

Environmental Protection in India: A Legal Study with Special Reference to Water Pollution

Thesis

SUBMITTED TO THE
BABASAHEB BHIMRAO AMBEDKAR UNIVERSITY
LUCKNOW

BABASAHEB
BHIMRAO
AMBEDKAR
UNIVERSITY



प्रज्ञा शील करुणा
ESTABLISHED 1996

FOR AWARD OF THE DEGREE OF

Doctor of Philosophy

IN
LAW

SUPERVISOR

Dr. SHASHI KUMAR

Associate Professor
Department of Human Rights
School for Legal Studies

CO-SUPERVISOR

Prof. S.K. BHATNAGAR

Dean
School for Legal Studies

SUBMITTED BY

LAV LESH KUMAR

Enrollment NO. 043/09

DEPARTMENT OF HUMAN RIGHTS
SCHOOL FOR LEGAL STUDIES
BABASAHEB BHIMRAO AMBEDKAR UNIVERSITY
(A CENTRAL UNIVERSITY)
VIDYA VIHAR, RAEBARELI ROAD
LUCKNOW-226 025

2018

*Dedicated to my
Grand Mother,
Grand Father,
Mother and Father*



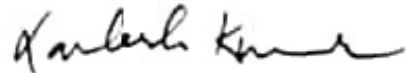
DECLARATION

I, **Lav Lesh Kumar**, hereby declare that this research work for the award of Ph.D. degree in Law entitled "**Environmental Protection in India: A Legal Study with Special Reference to Water Pollution**" has been done by me on the basis of original research material and information taken from other research works has been duly acknowledged.

I further declare that this is an original work and has not been previously submitted in part or full for any other degree or diploma in this or any other university.

Dated: 02/05/2018

Place: B.B.A.U, Lucknow



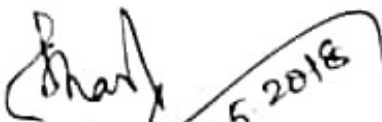
(**Lav Lesh Kumar**)

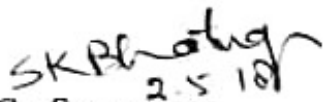
Research Scholar
Department of Human Rights
School for Legal Studies
Babasaheb Bhimrao Ambedkar University
Lucknow

CERTIFICATE

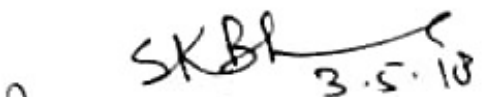
This is to certify that the thesis titled "**Environmental Protection in India: A Legal Study with Special Reference to Water Pollution**" submitted by **Mr. Lav Lesh Kumar** is an original research work and has not been previously submitted in full or part for award of any other degree or diploma to this or any other university.

This thesis submitted to Babasaheb Bhimrao Ambedkar University, Lucknow satisfies all the requirements as stipulated in the *Doctor of Philosophy (Ph.D.) regulations, 1999 as amended in 2010* and it is fit for submission and evaluation for the award of degree of Doctor of Philosophy of the University.


Supervisor 3.5.2018


Co-Supervisor 3.5.18

Date: 3rd May 2018


Head of Department 3.5.18

Acknowledgements

Firstly, I would like to express my sincere gratitude to my revered supervisor **Dr. Shashi Kumar**, Associate Professor, Department of Human Rights, for the continuous support of my Ph.D. study and related research, for his patience, motivation, and immense knowledge. His guidance helped me in all the time of research and writing of this thesis. I could not have imagined having a better advisor and mentor for my Ph.D. study.

Besides my advisor, I would like to thank Prof. S.K. Bhatnagar Dean, SLS and Prof. Priti Saxena, Head, Dept. of Human Rights for their insightful comments and encouragement, but also for the hard question which inspire me to widen my research from various perspectives.

I am also thankful to Prof. Preeti Mishra, for encouraging me to complete this work. My sincere thanks also goes to Dr. Rashida Ather, Asstt. Professor, without their precious support it would not be possible to conduct this research.

I place on record the encouragement which I received from Prof. S.D. Sharma and Prof. Sudarshan Verma . I am grateful to the kind gestures of Dr. Sanjeev Kumar Chadha, Dr. Sufia Ahmad, Dr. Anis Ahmad, Dr. Pradeep Kumar and Dr. Mujibur Rehman, faculty members of the Dept. of Law.

I would like to thank the Babasaheb Bhimrao Ambedkar University, Lucknow where I spent my research period for all the institutional support that I received over the years.

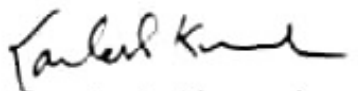
I am also grateful to the staff of the Library, B.B.A. University, Library Lucknow University and Library, RML National Law University, Lucknow for allowing me the access to the material stocked therein.

I thank my fellow research scholars for the stimulating discussions, for all the fun we have had in the last five years. Researcher would like to forward thanks towards the non-teaching staff of the department for their support.

Researcher puts special thanks and indebts to all authors, writers whose work has been utilized by the researcher in this present research study.

Finally, I would like to thank my Mother, Father, Wife, Sisters, Brother and my Son Arnav Shreyash to whom I owe a great deal. To my grandmother and late grandfather for showing me that the key to life is enjoyment.

Dated: 02/05/2018


(Lav Lesh Kumar)

PREFACE

The thesis analyses selected aspects of environmental law, mainly from the perspective of water law. It discusses the evolution of environmental law and how it operates specially for the protection of water resources. The thesis then examines the interplay between environment and globalization, and the resolution of environmental pollution resulting from the inherent tension between these two. The main principles of dispute resolution between the two are identified by way of an analysis of the judicial decisions. This analysis always addresses, too, the extent to which national legal system apply to this problem, and the extent to which this is appropriate.

During last few years there is an awakening about the Environmental issues amongst the common masses. As a result of which person started taking interest in the environmental issues and raising them at appropriate forum- the constitutional courts. The courts have also shown keen interest and deal with them deeply. Some of the noteworthy cases have been decided by the Supreme Court in last few years propounding various principles and theories of environmental ethics. Moreover there is a paradigm shift in their approach that is from anthropocentric approach to eco-centric approach to achieve the goal of environmental justice. The focus of the court has shifted from the humans to the protection and preservation of ecology or the present species of flora and fauna as it is necessary for the existence of mankind. The study has been divided into seven chapters. The first chapter of this research study is 'Introduction'. In this chapter the subject matter of the research work has been introduced. The second chapter is about international efforts for environment protection and Constitutional and statutory provisions for environment protection in India, are discussed in third chapter of this research study. The fourth chapter gives the detail note on National Programmes and Policies for Protection of Environment and Water. The fifth chapter of this thesis discuss the role of judiciary on environmental protection and water pollution in India. The latest case law and legislative provisions have been cited at appropriate

places. The sixth chapter is about water as human right: the challenges in globalized era. In the last chapter some useful suggestions along with the conclusion of the study have also been given for proper understanding of the environmental protection system.

It is an occasion for me to feel proud in presenting this research study. I hope and trust that this research study would be more useful for today as well as for future. Although, I have put in my best efforts to avoid all the mistakes but despite this if any mistake has been left out ignorantly, for that I personally tender my apologies.

List of Contents

<i>Declaration</i>	<i>i</i>
<i>Certificate</i>	<i>ii</i>
<i>Acknowledgements</i>	<i>iii</i>
<i>Preface</i>	<i>v</i>
<i>List of Contents</i>	<i>vii</i>
<i>Table of cases</i>	<i>xvi</i>
<i>List of abbreviations</i>	<i>xxv</i>
CHAPTER 1: INTRODUCTION	1-20
1.1. Introduction	
1.2. Need for Present Study	
1.3. Review of Literature	
1.4. Significance of Study	
1.5. Statement of Problem	
1.6. Objectives of study	
1.7. Hypothesis	
1.8. Research Methodology	
1.9. Scheme of the work	
CHAPTER 2: INTERNATIONAL EFFORTS FOR ENVIRONMENT PROTECTION	21-95
2.1 Introduction	
2.2 Sources Of International Environmental Law	
2.2.1.Treaties, protocols and conventions	
2.2.2.Customary International Law	

List of Contents

2.2.3 Judicial decisions at International Level

2.2.3.1. Trail Smelter Arbitration

2.2.3.2. France v. Spain (Lake Lanoux Arbitration)

2.3 Efforts of United Nation for Environmental Protection : Important Conventions / Agreements/ Reports on Environmental Protection

2.3.1. United Nation Conference on Human Environment 1972 (Stockholm Conference, 1972)

2.3.2. UN Convention on the Law of the Sea, 1982

2.3.3. World Charter for Nature, 1982

2.3.4. United Nations Conference on Environment and Development 1992 (Earth Summit: The Rio Declaration on Environment and Development, 1992)

2.3.4.1. Agenda 21 (Earth Summit 1992)

2.3.5. United Nation Framework Convention on Climate Change, 1992

2.3.6. World Summit on Sustainable Development (Rio Earth Summit +10) 2002

2.3.6.1 Johannesburg Declaration on Sustainable Development (26th August to 6th September 2002, South Africa)

2.3.7. Sustainable Development Goal 2015

2.3.8. United Nations Climate Change Conference 2015

2.3.9. United Nations Climate Change Conference 2016 (COP 22)

2.3.10. United Nations Framework Convention on Climate Change (UNFCCC) Conference COP 22: Paris Agreement 2016

2.3.11. COP 23 : UN Climate Change Conference 2017, Bonn

2.4 Historical Development of Water Law

List of Contents

2.5 United Nation's Initiatives For Environment Protection And Water Protection

2.5.1. United Nations Water family at the 7th World Water Forum 2015

2.5.2 United Nations-Water Annual International Zaragoza Conference 2015

2.5.3 1st meeting of the Core Group on Reporting under the UNECE Water Convention

2.5.4 7th meeting of the Task Force on Water and Climate

2.5.5 Targeting water in the post-2015 development agenda

2.5.6 United Nations-Water Annual International Zaragoza Conference 2014 (Preparing for World Water Day: Partnerships for improving water and energy access, efficiency and sustainability)

2.5.7 Budapest Water Summit 2013: The Role of Water and Sanitation in the Global Sustainable Development Agenda

2.5.8 49th session of UNESCO's International Hydrological Programme (IHP) Bureau

2.5.9 Water at Rio+20(2012)

2.5.10 The United Nations Office to support the International Decade for Action "Water for Life" 2005-2015

2.6 International Environmental and Water Law Cases

2.7 International Water Law Cases Decided by Permanent Court of International Justice

2.8 Development of International water law principles up to Globalised Era

2.8.1 International Framework on Water Protection

2.8.2. The Eurocentric International Water Law

List of Contents

- 2.8.3. International waters in the post-colonial era
- 2.8.4 Convergence and divergence in International law
- 2.8.5 How does globalization affect water policy?
- 2.8.6 Civil society versus global market forces
- 2.9 Conclusion

CHAPTER 3: CONSTITUTIONAL AND STATUTORY PROVISIONS FOR ENVIRONMENT PROTECTION IN INDIA

96-159

- 3.1 Introduction
- 3.2 Environment Protection under Constitutional Framework of India
- 3.3. Constitution and Forty-Second Amendment of 1976
- 3.4. Environmental jurisprudence and protection of natural resources
- 3.5. Right to Pollution free Environment: A Fundamental Right
- 3.6. Right to Equality and Environment
- 3.7. Environmental Pollution and Control under Other Laws
 - 3.7.1 Environmental Pollution as a Tort
 - 3.7.1.1 Tort of nuisance and environmental pollution
 - 3.7.1.2. Trespass
 - 3.7.1.3. Negligence
 - 3.7.1.4 Doctrine of "strict liability" and "absolute liability"
- 3.8. Provisions relating to Environment Protection under the Indian Penal Code, 1860
- 3.9. Provisions relating to environment protection under the Criminal Procedure Code, 1973 (Cr. PC)

List of Contents

- 3.9.1. Section 133 Cr.P.C. is independent and different from other pollution laws
- 3.9.2 Condition precedent to apply Section 133
- 3.10. Factories Act 1948
- 3.11. Public Liability Insurance Act, 1991
- 3.12. The Environment (Protection) Act, 1986 (EPA)
- 3.13. National Green Tribunal (NGT), 2010
- 3.14. Environmental Pollution and Disaster Management
- 3.15. The Pre-colonial History of Water Law
 - 3.15.1. Historical Context
 - 3.15.2 Water Law in Ancient India
 - 3.15.3 Water Law in Medieval India
 - 3.15.4 Water Law in Colonial India
 - 3.15.5 Water Law and Policies in Independent India
- 3.16. The Constitution and Union Legislation
- 3.17. Provisions under Different Laws Relating To Water Protection
- 3.18. Water (Prevention and Control of Pollution) Act, 1974
 - 3.18.1. Summary of Water Prevention and Control of Pollution Act (1974) of India
- 3.19. Conclusion

**CHAPTER 4: NATIONAL PROGRAMMES AND POLICIES FOR
PROTECTION OF ENVIRONMENT AND WATER**

160-211

4.1 Introduction

4.2 National Water Policy and Programmes – An Analytical Evaluation

4.2.1. Need for a National Water Policy

4.2.2. Historical evolution of the drinking water supply programmes and policies

4.3 Evolution of National Water Policies

4.4. National Water Mission

4.5. Water Conservation

4.5.1. Inter Linking of Rivers

4.5.1.1. Achievements of Interlinking of Rivers (ILR) Programme

4.5.1.2. Special Committee for ILR

4.5.1.3. Important decisions taken during meetings of Special Committee

4.5.1.4. Task Force for ILR

4.5.1.5. Prime Minister Krishi Sinchayee Yojana

4.5.1.6. Clean Ganga Mission

4.5.1.7. Group on Intra-state River Links

4.5.1.8. Ken – Betwa Link Project

4.5.1.9. Damanganga – Pinjal Link Project and Par – Tapi – Narmada Link Project

4.5.1.10. Par – Tapi – Narmada Link Project

4.5.1.11. Mahanadi – Godavari Link Project

List of Contents

- 4.5.1.12. Manas-Sankosh-Teesta-Ganga link
- 4.6. India Water Week – 2015
- 4.7. India Water Week – 2016
- 4.8. Jal Manthan-1
- 4.8.1. Jal Manthan-2
- 4.9. Intra-State Links
- 4.9.1. Benefit from Interlinking of Rivers (Inter basin water transfer)
- 4.10. Jal Kranti Abhiyan
- 4.10.1. The objectives of Jal Kranti Abhiyan
- 4.11 The India Water Week - 2017
- 4.12 Concluding Remarks

CHAPTER 5: THE ROLE OF JUDICIARY ON ENVIRONMENTAL PROTECTION AND WATER POLLUTION IN INDIA

212-253

- 5.1 Introduction
- 5.2 Environment Protection and the Judiciary
- 5.2.1 Doctrines and Principles Evolved By Courts
- 5.2.1.1 Public Trust Doctrine
- 5.2.1.2 Doctrine of Sustainable Development
- 5.2.1.3. Polluter Pays Principle
- 5.2.1.4. Precautionary Principle
- 5.2.1.5. Precautionary Principle and Sustainable Development
- 5.3 Contribution of Doctrines to Environmental Jurisprudence

List of Contents

5.3.1. Judicial Activism

5.3.2. Public Interest Litigation

5.3.3. Tanneries and Discharge of Effluents

5.4. Environmental Ethics

5.5. Conclusion

CHAPTER 6: WATER AS HUMAN RIGHTS: THE CHALLENGES IN GLOBALIZED ERA

254-286

6.1 Introduction

6.2 Human rights to water under international law

6.2.1 Right to Water

6.2.2 Right to Water and the Supreme Court of India

6.2.3 Right to Water and the High Courts of various States

6.3 Global environmental instruments

6.4 Regional arrangements

6.5 Customary international law

6.6 Judicial decisions

6.7 The human rights to water is not yet explicitly recognized

6.8 Relationship between Water with Human Rights

6.9 Globalization Trends

6.10 Impacts on the Environment and Water Resources

6.11 Commodification and Privatisation of Water

6.12 Water is A Important Subject of World Attention

6.13 Concluding remarks

List of Contents

CHAPTER 7: CONCLUSION AND SUGGESTIONS	287-302
--	----------------

7.1 Conclusion

7.2 Suggestions

BIBLIOGRAPHY	xxxii-l
---------------------	----------------

Table of Cases

A

A.D.M. Jabalpur v. Shivkant Shukla

A.P. Pollution Control Board II v. Prof. M.V. Nayudu

A.Q.F.M.Yamuna v. Central Pollution Control Board

Abdul Hamid v. Gwalior Rayon Silk Mfg. (Wvg Co. Ltd)

Abin Mukherjee v. State of W.B

Addl Dist Magistrate's Jabalpur v. Shivkant Shukla

Aerial Herbicide case

Aerial Herbicide Spraying, Ecuador v. Colombia

Ajay Hasia V. Khalid Mujib Sehravardi

Ajeet Mehta v. State of Rajasthan

Ambuja Petrochemicals Ltd. v. A.P. Pollution Control Board

Andhra Pradesh Pollution Control Board v. MV Nayudu

Animal and Environment Legal Defense Fund v. Union of India

Argentina v. Uruguay

Aruidson v. Reynolds Metals Co.

Australia v. France

B

Babulal v. Ghanshamdas Birla

Bamford v. Turnleya

Table of Cases

Bangalore Medical Trust v. B S Mudappa

Banwasi Seva Ashram v. State of Uttar Pradesh

Belgium v. Spain

Bijayananda Patra v. District Magistrate , Cuttack

Biranchi Narayan Mahapatra V. State of Odisha and Others

Bombay Dyeing & Mfg. co.Ltd. V. Bombay Environmental Action Group

Bombay environmental action group v. State of Maharashtra

Botswana v. Namibia

Britain v. Belgium

Bulankulama v. The Secretary, Ministry of Industrial Development

C

Calcuta Youth Forum v. State of W.B

Centre for Environment Law, WWF-I V. Union of India

CERC v. Union of India

Chhetriya Pardushan Mukthi Sangarsh Samati v. State of Uttar Pradesh

Chiattanaya Kumar V. State of Karnataka

Consumer Education & Research Centre V. Union of India

Costa Rica v. Nicaragua

D

D.S.Rana V. Ahmedabad Municipal Corpn.

Dahanu Taluka Environment Protection Group v. BSES

Table of Cases

Dahanu Taluka Environment Protection Group v. BSES

Damodhar Rao v. SO Municipal Corporation, Hyderabad

Deshi sugar mills v. Tupsi Kahar

Dhannalal v. Thakur Chittar singh Mehtap singh

Donoghue v. Stevenson

Dr. Ashok v. Union of India, (1997)

E

Essar Oil Ltd. v. Halar Utakarsh Samiti

Executive Engineer, AV project v. EE Protection Samiti

F

F.K. Hussain v. Union of India

Fairview Farms Inc. v. Reynolds Metals co

France v. Spain

France v. Spain (Lake Lanoux case)

G

G.S. Oberoi v. State of Punjab

Gauri Maulekhi v. State of J&K & Ors

Goa Foundation v. Konkan Railway Corporation

Gotham Construction Co. v. Amulya Krishna Ghose

Govind Singh v. Shanti Sarup

Gramophone Co. of India Ltd. V. Birendra Bahadur Pandey

Table of Cases

Greyhownd Corpn. v. Blakley

H

Hagy v. Allied Chemical and Dye Corpn

Hamid Khan v. State of Madhya Pradesh

Hindustan Coca-Cola Beverages (P) Ltd. v. Perumatty Grama Panchayat

Honduras v. El Salvador

Hungary v. Slovakia

I

Indian council for Enviro-Legal Action v. Union of India

Intellectuals Forum, Tirupathi V. State of A.P

Jagannath v. Union of India

JM Desai v. Roshan Kumar

Jolly George Varghese v. Bank of Cochin

K

K. Guruprasad Rao v. State of Karnataka

K. Ramakrishnan v. State of Kerala

Kanpur Tanneries case

Kalia Sethi And Another v. State Of Odisha And Others

Karnool Municipality v. Civic Assn.

Kerala State Board for Prevention and Control of Water Pollution v. Gwalior

Rayon Silk Mfg (wvg) co. Ltd

Table of Cases

Kinkari Devi V. State of H.P

Kisan Bhagwan Gawali V. State of Maharashtra

Krishna Gopal v. State of M.P.

L

LK Koolwal v. State of Rajasthan

Lalit Miglani v.. State of Uttarakhand & others

M

M.C .Mehta V. Kamalnath,(2000)

M.C. Mehta v. Union Of India (1987

M.C. Mehta v. Union of India (Ganga Pollution case)

M.C. Mehta v. Union of India (River Ganga Pollution case

M.C. Mehta v. Union of India, (1988)

M.C. Mehta v. Union of India, (1997)

M.C. Mehta v. Union of India 1986

M.C. Mehta v. Union of India⁴⁸ (Oleum Gas leakage

M.C.Mehta v. Union of India, (1996)

M.P. SEB v. Collector

Madhavi v.Thilakana

Madhya Pradesh v. Kedia Leather and Liquor Ltd

MC Mehta v. Kamal Nath

MC Mehta v. Union of India

Table of Cases

MC.Mehta v. Union of India AIR 1988

MP Rambabu v. Divisional Forest Officer

Mohd. Salim V. State of Uttarakhand & others

Mukesh Textile Mills (P) Ltd. v. H.R. Subramanya Sastryz

Municipal Commr. of Suburbs of Calcutta v. Mohd. Ali

Municipal Council, Ratlam v. Vardhichand

N

N.D. Jayal v. Union of India

Nagarahole Budakattu Hakku Sthapana Samithi v. State of Karnataka

Nagarjuna Paper Mills Ltd.v. Sub. Divl. Magistrate

Narmada Bachao Andolan v. Union of India

Netherlands v. Belgium

Nicaragua v. Costa Rica

Niya Vedi v. State

O

Oleum Gas Leakage cas

P

P. Pramila and others Vs. State of Karnataka and another

P.A.Jacob v.Supt.of Police

P.C. Cherian v. State of Kerala

Pakkle v. P.Aiyasami Ganpathi

Table of Cases

People United for Better Living in Calcutta v. State of W.B

Perumatty Grama Panchayat v. State of Kerala

Pradeep Krishen v. Union of India

Pradeep Krishen v. Union of India

Pulp Mills case

R

Rajiv Ranjan Singh v. State of Bihar

Ram Raj Singh v. Babulal

Ram Rattan v. Munna Lal

Ratlam v. vardhichan

Read v. J. Lyons & Co.,

Republic of Benin v. Republic of Niger

Rural Litigation and Entitlement Kendra v. State of Uttar Pradesh

Rylands v. Fletcher

S

Sachidanand Pandey V. State of W.B.

Samaj Pariuartana Samudaya v. State of Karnataka

Satyavani v. Andhra Pradesh Pollution Control Board

*Shabana Ramasuvramanyan V. Member Secretary, Chennai Metropolitan
Development Authority*

Shajimon Joseph v. State of Kerala

Shri Sachidanand Pandey v. State of West Bengal

Table of Cases

SP Gupta and others v. Union of India

St. Helen's Smelting Co. v. Tipping

State of Karnataka v. State of Andhra Pradesh

Subhash Kumar v. State of Bihar

Suhelkhan Khudyarkhan v. State of Maharashtra

Susetha v. State of T.N

Sushanta Tagore V. Union of India

T

T.N. Godavarman Thirumulpad v. Union of India

Taj Trapezium case,

Tarun Bharat Sangh v. Union of India

Tata Tea Ltd. v. State of Kerala

Tehri band virodhi sangharsh samiti v. state of U.P.

U

U.P. Pollution Control Board v. Mohan Meakins Ltd.

U.P. Pollution Control Board v. Modi Distillery

Union Carbide corp. Ltd. v. Union of India

Union Carbide Corporation v. Union of India

United Kingdom v. Albania

United States v. Canada

Table of Cases

V

V. Lakshimipathy v. State

V. Lakshmiipathy v. State of Karnataka

Vardhaman Kaushik v. Union of India & Ors

Ved Kaur Chandel v. State of H.P

Vellore Citizens Welfare Forum v. Union of India

*Vijayanagar Education Trust v. Karnataka State Pollution Control Board,
Karnataka*

Virender Gaur v. State of Haryana

Vishala Kochi Kudivella Samrakshana Samiti v. State of Kerala

W

Waschak v. Moffat

ABBREVIATIONS

ADB: Asian Development Bank

AIBP: Accelerated Irrigation Benefit Programme

APCCF: Additional Principal Chief Conservator of Forest

ARWSP: Accelerated Rural Water Supply Programme

AUWSP: Accelerated Urban Water Supply Programme

BNP: Bharat Nirman Programme

CBD: Convention on Bio-Diversity

CDM: Clean Development Mechanism

CEDAW: Convention on the Elimination of All Forms of Discrimination
against Women

CERES: Coalition for Environmentally Responsible Economies

CETP: Central Effluent Treatment Plant

CESR: Committee on Economic, Social and Cultural Rights

CETP: Common Effluent Treatment Plant

CFC: Chloroflouro Carbon

CITES: Convention on International Trade in Endangered Species

CWC: Central Water Commission

CO₂: Carbon Dioxide

CPCB: Central Pollution Control Board

CREP: Corporate Responsibility for Environmental Protection

List of Abbreviations

CrPC: Criminal Procedure Code

CRZ: Coastal Regulation Zone

CSD: Commission on Sustainable Development

CSE: Centre for Science and Environmental Development

CWC: Centre Water Commission

DAC: Department of Agriculture and Cooperation

DDWS: Department of Drinking Water and Sanitation.

DESA: Department of Economic and Social Affairs

DE: Department of Environment

DFO: District Forest Officer

DLR: Department of Land Resources

DPCB: Delhi Pollution Control Board

EA: Environmental Assessment

EAC: Expert Appraisal Committee

EC: European Community

ECE: European Commission of United Nations for Europe

ECEL: European Council of Environmental Law

ECOSOC: United Nations Economic and Social Council

EIA: Environmental Impact Assessment

ENVIS: Environmental Information System

EPA: Environmental Protection Act

EPA: Environmental Protection Agency

List of Abbreviations

EPL: Environmental Protection License

ESI: Environmental Sustainability Index

ESPP: Environmental Social Policy and Procedures

EU: European Union

FAO: Food and Agriculture Organisation

FICCI: Federation of Indian Chambers Of Commerce and Industries

GDP: Gross Domestic Product

GEF: Global Environment Facility Fund

GHG: Green House Gases

GoI: Government of India

GWP: Global Water Partnership

HC: High Court

HRC: Human Rights committee

ICCPR: International Covenant on Civil and Political Rights

ICESCR: International Covenant on Economics, Social and Cultural Rights

ICJ: International Court of Justice

IDA: Industrial Development Authority

IHP: International Hydrological Programme

ILA: International Lake Authority

ILC: International Law Commission

ILR: Interlinking of Rivers

IP: Intellectual Property

List of Abbreviations

IPC: Indian Penal Code

IPRs: Intellectual Property Rights

ISO: International Organisation for Standardization

IUCN: International Union for Conservation of Nature

IWMP: Integrated Watershed Management Programme

IWRM: Integrated water resources management

IWW: India Water Week

JNNURM: Jawaharlal Nehru National Urban Renewal Mission

MCGM: Municipal Corporation of Greater Mumbai

MDG: Millennium Development Goals

MEAs: Multilateral Environmental Agreements

MNP: Minimum Needs Programme

MGNREGA; Mahatma Gandhi National Rural Employment Guarantee Act

MEF: Ministry of Environment and Forests

MSTG: Manas-Sankosh-Teesta-Ganga link

MWR: Ministry of Water Resources

NCEPC: National Committee on Environmental Planning and Controlling

NDA: National Democratic Alliance

NDWM: National Drinking Water Mission

NEERI: National Environmental Engineering Research Institute

NEP: National Environment Policy

NGO: Non Governmental Organisation

List of Abbreviations

- NGS:** National Greenhouse Strategy (Australia)
- NLCP:** National Lake Conservation Plan
- NPCAE:** National Plan for Conservation of Aquatic Ecosystems
- NPP:** National Perspective Plan
- NWCP:** National Wetland Conservation Programme
- NWDA:** National Water Development Agency
- NWM:** National Water Mission
- NWP:** National Water Programme
- OECD:** Organisational for Economic Cooperation and Development
- OECWFF:** Organisational for Economic Cooperation and
Of Wild Flora and Fauna.
- OFWM:** On Farm Water Management
- UNOHCO:** United Nations Office of the High Commissioner for
Organisation
- PIL:** Public Interest Litigation
- PIM:** Participatory Irrigation Management
- PCB:** Pollution Control Board
- PCC:** Pollution Control Committee
- PHED:** Public Health Engineering Departments
- PMKSY:** Pradhan Mantri Krishi Sinchayee Yojana
- PPR:** Precautionary Principle Rights
- PRI:** Panchayati Raj Institutions

List of Abbreviations

RD&GR: River Development & Ganga Rejuvenation

RGNDWM: Rajiv Gandhi National Drinking Water Mission

SADC: Southern African Development Community

SC: Supreme Court

SD: Sustainable Development

SDC: Swiss Agency of International Development and Cooperation

SEA: Strategic Environmental Assessment

SMART: Specific, Measureable, Attainable, Realistic and Timely

SPCB: State Pollution Control Board

SPNDWS: Swajaldhara Programme for National Drinking Water Supply

SRPP: Sector Reform Pilot Project

STP: Sewage Treatment Plant

UDHR: Universal Declaration of Human Rights

UIDSSMT: Urban Infrastructure Development Scheme for Small and Medium
Towns

ULB: Urban Local Bodies

UN: United Nations

UNCED: United Nations Conference on Environment and Development

UNCHE: United Nations Conference Human Environment

UNDP: United Nations Development Programme

UNDRO: United Nations Disaster Relief Organisation

UNESCO: United Nations Education, Science and Culture

List of Abbreviations

UNFPA: United Nations Fund for Population Activities

UNICEF: United Nations International Children's Emergency Fund

UNO: United Nations Organization

US: United States

WCED: World Commission on Environment and Development

WHO: World Health Organisation

WRM: Water Resources Management

WSSD: World Summit on Sustainable Development

WWMWQ: Wastewater Management and Water Quality

Chapter-I

Chapter-1**Introduction**

It may be appreciated, at the outset, that a substantial portion of environmental jurisprudence in India has been the product of judicial creativity and innovation. In the administration of environmental justice in India, judicial activism, which is a necessary adjunct of the judicial function had power has played a vital role. The constitutionally institutionalized judicial process has been admirably and effectively invoked and utilized by the constitutional courts not only to create and enforce a new constitutional fundamental right to hygienic environment as an emanation of the right to life guaranteed in Article 21 of the Indian Constitution but also to enforce the statutory duties of the statutory authorities created under various environmental laws enforce in the country. Since the Indian constitutional courts, in a large number of cases, have been called upon not only to enforce the fundamental right to clean environment but also to give effect to the relevant environmental laws, rules and regulations made pursuant to the state's constitutional obligation under Article 48-A of the Indian Constitution, it is necessary to explain the constitutional contours and the frame work of the concept of the judicial process in the country. Therefore before an examination and discussion of various aspects of environmental jurisprudence and justice, as expounded by the Indian constitutional courts, is undertaken, it may be appropriate to give a brief account of the constitutional format of the judicial process and power in India.

