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# **CONSERVATION OF RIVERS IN INDIA**

AUTHORED BY: SARAHNA EKKA

(Written in 2021 using the NUJS Law Review Citation and Style Standard)

## **INTRODUCTION**

*“The care of rivers is not a question of rivers, but of the human heart.”<sup>1</sup>*

Rivers are an important source of clean and fresh water, which is essential for the survival of both humans and wildlife alike. They are important for agriculture, food, transportation, industries, tourism, harnessing energy, animal and plant habitat, etc. Even so, rivers have been misused and abused by everyone over long periods of time, leading to pollution, drying up and harming ecosystems. The author, thus, chose this issue of River Conservation as her Water Law project topic, as it is imperative that humans and nature work together to conserve our rivers, clean them up and restore freshwater habitat.

This research paper on “Conservation of Rivers in India” has been written after consulting notable authorities in the form relevant encyclopaedias, journal articles, case studies newspaper reports, academic reports, policies, legislations, etc. The author in this paper has attempted to answer why it is so important to conserve rivers, and also highlight the praiseworthy aspects as well as the shortcomings of the various programmes undertaken by the government in furtherance of river conservation. This paper will delve into the matters of how rivers are sought to be conserved in India. The paper concludes with recommendations and suggestions as to how there can be better conservation of rivers by the Government of India as well as the Indian citizens.

## **RESEARCH QUESTIONS**

This research paper on the topic of “Conservation of Rivers in India” has been written with the following research questions in mind:

1. How is river conservation achieved?

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<sup>1</sup> KENNETH STRONG, *OX AGAINST THE STORM: A BIOGRAPHY OF TANAKA SHOZO – JAPAN’S CONSERVATIONIST PIONEER* (2005).

2. Why is there a need to conserve rivers, and what are some of the factors which threaten our rivers?
3. What is the state of rivers in India?
4. What are some of the programmes undertaken by the Indian government in furtherance of river conservation?
5. Are there any legislations and policies which deal with the river conservation in India?
6. Are there any relevant case laws pertaining to the same?
7. What are some recommendations and suggestions to for successful river conservation in India?

## **WHY DO WE NEED TO CONSERVE OUR RIVERS?**

*“The conservation of natural resources is the fundamental problem. Unless we solve that problem it will avail us little to solve all others.”<sup>2</sup>*

The best definition of a river is that it is a freshwater-containing water body flowing from highland to lowland over a long distance. It is to be noted that not all rivers run year-round; some rivers just flow when it rains or when it's been raining a lot recently.<sup>3</sup> The source of water for rivers comes from rainfall, streams or by snowmelt which is supplied by snowy mountains on the peripheries of glaciers, as well as runoff coming straight from the land.<sup>4</sup>

“A river has many purposes, and one of the most essential job of the rivers is to transport Earth's water to the oceans. Seawater is known to be continuously lost, and upon evaporation, the resulting vapour droplets gather into clouds. Clouds bring water as they move over the land and make it rain. It supports small streams by providing freshwater for other watercourses. This exchange of water between the land, sea and atmosphere is what is known as the Water Cycle. The Water Cycle continually renews Earth's freshwater resources.”<sup>5</sup>

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<sup>2</sup> Theodore Roosevelt, 26<sup>th</sup> President of the United States of America, Address to the Deep Waterway Convention at Memphis, Tennessee (October 4, 1907).

<sup>3</sup> National Geographic Society, *River*, July 30, 2019, available at <https://www.nationalgeographic.org/encyclopedia/river/> (Last visited on May 4, 2021).

<sup>4</sup> Lawrence K. Lustig, Stanley A. Schumm et al, *River*, November 11, 2020, available at <https://www.britannica.com/science/river> (Last visited on May 4, 2021).

<sup>5</sup> Kim Rutledge, Tara Ramroop et al, *Understanding Rivers*, March 14, 2011, available at [https://www.nationalgeographic.org/article/understanding-rivers/?utm\\_source=BiblioRCM\\_Row](https://www.nationalgeographic.org/article/understanding-rivers/?utm_source=BiblioRCM_Row) (Last visited on May 4, 2021).

