

***ENVIRONMENTAL
CONCERNS AND
ISSUES RELATING
TO HUMAN
RIGHTS***

**IMPACT OF WATER POLLUTION
THROUGH HUMAN RIGHTS
PERSPECTIVE: A SOCIO-LEGAL
ANALYSIS**

04 MARCH 2022





NAIREEN IMRAN – B.A.LL.B. 5th YEAR – Vitasta school of law

NIDHI KANAUIA – B.A. POL. SC. – Miranda house college, DU

NUPUR BHATT- B.A.LL.B. 4th YEAR – Amity university Madhya Pradesh

PANCHAMI KHAUND –B.A.LL.B. 4th YEAR – National law university, Assam

PRERNA CHHABRA – BA.LLB - Guru Gobind Singh Indraprastha University

PARAS PARE- B.A.LL.B. – National law university, Delhi

PARVI RAWAT- Graphic era deemed to be university

POOJA KUMARI – B.A. ECONOMICS – Miranda house college, DU

PRAGYA TRIPATHI – B.A.LL.B. 5th YEAR – Chandigarh university

INTRODUCTION

WATER - primary source of life as a person cannot live without water for more than 3 days.

India has a coastline of 7516.6 kms. The percentage of population who has access to potable water is less than 50 %. India is ranked 120th among 122 countries in Water Quality Index with approximately 70% water unfit to drink.

The condition of water pollution was already at an alarming stage due to –

- a. Discharge of radioactive**
- b. Mining**
- c. Bio-medical waste**
- d. Climate change**
- e. Oil spilling**

a. But the advent of COVID -19 has worsened the situation

- a. Regular washing of hands, clothes, utensils**
- b. Dumping of dead bodies**
- c. Extreme level of bio-medical waste dump into water bodies**

A close-up photograph of clear water being poured from a glass pitcher into a clear glass. The water is captured in mid-pour, creating a dynamic, flowing shape. The background is a soft, light blue gradient. The overall image conveys a sense of freshness and purity.

WHY WATER?

Through this paper we have tried to study the impact of water pollution from the perspective of Human Rights and recommend ways to sustainably preserve water for our future generations. The paper also highlights the Rights which are infringed due to lack of clean water and its impact on human health and economy.

RESEARCH QUESTIONS



How are the lives of people affected due to pollution of water? Which of the human rights get violated due to water pollution?

What kind of implementation gaps exist in the legislations for water pollution?

How can citizens be made to contribute towards reducing and preventing water pollution at their individual levels?

OBJECTIVES

To identify and elaborate on some lesser-known sources of water pollution.

To examine various human rights associated with water and how water pollution impacts their lives.

To study the existing legal framework in the country for water pollution.

To identify the implementation gap between the legislation and ground reality.

To bring down the attention of the citizens towards the alarming consequences of water pollution and suggest steps that citizens can undertake to reduce and gradually prevent water pollution at individual level.

To suggest measures to the stakeholders on different aspects covered in the paper which will have potential to reduce water pollution to a considerable extent

METHODS AND DATA COLLECTION

The is paper is purely based on SECONDARY RESEARCH. Information and Data is collected from :

- a. Government Websites
- b. Articles
- c. Journals

For the study of legal framework DOCTRINAL METHOD is used. Sources of data:

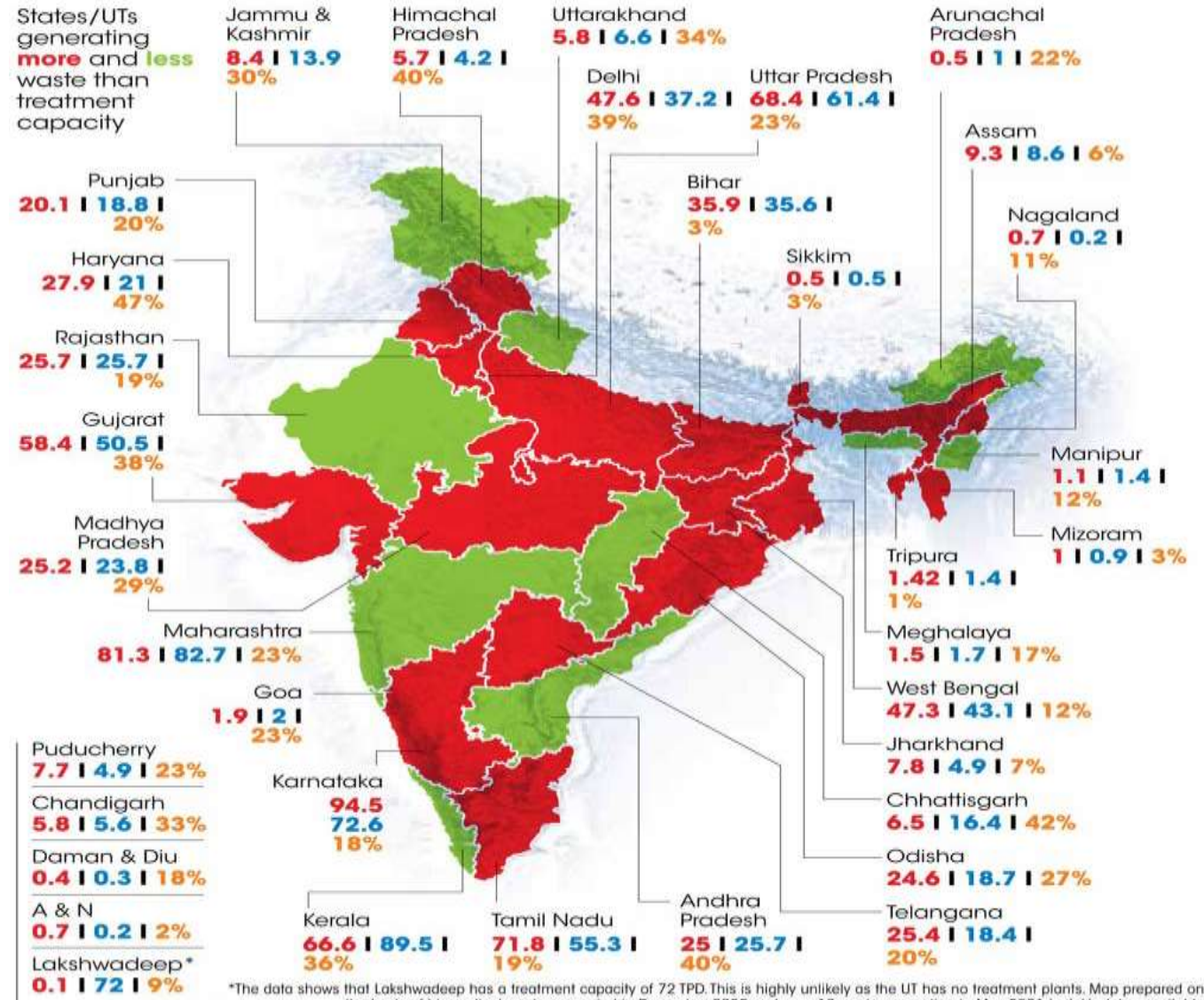
- a. Legislations
- b. Judicial Decisions



TOO MUCH TO HANDLE

As many as 22 states/UTs have generated more biomedical waste than their treatment capacity during the pandemic's second wave

00 Total biomedical waste generated in tonnes per day (TPD)
 00 Total treatment capacity (TPD)
 00 % share of covid-19 biomedical waste in the total



*The data shows that Lakshwadeep has a treatment capacity of 72 TPD. This is highly unlikely as the UT has no treatment plants. Map prepared on the basis of biomedical waste generated in December 2020 and covid-19 waste generation in May 2021. Ladakh data unavailable. Source: Central Pollution Control Board

