of rivers and river water involve the role of number of stakeholders, the political leaders, public and private firms etc. who decides upon what to build upon the rivers and how to protect them.⁴⁴ Whatever steps are taken will ultimately affect the common people. The human rights of the people in relation to the access to clean drinking water and destruction of natural habitats of the animals are the in the verge of serious danger. There is always and inverse relationship between development and environment. But nonetheless, care should be taken to limit the human interventions into nature sio as to make the world a safer place for future generations to come.

⁴¹ Guidelines for Preparation of River Basin Master Plan, Basin Planning and Management Organisation, Central Water Commission, Government of India, New Delhi, June 2007.

⁴² Central Water Commission, Government of India, Department of Water Resources, River Development & Ganga Rejuvenation.

⁴³ Vasudha Chawla, India's Emerging Quest to Develop Inland Waterways, National Maritime Foundation, <http://www.maritimeindia.org/>

⁴⁴ M.J. Peterson, "Narmada Dams Controversy- Case Study", International Dimensions of Ethics Education in Science and Engineering Case Study Series, Version 1, 2010.