It is no exaggeration to say that rivers are amongst the most environmentally sensitive components of our planet.<sup>6</sup> Rivers are used by almost all the creatures on the planet for purposes such as drinking water, food source, transportation, recreation, etc. Much of the world's land is fed by rivers and streams, and thus river systems play an enormous part in sustaining and defining the cultural and psychosocial diversities of human society.<sup>7</sup> Despite all this, our rivers have greatly exploited and not been adequately taken care of, and this is where river conservation comes into the picture.

Regardless of the fact that 97% of the world is covered by water, just 3 % of it is fresh, and 66% of this is trapped in ice, and the remaining water found in liquid form is known to exist primarily as groundwater with a slight separation existing across the land or visible all over.<sup>8</sup> To keep up the presence of life on Earth, the assurance and security of water is vital in light of the fact that existence without water is not attainable. Hence, it is the need of the hour to pay serious attention to the conservation of rivers.

## **THE CONDITION OF THE RIVERS OF INDIA**

River systems in India play an important role in the lives of people, whether it be as contributors to livelihood or for religious reasons, and help in sustaining and defining the cultural and psychosocial diversities of human society. In India, rivers are classified primarily into two categories depending on the geography and source of flow, namely Peninsular rivers and Himalayan rivers. The Peninsular rivers (Krishna, Kaveri, Godavari and Mahanadi) find their source in monsoon rains, whereas the Himalayan rivers (Ganga, Yamuna, Indus and Brahmaputra) are perennial in nature and are sustained by glaciers.

If one looks around them, one might not find even a single water body that has not been either encroached, exploited or polluted. It is a very common sight of rivers being treated as dumping

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<sup>6</sup> Jayanta Bandyopadhyay, *Why we need a new perspective on rivers*, July 25, 2018, available at [https://www.orfonline.org/research/why-we-need-a-new-perspective-on-rivers/#:~:text=However%2C%20rivers%20play%20many%20important,spectrum%20of%20all%20human%20societies.&text=This%20is%20called%20the%20WEBS,Sediment\)%20perspective%20on%20river%20basins.](https://www.orfonline.org/research/why-we-need-a-new-perspective-on-rivers/#:~:text=However%2C%20rivers%20play%20many%20important,spectrum%20of%20all%20human%20societies.&text=This%20is%20called%20the%20WEBS,Sediment)%20perspective%20on%20river%20basins.) (Last visited on May 7, 2021).

<sup>7</sup> *Ibid.*

<sup>8</sup> Shubham Bahuguna, *River Conservation in India*, **RESEARCH REVIEW INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY**, Vol. 4, (April 2019).

grounds or sewers in our country. As a result, rivers are drying up, dangerous diseases are being spread, human and wildlife sustenance is being affected and there is a loss of freshwater ecosystems. Our rivers face threats in the form of phenomena like deforestation, urbanization, over industrialization, indiscriminate use, and pollution by sources like untreated urban sewage, agricultural runoff, industrial effluents, religious ceremonies, etc.

## **INTERNATIONAL FRAMEWORK**

The Convention on the Law of Non-Navigational Uses of International Watercourses, generally referred to as the UN Watercourses Convention, is a United Nations treaty governing the use and preservation of all water bodies that cross international borders, including surface water and groundwater. "Mindful of increasing demands for water and the impact of human behaviour," the UN drafted the paper to aid the conservation and management of water supplies for current and future generations. The Convention waited over 17 years from the inception to come into force on 17 August 2014.<sup>9</sup> With only 36 states having ratified the treaty, the majority of states, particularly the major ones, remain beyond its scope. However, the convention is viewed as a critical step in defining international law regulating water.