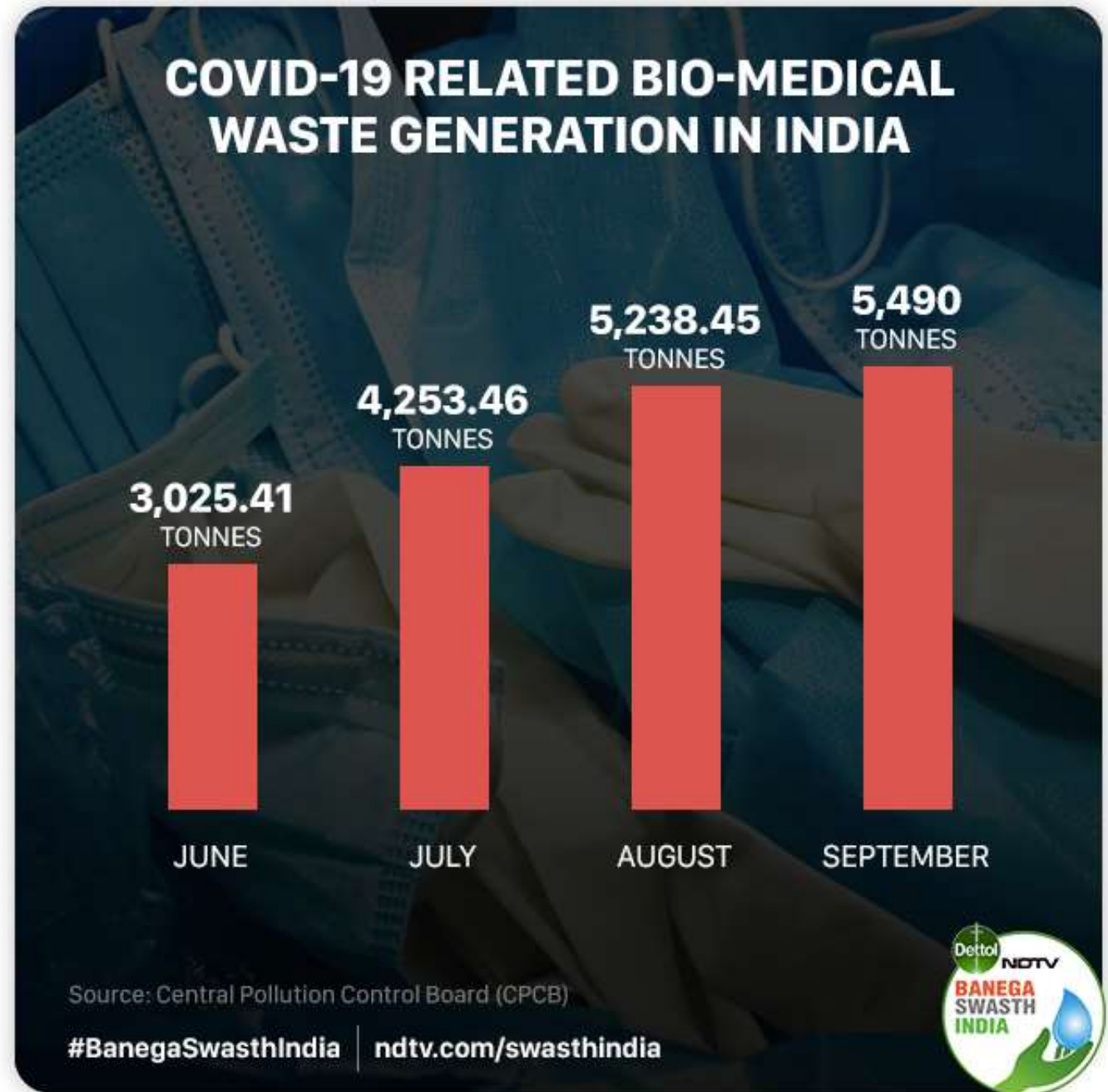
LESSER EXPLORED SOURCES OF WATER POLLUTION

- Bio medical waste in its regime includes all liquid and solid wastes generated from medical establishments and the activities involving biological materials.

LESSER EXPLORED SOURCES OF WATER POLLUTION

Bio medical waste as a source of water pollution

A great surge in disposal of bio-medical waste was also witnessed during Covid-19 Pandemic, when India generated over 15,000 Tonnes in just four months of the advent of the Pandemic.



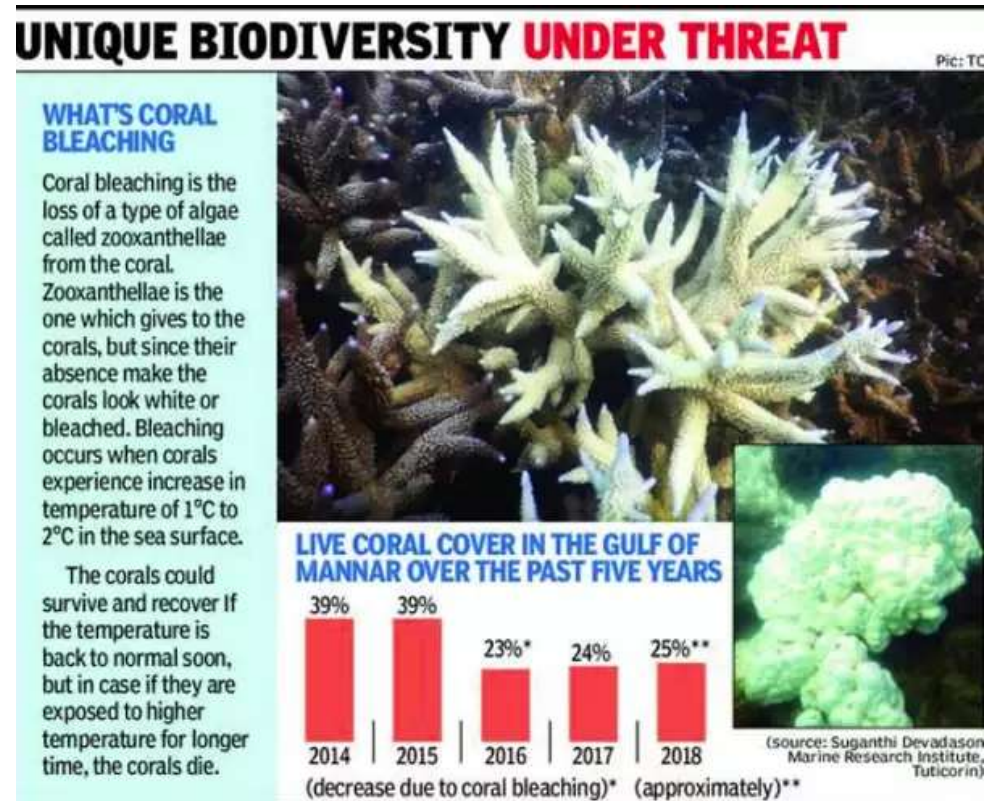
Radioactive Waste as a source of water pollution



These are generated by handling and usage of the radioactive elements like Radium, Uranium 235, 238 etc. These are generated during various operations of the nuclear fuel cycle as well as production and use of radionuclide for various societal applications.

Thermal Pollution as a source of Water Pollution

- Various industries, nuclear power plants and thermal plants use water for cooling their machines. The resultant hot water is often discharged into rivers or lakes or nearby water bodies.
- PHOTO - Corals are highly susceptible to temperature anomalies. Sudden change in the temperature can severely affect their ecology. The thermal pollution from run-offs and effluents causes bleaching, the expulsion of its symbiont algae and subsequent death of corals.



Mining as a source of Water Pollution



Mining is likely to have significant effects on ground water as well as surface water. Mining operations can contaminate and cause severe physical dislocation of aquifers.

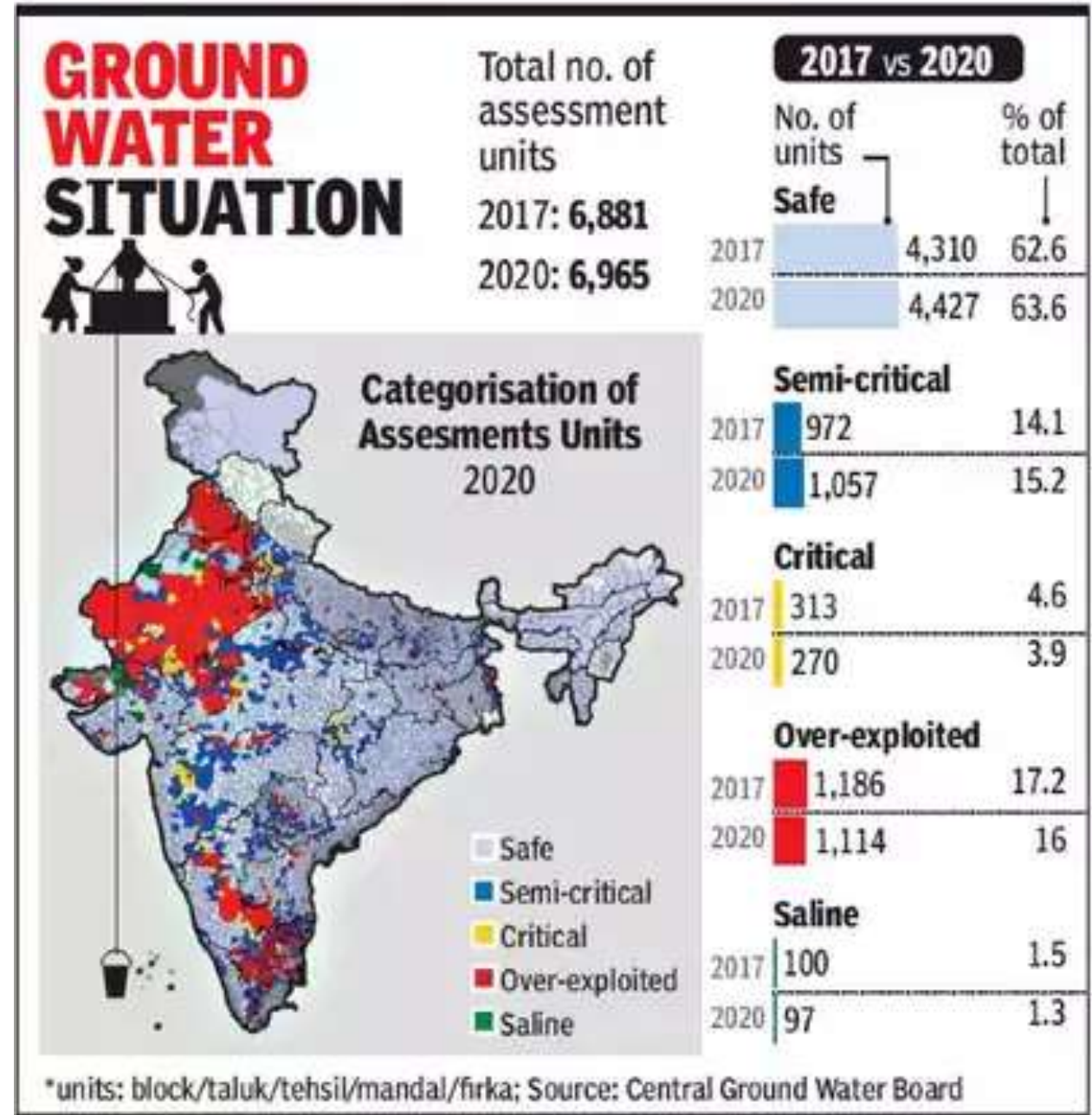
Accidental Oil Spilling as a source of Water Pollution