In contrast when the constitutional courts exercise their judicial power as protectors or guardians of fundamental rights, they do not function as part of the “state” which is evident from the import of Article 12 of the Indian constitution. As protectors of fundamental rights, these courts exhibit a kind of “progressive

Judicial Activism” by effecting fundamental changes in the traditional concept of judicial process, which are both procedural and substantive. In their substantive aspects, the changes pertain to the expansion of the reach of the fundamental rights by innovative interpretation and, in their procedural aspect, they pertain to the reform of procedures to ensure easy access to judicial justice. The reformed new and activist judicial process, which is called “Public Judicial Process”, is more democratic and participatory. The Courts, as protectors of fundamental rights, in using this new and more dynamic judicial process do not adhere strictly to the traditional rules of *locus standi*, ratio decidendi and justiciability. In this process, the courts are not inhibited in the exercise of their judicial review power by the demands of the Laxman-Rekha of the doctrine of separation of powers, for, they not only extend their jurisdiction to areas that traditionally belong to the concerns of the legislative and executive organs of the government but also shape and innovative new reliefs, new remedies and strategies to do justice. This is more so in the realm of environmental justice.

One of the Hallmarks of the Indian constitutionalism has been the doctrine of Judicial Review, which has been one of the two invaluable gifts of the American Constitutionalism to the Asian Constitutional Governments. Since the right to pollution-free environment is an aspect of the right to life, which is one of the fundamental rights guaranteed by Part-III of the Constitution which are enforceable against the State action, it is necessary to examine and appreciate the constitutional framework for the enforcement of these rights. The Indian constitution, as a Grundnorm of the Indian Legal System not only guarantees fundamental rights but also prohibits the state legislative organ from taking away or abridging any of these rights except as provided in the various provisions of Part III of the constitution. To enforce this prohibition, the same constitution confers on the Higher Judiciary the potent power of judicial review which is an inseparable and integral part of judicial process. The constitution has also taken

care to provide that the right to move the Supreme Court for the enforcement of fundamental right is itself a guaranteed fundamental right. Thus, under the Indian Constitution, the Indian Supreme Court enjoys original concurrent writ jurisdiction for the enforcement of fundamental rights along with the High courts. Article 32 of the constitution, which is the mainstay of the judicial power of the Supreme court for the enforcement of fundamental rights, including right to clean environment, read:

(1) The right to move the Supreme Court by appropriate proceedings for the enforcement of rights conferred by this part is guaranteed.

(2) The Supreme Court shall have power to issue directions or orders or writs, including writs in the nature of *habeas corpus*, *mandamus*, *prohibition*, *quo warranto* and *certiorari*, which ever may be appropriate for the enforcement of the rights conferred by this part...

As clear from the text of the above provision, the right to move the Supreme court by appropriate proceeding for the enforcement of fundamental rights is itself a guaranteed fundamental right. Under this provision the Supreme court has both the right and duty to protect and safeguard fundamental rights “zealously and vigilantly.” That is the reason why its role has been eulogized as the protector and guarantor of fundamental rights.

It is axiomatic that water is one of the most invaluable natural resources which the nature has bestowed on human kind. By the same token, it is a vital life sustaining nature’s gift to mankind, which has unfortunately been most defiled with serious deleterious consequences to human welfare. Man’s ecological misbehavior ,which is more pre dominant in the area of water management than in other areas of vital human concerns , has been the main cause for the growing shortage of fresh water sources throughout the world. It may be noted that in many parts of the world lack of sufficient fresh water is likely to be one of most crucial

issues of the twenty-first century. It is apprehended future wars among the members of international community might centre on water disputes more than anything else. The importance of water resource for the survival of humanity has been highlighted by the Indian Centre Board for Prevention and Control of Water thus: *“the fresh water that is so essential to our lives is only a small portion of the earth’s total water supply; it is only two percent of the total....”*

India, which is comparatively better off in respect of water resource, is in an unenviable position, facing the worst water pollution problem. India’s major watercourses, which among others, consist of fourteen major, fifty-five medium and forty- four small rivers, have all become highly polluted, evoking national concern for their protection and preservation . This is evident from the Statement of Objects and Reason of Water (Prevention and control of Pollution) Bill, 1974, which reads:

The problem of pollution of rivers and streams has assumed considerable importance and urgency in recent years as a result of the growth of industries and the increasing tendency to urbanization. It is therefore, essential to ensure that the domestic and industrial effluents are not allowed to be discharged into the watercourses without adequate treatment as such, discharges would render the water unsuitable as source of drinking water as well as for supporting fish life and for use in irrigation. Pollution of rivers and streams also causes increasing damage to the country’s economy.

In order to achieve the above stated objects, the water Act, 1974 and the Water Cess Act, 1977 have been enacted. These laws, which have been intended to combat the menace of water pollution and to restore the wholesomeness of water, have been in operation for almost three decades. Despite this fact, the problem of water pollution has not been mitigated, on the contrary the problem has aggravated mainly due to the lackluster implementation of the legislative mandates

by the concerned administrative agencies constituted there under. In this context, expressing its serious concern, the Supreme Court, “*Indian council for Enviro-Legal Action v. Union of India*,” observed:

There are stated to be over 200 Central and state statutes, which have at least some concern with environment protection either directly or indirectly. The plethora of such enactments has unfortunately, not resulted in preventing environmental degradation, which one of the contrary has increased over the years.... Violation of anti pollution laws not only adversely affects the existing quality of life but the non-enforcement of the legal provisions often results in ecological imbalance and degradation of the environment, the adverse effect of which will have to be born by the future generations.

The judicial remedies that are available to the victims of water pollution can, broadly, be divided into two categories. One is civil remedies and other is remedies by resort to the criminal process. While civil remedies can again be classified into civil remedies based on common law tort action and statutory civil remedies , the remedies by resort to criminal process can be subdivided into those based on Section 133 of Criminal Procedure Code, 1973 read with section 188 of Indian Penal Code, 1870 and those based on the “command and control” regime envisaged under the Water Act, 1974. Again, the aspect of statutory civil remedies can be conveniently divided into those based on the invocation of writ jurisdiction of the higher courts under Article 32 and 226 of the Constitution and those based on the regulatory regime of the Water Act, 1974.

The constitutional Preamble and the Directive Principle of State Policy plays a very important role in the development of Indian legal system. A new and latest feature fulfilling the objectives laid in the preamble and directive principle is the increasing number of Public Interest Litigation (here and after to be known as PIL) that has opened a new chapter in the Indian judicial system. The relaxed

procedural rules under PIL can be invoked in cases where the plaintiff is seeking enforcement of the constitutional or legal rights of those persons or groups of persons who by reason of poverty, disability or due to socially or economically disadvantageous position find it difficult to approach the appellate courts for redress.

LITERATURE REVIEW

Environment and Justice, C.M.Jariwala (2004). The book gives an insight into the judicial handling of environmental litigation. It informs types of petitioners and defendants and subject matter of dispute. It disseminates information's about tools used by the judiciary and the time consumed in the administration of environmental justice. The book exposes the unexposed that played the negative or environment friendly role in the protection of environment. A Specific study of the output of the Indian judiciary is made pointing out the merits and flaws and their effect on the Indian Environment .The judicial activism has brought new environmentally friendly principles and provided new vision to the then environmentally Blind constitution.

Environmental Law Case Book, P.Lilakrishnan(2006). The book contains extracts of, and comment or, significant judgment pronounced by Indian judiciary on Environment. Classified into six parts and comprising 18 chapters, the case book depicts the manner in which norms of environment protection are evolved, and tested in the social milieu of a fast developing country. This book highlights updated case law pertaining to various aspects of environmental regime.

Environmental issues in India, R Uma Maheshwari (2008), In this, it fills a lacuna, for rarely do we find books on environment (barring works of people like Ramachandra Guha and Madhav Gadgil and the editor of this volume) that traverse the path of history to address these issues. For a lay reader seeking

multiple views on these subjects, this book is a welcome source. It's a must-have for groups working on these issues who may rarely, if at all, turn the pages of history. A large section of the book is dedicated to the Narmada Bachao Andolan, undoubtedly India's most long-drawn debate on dams and displacement. Yet there isn't a much called-for note on the present status of the Sardar Sarovar project. The 'latest' on the subject in this volume is from 2001. A mention of the long debates within the movement, the splits, the shift from 'anti-dam', to 'rehabilitation and resettlement' should have found a mention. As should have another very controversial project--the Polavaram dam. This single multi purpose project, if built, will displace more than 276 villages and over three lakh people, the majority being tribal and dalit communities.

There are several other lapses. Another contentious concept--river-linking and its environmental and socio-political implications, is ignored. On global warming, a more recent study than one written in 2000 would have been welcome, considering the debate on climate change has come a long way since. Here they'll find nuggets like Romila Thapar's piece on forests and urban settlements in the early millennia BC; or archaeologist-historian Makhan Lal writing about climate and the end of Indus valley civilization.

Corporate accountability in International Environmental Law, Elisa Morgera(2009). This book examine the role of international organization that in the absence of State intervention, identify and promote the application of selected international environmental standards demonstrate how these organizations are a driving force in establishing and oprationalizing international corporate environmental accountability.

Environmental Law and Policy, Aruna Venkat(2011). This book presents comprehensive accounts of the various contours of the environmental

jurisprudence in India. It covers the Indian Constitutional, legislative, Administrative and judicial strategies that have shaped the Indian environmental Jurisprudence against the back drop of the various International efforts to control pollution and preserve the global environment. It deals with the constitutional framework provided for the preservation and protection of Indian Environment. In this context the book gives an extensive picture of Indian Administrative and legislative policy framework along with latest developments in the area. The salient and the most important feature of the book is its in depth account of the innovative judicial enforcement of the constitutional and legislative prescriptions as reflected in the catena of judicial decisions including the latest one.

Law development and Socio-Economic Policy, ed. By Bimal N. Patel & Mamta Biswal (2012). This book is a collection of Scholarly papers on topics that are hotly-debated across the world, that are areas of concern for most countries and that touch individual lives at some level or the other. These essays emphasize that law is interdisciplinary and is needed to address issues in the field of environment, international relations, science and technology, gender, banking and economy.

Green Book On Indian Environmental Law, PB Sahasranaman (2017), It is when the spotlight is firmly on India and its environment protection regime that the first edition of PB Sahasranaman's Green Book on Indian Environmental Law has been released. The book is three-fold. The first part contains the Acts, rules and notifications in respect of environment in force in the country. The book also attempts to define many terms relevant to the context, with a commentary before each enactment. The second part contains a digest of important cases on environment decided by the Supreme Court, high courts, and the National Green Tribunal. The third part is the unique feature of the book. The Environmental Law Lexicon in it defines technical words that are essential for understanding environmental law. On the whole, the book gives an impression that

notwithstanding the occasional loophole created for ease of business, a robust environmental regime is in place in the country. The problem is not so much with the law, but in its implementation. The book will benefit law practitioners, academicians, law students and government agencies alike as a one-stop reference point on environmental laws in the country. The author of the book, a well-known environmental law practitioner, has worked hard with dedication for bringing the book, which is the need of the hour.

Perspective on Human Rights, ed.by Abdul P. Vijapur& Kumar Suresh, in this edited book which is compilation of the seminar on the occasion of 50th anniversary of the UDHR by the centre for federal studies of Jamia hamdard. In this book author briefly discuss the relationship of environmental law and human rights. Both subjects are devoted to the welfare and happiness of man & society. Environmental law is concurred to protect global and national environments so that man lives in harmony with nature and attains his goals of a creative and happy life.

An Article, “Law unto themselves” by Prashant Bhushan(senior Advocate Supreme Court Of India, in Communalism Combat issue:Aug-Sept 2009). Author critically analyze the judicial power of the Supreme Court and gone through the detailed of the powers used by the apex court time to time in the administration of justice.

SIGNIFICANCE OF THE STUDY

The recent land- slide in the state of Uttrakhand, killer tsunami, earthquake and other natural hazards in the different parts of our country with all its disastrous consequences to the environment has shaken the international community .it also raised doubt on the concern and commitment to the protection of global environmental order. In this regard the Apex court of the country has used the

frame work of P.I.L. innovatively to compel the state executive to implement and enforce the various environmental laws. This work is an attempt to make people aware about their Fundamental and basic human rights relating to environmental protection and it is also helpful in letting the people to know how our Judiciary is dealing with environment problem especially water pollution through judicial activism i.e; Public Interest litigation. The main Focus of the work will be on the judicial innovation which has become necessary in the context of apathy on the part of executive in the enforcement of water related environmental laws in the country.

STATEMENT OF THE PROBLEM:-

Today, our interaction with nature is so extensive that the environmental issues have assumed such proportions as to affect all humanity. Urbanisation industrialization, overexploitation of resources, population explosion, depletion of traditional sources of energy, and the search for new ones, the disruption natural ecological balances, as well as the destruction of a multitude of animal and plant species for economic reasons are the major factors that have contributed to environmental deterioration. (*See also Shri Sachidanand Pandey v. State of West Bengal. AIR 1987 SC 1109 at 1114, as quoted in Dharmendra S. Sengar's ENVIRONMENTAL LAW.*)

Nature provides the most hygienic and healthy environment for the survival of mankind, but this environment has been changed by mankind for selfish ends by adding concrete, charcoal, plastics, toxic chemicals, hazardous wastes and many more objects, devices and processes. These man-made additions have unbalanced the ecosystem and are primarily responsible for environmental pollution and consequent health hazards.

Industrial revolution, which brought enormous comforts to mankind also been responsible for manifold miseries and disadvantages to it. The process of industrialization, which aimed at mass-production of goods of better quality to fulfill the human needs, is also polluting the environment, and now it is fast assuming menacing proportions. In India, as elsewhere in the world, almost the metropolitan as well as other big cities are afflicted with this problem. Most of the available water in the country is polluted. The pollution of air is also on the rise at an alarmingly high rate. The polluted environment is affecting human health, causing deadly diseases and reducing the lifespan.

Industrialisation is a striking feature of modern civilization and has led to an major centres which use hazardous industries. They have been identified as the major centres which hazardous substances and produce toxic and hazardous wastes. They have not only exploited the natural resources to their maximum for economic gain but have also disrupted the ecological balance and degraded the environment, resulting in huge human health hazards, including the loss of life. Industries, predominantly chemical in nature, pose potential as well as real health hazards. They have virtually created killer environment, destroying overnight what nature had taken thousands of years to create, as exhibited by the Bhopal Gas Tragedy.

Industrial development is believed to be essential for rapid economic growth of the country by maximum use of all its resources. It is aimed at increasing the production of better quality goods by an application of modern science and sophisticated technology. But man, prompted by his avaricious nature and quite often unreasonable behavior, has considered it as a licence to anxiety to improve living conditions and to have a comfortable lifestyle conflicts with the desired environmental quality. Such a conflict is at the root of basic issues which have to be resolved in a practical way; otherwise, the price for industrial progress and

development may have to be paid in terms of environmental disasters, which may pose a threat to the very survival of mankind.

On the global plane, the environmental threats are noticeable in various forms; acid rain, ozone layer depletion, global warming and other climatic modifications. The release of billions of tones of carbon dioxide, methane and chlorofluorocarbons into the air may result in chemical imbalances of natural cycles leading to warning of earth, melted ice-caps; new environmental pollution may adversely affect the ocean-dwelling phytoplankton, a primary source of oxygen. The nitric oxide emissions may also deplete the protective ozone layer, rendering the stratosphere without an ozone layer to shield man from the deadly ultraviolet rays. The Cesspool Rivers from industrial cities all around the world may fill the oceans with hazardous toxic wastes.

Adverse health effects associated with exposure to chemicals in the work environment as well as in general environment are also being increasingly noticed in India. The direct, constant and slow exposure to toxic substances has affected the reproductive capacity of female workforce. The use of hazardous chemicals has not even spared the safest source of infant food- mother's milk- which has shown DDT contamination. Allergies, damage to vital organs, genetic disorders, and even carcinogenic diseases are caused by hazardous substances used in industries. In other words, we produce a number of potentially hazardous chemicals as main products, such as insecticides and pesticides, as well as by-products like industrial effluents and emissions.

The air is polluted by slow as well as sudden release of toxic emissions from the hazardous industries. The concentration of toxic gases increases with the expansion of industries and affects the environment and human health. It causes many diseases and, thus, reduces the lifespan. The phenomenon of air pollution has reached an alarming proportion in big cities. Delhi is considered as one of the

most polluted cities of the world (though with the introduction of CNG and metro, the situation has improved), where pollution levels have exceeded many times more than the prescribed limits.

The industrial accidents causing air pollution have been reported from many parts of the world. The first case of accidental air pollution in modern times occurred in the Meuse valley in Belgium in 1930, followed by the Pennsylvania smog incident in 1948 and the London smog disaster in 1952. The 'Episode 104' which occurred in 1969, blanketed 22 states of the Mississippi with air pollution haze. However, the Bhopal Gas Tragedy may be cited as the worst industrial disaster amounting to air pollution by the release of 40 tones of poisonous methyl isocyanate (MIC), killing an estimated 15,000 people and injuring lakhs of residents of Bhopal.

Accidents of lesser magnitude have also occurred elsewhere. In Delhi, several people died and scores were affected when toxic oleum gas leaked from the Shriram Chemicals plant in 1985 (See *M.C. Mehta v. Union of India. AIR 1987 SC 965*). Tragedy also struck at Panipat in 1992 when deadly ammonia gas leaked, resulting in instant death of ten persons. In March 1993, ten people were killed by pungent fumes of strong sulphuric acid floating in the air, which from a chemical unit at Dhakta Shahad in Maharashtra. These are only some instances of reported pollution accidents; many more remain unreported.

There is no doubt that these pollution accidents are not everybody occurrences, but the magnitude of this problem is bound to increase due to the increasing number of hazardous industries which cause slow as well as sudden environmental pollution. The slow release of hazardous wastes from smaller units is usually stronger and sometimes larger in volume than those produced by bigger industries. Therefore, the concern is about the accidental or regular industrial pollution which causes sudden as well as slow deterioration of environment.

Due to rapid industrialization, the problem of pollution of natural water sources is also attaining alarming proportions. The most disturbing features of the modern wastes disposal system is that those who cause water pollution are seldom the people who suffer from it. Industries and cities discharge their untreated or only partially treated wastewaters and industrial effluents into neighboring streams and thus, expose the down stream's riparian population to dangerously unhygienic conditions. (*M.C. Mehta v. Union of India (Ganga Pollution case)*, AIR 1988 SC 1115 at 1125). Polluted water causes many waterborne diseases resulting in death. The World Health Organisation (WHO) estimates that as much as 80 per cent of all diseases in the world are associated with water. It states: "One hospital bed out of four in the world is occupied by a patient who is ill because of polluted water." It further states that about 25 million people die every year from the water-borne diseases in developing countries including India.

As per Expert Committee on Ganga Action Plan in India. In total volumetric domestic pollution is 75 per cent and industrial pollution 25 per cent; yet in toxic terms, the industrial pollution is much more because industries discharge chromium, mercury, arsenic and other hazardous chemical substances. Besides human health hazards, the polluted water also affects aquatic life. The biggest aquatic tragedy occurred in North India when hundreds of tones of fish perished, having consumed poisonous effluents discharged by National Fertilizer Naya Nangal into the River Sutlej.

The toxic effluents not only contaminate the local river water but also seep down to the water level, poisoning the groundwater supply in many places. Thus, the impact of hazardous industries on the environment and health of human beings and other biota is obvious.

In India, there have been considerable changes in the industrial and technological situations, on account of setting up of many industries that produce

hazardous and toxic substances, causing environmental pollution. These developments have made essential a review of the existing industrial and environmental laws. The recent catastrophic events have also raised the question of adequacy of existing laws relating to hazardous substances. The increasing trend of the problem also exposes administrative and judicial efficacy to provide remedy to reduce environmental pollution from hazardous processes and compensate the victims of pollution.

In spite of a number of legislations to check industrial pollution, the quest for more and more profit by the industrialists has led to the violation of laws relating to environmental pollution. Industrialists who spend crores of rupees on a project are unwilling to spend a few lakhs of rupees on pollution prevention devices. The applicants, who are required to obtain a certificate from Pollution Control Boards to the effect that the proposals meet with environmental requirements, submit an affidavit to the Pollution Control Boards that the factory can scrub the gases and incinerate the highly toxic wastes. However, they start production without installing incinerator and scrubbers. The production units argue that if they have to obey all the environmental legislations, they cannot remain productive and will have to close down their factories, rendering thousands of workers jobless. However, environmentalists argue that if pollution is allowed to continue, it may cause a threat to human survival itself. No justification can be made for observance of the measures to control environmental pollution even if it is argued that industrial development is in the interest of society. In case we do not take appropriate measures for sustainable development without further loss of time, environmental degradation will seriously threaten the socio-economic progress of the country, and our future generations may discover that life-support systems have been damaged beyond repair.

The legal measures should ensure that industrial projects are safe, protective and environmentally sound. They are not aesthetically displeasing or annoying. Before the projects are formally launched and commissioned, they should adopt the prescribed norms. It may even be necessary to create awareness among people for directing the industrial location and insisting on adoption of measure to prevent, mitigate or solve environmental problems arising subsequently. As pollution prevention by legal means may pave the way for development without destruction of environment, it becomes crucial to broaden the horizon of pollution prevention and environmental protection laws in the country. The existing legislations, therefore, call for evolution with a view to strengthening the legal measures to check economic deterioration without hindering environmental development.

OBJECTIVES OF THE STUDY

In the present work following objectives are included:-

1. To analyse the constitutional and statutory provisions for environmental protection and water rights in India.
2. To examine the international efforts for environmental protection and water resources.
3. To examine the International initiatives in protection of Environment and framing water law.
4. To analyse the existing environmental policies especially related to water conservation in our country.
5. To study the role played by our apex judiciary especially in the protection of Environment.
6. To find whether the Indian Judiciary is being implemented and provides enough remedy to combat with water pollution.
7. To study the cases relating to the environmental problem.

8. To find out the role of Indian judiciary in sensitizing the government and civil society towards protection of environment.
9. To analyze the challenges before protection of environment and water resources in the era of liberalization, privatization and globalization (LPG).
10. To make suggestions in order to control the water pollution.

HYPOTHESIS

- The Indian Judiciary plays a significant role in litigating the environment problems.
- The decision pronounced by the higher judiciary in combating the water pollution has helped in drawing the attention of governments.
- Indian judiciary is instrumental towards enactment of water protection legislations in India.
- There are many challenges before us on the issue of water protection and water as a human rights in contemporary period in wake of liberalization, privatization and globalization (LPG).

RESEARCH METHODOLOGY

The research work is primarily doctrinal in nature and based on the authoritative texts such as the Constitution of India, The National Environmental Act, 1986, Law of Torts Indian Penal Code 1860, Civil Procedure code 1908, Criminal Procedure code 1973, Case laws, Books, newspaper articles, Periodicals and internet sites etc which are duly acknowledged.

The sources for the information literature for research work have been collected from primary and secondary sources. Through various libraries and government and private institutions data are collected from reports judgments and

legislations will be critically analysed and inferences are drawn. The work has been concluded with appropriate suggestions and conclusions.

CHAPTERIZATION

CHAPTER-1	INTRODUCTION
CHAPTER-2	INTERNATIONAL EFFORTS FOR ENVIRONMENT PROTECTION
CHAPTER-3	CONSTITUTIONAL AND STATUTORY PROVISIONS FOR ENVIRONMENT PROTECTION IN INDIA
CHAPTER-4	NATIONAL PROGRAMMES AND POLICIES FOR PROTECTION OF ENVIRONMENT AND WATER
CHAPTER: 5	ROLE OF JUDICIARY ON ENVIRONMENTAL PROTECTION AND WATER POLLUTION IN INDIA
CHAPTER: 6	WATER AS HUMAN RIGHTS: THE CHALLENGES IN GLOBALIZED ERA
CHAPTER: 7	CONCLUSIONS & SUGGESTIONS

SCHEME OF THE WORK

The Ph.D. thesis “*Environmental Protection in India: A Legal Study with Special Reference to Water Pollution*” is divided into seven chapters. The first chapter is the “Introduction” of research work. At the initial stage, the selected area of research work has been identified. After identification of research problem, a synopsis of research work and its basic structure were developed. The main objectives of research study are put forth in this chapter. A review of literature is also put forth in this chapter. A para of hypothesis is constructed in

which four assumptions are made. On the basis of research observations, utilizing qualitative and quantitative research method techniques of research methodology, all assumptions are proved. Further, the selection of research problem, statement of research problem, significance of research study, scope of research study are also briefly mentioned in this chapter.

Chapter 2 of the study deals with “*International Efforts For Environment Protection*” These International Institutions have generated enough heat at the national level to initiate codification of national legislation and their early, effective implementation.

Chapter-3 of the study is about “*Constitutional and Statutory Provisions For Environment Protection in India*”. Various Judicial Decision and Constitutional Provisions have been discussed. Further Various Acts have been discussed starting from the policy and laws in ancient India till date.

Chapter-4 titled “*National Programmes and Policies for protection of environment and Water*” is dedicated to water protection in India. Time to time Government of India has framed various national water policies. These policies were successful on many fronts and on many areas these failed. The government has failed to operationalize these policies because of the prevalence of various contentious issues in these policies. The government has also spent a large amount of funds on the drinking water projects, but still a major chunk of population is devoid of safe drinking water.

Chapter-5 of the study is about “*Role of Judiciary on Environmental Protection and Water Pollution in India*” When administrative avenues for environment enforcement fail, the public often turns to the judiciary to uphold and enforce Environment Law. Effective public participation is critical to India’s development and conservation efforts.

Chapter 6 is “*Water as Human Rights: The Challenges in Globalized Era*” this chapter addresses the relevance of linking human rights and water. Why do we need such a right? What would be the benefits, if there were any? Why should we go into another academic debate when action is really what is necessary? These ‘whys’ will lead to another essential question: if there were to be such a right, what shape should it take? This issue is addressed in the third part of this chapter.

In the last chapter, on the basis of this research study, certain conclusions are drawn and some suggestions are also placed for consideration. On the basis of findings of this research study, it is inferred that the problem of environmental protection and water pollution needs to be addressed urgently.

Chapter-II

Chapter-2

International Efforts for Environment Protection

2.1 Introduction

The development of International Environmental Law as a separate area of public International Law began with United Nations Conference on Human Environment 1972 (Stockholm Conference on Human Environment in 1972), parallel to the rise of environmental consciousness in the early 1970s throughout the developed world, especially in the USA and Western Europe. Since then interest has steadily increased and, over the course of the next two decades, it became one of the fastest growing areas of International law. Current issues of environmental concern covered by environmental law include ozone layer depletion and global warming, freshwater scarcity, groundwater depletion, protection of wetlands, desertification, deforestation, water, soil and air pollution, International trade in endangered species, dumping and shipment of hazardous wastes to Third World countries, and high seas oil spills, transboundary nuclear accidents, and an array of specific issues related to environmental degradation and resource depletion. Environmental law is also cutting across other new areas of International law, such as commercial or business law, trade, development and human rights. In the past four and half decades a record number of International treaties and soft law documents have been created by International organizations with the cooperation of states.