While all provisions encourage conservation of water sources in some way, we will address those that are more pertinent and actively provide water conservation propositions. Part II, General Principles, is the Convention's core. Article 5, "Equitable and Reasonable Utilization and Participation," is perhaps the most important provision in the whole convention. This article lays out what many consider to be the foundation of international watercourses law, specifically, the principle that a state shall use an international watercourse in an equitable and reasonable manner in relation to other states that share the watercourse.<sup>10</sup> To be equitable and reasonable, Article 5 mandates that the usage be compatible with proper protection of the watercourse from contamination and other modes of degradation.<sup>11</sup> The Convention's Article 6 contains a non-exhaustive set of criteria to take into account while making the final decision.<sup>12</sup>

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<sup>9</sup> SALMAN M. A. SALMAN, **GROUNDWATER: LEGAL AND POLICY PERSPECTIVES: PROCEEDINGS OF A WORLD BANK SEMINAR** (1999).

<sup>10</sup> The Convention on the Law of Non-Navigational Uses of International Watercourses, Art. 5.

<sup>11</sup> *Ibid.*

<sup>12</sup> The Convention on the Law of Non-Navigational Uses of International Watercourses, Art. 6.

This demonstrates the significant importance of coordination between states involved in order to achieve an equitable and sustainable regime of watercourse usage. Thus, Article 8 of the Convention establishes a wider requirement to comply "in order to maximize the use and preserve an international watercourse".<sup>13</sup> It's worth noting that the delegations negotiating the Convention placed such an emphasis on cooperation through joint mechanisms that they added a paragraph to Article 8 requesting states to "consider the establishment of (such) mechanisms or commissions."<sup>14</sup>

Article 5 also incorporates the principle of "equitable participation".<sup>15</sup> The fundamental premise of this principle is that in order to achieve an equitable and sustainable use regime, riparian states must often collaborate by taking affirmative actions, either separately or collectively, regarding the watercourse. Although this concept is implicit in some well-developed cooperation agreements between river basin countries, it was not embodied in efforts to codify this legislation until the International Law Commission incorporated it in Article 5.<sup>16</sup> The inclusion in the Convention is welcome because it reinforces the idea that a regime of equitable watercourse use, as well as the conservation and maintenance of its biodiversity, cannot be accomplished exclusively by independent actions of each riparian state acting by itself; affirmative cooperation would constantly be required. The International Court of Justice's decision in the *Gabčíkovo-Nagymaros* case<sup>17</sup> exemplifies the utility of this principle by quoting the whole paragraph of Article 5 establishing the duty of equitable participation.

## **NATIONAL FRAMEWORK**

Water has been specifically included under the scope of the Environment Protection Act of 1986<sup>18</sup>. River stretches coursing through national parks and sanctuaries already have strong legal protection.<sup>19</sup> Certain other statutes which might be relevant for river conservation in India are the Inter-State Water Disputes Act of 1956, Irrigation and Drainage Acts of respective states, the Water (Prevention and Control of Pollution) Act of 1974, and the River Boards Act of 1956. Apart from this, efforts have

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<sup>13</sup> The Convention on the Law of Non-Navigational Uses of International Watercourses, Art. 8.

<sup>14</sup> *Ibid.*

<sup>15</sup> *Supra* at 11.

<sup>16</sup> *Ibid.*

<sup>17</sup> United Nations, *Summaries of Judgements, Advisory Opinions and Orders of the International Court of Justice 1997-2002*, ST/LEG/SER.F/1.Add.2 (2003).

<sup>18</sup> The Environment (Protection) Act, 1986, §2(a).

<sup>19</sup> The Wild Life (Protection) Act, 1972, §29 and 35(6).

also been spotted in the provisions of the Indian Constitution and the Legislative Entries in the matters of conservation of rivers in India. For example:

- Article 39(b): It says that for the benefit of society, the State should come up with such initiatives and schemes which take into account allocation (control and ownership) of resources..<sup>20</sup>
- Article 51A(g): It talks about the essential obligation of every Indian citizen to conserve and enhance the natural world, including their trees, waterways, and biodiversity.<sup>21</sup>
- Article 262(1): It prescribes that the Government may by formulating any legislation, serve the needs dispute resolution of any conflict or lawsuit with respect to the usage, distribution or regulation of the interstate waterbodies, especially rivers or river valleys.<sup>22</sup>
- Entry 17 under List II of the Seventh Schedule: It makes it possible for the state to negotiate with sources of water, drainage, canals, reservoirs, water impoundments, and embankments in consonance with List I, Entry 56.<sup>23</sup>
- Entry 3 in the Eleventh Schedule: Panchayats are given the power and duty to carry out small irrigation, management, watershed production, and other village activities.<sup>24</sup>
- Entry 5 in the Twelfth Schedule: Government legislation gives municipalities the authority and duty to provide drinking water for residential, agricultural, and industrial use.<sup>25</sup>