Mauritius Oil Spill, which was responsible for damaging water with spilling of over 1,000 Tonnes of oil into the Indian Ocean. The Indian Invention called the 'Graphene oil absorbent pads called 'Sorbene Pads Absorb up to 86 times their weight and are reusable upto 6-7 times

GROUND WATER POLLUTION

According to the Central Groundwater Board, India's groundwater is highly polluted. Unregulated anthropogenic activity has drastically increased groundwater depletion and resultant pollution. Therefore, pollution of groundwater is a matter of serious concern.



HUMAN RIGHTS VIOLATION BY WATER POLLUTION

INTERGENERATIONAL EQUITY

“Meeting the needs of the present without compromising the ability of future generations to meet their needs”.

To practice this principle, four criteria are to be adhered:

- Present generation mustn't exploit the resources.
- The present generation mustn't predict values of future generations and exploit resources to achieve their own needs/wants.
- They clearly lay down foreseeable situations.
- They will be human sources, being shared by every cultural, economic and political system.

Right to Health

Vincent v Union of India - The very foundation of all human activities lies in a healthy human body and public health must be developed and maintained by the state with its full ability since it is one of most significant for humankind.

Right to clean water

It falls under the purview of right to health under Article 21 as a predominant human right. It includes that every individual has the right to have access to pure and clean drinking water. Further, various diseases like diarrhea, cholera, dysentery, etc. stem from the root cause of drinking water which has been contaminated due to the varied sources of water pollution.

Right to economic activity

rights protected by the government to ensure the fulfillment of basic needs like sustenance, housing, education, health, and employment.

Existing Legal Framework

Constitution of India

The Indian Constitution apart from providing right to clean drinking water and right to live in a clean environment under Article 21 of the constitution also enshrines in Part IV-A that "It shall be the duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wildlife and to have compassion for living creatures.

Water (Prevention & Control of Pollution) Act, 1974

The act has defined pollution in terms of water contamination. It empowers the state board to inspect sewage or trade effluent, to conduct and participate in investigations, to lay down standards of treatment of sewage and trade effluents

Existing Legal Framework

Environment (Protection) Act, 1986

Under section 7 of the act, standards have been set beyond which emission or discharge cannot be carried out by the industry, operation etc. the industry, operation etc. cannot carry out more emission or discharge more than the set standards.

Hazardous Waste (Management & Handling) Rules, 2016

Ensures safe handling , generation, processing, treatment, package, storage, transportation, use reprocessing, collection, conversion, and offering for sale, destruction and disposal of Hazardous Waste.

Manufacture, storage and Import of Hazardous Chemicals Rules, 2016

Regulate manufacturing, storage and import of hazardous chemicals in India. Section 3 of this act explains the duties of the authorities to inspect the industrial activities at least once in a year.

INITIATIVES BY GOVERNMENT

Namami Gange Programme

It is an Integrated Conservation Mission, supported as 'Lead Program' by the Union Government in June 2014 with a spending plan cost of Rs.20,000 Crore to achieve the twin targets of successful **Pollution Control in 17 Categories of major polluting industries**, decrease of contamination, protection, and restoration of National River Ganga.

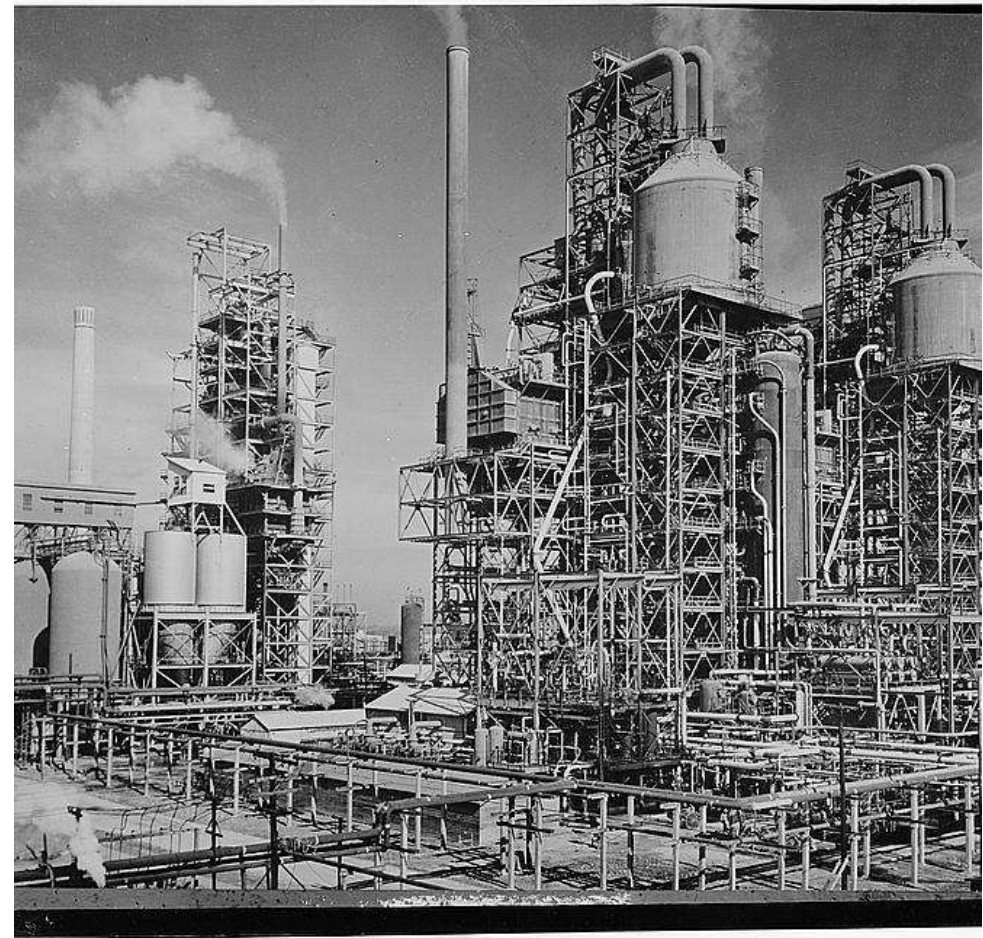


INITIATIVES BY GOVERNMENT

Central Pollution Control Board Mission

A nation-wide drive to control modern contamination. Central Pollution Control Board enrolled 17 classes of profoundly dirtying ventures, what's more horribly dirtying ventures releasing their effluents into the waterways and lakes.

The execution of these projects has been strengthened through the formation of the Environment Surveillance Squads by the Central/State Boards for shock assessment of ventures.



INITIATIVES BY GOVERNMENT

National Water Monitoring Programme (NWMP)

This is a nation-wide programme for monitoring of water quality. CPCB in collaboration with concerned SPCBs/PCCs established a nationwide network of water quality monitoring comprising 2500 stations in 28 States and 6 Union Territories.



INITIATIVES BY GOVERNMENT

Bio-medical and Municipal Solid Wastes Management

Public cleanliness prerequisites request that the tremendous mass of irresistible waste be delivered as innocuous as could really be expected.