In addition, many domestic laws and regulations have been adopted to protect the environment. Nevertheless, despite all these seemingly positive developments as embodied in legal documents, both at national and International levels, major environmental problems persist, and have become even more serious. The different priorities of developed and developing countries stemming from their uneven geographic, economic and political conditions, and their various geopolitical and

resource interests, have often made International environmental issues impossible to resolve.

During this period the promising commitments of the developed world to environmental protection gradually became elusive, and disagreements between North and South relating to environmental issues became deeper. There are many explanations of this disappointing track record in efforts to establish a regulatory framework for environmental protection. The close connection between environmental decisions and economic development, globalisation, International trade, corporate interests and an unconditional commitment to a free market economy, have made environmental law more difficult to implement than was the case in other normative International law areas. Moreover, the 11 September 2001 terrorist attacks on the USA, as well as the indifferent, if not hostile, attitude of the Bush administration to environmental protection, has shifted the global agenda further away from issues related to environmental protection of the developing world to security concerns. This is a very unfortunate development in an area that has already been problematic to deal with.

2.2. Sources of International Environmental Law

The development of International law is of recent origin. It has been originated, nurtured and developed only during the last seven decades. The end of World War II was the beginning of environmental law. The National Environmental Policy Act, 1960 (USA) was the first modern specific legislation in this field. Similarly "Earth Day" celebration on 22 April 1970 in the USA marked the beginning of movement in this field. A sequel to it, First International Conference on Human Environment was held in Stockholm in 1972. Between 1960 to this date, much development was taken place and environmental law was blossomed as full-fledged branch of law. Various activities helped it to establish and they become sources of environmental law. These important sources are stated below.

2.2.1. Treaties, protocols and conventions

Various International treaties, protocols and conventions are regarded as main sources of International environmental law. Some of the important environment treaties/ conventions and protocols are :

- The Antarctic Treaty, 1959,
- The Convention for the Conservation of Antarctic Seals, 1972,
- The Convention on International Trade in Endangered Species of Wild Fauna and Flora, 1973,
- The Convention on the Conservation of Migratory Species of Wild Animals, 1979.
- The Convention on the Conservation of European Wildlife and Natural Habitats, 1979.
- The Montreal Protocol on Substances that Deplete the Ozone Layer,
- The Protocol to the Vienna Convention for the Protection of the Ozone Layer 1987.
- The Basel Convention, 1989,
- The 1991 Protocol on Environmental Protection to the Antarctic Treaty,
- The Convention on Biological Diversity and Convention on Climate Change, 1992
- The Agreement on the Conservation of African-Eurasian Migratory Water birds, adopted in 1995, entered into force in 1999,
- The Kyoto Protocol, 1997 and Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade, 1998
- The Cartagena Protocol, 2000,

Agenda 21, Some of them are legally binding on the Member States. Sometimes these agreements are bilateral or sometimes multilateral. Protocols are subsidiary agreements of a primary treaty.

2.2.2 Customary International Law

The customary International law includes the practices prevailing amongst countries and followed in their relationship for a long time. This has also become an established source of International environmental law. These are the norms and rules that countries follow as a matter of custom and they are so prevalent that they bind all States in the world. Examples of such law are the duty to warn other States promptly about icons of an environmental nature and environmental damages to which another State or States may be exposed¹, and Principle 21 of the Stockholm Declaration ("good neighbourliness" or *sic utere tuo ut alienum non laedas*).

The principles laid down in International declarations also become part of International customary environmental law, like the Stockholm Declaration, 1972, the Rio Declaration, 1992, the World Charter for Nature, 1982, and the Third UN Conference on the Law of the Sea, 1982. Various principles applied in the adjudication of environmental cases (principle of sustainable development, polluter pays principle, precautionary principle, principle of inter-generational equity) are the outcome of principles declared in these International conferences. These principles have also become basis of many decisions in national and International courts.² In the Legality of Nuclear Weapons case³, Weeramantry J, in his dissenting opinion stated:

“Environmental law incorporates number of principles which are violated by nuclear weapons. The principle of inter-generational equity and the common heritage principle have already been discussed. Other principles of environmental law, which this request enables the Court to recognize and use in reaching its conclusions, are the precautionary principle, the principle of trusteeship of earth resources, the principle that the burden of proving safety lies upon the author of the

¹ Trail Smelter Arbitration Award and Lake Lanoux Arbitration, *France v. Spain (Lake Lanoux case)*, (1957) 24 ILR 101 available at www.Internationalwaterlaw.org/cases/othertribunals.html /(accessed on May 24, 2015).

² *United Kingdom v. Albania*, 1949 ICJ 4 available at : [www.icj-cij.org/docket/index.php? p1=3&p2=3& case=1&p3=4](http://www.icj-cij.org/docket/index.php?p1=3&p2=3&case=1&p3=4) /(accessed on May 24, 2015).

³ ICJ Rep 1996 available at <http://www.icj-cij.org/docket/index.php?p1=3&p2=4&k=e1&p3=4&case=95> /(accessed on May 25, 2015).

act complained of, and, the 'polluter pays principle', placing on the author of environmental damage the burden of making adequate reparation to those affected. There have been juristic efforts in recent times to formulate what have been described as 'principles of ecological security' a process of norm creation and codification of environmental law which has developed under the stress of the need to protect human civilization from the threat of self-destruction.”

These principles of environmental law thus do not depend for their validity on treaty provisions. They are part of customary International law. They are part of the *sine qua non* for human survival. These principles have been adopted and incorporated in national laws by many countries including India.

2.2.3 Judicial decisions at International Level

Article 38(1) (d) of the statute of the International Court of Justice (ICJ) has also recognised judicial decisions as one of the sources of International environmental law. The ICJ has decided many important cases involving environmental issues and put the environment on firm footing. Some of them are *United Kingdom v. Albania*⁴, *the Lake Lanoux case*⁵, *Belgium v. Spain*⁶, *Australia v. France*⁷, *the Aerial Herbicide case*⁸, *the Pulp Mills case*⁹ and others. These judicial pronouncements have recognised and explained various sources and principles of environment law. As a result of large number of environmental cases, ICJ has created the Chamber for Environmental Matters in July 1993. The contribution of ICJ is appreciable looking to number of cases decided and broader principle of

⁴ 1949 ICJ 4 available at: [www.icj-cij.org/docket/index.php? p1=3&p2=3&case=1&p3=4](http://www.icj-cij.org/docket/index.php?p1=3&p2=3&case=1&p3=4) /(accessed on August 24, 2015).

⁵ (1957) 24 ILR 101 available at: www.Internationalwaterlaw.org/cases/othertribunals.html/(accessed on August 22, 2015).

⁶ 1970 ICJ Rep 3 available at: <http://www.icj-cij.org/docket/index.php?p1=3&p2=3&case=50&p3=4>/(accessed on August 23, 2015).

⁷ 1974 ICJ Rep 2533 available at: <http://www.icj-cij.org/docket/index.php?p1=3&p2=3&k=78&case=58&code=af&p3=4>/(accessed on August 22, 2015).

⁸ *Aerial Herbicide Spraying, Ecuador v. Colombia*, 1-4-2008 (ICJ) available at: <http://www.icj-cij.org/docket/index.php?p1=3&code=ecol&case=138>/(accessed on August 22, 2015).

⁹ *Argentina v. Uruguay* (Pulp Mills on the River Uruguay), 4-5-2.006 (ICJ) available at: <http://www.haguejusticeportal.net/index.php?id=11878>/(accessed on August 25, 2015).

environmental law laid down. The following are some of the significant judicial pronouncements.

2.2.3.1. Trail Smelter Arbitration

The Trail, British Columbia was the largest lead and zinc smelting complex in the British Empire. During 1925 - 1927, two large, 400 foot smoke stacks were built. There was a resulting increase in the amount of sulphur emitted into the air. Within that same time period, the amount of sulphur released from the plant on a monthly basis almost doubled from what it had been in 1924. Its 400 foot high stacks sent plumes of noxious smoke down the Columbia river valley. Upon crossing the US-Canadian border, the smoke caused damage to crops and forests in Washington State. American farmers claimed compensation for crop losses and measures to ensure smoke reduction. The dispute raised thorny issues of how International law should respond to transboundary air pollution. It took almost 15 years and two precedent-setting decisions from an International arbitration tribunal to finally settle these questions.

Initially, the US agreed to bring the issue before the International Joint Commission (IJC). In its 1931 report, the IJC recommended that Canada should limit its sulphur dioxide emission limits and asked Canada to compensate the US for a sum of US \$ 350,000 for damages caused to the farmers, but the US did not accept the offer. In 1935, the two countries agreed to arbitration constituted under Convention of Ottawa, signed on 15 April between US and Canada, 1935. Meanwhile, Canada again offered to compensate US \$ 350,000 for all damages caused before 1932. In April 1938, after extensive expert assessments, the tribunal acknowledged that the smelter had caused damage after 1932. Then in 1941, it was held by the Arbitration Tribunal that no State has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another or the properties or persons therein, when the case is of serious consequence and the injury is established by clear and convincing evidence.

It was determined that the Canadian Government should pay the US \$78,000 for damage that the Trail Smelter had done to the State of Washington from 1932 to 1 October 1937. This compensation was primarily for damage done to land along the Columbia River valley in the US.

The tribunal held: *under the principles of International law, as well as the law of the United States, no State has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another or the properties or persons therein, when the case is of serious consequence and the injury is established by clear and convincing evidence.*

This case, commonly known as the "*Trail Smelter Arbitration*", is a landmark judgment in environmental law. It is recognised as the earliest articulation of two core principles of International environmental law that States have a duty to prevent transboundary environmental harm, and that they have an obligation to pay compensation for the harm they cause. It also saddled the "polluter pays principle" on the firm footing for transnational pollution issues. Thus it became the first International ruling on transboundary air pollution and created a global precedent. The Trail Smelter Arbitration is regarded as the "wellspring" and "fountainhead" of International environmental law, and the arbitrators as "trail-blazing", "courageous and creative"¹⁰.

2.2.3.2. France v. Spain (Lake Lanoux Arbitration)

Lake Lanoux is situated on the southern slope of the Pyrenees, in French territory (the Department of Pyrenees-Orientales). The lake waters flow out through a single stream, the Fontvive, which is one of the sources of the Carol River which, after about 25 kms from lake Lanoux in French territory, crosses the Spanish border at Puigcerda and continues its course in Spain for about 6 kms before joining the Segre river, which ultimately empties into the Ebro. Before entering Spain, the

¹⁰ *United States v. Canada*, (1939) 33 AJIL Available at: <https://www.cambridge.org/catalogue/catalogue.asp?isbn=9780521879453&ss=fro>, See also, Trail Smelter Arbitral Decision, *United States v. Canada*, (1941) 35 AJIL 684. /(accessed on September 24, 2015).

waters of the Carol feed the Puigcerda canal, which is the private property of the Spanish town of Puigcerda.

The France and Spain signed boundary treaties on 26 May 1866, 2 December 1856, 14 April 1862 and 26 May 1866 for the regulation of waters of common use.

In the 1950s, France began developing a plan to divert water from Lake Lanoux over a 789 m drop to generate hydroelectric energy. Even though France promised to return the diverted water to the Carol River, Spain pressed France to arbitrate the dispute because Spain believed that the plan would violate its water rights under a series of treaties signed in 1866.

The Arbitration Tribunal issued an award in 1957, which rejected Spain's arguments because the French plan promised not to alter the volume of water entering Spain through the Carol River. Further, the tribunal stated that the treaties did not constitute a reason to subjugate the general rule that standing and flowing waters are subject to the sovereignty of the State where they are located. The tribunal decided that in carrying out works for the utilisation of the waters of lake Lanoux in the conditions mentioned in the scheme for the utilisation of the waters of lake Lanoux, the French Government was not committing a breach of the provisions of the Treaty of Bayonne of 26 May 1866 and the Additional Act of the same date. However, while Spain disregarded the facts to concentrate its pleadings on a matter of principle, France made its case by proving the absence of actual damage to Spanish interests.

The tribunal declared that "territorial sovereignty must bend before all International obligations", negating the doctrine of absolute sovereignty. It ruled that the upstream State has a right to make reasonable use of water and it did not accept the principle of natural flow or absolute revering integrity.

The lake Lanoux arbitration has become a locus classic of International environmental law. Some elements of the award broke new ground, heralding, for instance, the provisions set in the Convention on the Non-Navigational Uses of International Watercourses, 1997. Others helped clarifying the content of well-

established principles, such as the principle of good faith in International relations. The case also became popular because the tribunal made authoritative and extensive inquiry of the norms of International customary law regarding the use of International waterways¹¹.

2.3. Efforts of United Nation for Environmental Protection : Important Conventions / Agreements/ Reports on Environmental Protection

2.3.1. United Nation Conference on Human Environment 1972 (Stockholm Conference, 1972)

First International conference on human environment was held in Stockholm, Capital of Sweden (5-16 June 1972) where more than 107 States participated. The then Prime Minister of India, Mrs. Indira Gandhi, was the first head of the State to address the conference.

In the conference, 26 principles were agreed and declared by the participating States. These principles are known as the Magna Carta on Human Environment.¹² The Stockholm Declaration (1972) was the first holistic approach to deal with the problems of environment. The conference adopted an action plan relating to natural resources, human settlement, human health, territorial ecosystem, environment and development, ocean, energy, wildlife, natural disaster, transboundary pollution, nuclear energy and means of mass destruction.

It also declares that there is a need for the International law relating to liability and compensation for the victims of pollution and other environmental damage. It is stated that “*Man has the fundamental right to freedom, equality and adequate conditions of life in an environment of quality that permits a life of dignity and well*

¹¹ (1957) 24 ILR 101as cited in S.C. Shashtri, *Environmental Law*, 446 (Eastern Book Co.5th ed.2015).

¹² *K. Guruprasad Rao v. State of Karnataka*, (2013) 8 SCC 418, 471 and *Essar Oil Ltd. v. Halar Utkarsh Samiti*, (2004) 2 SCC 392: AIR 2004 SC 1834.

being; and he bears a solemn responsibility to protect and improve the environment for present and future generation”¹³.

It is also enunciated the principle of "sustainable development". It is stated *“The natural resources of the earth including air, water, land, flora and fauna must be safeguarded for the benefit of present and future generation through careful planning and management”¹⁴.*

Therefore, man has a special responsibility to safeguard and wisely manage the heritage of wildlife and its habitat. It is mentioned *“Man has a special responsibility to safeguard and wisely manage the heritage of wildlife and its habitat, which are now gravely imperiled by a combination of adverse factors. Nature conservation including wildlife must therefore receive importance in planning for economic development.”¹⁵*

It also advocated establishing national institutions with the task of planning, managing or controlling the environmental resources with a view to enhance the environmental quality.

The United Nations Environment Programme (UNEP) was also created by the UN General Assembly on 15 December 1972 to promote environmental law and address major environmental issues.

2.3.2. UN Convention on the Law of the Sea, 1982

The object of the convention was to establish legal order for seas, and promote

- 1) Uses of seas and oceans,**
- 2) The equitable and efficient utilisation of their resources,**
- 3) The conservation of their living resources and their protection, and**
- 4) Preservation of the marine environment.**

¹³ United Nation Conference on Human Environment, 1972, Principle 1

¹⁴ United Nation Conference on Human Environment, 1972, Principle 2.

¹⁵ United Nation Conference on Human Environment, 1972, Principle 4.

The convention aims to prevent, control, reduce and abate the marine pollution from:

1. Land-based resources including rivers, estuaries, pipelines and outfall structures, etc.¹⁶
2. Sea bed activities.¹⁷
3. Dumping (it includes deliberate disposal of wastes or other matter from vessels, aircrafts, platforms or other man-made structures¹⁸;
4. Pollution from vessels;¹⁹ and
5. Pollution from or through air. [Art. 21]

The States are under an obligation to adopt laws and regulations to prevent, reduce and control marine pollution through above mentioned sources and to establish global and regional rules, standards and recommend practices and procedures to prevent, reduce and control such pollution.

The States are liable according to International obligation under the convention and shall pay compensation and other adequate relief in respect of damage caused by marine pollution²⁰.

"Sovereign immunity" has also been provided under Article 236 for warship, naval auxiliary, vessel or aircraft owned or operated by a State and used for governmental and non-commercial service.

The convention also has provisions for development and transfer of technology and settlement of disputes²¹.

2.3.3. World Charter for Nature, 1982

The charter was adopted by the UN General Assembly. It consists of 24 principles.

¹⁶ UN Convention on the Law of the Sea, 1982 ,[Art. 207].

¹⁷ UN Convention on the Law of the Sea, 1982 , [Art. 208].

¹⁸ UN Convention on the Law of the Sea, 1982 , [Art. 210].

¹⁹ UN Convention on the Law of the Sea, 1982 ,[Art. 211] .

²⁰ UN Convention on the Law of the Sea, 1982 , [Art. 235].

²¹ Held at Montego, on 10-12-1981. It is a voluminous convention, have 15 chapters and more than 300 articles available at: http://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf/(accessed on September 24, 2015).

The charter recognises that *"Mankind is a part of nature and the civilization is rooted in nature, which has shaped human culture and influenced all artistic and scientific achievement, and living in harmony with nature gives man the best opportunities for the development of his creativity, and for rest and recreation"*. Therefore, *"man must acquire the knowledge to maintain and enhance his ability to use natural resources in manner which ensures the preservation of the species and ecosystem for the benefit of the present and future generation"*. With this the charter has pronounced 24 principles to conserve the natural resources.

As general principle it has been provided that *"nature shall be respected and its essential process shall not be impaired"* and that *"nature shall be secured against degradation caused by warfare or other hostile activities"*. Genetic viability, population level of all forms and their habitats, all areas of earth, both land and sea, ecosystems and organisms should be protected and conserved.

Various functions have been provided to be performed by the States (from Principles 6 to 13). Such functions include planning and implementation of the social and economic activities with due care for conservation of nature; formulating long term plans for economic development, population growth and improvement of standards of living; using the natural resources in a restraint manner and prohibiting their wastage, maintaining the productivity of soil, reusing and recycling natural resources; exploiting non-renewable resources with restraint; controlling activities which might have an impact on nature and usage of best available technologies that minimise significant risk to nature; and avoiding the discharge of pollutants into natural resources with special precautions to prevent the discharge of radioactive or toxic wastes.

As implementing measures, the Charter provides²² that the States shall adopt legal measures, disseminate environmental education, formulate and encourage scientific research, monitor and evaluate conservation policies and methods, implement the applicable International legal provisions, ensure participation of

²² World Charter for Nature, 1982, Principles 14-24 available at: <http://www.un.org/documents/ga/res/37/a37r007.htm>. /(accessed on September 24, 2015).

people in formulation of decisions concerning environment and that "*each person has a duty to act individually*" in association with others or through participation in political process to achieve the objectives and requirements of the charter.

2.3.4. United Nations Conference on Environment and Development 1992

(Earth Summit: The Rio Declaration on Environment and Development, 1992)

The Rio de Janeiro Conference is known as "Earth Summit". It has proclaimed 27 principles. It reaffirmed the Stockholm Declaration of 1972. The main objective of the conference was to establish new and equitable global partnership through creation of new levels of cooperation among States, key sectors of societies and people, International agreements which respect the interest of all and protect the integrity of global environment and development system, recognising the integral and interdependent nature of the earth, our home²³.

The various principles of the declaration emphasise on "sustainable development"²⁴ to equitably meet developmental and environmental needs of present and future generations²⁵; eradication of poverty programmes²⁶; reduction and elimination of unsustainable patterns of production, and consumption and promotion of demographic policies²⁷; public participation in decision-making²⁸; national environment legislation; developing national law regarding liability and compensation²⁹ for the victims of pollution and other environmental damage; precautionary approach to protect environment; promoting the internalization of environment costs; undertaking environmental impact assessment for proposed activities which are likely to have a significant adverse impact; and role of women in environmental management and development. Article 22 also provided that good use of the knowledge of indigenous people must also be made and that knowledge be protected. It also pronounces that "*peace, development and environmental protection*

²³ Held from 3-6-1992 to 14-6-1992 *available at:* https://en.wikipedia.org/wiki/Earth_Summit

²⁴ Earth Summit: The Rio Declaration on Environment and Development, 1992, Principle 1.

²⁵ Earth Summit: The Rio Declaration on Environment and Development, 1992, Principle 3.

²⁶ *Id* at Principle 5.

²⁷ *Id* at Principle 8.

²⁸ *Id* at Principle 10.

²⁹ *Id* at Principle 13.

are interdependent and indivisible". Therefore, even armed conflicts should not harm the natural environment.

2.3.4.1. Agenda 21 (Earth Summit 1992)

Agenda 21 was, as one of the, instruments, adopted at the UN Conference on Environment and Development held at Rio de Janeiro in 1992.

It is a non-binding instrument and it has provided certain strategies and other detailed programmes to contain environmental degradation and to promote environmentally sound and sustainable development. It also advocates for global partnership among the world government, masses and non-governmental, voluntary agencies for abovementioned purpose.

Agenda 21 is divided into four parts:

- (1) Socio-economic dimensions (habitat, health, demography, consumption and production pattern, etc.
- (2) Conservation and resource management (atmosphere, forest, water, waste, etc.).
- (3) Strengthening the role of NGO's and other social action groups such as trade unions, women organisations, etc. and
- (4) Measures of implementation (finances, institutional machinery etc.).

The agenda has various provisions for the management of toxic-chemical hazardous wastes, solid and sewage wastes, radioactive wastes and biotechnology. Further, other provisions for the protection of oceans, seas, coastal areas, quality supply of fresh water resources and atmosphere has been provided. Some of the provisions deal with management of land resources, deforestation, drought, sustainable development of mountains, rural agricultural areas.

2.3.5. United Nation Framework Convention on Climate Change, 1992

One of the conventions adopted at "Earth Summit" at Rio de Janeiro in 1992 was the Convention on Climate Change³⁰.

The prime objective of the convention was to "*stabilise the greenhouse concentration in the atmosphere at a level that would prevent dangerous anthropogenic interference with climate system*"³¹. The concentration of greenhouse gases (GHGs) results in additional warming of the earth's surface and atmosphere, but it may adversely affect natural ecosystem and mankind. It also referred to the Vienna Convention for Protection of the Ozone Layer, 1985 and Montreal Protocol on Substances that Deplete the Ozone Layer, 1987.

The convention has also provided that **(1)** each State party shall make national policies and take corresponding measures on the mitigation of climate change by limiting its anthropogenic emissions of GHGs, and **(2)** protecting and enhancing its greenhouse gas sinks and reservoirs.

The Member states are under an obligation to promote and cooperate in scientific, technological, socio-economic and other research, systematic observation and development of data archives related to climate system and exchanges them with other countries³². Further, the member parties shall promote and facilitate at national level with national laws and regulation to implement educational and public awareness programmes on climate change and train scientists, technocrats and managerial personnel's in this field. Public participation and access to information shall also be encouraged by the Member States³³. The Kyoto Protocol of 1997 is a part of this convention as it is provided that the conference of the parties may adopt protocols to the convention³⁴.

³⁰ The convention consists of 27 articles available at: unfccc.int/essential_background/convention/items/6036.php (accessed on 25.09.2014)

³¹ Greenhouse gases mean those gaseous constituents of the atmosphere, both natural and anthropogenic, that absorbs and re-emits infrared radiation. [Art.1(5)].

³² United Nation Framework Convention on Climate Change, 1992 [Art. 5]

³³ United Nation Framework Convention on Climate Change, 1992 [Art. 6]

³⁴ United Nation Framework Convention on Climate Change, 1992 [Article 17(1)]

2.3.6. World Summit on Sustainable Development (Rio Earth Summit +10) 2002

This summit, also known as "Earth Summit", was held in Johannesburg, South Africa, from 26 August to 4 September 2002 by the UNO. It was in sequence to the Stockholm Conference on Human Environment of 1972.³⁵ The summit attracted the world's attention towards meeting their difficult challenges like improving people's lives and conserving natural resources, with ever-increasing demands for food, water, shelter, sanitation, energy, health services and economic security. The summit evaluated the progress made after Rio de Janeiro Conference of 1992 and the implementation of Agenda 21. It mainly focused on five key points:

- 1) Water and sanitation,
- 2) Energy,
- 3) Human health,
- 4) Agricultural productivity, and
- 5) Biodiversity and ecosystem management.

The summit called on all countries to take immediate steps to formulate national sustainable development strategies and to initiate implementation efforts by 2005. The summit concluded with the following resolutions:

1. The establishment of a "solidarity fund" to wipe out poverty. However, developed nations were urged to dedicate 0.7 per cent of their national income to this cause.
2. To halve, by 2015, the proportion of the world's people living on less than a dollar a day. This is a reaffirmation of a "UN Millennium Summit Goals of 2000".
3. To cut by half by 2015 number of people who lack clean drinking water and basic sanitation.
4. Substantially increase the global share of "renewable energy".

³⁵ In that conference it was resolved that after every ten years, the conference will be held to review the human environment.

5. Cut significantly by 2010 the rate at which rare plants and animals are becoming extinct.
6. Restore (where possible) depleted fish stocks by 2015.
7. Substantial cut in the number of people suffering from hunger.
8. To use and produce chemicals by 2020 in ways those do not lead to significant adverse effects on human health and the environment.
9. To achieve by 2010 a significant reduction in the current rate of loss of biological diversity.

It was decided that the UN Commission on Sustainable Development shall play an active role in the implementation of the resolutions and help the States to accomplish these objectives.

2.3.6.1 Johannesburg Declaration on Sustainable Development (26th August to 6th September 2002, South Africa)

The declaration was a commitment of the world States for sustainable development. *"We commit ourselves to building a humane, equitable and caring global society, cognizant of the need for human dignity for all."*³⁶ It gave new impetus to global action to fight poverty and protect the environment. Most significant aspect, the establishment of a "world solidarity fund" for the eradication of poverty, was a positive step forward. Other key initiatives were health, water and sanitation, energy, agriculture, biodiversity and ecosystem management, corporate responsibility, sustainable development of Small Island developing States, and institutional framework for sustainable development.

In its political agenda it was declared that *"we assume a collective responsibility to advance and strengthen the interdependent and mutually reinforcing pillars of sustainable development, economic development, social development and environmental protection at local, national, regional and global levels"*. Therefore, poverty eradication, changing consumption and production patterns, and protecting

³⁶ Johannesburg Declaration on Sustainable Development, Principle 2.

and managing the natural resource base for economic and social development are objectives and essential requirements for sustainable development³⁷.

2.3.7. Sustainable Development Goal 2015

(Ensure Availability and Sustainable Management of Water and Sanitation for All)

The Sustainable Development Goals (SDGs), officially known as “*Transforming our world: the 2030 Agenda for Sustainable Development*” are an intergovernmental set of aspiration Goals with 169 targets. The Goals are contained in paragraph 54 United Nations Resolution A/RES/70/1 of 25 September 2015. The Resolution is a broader intergovernmental agreement that, while acting as the Post 2015 Development Agenda (successor to the Millennium Development Goals), builds on the Principles agreed upon under Resolution A/RES/66/288, popularly known as The Future We Want. On 19 July 2014, the UN General Assembly's Open Working Group (OWG) on Sustainable Development Goals (SDGs) forwarded a proposal for the SDGs to the Assembly.

The proposal contained 17 goals with 169 targets covering a broad range of sustainable development issues. These included ending poverty and hunger, improving health and education, making cities more sustainable, combating climate change, and protecting oceans and forests. On 5 December 2014, the UN General Assembly accepted the Secretary-General's Synthesis Report which stated that the agenda for the post-2015 SDG process would be based on the OWG proposals. The Intergovernmental Negotiations on the Post 2015 Development Agenda (IGN) began in January 2015 and ended in August 2015. Following the negotiations, a final document was adopted at the UN Sustainable Development Summit September 25–27, 2015 in New York, USA³⁸.

³⁷ It consists of 37 principles. It was adopted on 4-9-2002.

³⁸ Sustainable Development Goals – IPFS available at: https://ipfs.io/ipfs/.../wiki/Sustainable_Development_Goals.html (accessed on 25.09.2016)

Everyone on earth should have access to safe and affordable drinking water. That's the goal for 2030. While many people around the world take clean drinking water and sanitation for granted, many others don't. Water scarcity affects more than 40 percent of people around the world, and that number is projected to go even higher as a result of climate change. If we continue the path were on, by 2050 at least one in four people are likely to be affected by recurring water shortages. But we can take a new path -more International cooperation, protecting wetlands and rivers, sharing water-treatment technologies and more-that leads to accomplishing this Goal.

It is recognize that social and economic development depends on the sustainable management of our planet's natural resources. We are therefore determined to conserve and sustainably use oceans and seas, freshwater resources, as well as forests, mountains and dry lands and to protect biodiversity, ecosystems and wildlife. It is also determined to promote sustainable tourism, tackle water scarcity and water pollution, to strengthen cooperation on desertification, dust storms, land degradation and drought and to promote resilience and disaster risk reduction. In this regard COP13 of the Convention on Biological Diversity held in Mexico in 2016³⁹.