## **SPECIAL MENTION TO THE RIVER BOARDS ACT, 1956**

The River Boards Act, 1956, introduced River Boards for the purpose of regulating and developing interstate rivers and river valleys and through this Act, the Central Government can create a Board upon proposal from a State Government or otherwise for the purpose of "advising the Government interested" on matters pertaining to the administration or growth of an inter-State river or river valley (or any designated part) as the Central Government may notify.<sup>26</sup> Various boards can be formed for

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<sup>20</sup> The Constitution of India, 1950, Art. 39(b).

<sup>21</sup> The Constitution of India, 1950, Art. 51A(g).

<sup>22</sup> The Constitution of India, 1950, Art. 262(1).

<sup>23</sup> The Constitution of India, 1950, Schedule VII, List II, *State List*, Item 17 (Water).

<sup>24</sup> The Constitution of India, 1950, Schedule XI, Item 3 (Minor irrigation, water management and watershed development).

<sup>25</sup> The Constitution of India, 1950, Schedule XII, Item 5 (Water supply for domestic, industrial and commercial purposes).

<sup>26</sup> Taniya Malik, *Inter-State River Water Disputes: A study in the light of the federal principle in India*, INTERNATIONAL JOURNAL OF HUMANITIES AND SOCIAL SCIENCE INVENTION, Vol. 4, (October 2015).

various interstate rivers or river valleys. The Board's responsibilities are extensive, encompassing the management of the interstate river's water supply, irrigation and drainage schemes, hydropower production, flood control schemes, navigation promotion, soil erosion control, and pollution prevention.<sup>27</sup> However, the Board's duties are merely advisory in nature.

Most of the provisions of the act revolve around the creation, framework and workings of the Board. Although this act specifically has been introduced to regulate Interstate River and River Valleys (which in turn promotes the conservation of rivers), there are certain provisions which clearly mention the need for preservation of water and other natural resources linked to rivers.

Section 16 which talks about the “General Powers of Board” specifically includes in its clause (d) that every Board may “conduct and co-ordinate research or various aspects of the conservation, regulation or utilization of water resources, such as water power generation, irrigation, navigation, flood control, soil conservation, land use and connected structural and design feature”.<sup>28</sup> The Act also mandates under section 5(2) that to be qualified as a member of Board, the person must have a special knowledge in fields like Water Conservation, Soil Conservation etc.<sup>29</sup>

Therefore this act was clearly introduced to conserve water resources through management of Interstate River and River Valleys.

## CASE LAWS

The Indian Judiciary has also played a key role in river conservation by its dynamic interpretation in some of the cases brought before it. A few notable and landmark cases with respect to conservation of rivers in India are mentioned below:

In the case of *Subhash Kumar v. Bihar*<sup>30</sup>, the Supreme Court was of the view that right of enjoying clean air and water which is free from pollution is a part of the right to life.

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<sup>27</sup> S. N. JAIN, ALICE JACOB & SUBHASH C. JAIN, INTER-STATE WATER DISPUTES IN INDIA (1971).

<sup>28</sup> The River Boards Act, 1956, §16(d).

<sup>29</sup> The River Boards Act, 1956, 5(2).

<sup>30</sup> *Subhash Kumar v. State of Bihar & Ors.*, AIR 1991 SC 420.

Similarly in *Sardar Sarovar case*<sup>31</sup>, the Supreme Court held that water is essential for human existence and hence it also belongs to fundamental human rights, thus carving out “right to water” from Article 21.

Again in the 2017 case of *Lalit Miglani v. Uttarakhand*<sup>32</sup>, the Yamuna and Ganga rivers, along with their respective glaciers as well as other related natural elements were deemed to be “legal persons” as per the High Court of Uttarakhand, and they would have all the associated privileges, obligations and responsibilities as that of any other live being.