The state contamination control sheets are associated with recommending grouping, isolation, and treatment offices. The state legislatures are likewise outlining the strong garbage removal rules and principles in view of Bio-clinical Waste Management Rules, 2016, and focal contamination control sheets rules.



This Photo by Unknown author is licensed under [CC BY-SA](https://creativecommons.org/licenses/by-sa/4.0/).

IMPLEMENTATION GAP

1. The Economic Survey 2021-22 - unsustainable extraction of groundwater
2. The survey showed improvement in the compliance status of Grossly Polluting Industries (GPI) near river Ganga and its tributaries
3. Maharashtra observed that industrial units were releasing untreated effluent into water bodies.
4. NGT observed that the Enforcement Directorate was not taking active action against such industrial units which were committing offences under environmental statute.

Basic problem lies with the regular operation and compliance of Common as well as Industrial Effluent Treatment Plants.

RECOMMENDATIONS

STEPS TO BE TAKEN BY GOVERNMENT

1. Prepare a proper method of disposing Radioactive waste.
2. Encourage innovations that aid environmental sustainability through monetary rewards and compensation.
3. Encourage and incentivize the citizens in waste segregation practices.
4. Promotion of sustainable agricultural practices

STEPS TO BE TAKEN BY NHRC

1. Mobilize SHRC's to conduct awareness drives at local levels to educate the locals.
2. Can organize training programmes and workshops to train citizens and public workers to shift to sustainable choices.

RECOMMENDATIONS

STEPS TO BE TAKEN BY CITIZENS

1. Avoid disposing of toxic chemicals used in households like ammonia, paint thinner, bleach into the toilets.
2. Disposal of medical wastes into the drains, and nearby water bodies or in the toilet should be avoided.
3. Try to avoid use of plastic, especially containers used in the household.
4. Only usage of those detergents and cleaners which do not involve phosphate in it.
5. Afforestation programmes with active participation of citizens.

CITATIONS

1. “Database of Coastal States in India”, *available at: <http://iomenviis.nic.in/index2.aspx?slid=758&sublinkid=119&langid=1&mid=1>*
2. Composite Water Management Index”, Niti Aayog, published in June 2018
3. Ramesh Chandrappa and Diganta Bhusan Das, “Biomedical Waste”, *US National Library of Medicine National Institute of Health*, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7122413/>
4. Ministry of Environment, Forest and Climate Change, Government of India, “Bio-Medical Waste (Management and Handling) Rules, 2016”, (March 29, 2016), https://dhr.gov.in/sites/default/files/Bio-medical_Waste_Management_Rules_2016.pdf
5. Radioactive Waste Management: Indian Scenario, *available at: <http://www.barc.gov.in/pubaware/nw.html>*
6. Staff Reporter, “Thermal Pollution as the Unseen side of Water Pollution”, *Geography n You*, July, 27, 2017, <https://geographyandyou.com/thermal-pollution-unseen-water-pollution/>
7. Mining, India Water Portal, *available at: <https://www.indiawaterportal.org/topics/mining>*

CITATIONS

11. Jayna Kothari, “The Right to Water: A Constitutional Perspective”, *International Environmental Law Research Centre (IELRC)*, https://www.ielrc.org/activities/workshop_0612/content/d0607.pdf
12. Aarti Kelkar Khambete, “Water contamination and pollution – A growing challenge for the health and biodiversity”, *India Water Portal*, <https://www.indiawaterportal.org/faqs/water-contamination-and-pollution-growing-challenge-health-and-biodiversity>
13. Medhavi Arora, “Arsenic polluted water linked to cancer in India”, *CNN Health*, May 1, 2017, available at: <https://edition.cnn.com/2017/04/28/health/arsenic-water-pollution-cancer-india/index.html>
14. Economic Survey, “Sustainable Development and Climate Change: Chapter 6”, pp 197-232, available at: <https://www.indiabudget.gov.in/economicsurvey/doc/eschapter/echap06.pdf>

THANK

YOU!

**TOPIC- ENVIRONMENTAL CONCERNS AND ISSUES RELATING TO
HUMAN RIGHTS**

**IMPACT OF WATER POLLUTION FROM HUMAN RIGHTS
PERSPECTIVE: A SOCIO-LEGAL ANALYSIS**

BY NHRC – GROUP 4

**Naireen Imran, Nidhi Kanaujia, Nupur Bhat, Panchami Khaund, Paras Pare, Parvi
Rawat, Pooja Kumari, PragyaTripathi and Prerna Chhabra**

TABLE OF CONTENTS

<u>Acknowledgement</u>	3
I. <u>Introduction</u>	4
II. <u>Research Questions</u>	5
III. <u>Research Objectives</u>	5
IV. <u>Literature Review</u>	5
V. <u>Research Methodology</u>	6
VI. <u>Identification of Lesser Explored Sources of Water Pollution</u>	6-11
➤ Biomedical Pollution	
➤ Radioactive Pollution	
➤ Thermal Pollution	
➤ Mining Pollution	
➤ Accidental Oil Spilling	
➤ Groundwater Pollution	
VII. <u>Human Rights violation by Water Pollution</u>	12-14
➤ Intergenerational Equity	
➤ Right to Health	
➤ Right to Clean Water	
➤ Right to Economy	
VIII. <u>Examining the Existing Legal Framework</u>	15-17
➤ Constitutional of India	
➤ Water(Prevention & Control of Pollution) Act, 1974	
➤ Environment Protection Act, 1986	
➤ Hazardous Waste (Management & Handling) Rules, 2016	
➤ Manufacture, storage and Import of Hazardous Chemicals Rules, 2016	
IX. <u>Initiatives by the Government</u>	17-20
X. <u>Implementation Gap</u>	20-21
XI. <u>Recommendations</u>	22
XII. <u>Conclusion</u>	23

Acknowledgment

Firstly, we would like to thank the National Human Rights Commission for this opportunity and also for providing us with resources to complete our work on time. We want to especially mention the efforts of Shri MukeshKulshetra for assigning us our Topic- Environmental Concerns and Issues Relating to Human Rights, which is very important in today's contemporary times.

Secondly, we would like to extend this feeling of gratitude to Ms. Laxmi, our research mentor for her valuable inputs, suggestions and time. Without her constant feedback and mentoring sessions, we would not have completed this research project on time.

Finally, we would like to extend this acknowledgement to our parents, siblings and extended family members. In this pandemic, we are grateful to them for letting us work on this project.

1.Introduction

India, surrounded by major water bodies and oceans, along with a coastline of 7516.6 kms¹, is considered to be an ideal place to grow crops, live and have a life of sustainability. India has an abundance of natural resources, but when it comes to water, less than 50 percent of the Indian population has access to clean drinking water. As many as 1.95 million dwellings have been contaminated with fluoride and arsenic. According to NITI Aayog Report on water crisis² India is undergoing the worst water crisis ever since its existence. Nearly 500 million people are facing high to extreme water scarcity. India also ranked 120th out of 122 countries in the water quality index with approximately 70% of its water unfit for human consumption.

Since the theme, “Environmental Concerns and Issues relating to Human Rights”, is vast and covers numerous pertinent topics, the team has narrowed down on a topic that is in dire need of recognition: “Impact of water pollution from Human rights perspective: A Socio-Legal Analysis”

Discharge of Radioactive waste, mining, bio-medical waste, climate change and oil spilling incidences have further contributed in worsening the already shabby situation of water crisis in India. The Advent of Covid-19 Pandemic further contributed to the situation negatively, with regular washing of hands, clothes, utensils and deposition of high amounts of dead bodies and bio-medical waste in water bodies’ further lead to contaminate our water.

Through this paper Group-4 tries to study the impact of water pollution from the perspective of Human Rights and recommends ways to sustainably preserve water for our future generations. The paper also highlights the Rights which are infringed due to lack of clean water and its impact on human health and economy.

Keywords: Water pollution, Sustainable Development, Legislative framework and Intergenerational Rights.

2.Research Questions

¹“Database of Coastal States in India”, available at: <http://iomervis.nic.in/index2.aspx?slid=758&sublinkid=119&langid=1&mid=1> , (last visited March 3, 2022)

²“Composite Water Management Index”, Niti Aayog, published in June 2018.

Water pollution has been a prolonged problem in our country. As India grows and urbanises, its water bodies are getting more and more toxic. The paper tries to throw light on the various aspects of human rights violated due to water pollution and analyse the shortcomings of the existing legal framework of the country. Following are the research questions sought to be answered in the course of the paper:

- How are the lives of people affected due to pollution of water? Which of the human rights get violated due to water pollution?
- What kind of implementation gaps exist in the legislations for water pollution?
- How can citizens be made to contribute towards reducing and preventing water pollution at their individual levels?