2.3.8. United Nations Climate Change Conference 2015 (COP 21)

The 2015 United Nations Climate Change Conference, COP 21 or CMP 11 was held in Paris, France, from 30 November to 12 December 2015. It was the 21st yearly session of the Conference of the Parties (COP) to the 1992 United Nations Framework Convention on Climate Change (UNFCCC) and the 11th session of the Meeting of the Parties to the 1997 Kyoto Protocol. Presently there are 195 member states. The conference negotiated the Paris Agreement, a global agreement on the reduction of climate change, the text of which represented a consensus of the representatives of the 196 parties attending it. The agreement has become legally binding if joined by at least 55 countries which together represent at least 55 percent of global greenhouse emissions. Such parties have signed the agreement in New York between 22 April 2016 (Earth Day) and 21 April 2017 and also adopt it within

³⁹ Sustainable Development Goals - Wikipedia, the free encyclopedia (accessed on April 16, 2016).

their own legal systems (through ratification, acceptance, approval, or accession). According to the organizing committee at the outset of the talks, the expected key result was an agreement to set a goal of limiting global warming to less than 2 degrees Celsius (°C) compared to pre-industrial levels. The agreement calls for zero net anthropogenic greenhouse gas emissions to be reached during the second half of the 21st century. In the adopted version of the Paris Agreement, the parties will also "pursue efforts to" limit the temperature increase to 1.5 °C. The 1.5 °C goal will require zero emissions sometime between 2030 and 2050, according to some scientists. Prior to the conference, 146 national climate panels publicly presented draft national climate contributions (called "Intended Nationally Determined Contributions", INDCs). These suggested commitments were estimated to limit global warming to 2.7 degrees Celsius by 2100. For example, the EU suggested INDC is a commitment to a 40 percent reduction in emissions by 2030 compared to 1990. The agreement establishes a "global stock take" which revisits the national goals to "update and enhance" them every five years beginning 2023. However, no detailed timetable or country-specific goals for emissions were incorporated into the Paris Agreement as opposed to the previous Kyoto Protocol. A number of meetings took place in preparation for COP21, including the Bonn Climate Change Conference, 19 to 23 October 2015, which produced a draft agreement⁴⁰.

2.3.9. United Nations Climate Change Conference 2016 (COP 22)

The 2016 United Nations Climate Change Conference was an international meeting of political leaders and activists to discuss environmental issues. It was held in Marrakech, Morocco, on 7-18 November 2016. The conference incorporated the twenty-second Conference of the Parties (COP22), the twelfth meeting of the parties for the Kyoto Protocol (CMP12), and the first meeting of the parties for the Paris Agreement (CMA1). The purpose of the conference was to discuss and implement plans about combatting climate change and to "demonstrate to the world that the implementation of the Paris Agreement is underway". Participants work together to

⁴⁰Available at: www.sustainabledevelopment.un.org/post2015/Agenda2030/outcome-document-of-summit-for-adoption-of-the-post-2015-development-agenda (accessed on 12.02. 2017).

come up with global solutions to climate change. To date, 195 countries have submitted their instruments of ratification. These countries meet once a year, during two weeks, in order to evaluate the application of the Convention and develop the negotiation process between the Parties in front of new commitments.

The conference was presided over by Salaheddine Mezouar, the Moroccan Minister for Foreign Affairs and Cooperation. Approximately 20,000 participants had attended.

On 2 May 2016, events firm GL Events signed the service contract. The Food and Agriculture Organization of the United Nations also lent its support to the preparation for COP 22".

2.3.10. United Nations Framework Convention on Climate Change (UNFCCC) Conference COP 22: Paris Agreement 2016

The Paris Agreement is an agreement within the United Nations Framework Convention on Climate Change (UNFCCC) dealing with greenhouse gases emissions mitigation, adaptation and finance starting in the year 2020. It was opened for signature on 22 April 2016 (Earth Day) at a ceremony in New York. As of December 2016, 194 UNFCCC members have signed the treaty, 131 of which have ratified it. The Intended Nationally Determined Contributions pledged during the 2015 Climate Change Conference serve—unless provided otherwise—as the initial nationally determined contribution. The emission reduction efforts will be made in order to hold the increase in the global average temperature to below 2 °C by reducing emissions to 40 gigatonnes or to 1.5 °C. The implementation of the agreement by all member countries together will be evaluated every five years, with the first evaluation in 2023. The Paris Agreement has a ‘bottom up’ structure in contrast to most international environmental law treaties which are ‘top down’, characterised by standards and targets set internationally, for states to implement. Unlike, the Kyoto Protocol, which sets commitment targets that have legal force, the Paris Agreement,

with its emphasis on consensus-building, allows for voluntary and nationally determined targets. The Paris Agreement still emphasizes the principle of “Common but Differentiated Responsibility”—the acknowledgement that different nations have different capacities and duties to climate action—it does not provide a specific division between developed and developing nations. The SDM is considered to be the successor to the Clean Development Mechanism, a flexible mechanism under the Kyoto Protocol, by which parties could collaboratively pursue emissions reductions for their INDCs. The Sustainable Development Mechanism lays the framework for the future of the Clean Development Mechanism post-Kyoto (in 2020). Not part of the Paris Agreement (and not legally binding) is a plan to provide US\$100 billion a year in aid to developing countries for implementing new procedures to minimize climate change with additional amounts to be provided in subsequent years (The Green Climate Fund (GCF) is a fund within the framework of the UNFCCC). The agreement stated that it would enter into force (and thus become fully effective) only if 55 countries that produce at least 55% of the world’s greenhouse gas emissions. (US and China together contribute 40% of the emissions.)⁴¹

2.3.11. COP 23 : UN Climate Change Conference 2017, Bonn

The 2017 UN Climate Change Conference held on 6-17 Nov 2017, with the aim of launching nations towards the next level of ambition needed to tackle global warming and put the world on a safer and more prosperous development path.

The Conference, coming just two years after the landmark adoption of the Paris Climate Change Agreement, held also further fuel momentum among cities, states, regions, territories, business and civil society in support of national climate action plans, the internationally-agreed temperature goal and the wider objectives of the 2030 Agenda for Sustainable Development.

⁴¹ Available at: <https://conferencealerts.com/topic-listing?topic=environment> (accessed on 22.02.2017)

Highlights of COP23

The conference is itself a welcome mirror of international cooperation and coordination.

COP23 is organized by Bonn-based UN Climate Change, presided over by Fiji and organizationally and logistically supported by the Government of Germany, the region of North-Rhine-Westphalia and the City of Bonn.

Speakers reflect the broad spectrum of action. Those already confirmed include Marshall Islands President Hilda Heine, Arnold Schwarzenegger, UN Secretary-General António Guterres, Paris Mayor Anne Hidalgo, California Governor Jerry Brown, UN Special Envoy Michael Bloomberg, Astronaut Thomas Pesquet, Unilever CEO Paul Polman, Scotland's First Minister Nicola Sturgeon, and Solar Impulse Explorer Bertrand Piccard.

Close to 20 country leaders are expected to attend, including President Emmanuel Macron of France and German Chancellor Angela Merkel.

Various transformative initiatives are anticipated including one from the UN on health and small islands; a platform to support engagement with Indigenous Peoples; a wide-ranging Gender Action Plan and the ramping up of a global risk transfer project that aims to deliver affordable insurance cover to an extra 400 million poor and vulnerable people.

Pre-2020 action

Pre-2020 climate action posed a significant conflict throughout the conference, with developing countries raising concerns that developed countries have not done enough to meet their pre-2020 commitments – in particular, having not yet delivered the promised \$100 billion per year in climate finance. These commitments are separate from the Paris Agreement, which only comes in to effect post-2020. Whilst pre-2020 action was initially omitted from the COP23 agenda, insistence from developing countries saw that pre-2020 ambition and implementation ultimately formed a major part of negotiations, resulting in an agreement to add

additional stocktaking sessions and reviews in respect of reducing emissions pre-2020.

2.4. Historical Development of Water Law

In many countries, local customs and religious beliefs have shaped the rules applied to water. Such local laws can be traced back more than 5,000 years. In India, for example, the Indus Valley civilization, which flourished around 2500 BC, developed water rules that were further developed in later centuries, as recorded in the Arthashastra. Similarly in ancient Egypt, rules to manage floods and to promote irrigation developed early. One of the early Chinese emperors, Yu the Great, is remembered as China's first water manager.

Water rules in prehistoric periods (when floods, irrigation, and health were key issues) evolved into systems that focused on ownership and rights. Since the Industrial Revolution, more attention has gone to ownership issues. In the late twentieth century, the focus of water regulation shifted to pollution. , As elaborated in Dombrowsky's article, the emphasis of water governance is shifting to integrated water resources management and sustainable development. This latest focus is seen in the Global Water Partnership since 1996⁴². The triennial World Water Forum meetings since 1997, and the 2002 World Summit on Sustainable Development⁴³.

The historical evolution of rights and responsibilities in respect of water implies a certain path dependency. It is not easy to change historically acquired rights and responsibilities. Indeed, in India some court cases regarding water have continued for over 700 years, showing that people have long memories regarding their property rights.

⁴² Global Water Partnership (GWP), Integrated Water Resources Management, Technical Advisory Committee Background Papers No. 4. (Stockholm: GWP, 2000) *available at:* www.unwater.org/.../gwp_inbo%20handbook%20for%20iwr%20in%20basins_eng... (accessed on April 13, 2015)

⁴³ See the documents produced by the 2002 World Summit on Sustainable Development *available at:* www.un.org/esa/sustdev/documents/WSSD_POI_PD/.../WSSD_PlanImpl.pdf (accessed on April 13, 2015)

Although water law is very much shaped by its particular context, six general features can be identified⁴⁴. Which are as follows:- First is the cultural origins of water law, as influenced by the geographic and hydrological conditions that shaped the growth of the early civilizations along riverbanks. In general, regions that were water rich had little need to develop rules, while water-poor regions had great need to do so. This tendency is evident to this day in the different parts of the United States, where water law is less developed in the humid eastern states and more developed in the drier western states.

In the period between 500 BC and 1600 AD, a second general feature is the religious influence becomes more apparent. Through the spread of Hinduism, Buddhism, Jainism, Judaism, Christianity, and Islam to different parts of the world, the water-related rules in each religion began to penetrate domestic legal systems. In some versions of Hindu law, for example, private ownership of water is not recognized, and water is seen as something that passes on and moves continuously. This perspective moved from the Indian subcontinent to Bali. In some versions of Islamic law, water cannot be commercialized because it is a gift of God, although limited ownership is recognized where individuals have taken specific measures to create access to water- for example, through the construction of a well⁴⁵. Rules concerning water are very important in Islam, because the faith was born in an arid region. The word for law in Islam-sharia-means path to the watering place. In contrast, Roman law developed in a relatively water-rich area. The Roman tradition recognized three types of water ownership: private ownership, community ownership, and public ownership⁴⁶.

In a third historical turn, from around 1000 to 1950, legal ideas regarding water spread across the world through conquest and colonization. Sometimes these processes transferred religious principles (e.g., in conquests by Islamic rulers).

⁴⁴Joyeeta Gupta, *International Water Law and Governance: Paradigm Lost or Gained* (Delft, the Netherlands: UNESCO-IHE, 2003) available at: <https://books.google.co.in/books?isbn=1402098677> (accessed on April 13, 2015)

⁴⁵Dante A. Caponera, *Principles of Water Law and Administration* 28 (Rotterdam: A. A. Balkema, 1992).

⁴⁶*Id* at 29-53.

Sometimes they spread secular laws (e.g., through colonial conquests from Europe). Sometimes they promoted ideologically based laws (e.g., the spread of state ownership of water in the communist countries in the early twentieth century).

From the 1950s, a fourth trend- International codification-emerged. This process involved the identification and articulation of common principles for managing water based on an analysis of local and national traditions. Particularly influential in these exercises were scholarly communities such as the The International Law Association (ILA) and the *Institut de Droit International*, as well as the International Law Commission (ILC) of the UN. The ILA's 1966 Helsinki Rules on the Uses of the Waters of International Rivers⁴⁷ helped to shape regional arrangements (especially in developing countries) and International water law (to be discussed in a later section). The UN Declarations on the Human Environment (Stockholm, 1972), on Environment and Development (Rio, 1992), and on Sustainable Development (Johannesburg, 2002) have also been influential in establishing the link between water and environmental issues. The ILC, normally mandated to codify International law, drafted the UN Convention on the Law of the Non-Navigational Uses of International Watercourses, which was approved by the General Assembly in 1997⁴⁸. Other influential International documents of recent years include Agenda 21, adopted at the UN Conference on Environment and Development in 1992; the Berlin Rules, adopted by the ILA in 2004; and the new ILC draft rules on ground water⁴⁹.

A parallel phenomenon to legal codification has been the rise of global engineering and epistemic communities in the area of water. An example is the International Hydrological Programme (IHP) of UNESCO. These communities have

⁴⁷ Charles B. Bourne, "The International Law Association's Contribution to International Water Resources Law," 36 *Natural Resources Journal*, 155-216(1966).

⁴⁸ UN Convention on the Law on the Non-navigational Uses of International Watercourses, 21 May 1997, UN Doc. No. A/51/869, 37 ILM 719 available at: legal.un.org/ilc/texts/instruments/english/conventions/8_3_1997.pdf(accessed on May 1, 2015)

⁴⁹ United Nations, Water for People, Water for Life: The United Nations World Water Development Report (Barcelona: UNESCO and Berghahn Books, 2003) available at: <http://www.unwater.org/publications/world-water-development-report/en/>(accessed on May 1, 2015)

studied water science and developed scientific concepts of water management, starting with notions of controlling water and bringing it to new destinations and using it to generate electricity. While initially these networks focused on developing infrastructural and engineering works such as dams, over time their work has shifted toward integrated river basin management. For example, UNESCO-IHP has developed a program, Hydrology for the Environment, Life and Policy (HELP), that aims to bridge the gap between water law, policy, and science. Such developments put the hydrological basin at the center of management, as opposed to water management within a national context.

A sixth and final historical trend, contemporary globalization, has spread neoliberal ideas regarding water. Neoliberal principles often underpin lending schemes of International banks. This discourse, encapsulated in many declarations of the World Water Forums, sees water as an economic good and not a human right. In a reaction against this trend, the UN Human Rights Committee has recognized water as a human right, and the Berlin Rules have identified a right of access to water. While these evolving influences have shaped today's water law, different parts of the world have been subject to different influences. While most developed countries are able to limit external influences and have disproportionately influenced the shaping of International standards, developing countries have voluntarily and involuntarily drawn extensively on the ideas promoted at the International level.

International Water Law has evolved with national law, especially over the past century. The key issue at hand here is the role of law in promoting cooperation among states. Five important points arise in this regard. First, International law has generally fostered peaceful solutions to interstate conflicts over water, although confrontations are greater in arid and semiarid zones than in water-rich areas. Second, customary International law recognizes limited state sovereignty and the no-harm principle. Third, the 1966 Helsinki Rules have codified existing state practices worldwide and articulated the principle of equitable and reasonable utilization. Fourth, the 1997 Convention on the Law of the Non-navigational Uses of

International Water courses is conservative and not yet in force. Fifth, the 2004 Berlin Rules promote the progressive development of International water law by incorporating the latest insights from International water, environmental, human rights, and humanitarian law.

Elaborating on the first point, International law provides an institutional framework for countries to work together peacefully. It provides rules for treaty making, interpretation, and dispute resolution that allow countries to seek diplomatic and legally binding solutions to water problems. As countries share more than 264 International rivers as well as many aquifers, common rules on water management are needed. These rules have been developed through bilateral and regional negotiations, the adjudication or arbitration of disputes, the process of rule making by joint river basin institutions, and the development of multilateral law.

The peaceful resolution of disputes tends to work better where regions are water rich. Where riparian regions are water poor, cooperation over water is more stressful, even when relations are friendly in other areas. This situation often leads to rivalry, a word derived from the Latin *rivalis*, meaning people who live on opposite banks of a river. While water can be a source of conflict, it has more often been a source of cooperation, with International law serving to protect water resources even during times of armed conflict⁵⁰. There are many issues of concern between countries, but water resources, unlike other resources, tend not to be the key reason for conflict⁵¹. For example, while India and Pakistan have fought three wars and are not the best of neighbors, they have peacefully divided the Indus waters. However, such cooperation may be superficial, as states often negotiate deals on paper but do not actually address the water conflict.

⁵⁰ In the last half century, thirty-seven disputes have arisen, 200 legal agreements have been signed, and fewer conflicts (507) than cooperative events (1,228) have occurred. United Nations, *Water for People, Water for Life*, The United Nations World Water Development Report (Barcelona: UNESCO and Berghahn Books, 2003), p. 312; available at: www.un.org/waterforlifedecade/water_cooperation.shtml (accessed on July 23, 2015).

⁵¹ Jack Kalpakian, *Review of Identity, Conflict and Cooperation in International River Systems* (Aldershot, UK: Ashgate, 2004).

Although International law has a long history, its current formalized shape is of recent origin. UN membership has increased fourfold to almost 200 states since 1945, bringing many different legal systems under its purview. Given the highly diverse cultural and political forms of governance in member states, the contours of customary International law have often been controversial, but tend to revolve around the principles of sovereignty and no harm.

In International water law, a key principle is sovereignty over national water,⁵² as limited by the rights of other countries to use shared waters⁵³. This principle of customary law emerged through a dialectic process in which some states claimed a right of absolute territorial sovereignty (the right to do whatever they chose with waters flowing within their territory), while other states claimed a right to the absolute integrity of their territory (an implied right that waters flowing into one country from another country must have the same quality and be under the same natural conditions). This conflict was resolved through the notion of community of property in waters that contemporary International law articulates as the principle of equitable utilization.⁵⁴ Some states claim that historic rights-that is, the right to use the same quantities of water that they have used in the past-are stronger than the rights of current or future generations to use that water⁵⁵. Disputes around this issue arise especially between countries at different levels of development-for example, Egypt and Ethiopia or South Africa and Mozambique⁵⁶.

The sovereignty principle that applies in respect of International law on water is limited not only by the principle of equitable utilization, but also by the no-harm

⁵² Caponera, *Principles of Water Law and Administration* available at: https://books.google.co.in/books?id=bhBfOqClzLIC&redir_esc=y (accessed on august 12,2015).

⁵³ Stephen C. McCaffrey, *The Law of International Watercourses: Non Navigational Uses* (Oxford: Oxford University Press, 2001).

⁵⁴ Helsinki Rules, Art. IV; UN Watercourses Convention, Art. 5; Berlin Rules, Art. 12. In the River Oder case, the Permanent Court of International Justice held that there was a community of interest in navigation among all riparian states available at: www.Internationalwaterlaw.org/documents/.../Helsinki_Rules_with_comments.pdf (accessed on May 5,2015).

⁵⁵ Jutta Brunne and Steven J. Toop, "The Changing Nile Basin Regime: Does Law Matter?" 43 *Harvard International Law Journal*, 105-159(2002): Countries often supported such claims by invoking the absolute territorial sovereignty principle or the absolute territorial integrity principle.

⁵⁶ Joseph W. Dellapenna, "Rivers as Legal Structures: The Examples of the Jordan and the Nile," 36 *Natural Resources Journal*, 217-250 (1996).

principle⁵⁷ (sic utero tuo ut alieum non laedes)⁵⁸ the principle of reciprocity, the obligation to settle disputes peacefully, and the harmonious application of national laws where there is a conflict⁵⁹. Most International case law, declarations, codifications, and treaties today embody these principles. In general, states observe these points of customary International law because they more or less reflect what states already do.

The third point to be made is that International water law has been influenced by the work of legal scholars, especially in terms of the concept of equitable utilization of waters. In 1966, the International Law Association, a nongovernmental organization (NGO), approved the Helsinki Rules on the Uses of International Rivers. These rules are not legally binding, as they were not adopted by states, but they are the work of legal scholars as reflecting state practice. The rules were accepted by states as being the authoritative summary of the customary International law on transboundary (Internationally shared) waters. The Helsinki Rules cover all surface and ground water tributaries, and give exclusive emphasis to equitable utilization, a principle that curtails the sovereignty of states with respect to fresh water: "Each Basin State is entitled, within its territory, to a reasonable and equitable share in the beneficial uses of the waters of an International drainage basin" (Art. IV). The Helsinki scheme elaborates criteria to underpin the principle of equitable utilization. The rules also include chapters on pollution, navigation, timber floating, and procedures for the prevention and settlement of disputes.

In 1970, the UN General Assembly refrained from endorsing the Helsinki Rules and instead requested that the International Law Commission of the United Nations prepare a set of draft articles on the "non-navigational uses of International watercourses modeled on the Helsinki Rules." This marked a shift in International

⁵⁷ United Nations, Water for People, Water for Life, *Available at*: <http://www.unwater.org/publications/world-water-development-report/en/> (accessed on August 24, 2015).

⁵⁸ Do not use your property so as to injure the property of another." See Joseph W. Dellapenna, "International Law Applicable to Water Resources Generally," in Robert E. Beck, ed., *Waters and Water Rights*, vol. 5 par. 49.05 (New York: Lexis Nexis, New York, 2006).

⁵⁹ United Nations, Water for People, Water for Life, *Available at*: <http://www.unwater.org/publications/world-water-development-report/en/> (accessed on August 24, 2015).

law to focus on non-navigational uses, since navigational issues appeared to be more or less settled.

A fourth landmark in International water law was the adoption of the UN Watercourses Convention. The International Law Commission's Draft Articles, completed in 1994, were reworked by the Sixth (Legal) Committee of the General Assembly into the UN Convention on the Law of the Non Navigational Uses of International Watercourses and approved by the General Assembly by a vote of 103:3 on 21 May 1997. While subsequent ratifications have proceeded slowly and the convention has yet to enter into force, it is recognized as the authoritative compendium of customary International law governing the issues it addresses⁶⁰.

This convention focuses on International watercourses and affirms that it does not automatically replace any previous agreements unless the parties ratifying it so choose. This provision was specified to ensure that this convention would not run roughshod over existing bilateral agreements in different parts of the world but would set an agenda for the future. Key elements of the convention are its focus on equitable, reasonable, and sustainable utilization of water resources. It also prescribes that all riparian parties have a right to be involved in any agreements made with respect to the watercourse in question. This point is critical, as many rivers flow through several countries, yet sometimes only certain riparian states make agreements respecting those rivers and then attempt to bind the rest to those arrangements. The classic example of such a situation is the set of agreements between Egypt and Sudan regarding the Nile, which implied that the other riparian states would have no rights to the river's waters. Future problems may arise with respect to International rivers in South Asia, where most agreements to date have not included China, the source of these rivers⁶¹.

Although the 1997 UN Convention came several decades after environmental issues were being discussed in multilateral forums, it says little on ecological

⁶⁰ Gabčíkovo-Nagymoros case (*Hungary v. Slovakia*), 1997, ICJ No. 92, pars. 78, 85, 141 available at: <http://www.icj-cij.org/docket/index.php?p1=3&p2=3&case=92/> (accessed on August 25, 2015).

⁶¹ M. A. Salman and Kishor Uprety, *Review of Conflict and Cooperation on South Asia's International Rivers: A Legal Perspective* (London: Kluwer Law International, 2002).

matters. Article 7 imposes an obligation on all states not to cause significant harm to other countries. Where such harm is significant, the perpetrating country should try both to stop the harm and to compensate the affected country, giving due regard to the principle of equitable utilization. What this provision means for the environment is not entirely clear. The article is not limited to environmental harm, while the principle of equitable utilization could allow a good deal of harm to occur so long as the damage was equitably distributed among the states concerned⁶².

The International Watercourses Convention tends to be conservative. It does not really attempt a progressive development of the law beyond the Helsinki Rules written thirty years earlier⁶³. Yet even with its conservatism, the convention has so far attracted ratifications from only sixteen states. This poor showing could reflect the fact that, for most states, the agreement adds nothing new and merely confirms their existing practice. Reluctance to ratify the convention might also reflect the unwillingness of upstream states to accept the principle of equitable utilization and the obligation not to cause significant harm to other states. Nevertheless, large sections of the convention were reproduced in the 2000 Revised Protocol on Shared Water courses of the Southern African Development Community (SADC), and also in other agreements⁶⁴.

Although 97 percent of all freshwater (excluding that captured in glaciers and ice caps) is in groundwater, there is very little International law on groundwater. Even the UN Convention failed to deal with groundwater that drains into the sea without passing through Internationally shared surface waters. State practice is similarly sparse. Thus, water treaties between the United States and Mexico make no reference to shared groundwater resources, despite their importance in the arid border

⁶² Joseph W. Dellapenna, "The Customary International Law of Trans boundary Fresh Waters," 1 *International Journal of Global Environmental Issues*, 264-305(2000).

⁶³ M. A. Salman, "The United Nations Watercourses Convention Ten Years Later," 32 *Water International*, 1-15(2007).

⁶⁴ Revised Protocol on Shared Watercourses in the Southern African Development Community, 7 August 2000, 40 ILM 321, 2001available at: www.Internationalwaterlaw.org/.../Revised-SADC-SharedWatercourse-Protocol-2000./(accessed on August 25, 2015).

regions⁶⁵. Most legal scholars argue that the rules addressing surface waters must be applied to groundwater, and in June 2006, the ILC adopted draft articles on transboundary aquifers on this basis⁶⁶. This document is currently being reviewed by UN member states.

The preceding discussion reveals the lack of a clear global legal frame work for water. However, the works of legal scholars on codifying rules on water law for the twenty-first century shows the way forward. While most of International law covers relations between states, human rights law and some aspects of International environmental law go beyond interstate relations to focus on the rights and duties of states within their borders. This trend is likely to grow, because most environmental and resource law concerns not just states but also humans within states⁶⁷.

The most complete recognition of this development is in the Berlin Rules on Water Resources. In 1996, the ILA decided to integrate all International legal rules regarding water resources into a single set of rules, taking into account the latest developments in International water law and related fields of International law including humanitarian, environmental, and human rights law. This work led to the Berlin Rules, as approved by the ILA in 2004.

While the Berlin Rules go beyond the terms of traditional summations of International water law, its innovations are grounded in International agreements and state practice relating to International environmental, human rights, and humanitarian law⁶⁸. The Berlin Rules are comprehensive, covering all freshwater and related

⁶⁵ Octavio E. Chavez, "Mining of Internationally Shared Aquifers: The El Paso-Juarez Case," 40 *Natural Resources Journal*, 237-260 (2000); Stephen P. Mumme, "Advancing Binational Cooperation in Transboundary Aquifer Management on the U.S.-Mexico Border," 16 *Colorado Journal of International Environmental Law and Policy*, 77-111 (2005).

⁶⁶ International Law Commission, "The Law of Transboundary Aquifers," UNGA/CN.4/L.688, 2006 available at: http://legal.un.org/ilc/texts/instruments/english/draft_articles/8_5_2008.pdf /(accessed on August 27, 2015).

⁶⁷ Johannesburg Declaration on Sustainable Development, UN Doc. A/CONF. 199/L.6/Rev.2, 2002; Rio Declaration on Environment and Development, UN Doc. A/CONF. 151/5/Rev. 1, 1992 available at: www.un.org/esa/sustdev/documents/Johannesburg%20Declaration.doc; /(accessed on August 28, 2015). International Conference on Water and Development, Dublin Statement on Water and Sustainable Development.

⁶⁸ See International Law Association, Sources of the International Law Associations Rules on Water Resources, available at: www.ila-hq.org/html/layout_committee.htm (accessed on April 15, 2014) (click on

resources (the aquatic environment) and integrating domestic with International water law. The Berlin Rules also involve the first comprehensive attempt to address the distinct characteristics of groundwater.

The Berlin Rules adopt the following principles: the right of public participation; the obligation to use best efforts to achieve both conjunctive and integrated management of waters and duties to achieve sustainability and the minimization of environmental harm. The rules deal with the rights of persons; the need to protect the environment; the obligation to apply a precautionary approach; the duty to prevent, eliminate, reduce, or control pollution as appropriate; the need to undertake environmental impact assessments; and obligations with respect to extreme situations, including highly polluting accidents, floods, and droughts.

New elements in the Berlin Rules include the incorporation of participatory water management, conjunctive management, integrated management, sustainability, and the minimization of environmental harm at the national level. At the International level, the rules express obligations of cooperation, equitable utilization, avoidance of transboundary harm, peaceful settlement of disputes, and equitable participation. Because the Berlin Rules use the most modern legal and practical insights and have been approved so recently, it is difficult to predict whether courts and states will accept them.