<sup>33</sup>At this juncture it is also necessary to mention the *Ganga Pollution case* as it stood as a proof of any PIL's effectiveness in resolving environmental issues. The Indian Supreme Court in the year 1985 gave different parties specific instructions for cleaning up the Ganges. The involvement of the Apex Court in this case was extraordinary. By such efforts, the Indian Supreme Court was seen as the nation's pinnacle of judicial reforms and advancements. The Polluter Pays Principle was brought about, thanks to this historical judgement. A kind of environmentalism was nurtured by a wide variety of government decrees on the holiest of all of all rivers to clean up pollution levels.

## **HURDLES TO RIVER CONSERVATION IN INDIA**

Following are some of the challenges posed when it comes to the issue of the conservation of rivers in India<sup>34</sup>:

- i. There is lack of comprehensive and fixed data available or collected for all the Indian rivers.
- ii. The works on the numerous rivers are completely sparse, with little coordination, unity, or linking of details from headwater to mouth (i.e. for the whole drainage basin).
- iii. The data on the practical functions of riparian vegetation and flood plains in the river ecology (including allochthonous energy input and its dynamics) are insufficient to draw any conclusions on their conservation status.
- iv. The majority of fundamental research is conducted by university researchers (rather than river basin managers), who are mostly concerned with documenting the impact of contamination

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<sup>31</sup> *Narmada Bachao Andolan, etc. v. Union of India & Ors.*, AIR 2000 SC 3751.

<sup>32</sup> *Lalit Miglani v. State of Uttarakhand and Ors.*, Writ Petition (PIL) No.140 of 2015.

<sup>33</sup> *M.C. Mehta v. Union of India*, [1987] 4 SCC 463.

<sup>34</sup> V. K. Srivastava, *River Ecology in India: Present Status and Future Research Strategy For Management and Conservation*, PROCEEDINGS OF THE INDIAN NATIONAL SCIENCE ACADEMY, Vol. 74, (December 2007).

- on biotic communities; however, they devote little attention to the "in field" pragmatic implementation of these research.
- v. Less focus has been paid to conducting research "in field" in the water body itself, which provides a "in situ" precise continuum of river eco-biological conditions.
  - vi. Ecological interests are given less emphasis in the system's river management, lift irrigation, and water allocation processes; this is particularly true for rivers that form inter-state and international boundaries. This condition has resulted in a variety of controversies concerning the socioeconomic aspects of riparian states/countries, which are often resolved politically. The river's ecosystem continues to deteriorate as a result of this policy procedure.
  - vii. Because of methodological shortcomings in sampling designs, the precision of the Ecological Impact Assessment is affected by multiple natural variations, and therefore management plans become misdirected and less efficient in accomplishing the objectives.

## **SUGGESTIONS AND CONCLUSION**

Here are a few steps which can be undertaken for effective river conservation in India:<sup>35</sup>

- Coming up with more stringent effluent-discharge legislations
- Attempts at riverbank reforestation
- Sensitizing people to the importance of river conservation
- Assisting landowners in developing cooperative river restoration activities
- Collaborating with farmers to develop integrated river management strategies
- Increasing funding and aid for river conservation at both governmental as well as community levels

The fact that India should protect its waterbodies, especially rivers, is now an unavoidable matter. Acknowledging the fact that rivers are breathing, thriving environments rather than just simple and inconsequential water channels is a good place to begin. The creation of a new National River Conservation Authority, with the Prime Minister as its head, has elevated the government's focus on water contamination, which in turn requires the understanding of all three aspects — ecological, fiscal, and technical as well as well as social issues. Agriculturalists, community leaders,

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<sup>35</sup> Hemant Pathak, *Rivers Conservation Challenges and Opportunities: A Case Study of BundelKhand, Madhya Pradesh, India*, INTERNATIONAL JOURNAL OF ENVIRONMENTAL SCIENCES & NATURAL RESOURCES, Vol. 7, (December 2017).

environmentalists, engineers, as well as policymakers would have to be actively involved in river restoration efforts. Rivers are important national assets, and river conservation in India should not simply be overlooked as just another pipe dream.