3. Research Objectives

The objectives of the paper are as follows:

- To identify and elaborate on some lesser known sources of pollution.
- To examine various human rights associated with water and how water pollution impacts their lives.
- To study the existing legal framework in the country for water pollution.
- To identify the implementation gap between the legislation and ground reality.
- To bring down the attention of the citizens towards the alarming consequences of water pollution and suggest steps that citizens can undertake to reduce and gradually prevent water pollution at individual level.
- To suggest measures to the citizens and other stakeholders on different aspects covered in the paper which will have potential to reduce water pollution to a considerable extent.

4. Literature Review

In the course of writing this paper, numerous scholarly articles were referred to. The paper of the Ministry of Education on law relating to Water Pollution under Environmental Law talked about the legal framework that exists in the country in the context of water pollution. It provided an overview of the different components of the legal framework relating to water pollution in India, which included constitutional provisions, legislation as well as judicial decisions.

Chapter 6 of Economic Survey of 2021-22 provides an analysis of data on the groundwater and river bodies. The survey provides extensive assessment on ground water resources. It also provides a detailed analysis of the NamamiGange Mission.

International Environmental Law Research Centre's paper on Right to Water in India, published in the International Journal of Human Rights (2013), undertook a study to understand the conceptual and practical gaps in the context of water as a right through analysis of the contributions made by the legislative, administrative and the judiciary.

A few articles have also been referred from trusted newspapers and websites. The articles talked about the non-compliance of certain industries to the laws on water pollution, the reasons for such activities and what steps the government has taken in this regard.

With respect to the existing literature on the topic, we understand that there has been good amount and quality research on water and its pollution. However, most literature has focused on the acts associated with water. This paper has focused on the acts as well as the reasons for non-compliance, highlighting lesser known sources of pollution and the steps that are needed to be taken by the Government and citizens respectively.

5. Research Methodology

This paper is based purely on Secondary Research, where all the information and data collection has been taken up from secondary sources. The data collected for research has been through authentic government sources. Other secondary sources of data such as articles and journals have also been utilised.

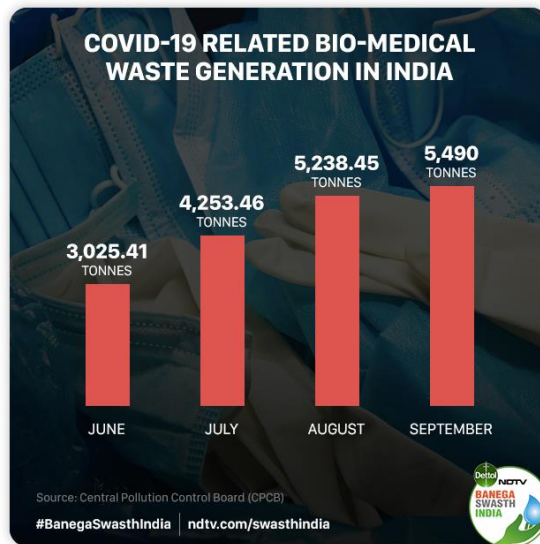
To study the existing legal framework in the country for water pollution, the Doctrinal Method of Explanatory Research Design, which implies library based research and analysis of existing laws and authoritative material, has been used. For the research and the collection of information, sources of data such as legislations and judicial decisions have been used.

6. Identification of Lesser Explored Sources of Water Pollution

The various sources of water pollution are stated below:

1. Bio-Medical Waste as a source of Water Pollution

Biomedical waste in its regime includes all liquid and solid wastes generated from medical establishments and also the activities involving biological materials. Apart



(Image Source: Central Pollution Control Board)

from health care, the relevant activities also include clinical research, research involving animals, animal farms, dead animals, and others. The generation of biomedical waste today is not restricted to specific activity or organisations like medical, pharmacy, hospitals etc³.

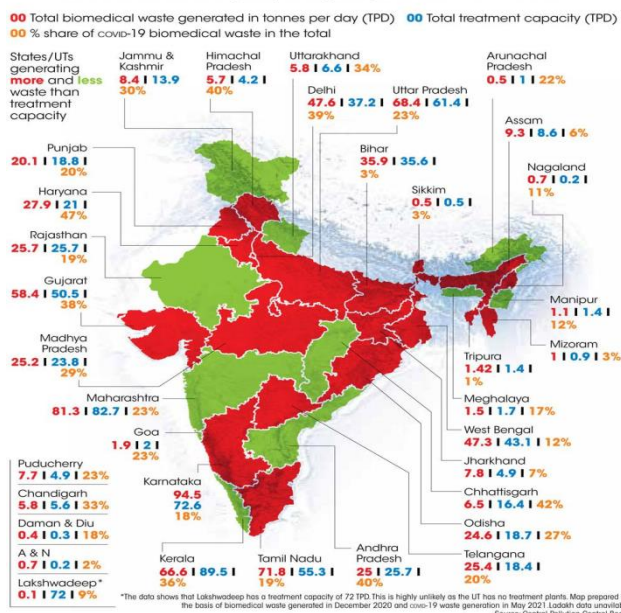
It can originate from homes during dialysis and using insulin injections, animal health activities in rural areas, butchering of sick animals in butcher houses, medical shops, use of sanitary napkins and ear buds, use of diapers, and airports when passengers throw away restricted medicines without prescription. A great surge in disposal of bio-medical waste was also witnessed during Covid-19 Pandemic, when India generated over 15,000 Tonnes in just four months of the advent of the Pandemic. The surge was seen despite repeated issuance of guidelines by Central Pollution Control Board (hereinafter, CPCB) about how to proactively dispose off medical waste in compliance of Bio-Medical Waste Rules, 2016⁴. Yet the waste was massive.

³Ramesh Chandrappa and DigantaBhusan Das, “Biomedical Waste”, *US National Library of Medicine National Institute of Health*, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7122413/>, (Last visited on March 2, 2022)

⁴Ministry of Environment, Forest and Climate Change, Government of India, “Bio-Medical Waste (Management and Handling) Rules, 2016”, (March 29, 2016), https://dhr.gov.in/sites/default/files/Bio-medical_Waste_Management_Rules_2016.pdf, (last visited on March 1, 2022)

TOO MUCH TO HANDLE

As many as 22 states/UTs have generated more biomedical waste than their treatment capacity during the pandemic's second wave



(Image Source: The Times of India dated July 29, 2021)

2. Radioactive Waste as a Source of Water Pollution

Radioactive wastes as the name suggests are the waste, which are generated by handling and usage of the radioactive elements like Radium, Uranium 235, 238 etc. These are generated during various operations of the nuclear fuel cycle as well as production and use of radionuclide for various societal applications.

The activities like mining and processing of uranium ore, fabrication of nuclear fuel, generation of power in nuclear reactor, processing of spent nuclear fuel, management of radioactive waste, production and use of radionuclide for various industrial and medical applications, research associating with radioactive material etc. generates the different types of radioactive waste. The radioactive wastes can be generated in forms of- solid, liquid or gas. The degree of radioactive level and its danger depends upon the nature of substance used and it varies from substance to substance.⁵

The major drawback of these kinds of wastes is that they are present in the environment for a very long duration. It may last up to a few hours, months or even up to several years. The very famous and known example in this aspect is that of the Chernobyl accident, Bhopal gas. Depending on the level and nature of radioactivity, radioactive wastes can be classified as exempt waste, Low & Intermediate level waste and High Level Waste.

3. Thermal Pollution as a source of Water Pollution

Various industries, nuclear power plants and thermal plants use water for cooling their machines. The resultant hot water is often discharged into rivers or lakes or nearby water bodies. The sudden changes in the temperature of water level have an adverse

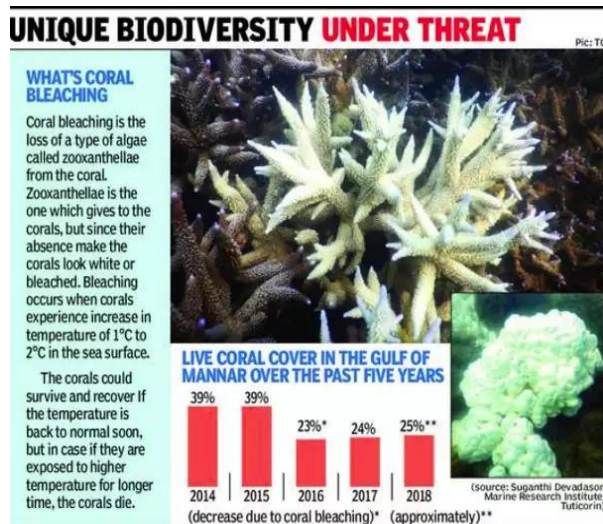
⁵ Radioactive Waste Management: Indian Scenario, available at: <http://www.barc.gov.in/pubaware/nw.html>, (last visited on March 1, 2022)

impact on the people as well as the aquatic life dependent upon these water resources. It affects the water quality as well as the water biota. Majority of the thermal pollution in water is caused due to human activities.