2.5. United Nation's Initiatives For Environment Protection And Water Protection

2.5.1. United Nations Water family at the 7th World Water Forum 2015

The 7th World Water Forum met a record of participation within its ministerial process with more than 100 ministerial delegations participated in the event. On 13 April 2015, the Ministers adopted the Ministerial Declaration, which was accompanied by a full set of recommendations from the International water

"List of Committees" and then "Water Resources Committee," under "Former Committees which have completed their work").

community on how best to overcome today's water challenges. The declaration was finalized after a yearlong negotiation among related International parties and acknowledges that sustainable management of water resources is a collective responsibility of all stakeholders that is vital to development for all countries. It supports the inclusion of a dedicated water goal and water-related targets in the Post-2015 Development Agenda and recognizes the 7th World Water Forum's contribution in supporting their implementation. The declaration also commits to ministers working together to ensure a successful outcome at CoP21 in full recognition of the importance of water-related issues in climate change. The declaration also emphasizes the importance of science and technology's role in moving from the identification of solutions for water-related challenges towards their implementation. To support collective action on subjects of particular interest, Eight High-level Ministerial Roundtable discussions provided unique opportunities for the political community to interact with numerous representatives from the worlds of business, civil society, academia and the media⁶⁹.

2.5.2 United Nations-Water Annual International Zaragoza Conference 2015

In preparation of the 2013 International Year of Water Cooperation, and World Water Day 2013, the 2012/2013 Zaragoza International Annual UN-Water Conference focused on how to make water cooperation happen. The conference identified the best approaches to promote effective cooperation at different scales and how we can do 'better' in water cooperation through sharing lessons from experiences, and inspiring participants to do 'better'.

- The conference introduced the key skills required for water cooperation, with particular attention to their important role in the process of negotiation and

⁶⁹ World Water Council, *available at*: www.worldwaterforum7.org / (accessed on April 12, 2016).

mediation and with examples of their application in national and International water settings⁷⁰.

The outcomes of the conference included:

1. A series of documented case studies that illustrate how different tools and approaches for dispute resolution are implemented in practice;
2. A synthesis of lessons learned on the use of approaches for dispute resolution and how to improve water cooperation;
3. A feedback on the main messages for World Water Day 2013.

2.5.3 1st meeting of the Core Group on Reporting under the UNECE Water Convention

The Core Group on Reporting was established by the Meeting of the Parties through the Working Group on Integrated Water Resources Management and mandated to prepare a proposal for a possible reporting mechanism under the UNECE Water Convention, taking into account the capacity of countries and other relevant reporting mechanisms. At its first meeting on 15-16 December, the Core Group reviewed other related reporting mechanisms and discussed the purpose, scope, content and format of a possible reporting mechanism under the Water Convention⁷¹.

2.5.4 7th meeting of the Task Force on Water and Climate

The 7th Task Force on Water and Climate took place in the Palais des Nations in Geneva, 13 October 2014 back-to-back with the Fifth Workshop on Adaptation to Climate Change in Transboundary Basins (Geneva, 14-15 October 2014)

The Task Force on Water and Climate reviewed the progress and discussed

⁷⁰ Available at: www.un.org/waterforlifedecade/waterandsustainabledevelopment2015/ (accessed on April 12, 2016).

⁷¹ Available at: www.unece.org/env/water/1st_core_group_reporting_dec.2014.html (accessed on April 12, 2016).

the implementation of future activities to be undertaken under the programme of work for 2013-2015 of the Water Convention⁷².

2.5.5 Targeting water in the post-2015 development agenda

The meeting on the Post-2015 Development Agenda Consultation on Water: Water Resources Management and Wastewater Management and Water Quality convened from 27-28 February 2013, at the Palais des Nations in Geneva, Switzerland. The meeting, sponsored by the Government of Switzerland, was part of the Thematic Consultation on Water, coordinated by UN-Water, the UN Children's Fund (UNICEF) and the UN Department of Economic and Social Affairs (DESA). The meeting focused on two of the three streams of discussion under the Thematic Consultation: Water Resources Management (WRM), facilitated by the UN Economic Commission for Europe (UNECE); and Wastewater Management and Water Quality (WWMWQ), facilitated by UN-Habitat/ Aqua Fed. The meeting brought together over 200 representatives from governments, International organizations, civil society and business to discuss these streams, review the outcomes of the online consultations taking place on the web platform (<http://www.worldwewant2015.org/water>), and debated how issues related to WRM and WWMWQ should be addressed in the Post-2015 Development Agenda. Following the opening ceremony on 27 February, the meeting convened panel sessions on WRM and WWMWQ, followed by group discussions addressing the key priority issues that should be included in a Post-2015 Development Agenda, which then reported back to the plenary. On 28 February 2015, six key issues identified during the group discussions were selected as themes for further consideration, including on: resilience to climate change and other global pressures; efficiency and reuse; transboundary cooperation; quality, protection, water quality and ecosystems; balancing uses and allocation; and governance frameworks and integrated water

⁷²Available at: www.unece.org/.../water/7th_meeting_task_force_water_climate_2014.h... (accessed on April 12, 2016).

resources management (IWRM). Each of the groups discussed the following questions: what should be the future objectives to address the key water-related issues in a Post- 2015 Development Agenda; what actions should be taken to achieve these objectives and can success be measured; and how are such objectives linked to other themes of both the water consultation and the other global thematic consultations? The meeting concluded with a wrap-up session summarizing the meeting's conclusions⁷³.

2.5.6 United Nations-Water Annual International Zaragoza Conference 2014 (Preparing for World Water Day: Partnerships for improving water and energy access, efficiency and sustainability)

In preparation for World Water Day 2014, that year focused on 'Water and Energy' issues, 9 UN Agencies and Programmes plus more than 120 experts, representatives for International companies in the water and energy sector, government and non-governmental organizations met in Zaragoza, Spain, to address the challenges, relationships and joint solutions that arise in ensuring access, efficiency and sustainability in the provision of water and energy⁷⁴.

2.5.7 Budapest Water Summit 2013: The Role of Water and Sanitation in the Global Sustainable Development Agenda

The objective of this high-level summit was to take stock of the various developments, in and outside the UN system, in preparing water-related goals for the post Rio+20 development agenda.

The Budapest Water Summit was envisaged as a policy forum to facilitate consensus building amongst stakeholders concerning water and sanitation policy goals. During these four days governments (from developed and developing

⁷³ Available at: unesdoc.unesco.org/images/0022/002281/228120e.pdf(accessed on April 10,2016).

⁷⁴Available at: www.un.org/waterforlifedecade/water_and_energy_2014/index.shtml (accessed on April 10, 2016).

countries), International organisations, financial institutions, businesses as well as civil society and science were gathered in Budapest to discuss the most pressing challenges of water and sanitation. The Summit strived to provide defining contributions to the elaboration of one overarching SMART (Specific, Measureable, Attainable, Realistic and Timely) Sustainable Development Goal (SDG) on water and sanitation that corresponds and responds to multidimensional challenges.

Areas covered include: Striving for universal access to water and sanitation; Integrated Water Resources Management for the 21st century; Good water governance; Green economy for blue water; Investment and financing of the implementation of water and sanitation Sustainable Development Goals.

Mr. Ban Ki-moon, UN Secretary General, participated in the opening. Mr. Wu Hongbo, United Nations Under-Secretary-General for Economic and Social Affairs, also attended the Summit.

On the occasion of the Summit, UN-Water organize a Side Event on 9 October: *"Policy Dialogue on an Emerging Proposal for a Dedicated Global Goal on Water, Targets and Indicators"*. The event discussed UN-Water's proposal for a Global Goal on Water⁷⁵.

2.5.8 49th session of UNESCO's International Hydrological Programme (IHP) Bureau

This intergovernmental meeting reviewed the results of IHP-VII activities, the status of UNESCO's category 1 and category 2 water-related Institutes and centres, recent IHP initiatives including actions in the post-2015 development agenda and the

⁷⁵Available at: www.budapestwatersummit.hu/budapest-water-summit/overview/ (accessed on April 10, 2016).

International Year of Water Cooperation, as well as cooperation on freshwater issues with the UN system and other organizations⁷⁶.

2.5.9 Water at Rio+20(2012)

From 20 to 22 June 2012, Rio+20 has provided an historic opportunity to define pathways to a safer, more equitable, cleaner, greener and more prosperous world for all.

Twenty years after the 1992 Earth Summit in Rio, where countries adopted Agenda 21, the UN brought together governments, International institutions and major groups to agree on a range of smart measures that can reduce poverty while promoting decent jobs, clean energy and a more sustainable and fair use of resources, including water.

The official discussions at Rio+20 focused on two main themes: how to build a green economy to achieve sustainable development and lift people out of poverty; and how to improve International coordination for sustainable development⁷⁷.

The main messages that emerged from the event are as follows:

- A transformative green economy does not act as an anti-competitive brake on development. Rather, it lifts people out of poverty through better use of the natural resources and associated local knowledge that are the main assets of the poor.
- The urban poor face a daunting struggle for development that is played out in a complex political battlefield. Locally controlled funds can help shift the balance — not only in enabling people to organise their way to better

⁷⁶Available at: www.unesco.org/new/en/unesco/events/all-events/?tx_browser.(accessed on April 10, 2016).

⁷⁷Available at: www.un.org/waterforlifedecade/water_at_rio.shtml(accessed on April 11, 2016)

homes and livelihoods, but also to get them taken seriously by other local actors.

- There are many ways in which the private sector can promote sustainability: across all of them, enabling communities to be involved in decisions is critical, as is ensuring adequate levels of benefit sharing, transparency and accountability.

- Sustainable Development Goals offer one way of focusing global efforts on reducing inequality and unsustainability. They could chart a course to a fairer and more sustainable world, but only if they are taken seriously at all levels and promote innovation and action.

The recommendations that flowed from the conference sessions included the following:

- If the future is to be sustainable, it must be planned collaboratively. That means the world leaders must move away from the current competitive and outdated negotiations to construct a new form of global debate.

- Asking whether the public or private sector should take the lead in implementing sustainable development is a false dichotomy. We need both to move us forward.

- Knowledge equals power. Ensuring transparency in governments and corporations alike is the first step to strengthening accountability.

- Evidence can show what is possible. Demonstrating approaches that work for people and planet is essential to show what is needed and help decision makers at all levels narrow in on the right options.

2.5.10 The United Nations Office to support the International Decade for Action "Water for Life" 2005-2015

The United Nations Office to support the International Decade for Action "Water for Life" 2005-2015/UN-Water Decade Programme on Advocacy and Communication (UNW-DPAC) hosted the UN-Water meeting from 8 to 9 February 2012 in Zaragoza, Spain. In this meeting, the chairmanship was handed over from the then UN-Water Chair Mr. Adeel Zafar, Director of the United Nations University Institute for Water, Environment and Health (UNU-INWEH), to the World Meteorological Organization's Secretary-General Mr. Michel Jarraud. The meeting gathered the directors and coordinators of the 29 UN-Water member agencies, programmes and departments of the United Nations.

The meeting focused on the approval of changes in the UN-Water organizational structure and rules, as well as on the ratification of the 2012-2013 work programmes. Furthermore, the coordinators of the different taskforces, Thematic Priority Areas and the directors of the three UN-Water programmes assessed and informed about up to date and on-going tasks in UN-Water activities.

The purpose of the meeting was also to decide about the participation of UN-Water in upcoming major International events; it also dealt with aspects regarding Integrated Water Resources Management in the Rio+20 Summit (June 2012). It was hence the last internal preparatory meeting in the United Nations concerning this International summit.

As an inter-agency coordination mechanism, UN-Water consists by today of 29 members out of United Nations organizations, programmes, departments, major funds and conventions. The ultimate objective of UN-Water and thus of the annual

meeting is to enhance coherence and coordination regarding UN initiatives in the water and sanitation agenda⁷⁸.

2.6 International Environmental and Water Law Cases:

Construction of a Road in Costa Rica along the San Juan River (Nicaragua v. Costa Rica) I.C.J Reports 2000.

In 2011, Costa Rica began constructing a road parallel to the San Juan River. The road itself, running from Los Chiles to the Delta region, is on Costa Rican territory. In its complaint, Nicaragua contends that the road has caused harmful environmental effects to Nicaraguan territory-specifically silting of the San Juan River, erosion of the River's banks, harm to the surrounding environment and wetlands. Nicaragua further contends that Costa Rica breached its International obligations by infringing on Nicaragua's territorial integrity, damaging Nicaraguan territory, and violating general obligations in International law and relevant environmental conventions. Nicaragua requests restoration to the status quo ante, damages, and the production and presentation of an appropriate transboundary Environmental Impact Assessment. On 17 April 2013, the Court joined proceedings in the case with the case of Certain Activities carried out by Nicaragua in the Border Area (Costa Rica v. Nicaragua). On 13 December 2013, the Court declined Nicaragua's request for provisional measures⁷⁹.

Certain Activities carried out by Nicaragua in the Border Area (Costa Rica v. Nicaragua)

Costa Rica contended that from August through November 2010, Nicaragua felled trees and dredged the San Juan River to build a canal across Isla Portillos. In so doing, Costa Rica contends that Nicaragua's Army incurred onto and occupied Costa Rican territory in violation of Costa Rica's rights and obligations Nicaragua owed Costa Rica under several International treaties and conventions. Nicaragua

⁷⁸Available at: www.un.org/waterforlifedecade/ (accessed on April 16, 2016)

⁷⁹ International Water Law Cases available at: www.icj-cij.org/docket/index.php?p1=3&p2=3&case=152 (accessed on December 12, 2015).

responded that the activities they undertook were on Nicaraguan territory. In 2011, the ICJ ordered provisional measures: mandating that neither party maintain personnel in the disputed territory; permitting Costa Rica to send civilian personnel to the disputed territory to protect the environment from potential irreparable harm; prohibiting both parties from engaging in activity that may further aggravate the dispute before the Court renders its final decision; and requiring both parties to inform the Court of its compliance. This case is still pending before the ICJ⁸⁰.

Pulp Mills on the River Uruguay (Argentina v. Uruguay)

In 2003, Uruguay authorized the construction of pulp mills on the Uruguay River. In 2006, Argentina initiated proceedings to prevent Uruguay from constructing the mills. Argentina claimed that Uruguay violated treaty provisions that require prior notification and consultation before taking actions that could affect river water quality. The Court rejected Argentina's request for a preliminary injunction, stating that Uruguay intended to and could still comply with its International obligations. As a result, protesters in Argentina blockaded roads to prevent construction. When Argentina appealed to the Court a second time, Uruguay also sought relief from Argentina's protests. The Court rejected both requests because neither state presented risks of prejudice to their rights under the treaty. On 20 April 2010, the Court concluded that while Uruguay breached its International procedural obligations to notify and consult with Argentina before authorizing and commencing construction on the pulp mills, the Court's declaration of Uruguay's breach constituted a sufficient remedy for Argentina's claim⁸¹.

Dispute regarding Navigational and Related Rights (Costa Rica v. Nicaragua)
I.C.J Reports 2000.

In 2005 Costa Rica initiated proceedings against Nicaragua for allegedly breaching treaty obligations and other International responsibilities by restricting Costa Rica's navigational rights on the San Juan River. The Court held that

⁸⁰ International Water Law Cases available at: www.icj-cij.org/docket/files/150/17772.pdf (accessed on December 12, 2015).

⁸¹ International Water Law Cases available at: www.icj-cij.org/docket/index.php?p1=3&p2=3&case=135&p3 (accessed on December 12, 2015).

Nicaragua has the right to regulate activity on the river for national security reasons. Accordingly, much of Nicaragua's regulatory scheme did not unlawfully violate Costa Rica's right of free navigation "for the purposes of commerce." The Court did find, however, that Nicaragua went too far in requiring visas and tourist cards and by imposing fees on Costa Rican vessels⁸².

Case Concerning the Frontier Dispute (Republic of Benin v. Republic of Niger)

The Republic of Benin and the Republic of Niger asked the International Court of Justice to determine the International boundary along the River Niger and River Mekrou sectors, which separate the two republics. Benin and Niger also disputed the ownership of several islands within the River Niger sector and asked the Court to specify which State owns each of the islands. The Court applied the principle of *Uti Possidetis Juris*, which allows administrative delimitations established during a colonial periods to become International frontiers at the moment when independence is achieved. Because Benin and Niger both escaped the colonial control of France in the 1960s, the Court identified the administrative boundaries that existed during France's colonial administration and endorsed them as the official boundary between the States⁸³.

Case Concerning Kasikili/Sedudu Island (Botswana v. Namibia)

The Kasikili/Sedudu Island lies in the Chobe River on the border between Botswana and Namibia. Botswana and Namibia asked the International Court of Justice to determine the International boundary and legal status of the Island based on the Anglo-German Treaty of 1 July 1890 and general principles of International law. The parties agreed that the Anglo-German Treaty, which defines the boundary along the Chobe River, was binding on them as successor states to Great Britain and Germany. In applying the terms of the Treaty, the Court found that the Island is within the borders of Botswana. Additionally, the Court rejected Namibia's alternative claim of prescription because Namibia's predecessor used the Island

⁸² International Water Law Cases available at: www.icj-cij.org/docket/index.php?p1=3&p2=3&case=133 (accessed on December 12, 2015).

⁸³ International Water Law Cases available at: www.icj-cij.org/docket/index.php?p1=3&p2=3&code...case (accessed on December 12, 2015).

without claiming territorial sovereignty, and when Namibia did claim title, Botswana's predecessor rejected that claim and thus precluded Namibia's subsequent claim of prescriptive title⁸⁴.

Case Concerning the Gabčíkovo- Nagymaros Project (Hungary v. Slovakia)

In 1977 Hungary and Czechoslovakia signed a treaty obligating the States to cooperate in the construction of a system of dams and locks along a section of the Danube River that formed the border between the States. Construction commenced in 1978 but progressed slowly due to political and economic transformations in both States. In 1989, Hungary abandoned the project, justifying its decision on claims of changed circumstances and impossibility. In 1993, Czechoslovakia peacefully separated into two nations: Czech Republic and Slovakia. Slovakia assumed its predecessor's responsibilities under the treaty because the planned hydraulic system fell within its territory along the Danube River. After continued negotiations failed, Slovakia devised "Variant C," an alternative plan to complete the project. Under Variant C, Slovakia dammed the Danube and appropriated between 80 and 90% of the river water. The dispute came before the International Court of Justice in 1994 and was decided in 1997. The Court rejected Hungary's claims of changed circumstances and impossibility but also concluded that Slovakia, by putting Variant C into operation and unilaterally taking control of a shared resource, had violated International law and the 1977 Treaty. Ultimately, the Court ordered the parties to "re-establish co-operative administration of what remains of the Project"⁸⁵.

Land, Island, and Maritime Frontier Dispute (Honduras v. El Salvador) 1986, 2003

In 1839, the Federal Republic of Central America broke up, and Honduras, El Salvador, Costa Rica, Guatemala, and Nicaragua became independent states. By 1986, Honduras and El Salvador were still in disagreement over six sectors of the boundary between them. Thus Honduras and El Salvador submitted a Special

⁸⁴International Water Law Cases available at: www.icj-cij.org/docket/files/98/8574.pdf (accessed on December 12, 2015).

⁸⁵ International Water Law Cases available at: www.icj-cij.org/docket/index.php?p1=3&p2=3&case=92 (accessed on December 12, 2015).

Agreement to the International Court of Justice to resolve their boundary dispute. They also asked the Court to rule on the legal status of islands and other maritime areas within the Gulf of Fonseca. Regarding certain maritime aspects of the case, the Court allowed Nicaragua to intervene. The Court and the parties agreed that the principle of *Uti Possidetis Juris* should operate to create International frontiers where administrative boundaries existed prior to independence of the countries. Accordingly, based on documentary evidence of administrative boundaries, the Court delimited the boundary in the disputed areas. For some areas where evidence was insufficient, the Court gave weight to watersheds and other identifiable topographical features⁸⁶.

2.7 International Water Law Cases Decided by Permanent Court of International Justice.

Diversion of Water from the Meuse Case (Netherlands v. Belgium)

In 1863, Belgium and the Netherlands signed a Treaty governing diversions from the Meuse that would supply water for navigation and irrigation canals. As economic conditions evolved, both States enlarged and expanded their respective waterways by constructing new canals, locks, and barrages. In 1937, the Netherlands initiated this injunctive proceeding, alleging that Belgium's expansion projects were in violation of the treaty. Belgium filed counterclaims declaring that the Netherlands' claims were ill-founded and that the expansion projects in the Netherlands violated the treaty. The Court concluded that the Treaty did not prevent either State from taking the actions complained of⁸⁷.

Oscar Chinn Case (Britain v. Belgium)

In 1931 the Belgian Government implemented a program that allowed Unatra, a company with significant ties to the Belgian Government, to offer discounted transportation services on the Belgian Congo. In return, Unatra would receive a reimbursement from the government. Mr. Chinn, a British Subject operating a fluvial

⁸⁶ International Water Law Cases available at: www.icj-cij.org/docket/index.php?sum=611&code. (accessed on February 12, 2016).

⁸⁷ [1937], P.C.I.J. (Ser. A/B) No. 70 available at: <http://www.Internationalwaterlaw.org/cases/meuse.html> (accessed on April 10, 2016).

transport company on the river, could not compete with Unatra's nominal prices and was not eligible for government reimbursement. The Court decided, based on the Convention of Saint-Germain of 10 September 1919 and general principles of International law, that the Belgian Government had not violated its duty to Mr. Chinn with regard to fluvial transport on the waterways of the Belgian Congo⁸⁸.

Case Relating to the Territorial Jurisdiction of the International Commission of the Oder River.

The treaty of Versailles established an International commission to rework International regulations pertaining to the Oder River and its tributaries. Poland disagreed with the commission's assertion of jurisdiction over two tributaries within Polish territory. Because the tributaries were found to be "navigable" and to "naturally provide more than one state with access to the sea," the court held that jurisdiction extended to navigable tributaries within Polish territory⁸⁹.

Case Relating to the Jurisdiction of the European Commission of the Danube between Galatz and Braila

Beginning with the Treaty of Paris in 1856, a series of treaties subjected the Danube to an International regime controlled by the European Commission. In 1919 the Treaty of Versailles confirmed the power of the European Commission over those parts of the Danube that the Commission had controlled previous to World War I. But the Treaty only allowed representatives from Great Britain, France, Italy and Romania to serve on the Commission. The Rumanian delegate disagreed with the other states' delegates that the Commission had jurisdiction over the river between Galatz and Braila. Upon finding that the Commission had historically controlled the disputed portion of the river, the Court rejected Romania's arguments⁹⁰.

⁸⁸ [1937], P.C.I.J. (Ser. A/B) No. 70 *available at*: <http://www.Internationalwaterlaw.org/cases/meuse.html> (accessed on April 10, 2016).

⁸⁹ [1929], P.C.I.J. (Ser.A) No. 23, (Sept. 10) *available at*: <http://www.Internationalwaterlaw.org/cases/meuse.html> (accessed on April 10, 2016).

⁹⁰ Advisory Opinion, [1927], P.C.I.J. (Ser. B) No. 14 *available at*: <http://www.Internationalwaterlaw.org/cases/meuse.html> (accessed on April 10, 2016).

2.8 Development of International water laws at global forum

In the words of the United Nations Development Programme (UNDP), water is ‘the stuff of life and a basic human right’.⁹¹ Thus, water is an essential element for life including human life on earth and as a result is a core concern in law. From a legal perspective, the UNDP rightly emphasises the importance of the human right dimension of water. Yet, in practice, water law is made up of a number of elements comprising a human right dimension, as well as economic, environmental or agricultural aspects. In particular, historically, one of the central concerns of water law has been the development of principles concerning access to and control over water.

Drinking water is essential component for human life. Water is also indirectly essential, for instance, as an indispensable input in agriculture. Yet, despite the central role that water has always played in sustaining life, human lives and human economies, the development of formal water law has been relatively slow and often patchy. At the domestic level, colonial legislation first focused on the regulation of water for economic reasons, for instance, through the development of legislation concerning irrigation and navigation. Over the past few decades, increasing water pollution and decreasing per capita availability have led to the development of other measures such as water quality regulation and an emphasis on water delivery, particularly in cities, as well as environment-related measures. Yet, water law remains largely sectoral till date.

At the International level, water regulation first focused mostly on navigation in International watercourses. It has progressively evolved to encompass issues concerning the sharing of International waters. International water law has, however, not yet reached the stage where it provides an overall regime for the regulation of water uses.

⁹¹United Nations Development Programme, Human Development Report 2006 – Beyond Scarcity: Power, Poverty and the Global Water Crisis 1 (New York: UNDP, 2006) *available at*: hdr.undp.org/en/content/human-development-report-2006(accessed on April 16,2016).

2.8.1 International Framework on Water Protection

International water law includes a number of instruments. They may not all apply directly to India but contribute in various ways to the development of water law at the International as well as national levels.

For many years, International water law included mostly treaties concerning navigation in International rivers, which constituted one of the early areas of collaboration among states. This has been expanded to many non navigational aspects over time but the focus on International watercourses remains an important part of water law, as exemplified in the Farakka treaty.⁹² Indeed, the only multilateral treaty in the field of water is a convention concerning non-navigational uses of International watercourses.⁹³ This treaty adopted in 1997 provides a framework for cooperation among states on International watercourses concerning the use of their waters apart from navigational aspects.⁹⁴ The basic principle it proposes for using International watercourses water is equitable and reasonable utilisation.⁹⁵ The basis for watercourse use is therefore agreement among concerned states concerning their respective needs. While there was substantial debate concerning the place of environmental aspects and sustainability, the principle of sustainable utilisation has not been adopted as a principle that would override equitable and reasonable utilisation.⁹⁶

The adoption of the UN water convention was in itself a landmark development since it took UN member states many years to agree on this text.⁹⁷ Nevertheless, the difficulties encountered in negotiating this convention are reflected

⁹²Treaty on Sharing of the Ganges Waters at Farakka, New Delhi, 12 December 1996, 36 Int'l Leg. Mat. 519 (1997) *available at*: www.globalwaterforum.org/.../sharing-waters-vs-sharing-rivers-the-1996-ganges-treat(accessed on April 20,2015)

⁹³ Convention on the Law of the Non-navigational Uses of International Watercourses, New York, 21 May 1997, reprinted in P. Cullet & A. Gowlland-Gualtieri eds, *Key Materials in International Environmental Law* 481 (Aldershot: Ashgate, 2004)

⁹⁴ Convention on the Law of the Non-navigational Uses of International Watercourses, Article 1 *available at*: legal.un.org/avl/ha/clnuiw/clnuiw.htm(accessed on April 25,2015).

⁹⁵ *Id* at Article 5.

⁹⁶ See, e.g., Patricia Wouters, *The Legal Response to International Water Scarcity and Water Conflicts: The UN Watercourses Convention and Beyond 20* (Dundee, 2003), *available at*: <http://www.dundee.ac.uk/iwlr/ Documents/ Research/IWLR1%20Team/W-outers/GYIL.pdf> (accessed on Nov.11,2015).

⁹⁷ The mandate for the development and codification of the law of non-navigational use of International watercourses was first given to the International Law Commission in 1970.

in the fact that its scope is relatively limited. Thus, it only applies to International watercourses and is therefore not a convention addressing freshwater in general. Further, its operative principles are relatively outdated as it fails to break clearly with the traditional principle of equitable and reasonable use in favour of a sustainability based approach. While the convention does not break much new ground at the conceptual level, only 14 states have ratified it so far. Further, only 21 countries (including those that have ratified) have signed the convention. India has not even signed yet. Freshwater remains an issue over which states are fearful of losing control. As a result, even relatively weak coordination measures appear threatening to many.

Besides the UN water Convention, there exist a number of International treaties that are directly or indirectly concerned with water. The UNECE Convention on impact assessment applies, for instance, in the case of dams and other water-related infrastructure projects.⁹⁸ The Desertification Convention clearly links water and desertification. In fact, its objectives provision recognises that rehabilitation, conservation and sustainable management of water are key to combating desertification.⁹⁹

The Convention on wetlands of International importance (Ramsar Convention) is intrinsically concerned with water.¹⁰⁰ It is particularly noteworthy because it goes beyond the main water treaties insofar as it considers water, which is entirely under national sovereignty. Indeed, the scope of the Ramsar Convention is not limited to transboundary wetlands but includes wetlands that are entirely within the territory of a member state.

Besides treaties focusing on water or having a water dimension, there are a multitude of non-binding instruments concerning water. These include instruments focusing on water like the Dublin Statement that laid down principles for water

⁹⁸ Convention on Environmental Impact Assessment in a Transboundary Context, Espoo, 25 February 1991, reprinted in Cullet & Gowlland-Gualtieri. This convention is open for global membership.

⁹⁹ Article 2, United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa, reprinted in Cullet & Gowlland-Gualtieri.

¹⁰⁰ Convention on Wetlands of International Importance Especially as Waterfowl Habitat, Ramsar, 2 February 1971, reprinted in Cullet & Gowlland-Gualtieri.

sector reforms in the early 1990s¹⁰¹. These also includes instruments not directly concerned with water like the Declaration on the Rights of Indigenous Peoples that specifically recognises the prior informed consent of indigenous peoples is necessary for any project affecting their water resources.¹⁰² Overall, International water law is both an old and highly developed area of law as well as an area in need of significant development.

International water law is well developed with regard to cooperation among states concerning issues and activities that are clearly transboundary in scope such as navigation on International. Further, while International water law has at least started integrating an environmental perspective, the social and human rights dimension of water remain largely absent. The absence of a human right perspective in water law has been addressed from the perspective of human rights law through the adoption of General Comment 15 of the first Covenant.