Some of the important sources of thermal pollution are nuclear power and electric power plants, petroleum refineries, steel melting factories, coal fired power plants, and boilers from industries. These factories release large amounts of heat to the water bodies leading to change in the physical, chemical and biological characteristics of the receiving water bodies. The impact is long lasting not only on aquatic life but also on human life. Several skin diseases and cancer related issues have come into light because of these unregulated activities.⁶

How thermal pollution is impacting the water bodies

- Decrease in dissolved oxygen – Oxygen, like in the air, is equally essential for aquatic life. The warmer the water the less is the rate at which oxygen is dissolved in it.
- Abrupt mass migration of species is another problem associated with thermal pollution. The change in temperature has forced various species to migrate to another habitat creating a hollow food web.
- Corals are highly susceptible to temperature anomalies. Sudden change in the temperature can severely affect their ecology. The thermal pollution from run-offs and effluents causes bleaching, the expulsion of its symbiont algae and subsequent death of corals.



(Image Source: The Times of India dated May 27, 2019)

4. Mining as a source of Water Pollution

⁶ Staff Reporter, “Thermal Pollution as the Unseen side of Water Pollution”, *Geography n You*, July, 27, 2017, <https://geographyandyou.com/thermal-pollution-unseen-water-pollution/> , (last visited on February 28, 2022)

Mining is a significant economic activity in India. It is a source of income and livelihood to a large part of the population. Mining is likely to have significant effects on ground water as well as surface water. India is the third largest producer of iron ore & coal and the fifth largest producer of bauxite in the world. For mining solid minerals like coal, open cast and underground mines are developed while; drilling and pumping methods are developed for the liquid and gaseous fuels.⁷

Mining operations can contaminate and also cause severe physical dislocation of aquifers. The major source of water pollution in coal mines is the suspended solids in the drainage system of mine water and stormwater. In some coal mines, the mine water is acidic because of the presence of sulphur / pyrites / pyritic compounds. Effluent from these washeries and coal preparation plants generally contain fine coal particles, suspended solids, washery medium, reagents etc. and sometimes oil and grease, this creates tremendous amounts of water pollution in the adjoining bodies.⁸

5. Accidental Oil Spilling as a source of Water Pollution

Accidental Oil-spilling refers to when the oil is released into the sea or oceans or coastal areas due to the collision, whether direct or indirect, of two vessels carrying oil cargo. It has a direct effect on marine ecosystems just because of the inhuman activity and it is also a kind of pollution. The accidental oil-spilling affects the marine ocean aquatic ecosystem tremendously. It is the release of liquid petroleum hydrocarbons.

The recent oil spill in the Gulf of Thailand which started in January 2022, has deeply impacted the coral reefs, seagrass beds and local water bodies of marine parks. Reportedly 40, 000 litres of oil leaked into the Ocean. This oil spill devastated the 15 miles of Khao Laem Ya-KohSamet National Park which preserves corals and seagrass beds.

⁷Mining, India Water Portal, available at: <https://www.indiawaterportal.org/topics/mining> , (last visited on February 29, 2022)

⁸Water Pollution & Control measures, available at https://cag.gov.in/uploads/download_audit_report/2019/Chapter_5_Water_Pollution_and_Control_Measures_of_Report_No_12_of_2019_Assessment_of_Environmental_Impact_due_to_Mining_Activities_and_its_Mitigation_in_Coal_India_Limited_and_its_S.pdf , (last visited on March 1, 2022)



(Image Courtesy of ChanklangKathong/ Greenpeace Thailand)

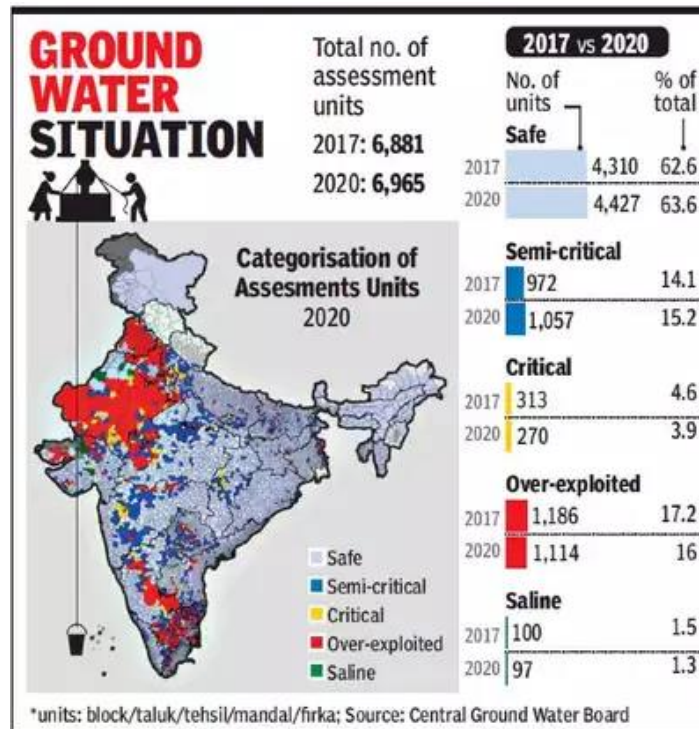
How is India helping in preventing oil spilling?

In 2020, it was seen that India through the help of a start-up ‘Sorbene’ pads is trying to clean up the infamous Mauritius Oil Spill, which was responsible for damaging water with spilling of over 1,000 Tonnes of oil into the Indian Ocean. The Indian Invention called the ‘Graphene oil absorbent pads called ‘Sorbene Pads Absorb up to 86 times their weight and are reusable upto 6-7 times’⁹.

6. Groundwater Pollution

When the polluted water seeps into the ground and enters an aquifer it results in ground water pollution. In most of our villages and many townships, ground water is the only source of drinking water. According to the Central Groundwater Board, India's groundwater is highly polluted. Unregulated anthropogenic activity has drastically increased groundwater depletion and resultant pollution. Therefore, pollution of groundwater is a matter of serious concern.

⁹ “India is using this startup’s ‘Sorbene’ Pads to clean up the Mauritius Oil Spill”, *available at:* <https://www.thebetterindia.com/236683/mauritius-oil-spill-environment-marine-life-log9-startup-containment-mumbai-india-nor41/> , (last visited on Mar 2, 2022)



(Image Source: The Times of India dated July 11, 2021)

7. THE HUMAN RIGHTS VIOLATION BY WATER POLLUTION

Intergenerational Equity

Before we dive into the aspect of violation of Human Rights due to Water Pollution, it is important to know the Concept of “Intergenerational Equity”. It can be defined as “Meeting the needs of the present without compromising the ability of future generations to meet their needs”. This forms the basis of Sustainable Development Goals laid down by the United Nations.

These rights operate in fairness because it says that “people are both beneficiaries entitled to use the environment and its resources, and at the same time trustees (or custodians) with an obligation to pass it on in no worse condition on balance than that in which it was received”.

In order to practice this principle, four criterias are to be adhered:

1. Present generation mustn't exploit the resources.
2. The present generation mustn't predict values of future generations and exploit resources to achieve their own needs/wants.
3. They clearly lay down foreseeable situations.

4. They will be human sources, being shared by every cultural, economic and political system.

In order to collectively preserve our environment, Sustainable Development Goals¹⁰ have been laid down by the United Nations. And on the similar Footing, India has recognized Right to preserve its environment, with special focus on water by giving it a status of Fundamental Right¹¹ and violation of the same, gives the aggrieved the Right to move to the Supreme Court¹².

Water pollution has been a major setback in preserving certain human rights which are extremely essential. The effects of water pollution on the rights of the individuals are far-reaching. Some human rights which are affected by water pollution are stated as follows-

- **Right to Health**

The Constitution of India under Article 21 guarantees the right to life and to live life with dignity. Further, under its wide ambit, it also guarantees the fundamental right to health and right to live in a healthy environment to all individuals. It states that there should not be any compromise on the part of a person's health. There exists a significant deal of responsibility on the state to promote the welfare of public health by securing social order as specified under Article 38 of the Constitution. The matter of health has been given immense significance under public policy under Part IV and Article 47 under the Directive Principles of State Policy (DPSP) highlight the state's responsibility to develop public health. Human health suffers a major setback with the prevalence of contaminated water due to water pollution.¹³

Moreover, a judicial pronouncement which has highlighted right to health as a significant human right is *Vincent v Union of India*¹⁴, where the court stated that the very foundation of all human activities lies in a healthy human body and public health must be developed and maintained by the state with its full ability since it is one of most significant for humankind.