In this section the main aim is not to address this failure of International environmental law in general, or to assess global environmental problems overall. Researcher wills specifically emphasis the problems of fresh water scarcity and the responses of International law and policy to this emerging global threat to human health and the environment. There are several reasons for choosing freshwater issues as the subject matter. First, in 2000 freshwater scarcity and management was recognized as a global problem and it has been included in the 'Millennium Development Goals' of the UN Secretary General, being listed as one of the major concerns that humanity faces in 21st century.

The second reason is that water scarcity and management is one of the key issues in the developing world, not only as part of the environmental protection

¹⁰¹ Dublin Statement on Water and Sustainable Development, International Conference on Water and the Environment, Dublin, 31 January 1992.

¹⁰² Article 32(2), United Nations Declaration on the Rights of Indigenous Peoples, in Report to the General Assembly on the First Session of the Human Rights Council, UN Doc. A/HRC/1/L.10 (2006).3 watercourses. In recent decades, the importance of collaboration on non-navigational aspects of International watercourses has rapidly grown and is now recognised as a core objective of International water law. However, International water law is yet to be effectively developed with regard to cooperation on issues related to water found within national boundaries. While this still seems to be beyond what most states can agree on at present, water is no different from biodiversity, which is also nearly entirely found under national jurisdiction.

related to resource depletion, but also because water is the major development issue. Especially countries situated in arid and semi-arid areas confronted by population pressure and economic trouble are already subject to serious water shortages, and are paying a heavy price, in particular in human health. Many of these countries are developing countries in Africa, the Middle East and Asia.

The third reason is that freshwater scarcity and management is one of the most difficult challenges facing International law. Solving freshwater scarcity in an equitable manner contradicts the vital principles of International law, such as 'absolute state sovereignty' over natural resources. The location of water resources, as with many other resources, does not always follow political boundaries. Most rivers and groundwater resources are shared by at least two or more states that economically, ecologically and politically are unequal one to another.

Traditional principles of International law simply do not provide an easy answer about how to share fresh water resources among riparian states in an equitable manner. Moreover, a new generation of International human rights principles provides persons with a right to have access to drinking water. While states have a responsibility to obtain water for their citizens and residents, is it possible to ignore downstream states' right of access to water? Or is it fair that economically and technological advanced states have already obtained access to ample water, while less developed riparian countries must be content with what remains, which more often than not is already polluted? There are many questions of this sort that International water law experts and policy makers are currently faced with as part of this challenge of hydro politics in the early 21st century.

2.8.2. The Eurocentric International Water Law

Water law principles have a long historical background. They were born in Mesopotamia at a time when ancient civilizations were preoccupied with major water projects. From these points of origin the Middle East and the Mediterranean have

remained important as regions where major legal ideas about water law and rights arose and spread to the rest of the world.¹⁰³

Since the early period of traditional International law, International rivers conflict and management has been an important subject matter, although its initial preoccupations were quite different from those of the current period. In the 'period of abundance' rivers basically constituted boundaries among states, providing major transportation roads, essential for International trade and commerce in Europe. Many bilateral agreements were signed and ratified that dealt with various management issues, including even issues of water pollution. This early development of International law with respect to freshwater resources can be divided into two distinct periods, the first emphasizing navigational uses, and the second non-navigational uses of International rivers.

The first period was distinctly Eurocentric, with the major effort devoted to the commercial and navigational activities associated with International rivers. These two periods were exclusively state-oriented, which was consistent with the general preoccupation of International law. Chronologically this period starts in the 17th century with the Peace of Westphalia and ends after World War II. The 19th century witnessed the climax of economic liberalization in Europe. The successful establishment of freedom of the seas had already facilitated the economic and strategic expansion of the colonial powers. These European countries took advantage of rivers in Africa and other continents as a 'right' associated with colonial administrations.¹⁰⁴ Freedom of navigation on International rivers was the only way for the products of landlocked areas in colonial territories to reach the sea, and the presence of such realities generated a practical necessity to accommodate them.¹⁰⁵ The transportation of goods, passengers and vessels on

¹⁰³ For a historical and comparative approach to water law principles, see Hilal Elver, *Peaceful Uses of International Rivers: The Euphrates and Tigris Rivers Basin*, 19-52 (Ardsey NY: Transnational Publishers, 2002).

¹⁰⁴ James L. Westcoat, Jr., "Main currents in multilateral water treaties: a historical - geographic Perspective, 1648- 1958", 7 (39) *Colorado Journal of Environmental Law & Policy*, 12 (1996).

¹⁰⁵ Freedom of navigation on the Congo River, for example, was agreed upon at the Congress of Berlin in 1885.

European waterways was considered of vital importance until the first half of the 20th century. Because water was generally abundant, the utilization of water did not often create a conflict over use that extended beyond national borders. In this period Europe was in the grip of intense commercial competition that amounted to an early and limited version of economic globalization, taking the main form of expanding International trade. Clashes over trade policies arose between inland and maritime economies that led European countries to a series of wars.

The outcome of these wars determined which country controlled particular rivers, which navigation regulations were adopted, and which principles of natural and national law were relied upon as the basis of International legal authority. In this period most multilateral water agreements concentrated on defense arrangements, as well as confirming navigational rights and freedoms. In what would become a common pattern of International watercourse law, political victors used navigation provisions and principles to enhance their economic trade positions.¹⁰⁶ The exclusion of powerless states from access to rivers was a major issue in this period of hydro politics. Beyond Europe water treaties were generally influenced by legal developments in Europe. Colonization led to a new pattern of multilateral agreement in the 1800s.

In Asia and Africa bilateral agreements included provisions that gave monopolistic access and trading opportunities to European powers with respect to International rivers in colonies. Demarcation and cession of territory was a common feature in these agreements made during the colonial era. Various European colonial ventures produced increasing contact, conflict and collaboration, part of the broader effort to co-ordinate colonial interests outside Europe. Not surprisingly, the progressive development of International water law was easier to agree upon and apply in these distant territories in which European powers had substantial economic interests but were less deeply embedded in historic territorial concerns. In North America, too, treaties between the US government

¹⁰⁶ James L Westcoat, Jr, "Main currents in multilateral water treaties: a historical - geographic Perspective, 1648- 1958", 7 (39) *Colorado Journal of Environmental Law & Policy*, 12(1996).

and Indian tribes often skipped the process of concluding commercial agreements governing river use and moved directly to the comprehensive demarcation of rights and the cession of Indian territories, including water rights.¹⁰⁷

Recently scholars have examined extensively the political and economic influence of colonial era administration over water development projects in Africa and Asia. According to some academic specialists, the role of the colonial powers was relatively enlightened in this sphere of activity and included several undertakings to reconstruct ancient irrigation systems.¹⁰⁸ However, this positive account of the colonial mission has been criticized overall, and particularly with respect to water policy in the Middle East and the Nile River Valley.¹⁰⁹

Water initiatives during the League of Nations period were again mainly concerned with Europe and its colonies. Efforts to deal with water management issues slowed in the period of tension leading up to World War II, and ended altogether in Europe and elsewhere as soon as the conflict started in 1939.¹¹⁰ Subsequent regional and global changes influenced the codification and development of International water law. Navigational regulations eventually lost their importance and other sectors of water utilization became the subject of more serious disputes in the International arena. But it remains important to grasp the reasons for the emphasis on navigational uses and freedom of navigation during the colonial era. Freedom of navigation declined during World War II, as a result of the advent of fascism in Germany and its spread to other parts of Europe.

¹⁰⁷ *Id* at 20.

¹⁰⁸ William Willcocks, *The Restoration of the Ancient Irrigation Works on the Tigris, or the Recreation of Chaldea*, 1903; and *Lectures on the Ancient System of Irrigation in Bengal and its Application to Modern Problems*, 1930.

¹⁰⁹ Edward Said, *Orientalism*, and London: Routledge & Kegan Paul, 1978 available at: <http://journals.cambridge.org/action/displayAbstract?fromPage=online&aid=4087840/> (accessed on August 24, 2015).

¹¹⁰ The only main exception occurred in 1931 in relation to China. The Yangtze River flooded Catastrophically, killing some 140 000 people in one of the worst river disasters of modern history. A combination of political, economic and humanitarian considerations in Europe led the League to send large-scale help to China in the form of disease control and food and, more importantly, assistance in the establishment of water conservancy programme. This undertaking was the most substantial League attempt to respond to a challenge that was related to the management of water resources.

This pattern continued as Europe became the setting of an intense cold war rivalry after 1945. Additionally, many Third World countries, after achieving independence, changed their river regulations to limit the navigational rights of vessels belonging to non-riparian states. The rise of nationalism tended to supersede the prior emphasis on freedom of navigation during the colonial era.¹¹¹

2.8.3. International waters in the post-colonial era:

The effect of two world wars contributed to the end of colonialism, which led directly to the emergence of newly independent states, new diplomatic borders and great artificiality as to the governance of peoples and their environments. In this period the number of International rivers reached 261.

These river systems cover about 47% of the world's continental land area, which is home to some 40% of the world's population. Roughly two billion people live in International river basins.¹¹² This period witnessed not only the revival of traditional hydrological and geographical diversities and an unbalanced distribution of natural resources among nations but also an increase in politically and economically antagonistic outlooks. With capitalism on one hand, and communism on the other, new states, many of them former colonies, tried very hard to promote the goals of economic development. Only short-term economic outputs seemed to matter, without taking any serious account of environmental concerns and sustainability.

During this period, in the early 1970s, International organizations gave technical, financial and institutional assistance to developing countries, generally without giving adequate considerations of adverse environmental effects or long-term sustainability. With increasing water scarcity on the one hand, and economic competitiveness on the other, the management of shared resources between two or more sovereign states became one of the most contested issues in

¹¹¹ Lucius Caflisch, 'Regulation of the uses of International watercourses', in M. A. Salman & Laurence Boisson de Charzournes (eds), *International Watercourses: Enhancing Cooperation and Managing Conflict*, Washington, DC: World Bank, , 7(1998).

¹¹² Among 261 International river basins, 148 are shared by two countries, 30 by three, nine by four, and 13 by five or more countries.

International law. States seeking to develop their natural resources rapidly, in order to achieve national economic goals, embarked upon the construction of big development projects. They generally did so without taking adequate account of environmental consequences, or of damage to neighboring countries.

The priorities of this period were primarily oriented towards economic growth. Large water projects such as dams, irrigation canals, and hydroelectric power stations were regarded as offering such developmental payoffs. Unfortunately, the benefits of these uses often come by means that adversely modify historic flow cycles, deplete resources over time, degrade estuarine systems, increased flood damage and produce many other types of environmental harm. Among shared resources fresh water is particularly valuable as it constitutes a vital source of life, and its purity and availability have always figured prominently in national water policies.

At the same time a major concern of newly independent states was to protect their sovereignty and independence and safeguard their liberation after the long ordeal of colonial exploitation. Therefore they were very insistent upon controlling and developing their own natural resources, and doing this almost to avoid foreign intervention. Such nationalistic attitudes blocked any possibility of joint management over shared resources. What is commonly regarded as successful hydro political action includes appropriating water received from neighboring countries to the extent possible, constructing big water projects in order to overcome water scarcity arising from the demands of a growing population, and massive agricultural reliance on irrigation to achieve self-sufficiency. Given these conditions, as well as uneven distribution of wealth and water resources and political instability among neighboring states, water has inevitably become a crucial focus of concern in International politics.

In this setting inter-state and intra-state water conflicts have erupted in many parts of the world, especially in areas that have serious water shortages and political

tension, particularly the Middle East.¹¹³ Despite the multiplicity and wide coverage of these conflicts, the Middle East is not the only region where significant water disputes have emerged. In this period International watercourses were one of the most studied and developed areas of International law.

Even though some 3700 International water agreements have been concluded, there was still an unbalanced distribution among states and regions. Developed countries have concluded many of these agreements, most of them in water-rich regions. In contrast, developing countries either did not make water agreements at all, or did not effectively implement those agreements that were made, because of their inefficient economic and technical capabilities.¹¹⁴

According to a United Nations study, 72% of all major International river basins are in developing countries located in Africa, Asia and Latin America, but fewer than 33% of the relevant agreements signed world-wide between 1948 and 1972 covered these rivers.¹¹⁵ In Africa, for instance, with 12 complex systems of river basins shared by four or more nations, only 34 treaties regulate their use.

In contrast, International river management agreements are far more present in developed countries. Europe, as a prime example, has four river basins shared by four or more countries, and no fewer than 175 treaties to regulate them.¹¹⁶ In this period International water law tried to address two broad issues: how should uses of water that affect quality and quantity in a transboundary lake or river be allocated between the two or more states belonging to the basin? And what procedural rights and responsibilities pertain to states sharing a basin?

¹¹³ The Nile Rivers Basin, Jordan River Basin, Euphrates and Tigris Rivers Basins are the major sites of water conflict among riparian countries.

¹¹⁴ In a comprehensive study on this issue, a table of International agreements containing substantive provisions concerning pollution of International watercourses in this period indicates that 81 of the 88 treaties are among European and North American countries. JG Lammers, "Pollution on International Watercourses", *Boston: Kluwer Law International*, 1984

¹¹⁵ For the older agreements, see FAO Legislative Study, No 15, Rome: Food and Agriculture Organisation, 1978. For newer and universal legislative studies, see Sources of International Water Law: FAO Legislative Study, Rome: Food and Agriculture Organisation, 1997.

¹¹⁶ David Hunter, James Salzman & Durwood Zaelke, "International Environmental Law and Policy", *New York: Foundation Press*, 1998.

In recent years concern over the environment has begun to add another dimension to International water law, namely protecting the environment of transboundary water resources in relation to water use. As a result of this development the two areas of International law-environment and transboundary watercourses-have merged. Although this merger has shaped current International thinking about watercourse principles, it is not yet able to resolve major International river conflicts.

2.8.4 Convergence and divergence in International law

The global fresh water crisis looms as one of the greatest threats ever to the survival of human life on this planet. Environmental degradation, excessive use and abuse of water everywhere, construction of massive dams, toxic dumping, wetland and forest destruction, urban and industrial pollution, factory farming and climate change have damaged not only the Earth's surface water resources badly, but also depleted underground water reserves far faster than nature can replenish them. Moreover, per capita use of water is doubling every 20 years, at more than twice the rate of human population growth. Thanks to the global environmental protection movement of the 1970s on one hand, and emerging global water scarcity and water conflicts on the other, we all learned that only less than 1% of the planet's freshwater resources is readily accessible for direct human use. It is remarkable that this small amount of fresh water has remained stable over millennia through the water cycle.

However, despite the stability of global water supply, growing global demand for water has made the International community extremely nervous about the future. The world has entered a new era, moving from a condition of water abundance to a 'period of scarcity'. Currently over a billion people do not have access to safe drinking water and sanitation is minimal for half the world's population. Quite simply, unless we dramatically change our ways, two-thirds of humanity will be faced with severe freshwater shortages within the next 25 years.

The world is ready now to search for new methods and to adopt new ways of thinking to overcome a water scarcity that threatens all peoples in the world, although with different degrees of immediacy. Considering the current political and legal situation, a series of questions needs to be answered: given its philosophical and conceptual background, based on self-interest, reciprocity and consent, is current International law capable of addressing the challenge of global water scarcity in the 21st century? Are we experiencing a new global law based on normative principles which value environmental protection and human rights principles more than sovereign states' interests?

In other words, is the world ready to embrace the moral predicament based on human values? If we look at the past three decades of the evolution of International law, we experience a significant accumulation of International activity, including a developing regulatory framework, and International organizations dealing with various global issues. Among the positive aspects have been the emergence of environmental law, human rights law, recognition of women's rights and of the rights of indigenous peoples.

This legal evolution involves new developments and convergence in International law, and has brought new normative principles that are especially important for developing countries. For instance, transparency and participatory environmental practices lead to a more democratic, equitable and fair decision-making process, including respect for human rights, as integral to the development process. Whether and how these new normative principles will attain a legal Status as customary law is not clear yet, but they are definitely challenging current state practices. Since the 1980s, however, besides these normative areas and parallel to the neoliberal global economy, International law has gained the daunting new task of regulating International business transactions and trade relations.

By the late 1990s these two sets of legal concerns had been visibly distinguished. International business and trade law, with the help of the International financial institutions, such as the World Trade Organization (WTO)

and other Brettonwood institutions, have created an effective regulatory framework and compliance mechanisms for private sector actors. This tendency follows the neoliberal economic path that tries to resolve all policy issues through the logic of market efficiency and the gains in productive capacity attributable to innovative technology. Meanwhile, normative International law suffered from ineffective compliance and a lack of enforcement mechanisms, relying on consensual 'soft law' principles rather than 'hard law' mandatory regulations.

There are two distinct International regulatory frameworks for dealing with two sets of substantive activity. How do we locate water issues in relating these two domains of International law? There is no question that International water disputes generally depend on state-to-state negotiation. These disputes are still under the control of traditional International law principles, namely state sovereignty, allocation of water (the widely accepted principle is equitable utilization), and protection of water resources from pollution and over-use.

Among many other soft law principles the newly developed environmental law principles embodied in the UN Convention on Non-Navigational Uses of International Watercourses of 1997 is of greatest significance.¹¹⁷ Nevertheless, despite the efforts of the UN and transnational NGOS, no adequate remedy for global water crises now exists, nor does the capacity to resolve International river conflicts.¹¹⁸ Many developed countries have already been managing their International waters through bilateral and regional agreements. Developing states, however, are worried about any sign that such agreements might make it more difficult to develop their water resources to take account of transboundary environmental effects. Further, these states are much concerned about any legal moves that restrict their national sovereignty over natural resources.

Besides the traditional problem of resolving disputes in International water conflicts, the most serious immediate challenge for the International community

¹¹⁷ UN Doc A/51/869, Apr 11, 1997 36 ILM 700 (1997) *available at*: legal.un.org/ilc/texts/instruments/English/conventions/8_3_1997.pdf. / (accessed on August 24, 2015).

¹¹⁸ For detailed information on the UN Convention see Elver, *Peaceful Uses of International Rivers*,

is the lack of access to safe drinking water, and inadequate sanitation. Various policy makers have presented many solutions.

The first approach is to conceptualize access to water as a basic human right in a manner that affirms the democratic world order. Connecting human rights to water issues, namely by way of providing 'access to water for all' implies that the implementation of this right is a responsibility of states with respect to their own citizens. An extension of this concept to the International level suggests that water should be considered as the 'common heritage of humankind', to borrow an idea proposed originally by the former Maltese Ambassador to the UN, Arvid Pardo.

This proposal was viewed as a breakthrough in the 1970s, when Pardo initially developed this idea to distribute the benefits from mining deep seabed mineral resources. This innovative idea was accepted as an International norm by the great majority of states, which became party to the 1982 United Nations Convention on the Law of the Sea, the most comprehensive multilateral treaty arrangement in all International law. As might be expected, the USA has adopted an overall posture of opposition to the common heritage idea.

The second prominently advanced solution for water management, not surprisingly, comes from the neoliberal economist view, which has become known as the 'Washington consensus'. Proponents of economic globalization, especially multinational corporations, International economic organizations like the WTO, the World Bank and the IMF have been openly supporting the idea of 'water as a tradable commodity'.

The mainstream conception of co modification considers that only exchange offers value for anything. A non-traded commodity is outside the market and has no value. Furthermore, only private investment acts as an engine of growth, and only private profit-making enterprises can ensure optimal allocation and management of valuable resources.

Therefore, public authorities must leave the management of the water sector to private enterprise. At the UN World Summit on Sustainable Development in Johannesburg in 2002 this idea was proudly presented to the world community as a magical formula capable of solving the water problem around the globe, whether in developed or developing countries.¹¹⁹

2.8.5 How does globalization affect water policy?

In general advocates of economic globalization argue that neoliberal market economy encourages long-term resource management. The theory contends that, as countries globalised, often by exploiting resources, their increased wealth will enable them to save more patches of nature from the ravages of their exploitation. To manage water as a marketable commodity that is bought and sold, and to privatize the water-delivery system under the control of corporations, rather than as a public service, supposedly brings economic prosperity, enabling governments in the long run to protect water resources from depletion.

In late 1990s, the International financial institutions gave governments an idea about how to deal with emerging water interests and with the financial burdens associated with infrastructural needs. The formula was simple: 'private sector participation in water supply and sanitation'. If access to clean water is one of the major problems in the world, one would expect governments and global bureaucracies to advocate conservation. Instead, what is being pushed is the privatization, co modification and globalization of the planet's remaining fresh water, including the sale of exploitation rights to corporations, and allowing the global market to decide who gets to drink and use water. Corporations that deliver services have a strong self-interest in promoting these initiatives as beneficial to the poor.

There is an absence of choice for citizens and their elected representatives, especially in developing countries, in deciding democratically how essential services should be delivered. Governments that refuse to play by the new rules of the

¹¹⁹Available at: www.johannesburgsummit.org. (accessed on September 27,2015)

privatization game are finding that their vital aid and debt relief packages have been scaled back, even in some instances suspended or terminated altogether.

Such governments have little effective freedom to oppose the tide of privatization. Moreover, to support their argument, the advocates of privatization are using the benefits of new technological developments. New satellite technology, for instance, is capable of evaluating the quality and quantity of water resources and of disseminating data over long distances with significantly lower costs than was previously done by local governments. Privatization advocates argue that previously these public facilities were not economically efficient even if socially accessible to the poor at lower costs.

Recognition of this economic reality has led governments, rich and poor, to privities public facilities and encourage the import of the highest- performance equipment. Privatization becomes a non-negotiable solution for water infrastructure. While rich countries have the flexibility to implement selectively, shop around and find the most effective solutions for the privatization of water, poor countries are often virtually pushed by organizations such as the IMF and World Bank to privatize inefficient water facilities through foreign aid and loan packages. The practical result is that privatized water prices take away water from poor neighborhoods, but they also deprive many government facilities of water because of the latter's inability to afford such expensive services. The main questions that arise from this are:

(1) how to organize society so that basic public services, such as clean water, can be made available to all people regardless of their ability to pay; and

(2) how to govern the world so that technological innovations become available to support all sustainable uses of natural resources? The market for water infrastructure, sanitation and pollution prevention in the developing world is huge. Already corporations own or operate water systems across the globe that produces

\$200 billion in revenue a year. These systems presently serve only about 7% of the world's population, leaving a potentially vast market as yet untapped.¹²⁰

The private sector has become increasingly involved in the implementation of 'Build, Own, Operate and Transfer' (BOOT) projects. Gradually, including in the developed countries, water projects have been taken over by transnational corporate giants. Surprisingly, world-wide there are only a few corporations that operate in the water sector. The two French companies Vivendi and Suez are the largest. These two giants capture nearly 40% of the existing water market share, providing water-related services for over 110 million people each. Suez operates in 130 countries on five continents and Vivendi in over 100; their combined annual revenues from water operations are over \$70 billion. The German RWE follows these two frontrunners, having acquired the British water giant, Thames, and completed the purchase of American Water Works, the largest US private water utility.¹²¹

Surprisingly, US companies are coming late to the water area following these European corporate ventures. The US companies are familiar names, including Bechtel, Cadiz, and formerly Enron. Their notoriety is partly based on their suspicious activities around the world, as well as on their corporate crimes in the USA and elsewhere. On their websites these companies proudly proclaim that throughout the world they are pumping water, and treating, transporting and controlling the pollution of wastewater with their new efficient technologies. Nevertheless, these companies are not normally willing to pay any of the social, ecological or financial costs associated with their operations, especially if these costs encroach on profitability. Because of these changing patterns of ownership, however, farmers will lose their land, as well as water, and if deemed necessary by the corporations, their irrigation rights might disappear as a result of the privatization of energy.

¹²⁰ John Tagliabue, 'Running dry', *New York Times*, 26 August 2002 *available at*: topics.nytimes.com/top/reference/timestopics/people/t/john_tagliabue/index.html (accessed on April 15, 2016).

¹²¹ Public Citizens *available at* www.citizens.org/cmep/Water/, (accessed on September 7, 2014).

Through the accelerated price of water the public will eventually pay the cost of water privatizations. Vast numbers of people have demonstrated in Bolivia, Argentina, Ecuador, Panama, South Africa, India, Turkey, the Philippines, and even in California, against the rising cost of water, exhibiting the growing volatility of the issue. The fundamental question is this: should water, a substance close to life itself, be treated as a profit-making business? The local protesters, International NGOS, environmentalist, and non-economist globalists all object to the very idea of private enterprise making a profit from water. 'Water is a resource essential to life, decisions about allocation and distribution should be democratic and based on everyone's fundamental right to a clean, healthy supply', says the major environmental NGO, Friends of the Earth.

In contrast, the market-driven economist view argues that, unless water is treated as an increasingly precious commodity and priced to reflect its value- particularly for heavy users like farmers and factories- much of it will be wasted, and the scarcity crisis will worsen.¹²² One of the strongest arguments in favor of privatization is the widespread inability of public utilities in the developing world to provide clean water. Many governments literally are not able to spend the money needed to supply water to their people.

At this stage the World Bank is trying to solve the problem for the developing countries by supporting private investment in water facilities, increasingly turning its back on allegedly 'dysfunctional' public utilities. The first stage starts with an IMF loan designed to promote the country's economic growth. In compliance with IMF drafted 'structural reforms' for the nation, a country agrees to the sale of 'all remaining public enterprises'. Second, the World Bank produces a report for the country, generally prepared by local officials, but presented by the Bank's expensive International experts.

In this report the World Bank upon 'no subsidies for water'. A country that receives loan assistance from the World Bank and IMF is often discouraged from

¹²²Available at: www.johannesburgsummit.org. (accessed on September 27, 2015).

heavily subsidizing public services that may be controlling inflation and attracting foreign investment. Private companies provide water and sanitation services to the local residents through an agreement between officials of the country and corporations. Meanwhile, the domestic legal order is changed and the parliament passes a law which allows privatization of the state drinking water system. Companies access the money provided by various International and regional development banks to do their business. They do not even need to invest money up front. However, the issue is not easily resolved by such a choice.

In order to recover their investment costs, private companies often charge astronomical amounts to the poorest countries and their poorest people. The example of Bolivia is revealing. An American company Bechtel, and its co-investor, Abengoa of Spain, raised water rates by an average of more than 50% in the Bolivian town of Cochabamba. This led to a violent conflict in 2000 between the people and the local government, igniting a water war at the domestic level. The first water warrior, Victor Hugo Diaz, a 17-year old student, had been shot in the face by the army during protests sparked by an increase in local water rates.

Similar encounters have been reported in many parts of the world. First, people demonstrate against local governments by refusing to pay what appear to them to be surreal prices for water, then the politicians in the local government suddenly realise that privatisation is not such an acceptable alternative for public utilities. Moreover, they also realise that private companies can also be extremely dysfunctional in relation to day-to-day problems, especially since profit is always their most important goal. Governments now are thinking about how to withdraw from sophisticated agreements that have been signed with corporate giants, usually prepared by International corporate lawyers.

The Bechtel versus Bolivia case went before the International Center for the Settlement of Investment Disputes (ICSID), the World Bank's little known

International tribunal that holds all its sessions in secret.¹²³ Bechtel demanded \$50 million dollars from some of the poorest families in the world for a portion of the profits it wasn't able to earn after a public uprising in April 2000.

The World Bank court heard this case behind closed doors, without any public scrutiny or participation.¹²⁴ A wide range of groups joined in to demand that the Bank open up the process. Trade union organizations, environmental groups, consumer organizations, research groups and numerous religious institutions all over the world joined in presenting a petition to participate in the ICSID tribunal hearing the case. For four years afterwards Bechtel and Abengoa found their companies and corporate leaders dogged by protest, damaging press, and public demands from five continents that they drop the case.

This is the first time that a major corporation has ever dropped a major International trade case as a direct result of global public pressure, and it sets an important precedent for the politics of future trade cases like this.¹²⁵

2.8.6 Civil society versus global market forces

One of the inevitable and positive consequences of globalisation are the intensive communications arising from global networking, which have increased the awareness of common International and global problems, especially environmental problems.

In many non-Western societies new patterns of global interaction are also increasing the demand for democracy.¹²⁶ This 'awakening effect' of global communication has created a significant safety net for local people against those forces bent on environmental destruction. A well known example is in India. During the early 1990s the Sardar Sarovar Dam project on the Narmada River was

¹²³ ICSID, created in 1966, is a mechanism of the World Bank that provides conciliation and arbitration in disputes between countries and investors who are World Bank members.

¹²⁴ Earth Justice press release, *available at*: <http://www.earthjustice.org/news/>, (accessed on September 01, 2014).

¹²⁵ *Bechtel versus Bolivia: the Democracy Center*, *available at*: <http://www.democracyctr.org>, (accessed on March 01, 2015).

¹²⁶ Nevertheless, the borderless world of telecommunications technology is seen as a threat by some governments. China, for instance, has attempted to develop an internet system that controls domestic access and monitors incoming material. Most experts believe that such a system of regulation cannot work, as access to information is in the end impossible to control.

the first successful initiative of a local protest movement against a major World Bank project. There are many other examples of such resistance to be found in the newspapers every day. These local initiatives, generally in developing countries, have been supported, sometimes even initiated, by International NGOS.