¹⁰“What are Sustainable Development Goals”, available at: <https://www.singleton.nsw.gov.au/1068/What-are-the-Sustainable-Development-Goals>, (last visited on March 2, 2022)

¹¹The Constitution of India, art. 21

¹²*Ibid.*, art. 32

¹³Subodh Kumar, Hari Mohan Meena and Kavita Verma, “Water Pollution in India: its impact on the Human Health: Causes and Remedies”, Volume 12, Number 2, *International Journal of Applied Environmental Sciences*, pp. 275-279, (2017)

¹⁴AIR 1987 SC 990

- **Right to clean water**

The right to clean water falls under the purview of right to health under Article 21 as a predominant human right. It includes that every individual has the right to have access to pure and clean drinking water. Further, various diseases like diarrhoea, cholera, dysentery, etc. stem from the root cause of drinking water which has been contaminated due to the varied sources of water pollution. The non-availability of clean drinking water acts has a pertinent factor in the deplorable health conditions of the people. A stark reality portrays that about 37.7 million Indians are affected annually by diseases which are water-borne, diarrhoea leads to the death of 1.5 million children, and 73 million working days are lost leading to an economic burden of \$600 million a year¹⁵.

Moreover, apart from drinking water, human beings use water for various other purposes like cleaning, bathing, cooking, etc. and all these activities require clean water. However, because of water pollution, water becomes contaminated and eventually leads to the scarcity of water in the society. This scarcity creates additional difficulties among people since the upper class manage to afford the prevalent water resource, however, the lower class fail to do so. Hence, the right to clean and adequate water is a major human right which needs suitable protection¹⁶.

- **Right to economic activity**

Almost 1.6 million children under the age of 5 years lose their lives every year to water related diseases in India. Nearly 100 million person days of work are lost each year and an approximate of Rupees 350 billion are lost due to expenditure on water related diseases.¹⁷

Since arsenic has entered our water bodies, what is known as the “Cancer Chain” has become a prevalent problem in India. The crops which consume a lot of water to grow

¹⁵Jayna Kothari, “The Right to Water: A Constitutional Perspective”, *International Environmental Law Research Centre (IELRC)*, https://www.ielrc.org/activities/workshop_0612/content/d0607.pdf , (last visited on March 2, 2022)

¹⁶Aarti Kelkar Khambete, “Water contamination and pollution – A growing challenge for the health and biodiversity”, *India Water Portal*, <https://www.indiawaterportal.org/faqs/water-contamination-and-pollution-growing-challenge-health-and-biodiversity> , (last visited on March 2, 2022)

¹⁷Medhavi Arora, “Arsenic polluted water linked to cancer in India”, *CNN Health*, May 1, 2017, available at: <https://edition.cnn.com/2017/04/28/health/arsenic-water-pollution-cancer-india/index.html> , (last visited march 2, 2022)

like rice, also quickly absorb arsenic, thereby slowly poisoning a person, and eventually developing cancerous cells in the human body.

8. Examining the Existing Legal Framework

I. Constitution of India

The Indian Constitution apart from providing right to clean drinking water and right to live in a clean environment under Article 21¹⁸ of the constitution also enshrines in Part IV-A¹⁹ that “It shall be the duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wildlife and to have compassion for living creatures.”²⁰

Every resident of India has a principal right to continue any calling or business, exchange, or trade at any spot inside the region of India²¹. Yet, this is definitely not a flat out right and hence, reasonable restrictions attached to it under Article 19(6), makes it the duty of the state to ensure that any activity which causes harm to the interest of the general public, or to their health, or is detrimental to the environment, shall cease to exist. In furtherance of this provision the Central and State Pollution Control Boards were set up as a statutory body under the Water (Prevention and Control of Pollution) Act, 1974²² and have been assigned the role of protection, control and abatement of water pollution. Other functions of both Central Pollution and State Pollution Control both are as follows:

- Advising the Central and state Government on matters relating to pollution,
- Coordinating the activities of the Central and State Boards
- Providing Technical assistance to the State Boards, carry out and sponsor investigations and research relating to control of pollution
- Planning and organising training of personnel
- Collecting, compiling and publishing technical and statistical data, preparing manuals and code of conduct.
- To lay down standards

¹⁸*Supra Note 8*

¹⁹Fundamental Duties

²⁰*Supra Note 8*, art. 51A(g)

²¹*Ibid.* art, 19(1)(g)

²²(Act 6 of 1974)

- To lay down effluent and emission standards
- To issue consent to industries and other

II. Legislations dealing with protection and safeguard of the Environment

1. Water (Prevention & Control of Pollution) Act, 1974²³

The act has defined pollution in terms of water contamination²⁴. The act also empowers the state board to inspect sewage or trade effluent, to conduct and participate in investigations, to lay down standards of treatment of sewage and trade effluents²⁵. The act has given power to the state board or any person on his behalf to collect samples effluents and to send them to the laboratories established under the act²⁶. Section 18(1)(b) imposes authority over the state board to follow all the directions of the central board who further have to follow the directions of the central government, Section 24 specifically lays down prohibition on use of streams or wells for disposal. Any act in contravention to this has been made punishable with maximum imprisonment of six years and fine²⁷. The act has also laid down certain restrictions on new outlets and new discharges without the previous consent of the state board in this regard under section 25, violation of which is further punishable with imprisonment for a maximum term of six years and fine.²⁸

2. Environment (Protection) Act, 1986²⁹

Under section 7 of the act, standards have been set beyond which emission or discharge cannot be carried out by the industry, operation etc. the industry, operation etc. cannot carry out more emission or discharge more than the set standards. The Act empowers the Central government to give directions regarding the stoppage or regulation of the supply of electricity or water or any other service³⁰. Section 11 has given power to the central government or any officer empowered by him on his behalf to collect samples for the purpose of analysis to any environmental laboratories established under section 12. The samples can be taken of soil, air, water or any other substance from any factory. Section 15 and 16 are penalty provision for the acts done in contravention of the act.

²³*Ibid.*

²⁴*Ibid.*, s. 2(e)

²⁵*Ibid.*, s. 17

²⁶*Ibid.*, s. 21

²⁷*Ibid.*, s. 43

²⁸*Ibid.*, s. 44

²⁹(Act No. 29 of 1986)

³⁰*Ibid.*, s. 5

3. Hazardous Waste (Management & Handling) Rules, 2016³¹

Ensures safe handling, generation, processing, treatment, package, storage, transportation, use reprocessing, collection, conversion, and offering for sale, destruction and disposal of Hazardous Waste.

4. Manufacture, storage and Import of Hazardous Chemicals Rules, 2016³²

Regulate manufacturing, storage and import of hazardous chemicals in India. Section 3 of this act explains the duties of the authorities to inspect the industrial activities at least once in a year.

III. Initiatives by the Government

1. Industrial Pollution Control along the river Ganga

This programme is generally known as *NamamiGange Programme* which is an Integrated Conservation Mission, supported as 'Lead Program' by the Union Government in June 2014 with a spending plan cost of Rs.20, 000 Crore to achieve the twin targets of successful **Pollution Control in 17 Categories of major polluting industries** decrease of contamination, protection, and restoration of National River Ganga.



(Image Source: JagranJosh)

2. The Central Pollution Control Board Mission

For a nationwide drive to control modern contamination, The Central Pollution Control Board enrolled 17 classes of profoundly dirtying ventures, what's more horribly dirtying ventures releasing their effluents into the waterways and lakes. The SPCBs/PCCs were

³¹Notification issued on April 4, 2016

³²Notification issued on November 27, 1989

approached to focus on these enterprises and the advancement of execution of the program is consistently checked by CPCB. Prior, such a drive was additionally taken concerning the horribly dirtying enterprises releasing their effluents into the stream Ganga.

The execution of these projects has been strengthened through the formation of the Environment Surveillance Squads by the Central/State Boards for shock assessment of ventures.

3. Pollution Control in Problem Areas

The Centrally Sponsored Scheme implemented by the Ministry for abatement of pollution has taken a plan named *National River Conservation Plan* which was made to reduce river pollution. This programme is targeting domestic pollution. This plan started with the Ganga Action Plan and was launched in 1985.

4. Comprehensive Environmental Pollution Index (CEPI)

Developed by the Central Pollution Control Board, Comprehensive Environmental Pollution Index measures the critically polluted industrial clusters/areas. It can be used for air, water and land. Such a move by the government will increase the accountability of the industries.

5. Industrial Pollution Prevention Project (IPP)

Signed in 1994 and its implementation is in progress. The goal of this project is to aid the execution of the public authority's arrangement on contamination reduction and advance savvy contamination decrease from modern sources. The undertaking will zero in on the most contaminating modern areas, and includes three parts:

- (a) An institutional part;
- (b) A speculation part, and
- (c) A specialised help part.

The institutional part is intended to help a program of fortifying the State Pollution Control Boards. The speculation part is intended to help subprojects by individual firms for contamination decrease, with attention on squander minimization, and reception of cleaner strategies for creation. The specialised help part is intended to help:

- (a) The foundation of a spotless innovation institutional organisation
- (b) Expansion administrations for the recognizable proof of waste minimization and decrease strategies for limited scope industry

(c) Pre-investment studies and

(d) Finance for other preparation and counselling administrations, including the preparation prerequisites for the readiness of ecological explanations by ventures.

6. Environmental Management Capacity Building Technical Assistance Project (EMCBTA)

Signed in 1997 and its implementation is in progress. The objective of this project is to help the Government of India to execute its ecological needs as laid out in the Environmental Action Program (EAP). The particular goal of the task is to upgrade ecological administration ability to guarantee the powerful execution of EAP needs.

The Project incorporates six parts:

a) Natural arrangement arranging

b) Ecological organisation

c) Decentralisation of natural administration

d) Ecological regulation execution

e) Checking and consistency in high need natural trouble spots; and

f) Gujarat-where the venture will reinforce the Department of Forests and Environment and the Gujarat Ecology Commission, as well as set up a State Environmental Action Program.

7. Common Bio-medical Waste Treatment Facility (CBWTF)

Was set up where biomedical waste, generated from member health care facilities is imparted necessary treatment to reduce adverse effects that this waste may pose on human health and environment. The treated waste may finally be sent for disposal in a landfill for recycling purposes. Programmes implemented through State Pollution Control Board (SPCB)

8. Consent Management

Here, a business person running or laying out any industry or interaction, and releasing profluent/radiating contaminations into any water assets or ashore/air and dirtying accordingly the ecological water/air is expected to acquire assent, which necessities to get in two stages:

- a) **Consent to Establish:** This agreement is to be gotten preceding laying out any industry or interaction.

- b) **Consent to Operate**: Once the business or cycle plant is laid out alongside the expected contamination control frameworks, a business visionary is expected to agree to work the unit. This assent is given for a specific period, which should be restored consistently.

9. Bio-medical and Municipal Solid Wastes Management

With the expansion of clinical offices, how much biomedical waste has additionally expanded quickly? The public cleanliness prerequisites request that the tremendous mass of irresistible waste be delivered as innocuous as could really be expected. Neighbourhood contamination control specialists are investigating the clinics and their treatment offices occasionally and give proposals in light of their discoveries. The state contamination control sheets are associated with recommending grouping, isolation, and treatment offices. The state legislatures are likewise outlining the strong garbage removal rules and principles in view of Bio-clinical Waste Management Rules, 2016, and focal contamination control sheets rules.

10. National Water Monitoring Programme (NWMP)

This is a nation-wide programme for monitoring of water quality. CPCB in collaboration with concerned SPCBs/PCCs established a nationwide network of water quality monitoring comprising 2500 stations in 28 States and 6 Union Territories.

IV. Implementation Gap

The Economic Survey 2021-22 highlighted the unsustainable extraction of groundwater. In north-western states of Delhi, Haryana, Punjab and Rajasthan groundwater extraction goes beyond 100% leading to overexploitation. In some areas of southern India also, overexploitation was observed as much more groundwater was being extracted than what is annually replenishable.

The survey also showed improvement in the compliance status of Grossly Polluting Industries (GPI) near river Ganga and its tributaries. It observed a consequent reduction in discharge of effluents from these industries into the waters of Ganga. A similar observation was made by the CPCB Annual Report 2019-20. However, the CPCB report highlighted that such compliance was observed only in 3 out of the 8 Common Effluent Treatment Plants on banks of Ganga and its tributaries. The report further pointed out the specifically high number

of non-operational sewage treatment plants in West Bengal. The CPCB report, further, highlighted the role of dumpsites in contaminating groundwater.

The National Green Tribunal, in a recent order in Tarapur, Maharashtra observed that industrial units were releasing untreated effluent into water bodies. The industrial units were violating the norms by not operating effluent treatment plants. They were, further, releasing untreated or only partially treated pollutants into the water bodies.

Making a special reference to the Prevention of Money laundering Act, 2002, the NGT observed that the Enforcement Directorate was not taking active action against such industrial units which were committing offences under environmental statute. Such inaction, as per the NGT, gives impetus to the offenders to irresponsibly continue such violations. The NGT also slammed the Maharashtra Industrial Development Corporation (MIDC), for failing to maintain pipelines and to carry out regular clearance of sludge. This again contributes to polluting water bodies. In an article, the New York Times observed that only half of the 16 billion gallons of urban sewage is treated on a daily basis. The remaining is released into rivers untreated. In the same article, a top advisor on water and land to the PM associates bureaucratic red tape and involvement of multiple agencies to the failure of authorities to tackle the problem of river pollution.

Therefore, we can conclude that the basic problem lies with the regular operation and compliance of Common as well as Industrial Effluent Treatment Plants. Such compliance requires stricter and more active involvement from enforcement authorities. We may alternatively use natural wastewater treatment systems at local levels to counter untreated effluents at the source itself³³.

9.Recommendations

Identifying best practices and replicating the same at all levels

- The major problem lies with untreated domestic and industrial effluent. To tackle that, we can rely on Floating treatment wetlands (FTW), like the one in Hyderabad, using plant species like Vetiver which has the highest uptake of nitrogen and phosphorus. We can set up such Vetiver floating wetlands at local levels very easily since Vetiver grass is native to India and the wetland system is economical to set up too. We can

³³ Economic Survey, “Sustainable Development and Climate Change: Chapter 6”, pp 197-232, *available at:* <https://www.indiabudget.gov.in/economicsurvey/doc/eschapter/echap06.pdf> , (last visited on March 2, 2022)

also, most positively, use this method to treat the high ammonia levels of Yamuna River which has caused the toxic froth in its waters.

Steps needed to be taken by the Government

- Should prepare a proper method of disposing radioactive waste, since it cannot be disposed of as normal waste. The solution can be to dispose of the waste under professional guidance. Another step the government can switch to is using renewable sources of energy such as solar, hydro-electric and wind power.
- Central and state governments should promote and encourage innovations that aid environmental sustainability through monetary rewards and compensation, especially for the non - biodegradable wastes. An example of sustainable innovation is Dr. Binish Desai, popularly known as the 'Recycle Man of India', who is turning biomedical wastes - used PPE Kits and masks - into eco-friendly bricks.
- The local government should encourage and incentivize the citizens in waste segregation practices. It may organise workshops to help people to set up composting units at society or neighbourhood levels.
- Promotion of sustainable agricultural practices- The government can also promote the growth of millets after analysing the Minimum Support Price of the same, since it takes less water to grow and also has anti-carcinogenic properties.

Steps needed to be taken by the NHRC

- NHRC can mobilise SHRC's to conduct awareness drives at local levels to educate the native population about alternate methods of natural wastewater treatment. The commissions can convince the local authorities to actively take up the initiative to set up such systems with the help of the local population itself under guidance of experts in this field.
- NHRC and SHRC can organise training programmes and workshops to train citizens and public workers to shift to sustainable choices- at individual as well as collective level. Training can further be provided in local waste management techniques, in organising regular collective meetings by citizens to track status of improvement, etc.

Steps needed to be taken by the Citizens

- We must avoid disposing of toxic chemicals used in households like ammonia, paint thinner, and bleach into the toilets or the drains since it causes major water pollution. The responsible disposal of harmful chemicals is the key to a sustainable life. It would also be a plus point if people stop buying products that have severely toxic chemicals, to avoid any damage.
- The disposal of medical wastes into the drains, and nearby water bodies or in the toilet should be avoided since it leads to certain chemical reactions which pollute the water bodies.
- We must try to avoid use of plastic, especially containers used in the household. Many people tend to throw these plastic containers in nearby water bodies and it eventually leads to water pollution
- Another very significant step to minimise water pollution is the usage of detergents and cleaners which do not involve phosphate in it.
- Afforestation programmes with active participation of citizens, by directly engaging in plantation or by sponsoring such programmes, will help in improving groundwater levels as well as quality. In case of farming this will prevent soil erosion.

10. Conclusions

Despite the numerous legislative measures taken by the government, water remains bad for human consumption. Since the problem is severe in most of India, only government initiatives alone cannot better the situation. Citizens, industries, and various statutory bodies need to come together and work cohesively to improve the situation. Everyone needs to be held responsible for their wrongful conduct by imposition of stricter penalties and hefty fines. As rightly quoted “you’re always one decision away from a totally different life”, on the similar footing, there is also a need to look for alternatives which are cost-effective and easier to set up and operate. Here, we can make use of native traditional methods and encourage people like Dr. Binish Desai to contribute. In order to deal with a humongous scarcity, tackling the problem in a hierarchical manner will help us obtain desirable results. Citizens should be “Responsible consumers” and sensitise others at all levels to sustainable practices. Citizens need to be educated in making prudent choices and should question the ‘whys’, ‘what ifs’, and ‘how’ aspects of their actions. A major chunk of environmental concerns can be overcome by collective efforts of the whole society.