Environmental NGOs have been working hard to avoid the various negative effects of big dam projects around the world. These campaigns have been highly successful in creating a growing environmental and social consciousness around the world, and even in stopping some large water projects, especially those in the developing world supported by the World Bank. This awakening effect of the global communication network is extremely important, especially for less authoritarian societies. If governments are highly oppressive, it can be almost impossible to mount local resistance.

The recent campaigns on water issues, however, have a different target. While global market forces have been working vigorously to bring water to the world as a commodity, many NGOs have been mobilizing citizens groups against the privatization of water, and to remove water from the global trade list. The World Coalition against Water Privatization is a global umbrella civil society organization that developed a campaign to keep water out of the WTO at the Johannesburg Summit. For two years governments have been in the process of negotiating a General Agreement on Trade in Services (GATS) under the auspices of the WTO in Geneva to liberalize International access to services.

The EU led the support for a proposal intended to extend the classification of environmental services to include a water provision. While several governments were in favor of trade in services, anti-privatization groups and environmentalists successfully lobbied against the EU initiative. Another initiative has taken by the Canadian group, Blue Planet Project, which is opposing bulk water transfers. Canada is one of the most water-rich and environmentally conscious countries in the world. The new and growing water export industry threatens

Canada's rich water resources, especially within the framework of the North American Free Trade Agreement (NAFTA).

They fear that if Canada starts to sell water in the market to the thirsty Western USA this will become irreversible at a later date. The Blue Planet Project collects scientific evidence to reinforce its opposition to bulk water transfers.

Privatization of water is not only happening in developing countries. The USA is also subject to the same threat. Most major water structures in the USA are still in the public domain. The two water giants, Suez and Vivendi, have tried to take over the New Orleans water system. If they had succeeded this would have become the largest public works privatisation ever to occur in the USA. Over the past few years the USA-based Public Citizens has worked closely with local groups to keep the privatization process in the public eye, and to build a greater awareness of the privatization issue in the community. Community groups have succeeded in changing the city charter in many places to require all privatization contracts of this magnitude to be approved in a public vote. As a result, the privatization process has been significantly slowed.

This is a success story of citizen action against global market forces. Every day, the failure of privatization becomes more imminent. This gives us hope that such democratic institutions as the rule of law, access to information, the right to participate in decision-making processes, and freedom of speech can serve as major tools against the penetration of market forces into public services. Water is a unique resource that has no elasticity as an economic good. No substitute, no alternative. The failure of water management and water services is too costly for any government to bear on its own. Such failure would produce disasters from environmental to public health to food insecurity. Managing the water supply by relying on predatory economic principles in a free market global economy is too implausible to succeed.

Besides the International initiatives of civil society, it is also necessary to give credit to the UN agencies, and to the organization's global conferences which started

in the early 1990s. These UN meetings dealt with critical global social issues such as environment and development, women's rights, population, human rights, employment and poverty, and were very successful in establishing an International network of civil societies, especially linking developed and developing countries. This network has become an influential voice. It is a new presence in International life, and changes the atmosphere. Traditional state-oriented forums have lost some of their influence to more democratic platforms of debate and advocacy.

In recent years new developments are taking shape in relations between corporate business and the UN in the area of environmental protection, labour rights and human rights. The UN Secretary General has regularly addressed global economic forums on these issues. He has encouraged corporate business executives to adopt global social standards on a voluntary basis, without any regulatory structure, under the name of the 'global compact'. This is part of Kofi Annan's effort to establish a partnership between corporate business and International organisations in the era of global economy. This can be interpreted not only as an effort to overcome the financial troubles of the UN, but also as a means of acknowledging the growing presence of corporate business around the world, most importantly in the developing world, and its great influence in relation to state authorities.

At the UN summit in Johannesburg in 2002 this initiative became an indelible reality for the future. In relation to water, the formula of 'Public Private Partnership' became the buzzword with respect to legitimising water privatization. In 2003, during the World Water Forum in Kyoto hosted by the World Water Council, this private think-tank promoted the belief that improved water delivery is only possible with private sector involvement.

Water companies had successfully infiltrated the UN and other global mechanisms on water politics. Against this initiative in March 2006 at the 'International Forum on the defense of Water' held in Mexico City, an NGO

coalition, 'Friends of Public Partnership', promoted 'public to public initiatives'.¹²⁷ According to the coalition's study, the policy of private sector involvement has been a serious distraction from the real solution to the global water crisis. Despite rhetoric and promises, almost all finance for water delivery continues to come from public sources. Moreover, there is no systematic, intrinsic advantage to private sector operation in terms of efficiency.

Since 2005 Suez and other multinationals have been forced to withdraw from concessions in cities in Bolivia, Argentina, Tanzania and elsewhere after failing to deliver promised improvements. Against this background is a growing awareness that public water operators, responsible for over 90% of water supply world-wide, deserve support. Improvement and expansion of public water delivery should be considered key for delivering the sustainable Development Goals.

Particularly in Latin America new public sector models are under development in cities where large parts of the population lack access to clean water and adequate sanitation. A defining feature is that these are partnerships in which there is no for-profit private sector involvement. This is a significant shift from what was happening in International forums on water issues a few years ago, when public water received virtually no mention.

2.9 Conclusion

Conflict and co-operation are both common and expressive of rhetoric in traditional hydro politics that maintains ambiguity with respect to the rights and duties of countries that share water resources. The same rhetoric can be used to determine the relationship between two trends with regard to new challenges that are arising from water scarcity at the global level: a democratic, transparent, human rights-oriented policy from below, which is primarily espoused by civil society; and an efficient, scientific, market-oriented policy from above, that is, primarily, the work of leading economic actors. The ability of these two levels of

¹²⁷ Public Water for All: The Role of Public-Public Partnership, report prepared by a working group of Reclaiming Public Water, available at: <http://waterjustice.org/> and <http://www.tni.org/>. (accessed on December 17, 2015)

interest to co-operate, to the extent achieved, would induce a more constructive set of ideas about how to shape and implement future global water policy.

These two different conceptualizations of water policy are also illustrative of how various global issues can be defined, theorized and interpreted in our time of economic globalization. If globalization is the inevitable future of the world, we must ask how this phenomenon can be shaped to ensure that socially, economically and politically powerless groups will be benefited by current trends and empowered to establish a just and humane global order. Flexible implementation at the local level, taking account of the social, economic and geographical conditions of each particular case is a necessary first step to achieving a satisfactory global water policy.

The attractiveness of this idea arises, in part, from its capacity to embrace the social, economic and cultural diversity of people on the one hand, and geographical, environmental and climatic variations of water resources on the other. This flexibility allows us to identify the diverse needs of each region in relation to water availability and to consider the economic ability of communities to offer different solutions. For instance, in some settings, especially in the developed world, one of the major water consumers, agro-businesses, should be subjected to a neoliberal private sector solution, paying for water as a commodity. In contrast, the water needs of small farmers and the adequacy of the drinking water supply for the developing world should be treated as a public good accessible for all. Social justice should work to reduce existing inequality, which would help manage scarce and vital resources of water in a more equitable manner.

In March 2006 the world's major water companies, environmentalists, academics, local authorities, global bodies, International banks and unions, and farmers met to discuss the world's water problems. They did so in Mexico City, a city where over 20 million people live, built on an ancient lake that has been drained, whose underground aquifers are now collapsing.

The UN has declared that water quality is declining in most regions; by 2030 some two billion people will live in illegal squatter settlements and slums without access to water. At this rate of progress, access to clean water cannot be guaranteed until beyond 2050 in Africa, 2025 in Asia and 2040 in Latin America and the Caribbean'.¹²⁸ Who is to blame for the failure? Large institutions, states and International companies that have the money, or access to it, but have failed to target the poor.

A report by the UK charity Water Aid, to mark World Water Day on 21 March, shows that 61% of the EU's International aid earmarked for water and sanitation goes to comparatively wealthy countries.¹²⁹ Global water companies are also blamed. New analysis by the UN shows that water privatization has gone into reverse, with private sector investment in water services declining, and that many companies have begun withdrawing in poor countries because of high political and financial risks.

It is now almost impossible to work in Latin America or Africa, and water companies are concentrating on China, India and Eastern Europe. Meanwhile, research by the World Bank and others demonstrates that the public sector is not always incapable of providing clean water. It still provides water for 90% of the world. The public sector is in many countries reforming itself, gaining confidence and learning how to raise the money and stand up to International pressure. Cities such as Recife in Brazil and Bogota in Colombia have persuaded the World Bank to make loans for public service expansion, something inconceivable 10 years ago. Others, including Lagos in Nigeria, are working with private companies, but on their own terms.

The political mood is swinging back to the public sector, and at some point International donors, banks and governments will recognize that clean water is a human right.

¹²⁸ John Vidal, "Clean water is a human right", *Guardian Weekly*, 28(24- 30 March 2006) available at: www.theguardian.com › World › Development › Privatisation(accessed on Jan 07,2016)

¹²⁹ *Ibid.*

Chapter-III

Chapter-3

Constitutional and Statutory Provision for Environment Protection in India

3.1. Introduction

India is a subcontinent surrounded by Arabian Sea on the west, the Indian Ocean in the South, the Bay of Bengal in the east and the Himalaya in the North. It covers about 3millions square kilometres, and includes 29 States and 7 Union Territories. It is home of about 1/6th of the world's population; more than 1,20,00,00,000 people .India is enriched by 12 major river systems. About 85% of the available water is used for agricultural purposes, 8% for domestic purposes and 5% for industry¹.

Its long history can be traced back to the Indus Valley Civilization that emerged on the banks of the river Indus. Over the last 5,000 years, society has evolved under multiple kingdoms. It was often conquered by invaders from other countries, each bringing its own system of governance. Part of this story is recorded in historical accounts and records of visitors to India and part is unrecorded, giving a uneven, incomplete picture of the evolution of water management. Nevertheless, this chapter explores the available information to provide an overview of the key elements of the changes in Indian water law and policy over the centuries, focusing, however, on more recent developments.

This chapter firstly provides a brief history of environmental law and water law in pre-colonial and colonial India, before moving on to discuss constitutional and statutory provisions. It closes with the present decade to highlight current challenges.

¹ Food and Agriculture Organisation, Aqua stats , 2003 *available at* : www.fao.org > FAO Home > Fisheries & Aquaculture(accessed on April 14,2014).

3.2. Environment Protection under Constitutional Framework of India

The constitution is known as the ‘basic law of the land’ from which all other laws derive their sanctity or validity. Therefore, it must be a living and growing law-means must be able to cope with the newer situations and development. That is why, as and when it is felt that a special situation has arisen and the present constitutional provisions are not adequate and cannot deal with the new development effectively, they are amended by Parliament from time to time.

In the original constitution as it was adopted on 26th Nov. 1949 and came into force on 26 Jan.1950, there was no provisions regarding the protection of environment in general and Water in particular. Provision regarding the environmental protection as well as water protection was incorporated in the Indian Constitution by 42nd amendment in1976, after the UN conference on Human Environment in 1972.

The then Prime Minister of India, Mrs. Indira Gandhi, was the first head of State to address the first International Conference on Human Environment at Stockholm in 1972, and voiced deep concern about the degradation of the environment and eco-imbalances. She also emphasized that pollution, population and poverty are interrelated problems and there must be an integrated approach to deal with them. India was also one of the signatories of the Stockholm Declaration which is known as the Magna Carta on Human Environment. Therefore, to fulfil its promise made at the Stockholm Conference, the Indian Parliament passed the forty-second amendment to the Constitution in 1976² and incorporated specially two Articles relating to protection and improvement of the environment. Thus, India became the first country in the world to have provisions on the environment in the Constitution.

² The Constitution (42 Amendment) Act, 1976 received the assent of the President of India on December 16, 1976.

3.3. Constitution and Forty-Second Amendment of 1976

As it is mentioned above that before 1976 Constitution of India did not have explicit reference to environment protection, so there was no independent and separate provision dealing with the protection or improvement of the environment. But taking note of the Stockholm Conference and growing awareness for environmental pollution and eco-imbalances, the Indian Parliament passed a historic amendment- Forty Second Constitution Amendment Act, 1976³. ‘This 42nd Amendment incorporated two significant Articles- Articles 48-A and 51- A (g) to protect and improve the environment. Further, it introduced certain changes in the Seventh Schedule of the Constitution.’ These changes are as follows-

Article 48-A: “The State shall endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country.”

Article 51-1(g): “It shall be a duty of every citizen of India...(g) to protect and improve the natural environment including forests, lakes, and wildlife and to have compassion for living creatures.”

Schedule Seventh: List III, Concurrent List

Item No. 17-A: Forests

17-B: Protection of wild animals and birds

20-A: Population Control and Family Planning.

Thus, various entries of State List II were transferred to List III (Concurrent List) which empowered Parliament to legislate on environmental issues such as forests, wildlife, population control, family planning, etc. It was necessary to make such changes to bring uniformity in law throughout the Country.⁴

3.4. Environmental jurisprudence and protection of natural resources

The basis, scope and nature of the state responsibility for the protection of natural resources were discussed by the Supreme Court in *Intellectuals*

³ It came into force on January 7, 1977.

⁴ C.M. Jeriwala, *The Constitution 42nd Amendment Act and the Environment in Legal Control of Environmental Pollution* (1980), edited by S.L. Agarwal.

*Forum, Tirupathi V. State of A.P.*⁵ The court was required to deal with the question at the jurisprudential level as it related to the conflict between the competing interests of protecting the environment and social development. The court held that:

“The responsibility of the State to protect the environment is now a well accepted notion in all countries. It is this notion that the International Law gives rise to the principle of State responsibility for pollution emanating within one’s own territories. This responsibility is clearly enunciated in the United Nations Conference on Human Environment, Stockholm 1972 (Stockholm Convention) to which India was a party”.

Thus, the court declared that there is a responsibility bestowed upon the government to preserve and protect the natural resources. To explain and buttress its conclusion, the court discussed doctrines of sustainable development, public trust doctrine, and principle of inter- generational equity and their origin and application. To arrive on this conclusion, the court referred the ‘Our Common Future’ (Brundtland Report). The court declared that under Public Trust doctrine’, the state as a trustee is under the legal duty to protect the natural resources. It is an affirmation of the duty of the State to protect the people’s common heritage of streams, lakes, and marsh land and tide lands, surrendering the right only in those rare cases when the abandonment of the right is consistent with the purpose of trust.

3.5. Right to Pollution free Environment: A Fundamental Right:

The Environmental laws which have been passed by Parliament and State legislatures are based on the recognition of clean environment as a human right or fundamental right. As it has been recognized that a clean environment is the basic need for the survival of humanity and it cannot be ensured without ecological balance, thus, this right belongs to all as survival of mankind depends on clean, healthful or pollution free environment. Any attempt to defile, damage the natural environment would amount to violation of the

⁵ (2006) 3 SCC 549.

human right to a clean environment.⁶ The Stockholm Conference of 1972 also declared that ‘man has the fundamental right to freedom of equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being.’⁷

Part IIIrd of the constitution of India dealing with ‘fundamental right’ (Article 12 to 35) does not have any direct bearing on environmental degradation or eco-imbalances, and has not even referred to these words at all. But the judicial pronouncements of the Supreme Court of India and State High Courts have significantly contributed in giving a newer and finer perspective to environment protection in the form of fundamental right. The Courts, while dealing with environmental cases, have referred and based their judgments on Right to Equality (Article 14), Right to Life (Article 21), Right to Freedom of Trade and Commerce [Article 19 (1) (g)], We will study various aspects of right to healthful, pollution-free environment vis-a-vis fundamental rights provided under Part IIIrd of the constitution of India.

The Madras High Court has rightly pointed out that today’s emerging jurisprudence, environment rights, which encompass a group of collective rights, are described as ‘third generation rights’. The first generation rights are Civil and Political Rights, while the Second generation rights are social and economical. Thus, right to have pollution free water is a third generation right⁸.

The constitutional Scheme to protect and preserve the environment has been provided under Articles 21, 48-A and 51-A(g) which includes fundamental right to have healthful and pollution free environment, constitutional obligation of the State and fundamental duty of all the citizens of India to protect and improve the natural environment. The Supreme Court has clarified it in many cases. It has also been observed by the court that this scheme is based on the ‘constitutional policy of sustainable development which

⁶ R.P. Mishra, *Ecological Balance as a Human Right in Environmental Law in India* 20-26 (1996).

⁷ Stockholm Declaration, 1972- Principal 1.

⁸ *Shabana Ramasuvramanyan V. Member Secretary, Chennai Metropolitan Development Authority*, AIR 2002 Mad 125.

must be implemented'.⁹ The court has observed that 'the development of the doctrine of sustainable development indeed is a welcome feature but while emphasizing the need of ecological impact, a delicate balance between it and the necessity for development must be struck. Whereas it is not possible to ignore intergenerational interest, it is also not possible to ignore the dire need which the society urgently requires.' 'What the court should follow is a principle of sustainable development and finds a balance between the developmental need which the respondents assert and the environmental degradation that the appellants allege.'¹⁰ There it is also necessary to ascertain the object sought to be achieved by the Act in question and which would affect the environment.¹¹ This concept has been recognized as fundamental concept of Indian Law.

It is also to be noted that Articles 14, 21, 48-A of the Constitution of India must be applied both in relation to an executive action as well as in relation to a legislation. In judicial review, the executive and legislation can be made, may be on different principles. Ecological principles are consideration in continuing town planning statutes.¹²

3.6. Right to Equality and Environment

The Indian Constitution guarantees 'right to equality'¹³ to all persons without any discrimination. This indicates that any action of the 'State' relating to environment must not infringe upon the right to equality as enshrined in Article 14 of the Constitution.

⁹ *Bombay Dyeing & Mfg. co.Ltd. V. Bombay Environmental Action Group*, (2006) 3 SCC 434.

¹⁰ *Intellectuals Forum, Tirupathi V. State of A.P.* (2006) 3 SCC 549; AIR 2006 SC 1350, at p. 1363.

¹¹ *Sushanta Tagore V. Union of India*, (2005) 3 SCC 16.

¹² *Id.* at 1530.

¹³ Article 14; 'The State shall not deny to any person equality before the law and equal protection of laws within the territory of India.' Right to equality consists of five Articles- viz. Articles 14,15,16,17 and 18.

The Stockholm Declaration, 1972 also recognized this principle of equality in environmental management¹⁴ and it called up all the world's nations to abide by this principle.

The Courts in India, on various occasions, have struck down the arbitrary official sanction in environmental matters on the basis that it was violative of Article 14 (Right to Equality)¹⁵. Because sometimes arbitrary grant of lease and indiscriminate operation of mines may jeopardize the wildlife and natural wealth of the nation. It has also been made very clear that where arbitrariness and perversion are writ large, the court has no option but to issue a writ to advance public Interest and avoid public mischief which is the paramount considerations.¹⁶

In *Kisan Bhagwan Gawali V. State of Maharashtra*¹⁷ the exclusion of a particular class of grazers from consideration and inclusion of some on the ground that the excluded class was indulging in illegal grazing is violative of Article 14 and invalid. Such a policy decision is against the right to equality.

The Gujarat High Court declared that imposition of restriction on the trade and operation of melting gold and silver ornaments by running furnaces and thus causing nuisance is not unreasonable and violative of Article 14 of the Constitution.¹⁸

It has aptly been observed that 'concept of social justice and equality are complementary to each other and practical contents of right to life'.¹⁹

3.7. Environmental Pollution and Control under Other Laws

There are various other laws which deal with environmental pollution. Some of the important laws which have effectively been used to contain and control the various forms of environmental pollution are as follows:

¹⁴ The Stockholm Declaration, 1972, Principle 1, 'Man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity & well-being...' available at : <http://www.unep.org/documents.multilingual/default.asp%3fdocumentid %> (accessed on 23.04.15)

¹⁵ *Ajay Hasia V. Khalid Mujib Sehravardi*, (1981) 1 SCC 722; *Kinkari Devi V. State of H.P.* AIR 1988 HP 4; also see *Sachidanand Pandey V. State of W.B.*, (1987) 2 SCC 295.

¹⁶ *Chiatanaya Kumar V. State of Karnataka*, (1986) 2 SCC 594.

¹⁷ AIR 1990 Bom 342.

¹⁸ *D.S.Rana V. Ahmedabad Municipal Corpn.*, AIR 2000 Guj 45.

¹⁹ *Consumer Education & Research Centre V. Union of India*, (1995) 3 SCC 42.

1. Law of Tort
2. Indian Penal Code, 1860 (IPC)
3. Criminal Procedure Code, 1973 (CrPC)
4. Factories Act, 1948
5. Public Liability Insurance Act, 1991
6. National Environment Tribunal Act, 1995

These above laws are briefly discussed below:

3.7.1 Environmental Pollution As A Tort

Saghir Ahmed J. of the Supreme Court has aptly observed, in unequivocal terms: Pollution is a civil wrong. By its very nature, it is a tort committed against the community as a whole. A person, therefore, who is guilty of causing pollution, has to pay damages (compensation) for restoration of the environment and ecology. In addition to damages aforesaid, the person guilty of causing pollution can also be held liable to pay exemplary damages so that it may act as a deterrent for others not to cause pollution in any manner.²⁰

In this case, a motel was discharging its untreated effluents in river Beas, thereby causing water or river pollution. The construction of the motel also interfered with the natural flow of the river. The motel was directed to pay compensation and it was also declared that "pollution fine" can also be imposed on such polluters by following the statutory procedure. Law of tort, basically a part of common law, is based on judicial pronouncements. There are various torts which provide relief for environmental pollution under various headings. Torts relating to environmental pollution are -

1. Tort of nuisance,
2. Trespass,
3. Tort of negligence, and
4. Strict liability.

²⁰ *M.C .Mehta V. Kamalnath*, (2000) 6 SCC 213; AIR 2000 SC 1997

3.7.1.1 Tort of nuisance and environmental pollution

It has rightly been observed that deepest doctrinal roots of modern environmental law are found in the common-law principles of "nuisance"²¹. The law of nuisance covers various kinds of activities which pollute the environment. Nuisance means "an unlawful interference with the use and enjoyment of land or property, or some right over, or in connection with it". It is recurring state of affairs. This covers the escape of deleterious things and inconvenience to another. "Nuisance" ordinarily means anything which annoys hurts or that which is offensive. It may be through escape of water, smoke, fumes, gas, noise, heat, vibrations, electricity, disease, germs, trees, etc. There are two categories of nuisance, public and private. Public nuisance is a crime and is covered under IPC [Ss.268-291] and CrPC [Ss. 133-144].

In *Dhannalal v. Thakur Chittar singh Mehtap singh*²², the Madhya Pradesh High Court held that the constant noise, if abnormal or unusual, can be actionable if it interferes with another's physical comfort. The person causing nuisance may be restrained by injunction, although he may be conducting his business in a proper manner according to rules framed in this behalf either by the municipality or by the State. The focal point of law of nuisance is the material interference with the ordinary comfort of human existence. The following factors are material in deciding whether the discomfort is substantial as to make it actionable:

1. Degree of intensity
2. Duration
3. Locality
4. The mode of using the property

Long back, in 1862, the court of Exchequer Chamber in *Bamford v. Turnley*²³, declared that anything which lessens the comfort or endangers the health or safety of a neighbour must be an actionable nuisance. It was a case

²¹ Rogers, Winfield and Jolowicz on Tort (1984)377

²² AIR 1959 MP 240.

²³ (1862)3 B&S 66: 122 ER 27.

where the plaintiff complained of smoke and smell from the burning of bricks by the defendants. Similarly, large smelting works and vapour exhaled from those works did physical injury to the shrubs and trees on the plaintiff's land and was held to be an actionable nuisance and air pollution.²⁴

In *Pakkle v. P.Aiyasami Ganpathi*²⁵ laid salt pans in the tank which belonged to the government, it amounted to nuisance as the water is rendered useless to people for bathing, drinking and other purposes. It is no defence that other person also laid their salt pans which also made the water of the tank useless.

In the famous *M.C. Mehta v. Union of India* (River Ganga Pollution case)²⁶, the Supreme Court declared that the nuisance caused by the pollution of the river Ganga is a public nuisance, which is widespread in range and indiscriminate in its effect. Since this affects the community at large, one can move the court through public interest litigation (PIL). In this case, tanneries were discharging their untreated effluents into the river and many nallahs were also releasing the city waste into the river, thereby causing water pollution. The court issued various detailed directions to the municipal corporation of Kanpur city to maintain the wholesomeness of the water of the river by taking necessary steps to stop the release of industrial effluents and municipal waste into the river Ganga.

The Karnataka High Court in *V. Lakshmipathy v. State of Karnataka*²⁷ observed that air, water, land and noise nuisance were hazardous, and the industries cannot be permitted to operate while causing air and noise pollution affecting the quality of the environment. Illegal mining at a large scale and overburden dumps, roads, offices, etc., outside the sanctioned lease area were named as "mass tort" by the Supreme Court in *Samaj Pariuartana Samudaya v. State of Karnataka*.²⁸ The court also ordered for the compensatory payment

²⁴ *St. Helen's Smelting Co. v. Tipping*, (1865) 11 HL Cas 642 (HL)

²⁵ AIR 1969 Mad 351.

²⁶ (1988)1 SCC 471.

²⁷ AIR 1992 Kar 57

²⁸ (2013) 8 SCC 154; AIR 2013 SC 3217.

for damage to the environment by illegal mining. Exposure of unwilling persons, residents of a locality to the dangerous and disastrous levels of noise amounts to noise pollution and is known as noise nuisance.²⁹ In *Ram Rattan v. Munna Lal*³⁰ it has also been made clear by the courts that noisy locality may not be an actionable nuisance but substantial increase may cause nuisance if it interferes with the ordinary comfort of human existence. Addition of two power loom in a locality devoted to noisy trades, such as the printing and allied trades, may constitute an actionable wrong entitling an occupier of an adjoining residence to an injunction.³¹ Noise from mining operations has also been held as noise pollution.³² The courts have also accepted PIL even when there is a likelihood of air and noise pollution or apprehended nuisance.³³

Noise pollution, a slow agent of death, simply connotes disagreeable unwanted sound in the atmosphere. Therefore, it requires special or specific laws to deal with the noise pollution as it has already crossed the danger level.³⁴ The use of loudspeakers and explosives must be regulated as they have proved to be big health hazards.³⁵ Looking at the widespread adverse effect on health, noise has been recognised as a nuisance which contaminates the environment. Therefore, courts have suggested, on many occasions, to enforce the standards for noise pollution strictly, and a comprehensive and independent noise code, regulating all aspects of noise to be enacted.³⁶

*Ram Raj Singh v. Babulal*³⁷ is an instance where an individual can claim damages from a person for causing public nuisance if he can prove some "special damage" and "substantial injury" from such nuisance to him. In this case, the plaintiff-appellant, a medical practitioner, constructed a consulting chamber opposite the brick-grinding machine erected by the defendant-

²⁹ *M.C.Mehta v. Union of India*, (1996) 8 SCC 462: AIR 1996 SC 19

³⁰ AIR 1959 Punj 217.

³¹ *Ibid.*

³² *Ved Kaur Chandel v. State of H.P.*, AIR 1999 HP 59. R

³³ *P.A.Jacob v.Supt.of Police*,AIR 1993 Ker 1; *Abin Mukherjee v. State of W.B.*,AIR 1985 Cal 222.

³⁴ *Bijayananda Patra v. District Magistrate, Cuttack*, AIR 2000 Ori 70.

³⁵ *Gotham Construction Co. v. Amulya Krishna Ghose*, AIR 1968 Cal 91.

³⁶ See, *Bijayananda Patra v. District Magistrate , Cuttack*, AIR 2000 Ori 70.

³⁷ AIR 1982 ALL 285

respondent. There was a distance of 40 feet between the two and a road intervened between the grinding machine and the consulting chamber. The plaintiff alleged that the machine generated dust which polluted the general atmosphere and entered the consulting chamber causing physical inconvenience to him and the patients sitting inside the chamber. These allegations were denied by the defendant. The court held the defendant liable as the facts proved that plaintiff could prove "special damage". The court observed:

All that law requires is that when an act amounts to public nuisance, an individual can sue in his own right only if he is able to prove 'special damage' to himself, i.e. damage which is personal to him as opposed to the damage or inconvenience caused to the public at large or to a section of the public.

Coming to the question of substantial injury, it is already indicated above that every injury is considered to be substantial which a reasonable person considers to be so. In assessing the nature of substantial injury the test to be applied is again the appraisal made of the injury by a reasonable person belonging to the society. The expression does not take into account the susceptibilities of hypersensitive person or person attuned to a dainty mode of living.

Therefore, entry of dust from the brick-grinding machine in the consulting chamber and a thin red coating visible on the clothes of the persons sitting there were sufficient evidence of special damage. As it was a public hazard and was bound to cause harm to the health of persons, it amounted to substantial injury. The appeal succeeded.

Following are the remedies for private nuisance:

1. *Abatement* -It means the removal of a nuisance by the party injured but it must be peaceably, without danger to life or limb. For this, a prior notice and adequate opportunity must be given to the other party before entering upon the land of the other person.

2. *Damages* - Aggrieved party/ parties can bring an action for damages.

3. *Injunction* - It is a court's order for restraining the other party from continuing an activity which is causing a nuisance. It must be proved before the court that the injury cannot adequately be compensated. Injunctions have been dealt with by the Specific Relief Act, 1967 from Sections 36 to 42 and the Civil Procedure Code.

3.7.1.2. Trespass

Trespass is very closely related to nuisance and is occasionally invoked in environmental cases. Trespass requires an intentional invasion of the plaintiff's interest in the exclusive possession of property. No substantial injury needs to be shown for a plaintiff to succeed in an action for trespass.' The only requirement to establish a trespass is that there must be an "intentional unprivileged physical entry" by a person or object on land possessed by another.

In *Aruidson v. Reynolds Metals Co.*³⁸, the court observed that aluminium was produced by the defendant's plant in a manner that unavoidably cursed fluorides to be discharged into the atmosphere and it is recognised that fluorides of some types escaping from the plants, if ingested in excessive quantities, were capable of causing damage to cattle. Nevertheless, the court found for the defendants on the ground that large-scale production of aluminium is essential to national defence.

In *Fairview Farms Inc. v. Reynolds Metals co.*³⁹, the court held that airborne liquids and solids deposited upon Fairview's land constituted trespass and allowed damages for a six-year period applying the statute of limitation. Nevertheless, the trespass theory is inadequate to control air pollution. The difficulty in identifying the correct source of air pollution in an area, the cost of litigation and willingness of the people to accept the status quo, etc. Tends to discourage the filing of trespass suits.

³⁸ 125 F Supp 486 (1954).

³⁹ 176 F Supp 178 (1959) cited by James F. Krier.

3.7.1.3. Negligence

Negligence is another specific tort which can help us in preventing environmental pollution. Negligence is the failure to exercise that care which the circumstances demand in any given situation. where there is a duty to take care, reasonable care must be taken which can be foreseen to be likely to cause physical injury to person or property.⁴⁰ The degree of care differs from case to case and circumstances to circumstances. Causal relation must be shown by the plaintiff between the negligence of the defendant and the injury to the plaintiff.

But causal relation between the negligent act and the injury suffered is not necessary to be proved by the plaintiff when a deadly pollutant like carbon monoxide is discharged in air admittedly under the defendant's exclusive control as was decided in *Greyhound Corpn. v. Blakley*⁴¹. Therefore, public man can bring an action for lung damage caused by fine dust particles against local cement and like factories; for example National Silicon, Factory at Baroda (rich chlorosilane if combined with water to produce hydrochloric acid and silica, its fumes can damage lungs) asbestos industries, and others. The fibres entering into the body of man cannot be seen by the naked eyes and cause damage to the lungs of a man. Such cases call for a very high degree of care.

In *Mukesh Textile Mills (P) Ltd. v. H.R. Subramanya Sastry*⁴², common law action for negligence was applied to prevent any activity causing environmental pollution. In this case, appellant had a sugar factory and used to store molasses a by-product in the manufacture of sugar, in tanks, two of them were steel tanks and one was of mud, with earthen embankment close to respondent's land separated by a water channel. One day, this third tank collapsed as it was in a dilapidated condition and it emptied into the water

⁴⁰ *Donoghue v. Stevenson*, 1932 AC 562: 1932 ALL ER Rep 1(HL), per Lord Atkin.

⁴¹ 262 F 2d 401 (1958).

⁴² AIR 1987 Kar 87.

channel ultimately inundated the paddy fields of the respondent causing damage to the raised crops.

The court based the liability of the appellant-defendant on two grounds. One, who had stored large quantities of molasses in the mud tank had the "duty to take reasonable care" in the matter of maintenance. The duty to take care was not properly performed which showed negligence on the part of the appellant-defendant. The appellant could reasonably have foreseen that damage was likely to be caused if there was a breach in the tank. Thus, it was reasonably foreseeable. Secondly, liability arises as the land was put to the non-natural use. The court held, "in both situations, a duty-situation emerges and the appellant must be held liable for the consequences of the escape of the fluid from its tank."

In *Hagy v. Allied Chemical and Dye Corpn.*⁴³, the appellant, Mrs Hagy, suffered injury to her larynx when her husband drove through smog which contained injurious sulphuric acid components negligently emitted from the defendant's plant. The court allowed the damage for negligence of the corporation. Though dangers caused by environmental pollution are often potential dangers difficult to evaluate, but the court can help to eliminate such conditions.

3.7.1.4 Doctrine of "Strict Liability" and "Absolute Liability"

The tort is comparatively new (came into existence in 1868). The rule in *Rylands v. Fletcher*⁴⁴ is known as a tort of strict liability. The rule propounded in this case by Blackburn J. is:

"The person who for his own purpose brings on his land and collects and keeps there anything likely to do a mischief if it escapes, must keep it at his peril, and if he does not do so, is prima facie answerable for all the damage, which is the natural consequence of its escape".

⁴³ (1954)122 Cal App 2d 361.

⁴⁴ (1868) LR 3 HL 330; (1861-73) All ER Rep 1 (HL).

The doctrine of "strict liability" -a liability without fault on the part of the defendant is very significant in relation to cases arising from environmental pollution because it has been applied to a remarkable variety of things fire gas, explosions, electricity, oil, noxious fumes, colliery spoil, poisonous vegetation, etc. Further, this rule applies equally to the injuries caused to person⁴⁵ and property⁴⁶. But unless there is an escape of the noxious substance or article from the land of the defendant where it is kept, to the land of the plaintiff, there is no liability under the rule⁴⁷. It was applied by the Indian courts in many cases.

Rejecting the theory of strict liability propounded in *Rylands v. Fletcher*, the Indian Supreme Court in *M.C. Mehta v. Union of India*⁴⁸ (Oleum Gas leakage or Shriram Food and Fertiliser Industry case) declared that we have to develop our own law and if we find that it is necessary to construct a new principle of liability to deal with unusual situation on account of hazardous or inherently dangerous industry we should not hesitate to evolve principle of liability though such principle might have been evolved in England. In the words of Hon`ble P. N. Bhagwati CJ: "*An enterprise which is engaged in a hazardous or inherently dangerous industry which poses a threat to the health and safety of the persons working in the factory and residing in the surrounding areas owes an absolute and non –delegable duty to the community to ensure that no harm results to anyone on the account of hazardous or inherently dangerous nature of the activity which it has undertaken. The enterprise must be held to be under an obligation to provide that the hazardous or inherently dangerous activity in which it is engaged must be conducted with highest standards of safety and if any harm results on account of such activity, the enterprise must be absolutely liable to compensate for such harm and it should be no answer to say that it had taken*

⁴⁵ *Ryland v. Fletcher*, (1868-73) LR 3 HL 330: (1861-73) All ER Rep r (HL).

⁴⁶ *Waschak v. Moffat*, cited by Krier in *Environmental Law & policy*, 379 Pa 441:109 A 2d 310 (1954).

⁴⁷ *Read v. J. Lyons & Co.*, 1974 AC 156: (1946) 2 All ER 471 (HL).

⁴⁸ (1997) 2 SCC 353: AIR 1997 SC 734.

all reasonable care and that the harm occurred without negligence on its part”.⁴⁹

Further, it was explained that such industry must be held strictly and absolutely liable for causing harm as a part of social cost for carrying on hazardous or inherently dangerous activity.

In this case there was leakage of oleum gas –a toxic gas from Shriram food and Fertiliser Industry, on 4 December 1985. As a result of this an advocate died on account of inhalation of oleum gas and several persons were taken ill. The Industry was held liable on the principle of "absolute liability" as mentioned above.

It was also declared by the court that in cases of damage/harm to anyone on account of accident in the operation of hazardous or inherently dangerous activity, as in this case of leakage of gas, The measure of Compensation must be correlated to the magnitude and capacity of the enterprise because such compensation must have deterrent effect. The larger and more prosperous the enterprise, greater must be the amount of compensation payable by it.

The above observations about the basis of liability of the Supreme Court were quoted with approval by Ranganath Mishra J. in *Union Carbide corp. Ltd. v. Union of India*⁵⁰ (Bhopal Gas Leakage Disaster case) but the court refused this principle of "*damages be proportionate to the superiority of the offence*" as the amount of the US \$ 470 million was a result of a settlement between the Union Carbide Corporation and the Union of India. In this case, there was leakage of Methyl Isocyanate (MIC) gas from the Union Carbide Corporation at Bhopal, on 2 and 3 December 1984. It was reported that more than 3000 persons died the same night and two lakh persons were taken ill of various ailments.

⁴⁹ *M.C. Mehta v. Union Of India* (1987) 1 SCC 395:1987 SCC (L&S) 37 :AIR 1987 SC 1086

⁵⁰ 1994 SUPP (3) SCC 328

The court in this case also held that the Union Carbide Corporation would also compensate for the injuries to unborn children whose congenital defects were traceable to MIC toxicity inherited or derived congenitally.

Law of nuisance for environment protection is a less effective measure because in case of public nuisance "some special injury" is necessary to prove to succeed, and in private nuisance, the individuals do not take interest in coming to a court of law. The common law action of trespass is less known to India and is not suited to deal with the general issues of environmental degradation as it requires some direct physical interference by one against the person or property of another. Environmental degradation is generally indirect in its nature and effect. So person aggrieved by it may find it difficult to establish a successful legal action for trespass. In case of an action for negligence, environment pollution cases have some inherent difficulties. Firstly, the plaintiff has to prove the casual connection between the negligent act and the plaintiff's injury, and that it was foreseeable by the defendant. Secondly, the standard of care is seriously affected by the state of scientific knowledge as to causes and effects of air and water pollution. Therefore, *M.C. Mehta v. Union of India*⁵¹, principle of absolute liability with non-delegable duty rule, is an appropriate remedy to check environmental pollution effectively.

Insurance against abnormally dangerous harm may be a proper remedy in deciding the question of liability. Considering the pollution problem in its totality, interests of the public may considerably overshadow the interests of the parties concerned. This requires that the public point of view be searched out and decisions be taken in the light of social policy.

3.8. Provisions relating to Environment Protection under the Indian Penal Code, 1860

In the IPC chapter XIV on "Offences affecting the public health, safety, and convenience", Section 268 defines "public nuisance" as, a person is guilty

⁵¹ (1987) 1 SCC 395; 1987 SCC (L&S) 37; AIR 1987 SC 1086

of a public nuisance who does any act or is guilty of an illegal omission which causes any common injury, danger or annoyance to the public or to the people in general who dwell or occupy property in the vicinity, or which must necessarily cause injury, obstruction, danger, or annoyance to persons who may have occasion to use any public right. The section further explains that a common nuisance is not excused on the ground that it causes some convenience or advantage.

Thus, an act which tends to or causes interference with the health, safety, comfort, convenience of the public at large will be considered as public nuisance. It covers all types of pollutions -land pollution, air pollution, water pollution, noise pollution, etc. Section 290 provides punishment for public nuisance which otherwise is not punishable under the Act, with a fine which may extend to Rs.200.

In *Karnool Municipality v. Civic Assn.*⁵², it was held that municipality can be convicted for not maintaining the cleanliness of the town under Section 290.

It is to be noted that no prescriptive right can be acquired to maintain nuisance, and no length of time can legalise a public nuisance.⁵³

The Kerala High court held that smoking, in any form, in a public place is a public nuisance and cases can be filed under section 290 IPC⁵⁴ and it is violative of right to life provided under Article 21 of the Constitution.

Since the punishments provided for the offences under sections 269,270,277,278,284,285,286,and section 425 to 440 are too meagre, looking to present-day gigantic problem of environmental pollution, there for, most of the provisions are ineffective and are not helpful in curbing the problem of environmental pollution.

Under the code the fouling of water of any public spring of reservoirs and rendering it less fit for the ordinary use has been considered as an offence

⁵² *Kurnool Municipality v. Civic Assn.*, :1973 Cri LJ 1227 (AP).

⁵³ *Municipal Commr. of Suburbs of Calcutta v. Mohd. Ali*, (1871) 16 Suth WR (Cri) 6: (1871) 7 Beng LR 499.

⁵⁴ *K. Ramakrishnan v. State of Kerala*, AIR 1999 Ker 385.

and punishable under section 277 for a term which may extend to three months or with fine which may extend to five hundred rupees or both. Some of the more important cases of such danger have been specifically provided and the offence of fouling of the water has also got a cursory glance. Section 277 of code provides for the punishment to the offender who corrupts or fouls the water of any public spring or reservoir. The word corrupts and fouls are the words of ordinary use and have been used to connote the same meaning. The word corrupts refers to an act which makes the water impure, whereas, the term fouls point out an act which causes a bad smell and taste to water. However, the phraseology of the section, to render it less fit for the purpose for which it is ordinarily used, clearly indicates the intention of the legislatures to punish the person who by his positive acts deteriorates the quality of water of the public spring or reservoir.

3.9. Provisions relating to environment protection under the Criminal Procedure Code, 1973 (Cr. PC)

Chapter X of Cr. PC Part B, has provided a provision for public nuisance which relates to environmental pollution' Section 43 Cr. PC empowers District Magistrate, Sub-Divisional Magistrate, to stop the nuisance on receiving information. "Nuisance" is defined in very liberal terms and includes construction of structures, disposal of substances, conduct of trade of occupation; under this section the court issues Conditional order for the removal of nuisance.⁵⁵ In this case the bakery owner constructed chimney and oven and was emitting smoke on a highway orders, the court can impose penalties provided under Section 188 IPC which includes imprisonment for a maximum period of six months and a fine which may extend to Rs.1000 or with both.

The imperative tone of Section 133 CrPC read with punitive temper of Section 188 IPC make the prohibitory act a mandatory duty.⁵⁶ The decision of

⁵⁵ *Govind Singh v. Shanti Sarup*, (1979) 2SCC 267: 1979 SCC (Cri) 444

⁵⁶ *Municipal Council, Ratlam v. Vardhichan*' 1980 SCC (Crl) 933

the Supreme Court in *Municipal council, Ratlam v. vardhichan*⁵⁷ has made it clear that a citizen can always bank upon Section 133 CrPC For the removal of the nuisance of pollution. It is of greater significance in view of the fact that the water Act and the Air Act do not provide for the affected parties a right to prosecute violators of the provisions. Another significant point is that corporate bodies like companies and corporations can also be held, responsible for pollution nuisance under these provisions. The observed that "whenever there is a public nuisance, the presence of Section 133, Cr.P.C must be felt and any contrary opinion is contrary to the law"

But it is not clear that municipalities and other local bodies (other than the affected parties) can initiate prosecution proceedings against industries and factories for causing environmental pollution. Therefore, it is, suggested that the prosecution power may also be vested in the municipalities, and other local body authorities of the Pollution Control Board.

It has been clarified that sub-section (1) of Section 133 gives ample powers to make order prohibiting the discharge from a factory into a river of an effluent which might be injurious to health of the community which has right to use the water of the river. But it is essential to prove before an order is passed by means of scientific enquiry against a wrong doer. It was declared in *Deshi sugar mills v. Tupsi Kahar*⁵⁸ that orders under section 133(1) cannot be made only on the basis that the complaint has been filed by more than two persons. To take action under the said section, there must be definite, scientific and convincing evidence.

In *Krishna Gopal v. State of M.P.*⁵⁹, Section 133 Cr.P.C. was effectively used. In this case, the complaint was made against noise air pollution due to fly ash and discharge of steam in the air from a glucose factory. This all cumulatively caused inconvenience and discomfort to the persons to the locality. But complaint was made by a lady resident of the locality as her

⁵⁷ *Ibid.*

⁵⁸ AIR 1926 at 506.

⁵⁹ 1986 Cri LJ 396 (MP).

husband was a heart patient. The main question before the High Court the alleged nuisance could be said to be a public it affected the health of the person and the oven could cause conflagration. The court held it nuisance, and declared that it affects the health, safety and con convenience of the public at large. Therefore, the court ordered for demolition of the chimney and the oven under section 133 Cr.P.C. nuisance and whether the orders of the removal of boiler or factory can be made on the complaint of a single individual? The court made a very significant pronouncement, which is as follows:

It is not the intent of law that the community as a whole or large number of complainants come forward to lodge their complaints or protest against the nuisance. Law does not require any particular number of complainants. A mere reading of Section 133(1) would go to show that the jurisdiction of Sub-Divisional Magistrate can be invoked on receiving a report of a police officer or other information.⁶⁰

The court ordered for the removal of the boiler and for the closure of the factory as it was a public nuisance to the locality.

Similarly, the Rajasthan High Court also ordered for the removal of a business enterprise from a residential locality in *Ajeet Mehta v. State of Rajasthan*⁶¹. In this case the complained business involved loading, unloading and stocking of fodder in a residential locality causing pollution to the atmosphere. The orders were issued by the Magistrate under Section 133 CrPC.

In *Madhavi v. Thilakana*⁶², the Kerala High Court dealing with the nuisance created by an automobile workshop in a residential area, declared it a health hazard. Regarding the nature of the public nuisance under Section 133 Cr PC, the court observed:

We recognise every man's home to be his castle which cannot be invaded by toxic fumes, or tormenting sounds. This principle was expressed

⁶⁰ *Id.* at 399.

⁶¹ 1990 Cri LJ 596 (Raj).

⁶² 1989 Cri LJ 499 (Ker).

through law and culture, consistent with nature's ground rules for existence, has been recognised in Section 133(1) (b). The conduct of any trade or occupation, or keeping of any goods or merchandise injurious to health or physical comfort of community, could be regulated, or prohibited under the section.⁶³

But there are some High Courts who have decided that remedy of public nuisance using air and water pollution does not lie in Section 133 but under the Water (Prevention and Control of Pollution) Act, 1974 and The Air (Prevention and Control of Pollution) Act, 1981.⁶⁴ But views have been expressed against such observations of the courts.⁶⁵

In *M.C. Mehta v. Union of India*⁶⁶ (Oleum Gas Leakage case), gas having leaked from the Shriram Food and Fertiliser Industry, New Delhi, the District Magistrate, Delhi ordered to close down the factory under Section 133 Cr.PC. This case culminated into a historical case in the field of the liability of industries/ operations/ process engaged in a hazardous or inherently dangerous activity.

The Andhra Pradesh High Court in *Nagarjuna Paper Mills Ltd.v. Sub. Divl. Magistrate*⁶⁷ (Nagarjuna Paper Mills), declared that the Magistrate has powers to abate public nuisance and grant injunctive relief under Section 133 as long as such orders of the Magistrate do not interfere with the orders of the Pollution Control Board or Chief Judicial Magistrate issued under the Water (Prevention and Control of Pollution) Act, 1974. In this case the Nagarjuna Paper Mills were discharging untreated effluent causing water and air pollution for the residents of the nearby area. On the report received from the Engineer of the Pollution Control Board, the Magistrate issued conditional orders under Section 133 to abate the public nuisance within a stipulated time. When orders were not carried out, the Magistrate issued final order under

⁶³ *Id.* at 501.

⁶⁴ *Tata Tea Ltd. v. State of Kerala*, 1984 KLT 645; *Abdul Hamid v. Gwalior Rayon Silk Mfg. (Wvg Co. Ltd)*, 1989 Cri LJ 303 (MP).

⁶⁵ P. Leelakrishnan, *Law and Environment*, in P. Leelakrishnan, Nair, Murthy, *Evolving Environmental Jurisprudence*, 126-152 (1992).

⁶⁶ 1986 2 SCC 325 : AIR 1987 SC 982.

⁶⁷ 1987 Cri LJ 2071 (AP).

Section 141. Such powers of the Magistrate were challenged in the High Court on the basis that since the Pollution Control Board has powers under the Water Act, 1974; the Magistrate was not entitled to exercise powers under Section 133. Such objection was dismissed by the High Court.

The Kerala High Court in *P.C. Cherian v. State of Kerala*⁶⁸ explained the nature and scope of Section 133. In this case two rubber industries, situated in industrial area, were using carbon black for carbon mixing process. The excess carbon black usually disseminated into the atmosphere. There was no necessary equipment to prevent such dissemination of carbon black which caused discomfort, injury and nuisance to the people of the nearby area and even prevented them from attending to their avocation as there were 600 Christian families in the area. When they used to come to attend the Church prayers, their clothes soiled as a result of atmospheric pollution. Under these circumstances, the Sub-Divisional Magistrate, Kottayam under Section 133 directed the stoppage of mixing of carbon in both the factories. The petitioner claimed that there was no ground to invoke Section 133 by the Magistrate as the licence was issued under the Panchayat Act and the Factories Act, 1948

On satisfying the conditions which included absence of hazard to health. The High Court after examining the whole issue came to the conclusion that dissemination of carbon black in the atmosphere was a public nuisance and a health hazard as it effects the respiratory organ of the people. This all was an outstanding instance of air pollution. It was also causing discomfort to the community of the area.

The court also considered the question that the stoppage of working of the factory under Section 133 would affect the right of livelihood of the employees. Answering this, the court observed that this argument is not applicable here because the danger that general public has to face by service mixing of carbon without adequate equipment to prevent dissemination of

⁶⁸1981 KLT 113

carbon, out-weighs the advantage in the form of jobs for a few persons and that too under threat of hazards to their own health.

Under these circumstances, the Sub-Divisional Magistrate was justified in invoking the powers under Section 133 Cr.PC and directing them to stop the service of mixing of carbon in their factories. In this case the, court held that it is not necessary to establish toxicity on scientific basis before issuing orders to restrain the public nuisance.

The court also referred to the remarks of the Supreme Court in *Municipal Council, Ratlam v. Vardhichans*⁶⁹ that "public nuisance, because of pollutants, being discharged by big factories to the detriment of the poorer section, is a challenge to the social justice component of the rule of law".

3.9.1. Section 133 Cr.P.C. is independent and different from other pollution laws

The Supreme Court in *State of M.P. V Kediya Leather And Liquor Ltd.*⁷⁰ has declared that the area of Section 133 of the Code and pollution laws like the Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981, are different and not identical in nature. While Section 133 is in the nature of preventive measure, the provision contained in the above two Acts are not only curative but also preventive and penal. The provisions appear to be mutually exclusive and different in their respective fields and there was no impediment for their existence side by side. Moreover, passing of new pollution control laws, as mentioned above, does not repeal Section 133 CrPC.

3.9.2 Condition precedent to apply Section 133

In *Suhelkhan Khudyarkhan v. State of Maharashtra*⁷¹, the Supreme Court made it clear that for the application of Section 133 CrPC, the condition precedent is that the conduct of the trade must be injurious to the health or physical comfort of community. There must be imminent danger to

⁶⁹ (1980) 4 SCC 162; 1980 SCC (Cri) 933.

⁷⁰ (2003) 7 SCC 389; 2003 SCC (CRI) 1642

⁷¹ (2009) 5 SCC 586; (2009) 2 SCC (Cri) 726.

health or physical comfort of the community in locality in which trade or occupation is conducted. It is not intended to settle private disputes.

3.10. Factories Act 1948

One of the basic laws dealing with environmental pollution from industries is the Factories Act, 1948. The term "occupation", used in the, Environment (Protection) Act, 1986 has been adopted from the Factories Act. In various cases relating to industrial pollution- *Taj Trapezium case*,⁷² *Kanpur Tanneries case*⁷³; *Oleum Gas Leakage case*⁷⁴; *U.P. Pollution Control Board v. Modi Distillery*⁷⁵; *Consumer Education and research Centre v. Union of India*⁷⁶ -the Factories Act has been referred to by the Supreme Court. This Act is the first Code which deals with industrial safety, discharge of effluents/ pollutants, hazardous substance and occupational health and welfare of workers employed in factories.

Section 12 of the Act provides that the occupier is duty-bound to follow effective arrangements in the factory for treatment of wastes and effluents due to manufacturing process carried on in the factory as to render them innocuous. It also empowers States to frame rules for the safety, health and for discharge and disposal of effluents of a factory. Section 14 deals with dust and fumes.

Keeping this fact in view that several chemical industries have come up which deal with hazardous and toxic substances, an amendment was made in the Factories Act in the year 1987 and a new Chapter IV-A was incorporated in it. This chapter has "provisions relating to hazardous process". New sections incorporated under the chapter are given in table 1.

⁷² *M.C. Mehta v. Union of India*, (1997) 2 SCC 353.

⁷³ *M.C. Mehta v. Union of India*, (1988) 1 SCC 471: 1988 SCC (Cri) 141

⁷⁴ *M.C. Mehta v. Union of India*, (1986) 2 SCC 325: AIR 1987 SC 982

⁷⁵ (1987) 3 SCC 684: 1987 SCC (Cri) 632: AIR 1988 SC 1128.

⁷⁶ (1995) 3 SCC 42 : 1995 SCC (L&S) 604: AIR 1995 SC 922.

TABLE 1 : Regarding the provision for Environmental protection

Section 41-A	Constitution of Site appraisal committees
Section 41-B	Compulsory disclosure of information by occupier involving hazardous process
Section 41-C	Specific responsibility of the occupier in relation to hazardous process
Section 41-D	Power of central government to appoint Enquiry committee(in the event of occurrence of extra ordinary situation)
Section 41-E	Emergency standards
Section 41-F	Permissible limits of chemical and toxic substances
Section 41-G	Worker's participation in safety management
Section 41-H	Rights of workers to warn about eminent danger

Under Section 87, the State Government is also authorised to declare, any manufacturing process or operation in a factory which exposes any person to a serious risk of bodily injury , poisoning or disease ,as dangerous and prohibit/restrict the employment of women, adolescent or children children in the unit as hazardous process unit. On account of serious hazard of injury or death, it can prohibit the employment in the factory and can fix minimum number to attend the factory⁷⁷.

The Manager of a factory is duty-bound to inform the proper authorities in prescribed form about the occurrence of an accident, dangerous occurrence, any disease specified in Third Schedule. The Supreme Court declared that the employer is vicariously liable for occupational diseases like the workers affected by asbestosis and liable to pay compensation to workmen for health hazards. It was clarified that right to life under Art. 21 of the Constitution includes right to livelihood, better standards of life, hygienic conditions in workplace and leisure, and right to health and medical care both during and after service.⁷⁸ The failure on the part of the Manager will make him liable to be penalised under, various provisions of the Act⁷⁹.

⁷⁷ FACTORIES ACT 1948,S. 87-A

⁷⁸ Under ss. 88, 88-A, 89. In *Consumer Education & Research Centre v. union of India*, (1995) 3 SCC 42: 1995 SCC (L&S) 604: AIR 1995 SC 922.

⁷⁹ Chap. X of Factories Act 1948 [Ss. 92-105] provides for the "Penalties and Procedure".

Section 96-A provides that whoever fails to-

- 1) Compulsorily disclose information regarding hazardous process; or
- 2) maintain health record of workers, appoint qualified and experienced persons and provide medical aid to workers; or fails to inform the workers of the factory of likely imminent damage to lives/health due to accident, shall be punishable with imprisonment for a term which may extend to seven years and with a fine which may extend to Rs.2,00,000.

Above mentioned new amendment incorporating Chapter IV-A is a welcome venture as it provides for the regulation of hazardous substances so as to protect the health of the workmen. Though, it is quite comprehensive in nature, it does not provide for citizen's suit.

The Insecticides Act, 1968 also empowers the Central Governments and the State Governments to prohibit the sale, distribution and use of dangerous insecticides. The manufacture and distribution of insecticide are now regulated through licensing under this Act, the violation of which leads to prosecution and penalties. The Act establishes a Central Insecticides Board to advise the Central and the State Governments. A committee under the Board registers insecticides after examining their formulae and it also verifies claims regarding their safety and efficacy. The Board can ban any pesticide or refuse to register any pesticide. Further, it also prohibits any import of misbranded, prohibited or unregistered insecticide [Ss. 17 and 18]. The Insecticides Rules, 1971 provides the procedure for licensing, packing, labelling and transporting insecticides apart from the provisions for workers' safety during the manufacture and handling of insecticides through protective clothing, respiratory devices and medical facilities. A survey and comparison with the laws of other countries reveals that it lacks effective implementation machinery and various deadly pesticides like Agent Orange are not banned by this Act.

3.11. Public Liability Insurance Act, 1991

This Act was passed with an object "to provide immediate relief to the persons affected by accidents occurring while handling any hazardous substances and for matters connected therewith or incidental thereto". It consists of 23 sections and one schedule. Section 3 of the Act propounded the doctrine of "no-fault liability" by imposing liability on the owner for death or other injury to any person (other than the workmen) or for damage to property. The claimant shall not be required to establish any wrong of any person (including that of the owner) or neglect or default of any person. The Madhya Pradesh High Court has also declared that "Section 3(2) speaks about the strict liability without fault involving death due to hazardous substances". It is not necessary for the claimant to plead and establish that the death, injury or damage was due to any wrongful act⁸⁰. The owner is required to take out insurance before he starts handling any hazardous substance which will be renewed from time to time⁸¹. The Collector of the District has been empowered to invite applications for relief to be awarded under the Act in case an accident occurs. Any aggrieved person, legal representative or duly authorised agent can apply/ claim for relief if he has suffered any loss/ damage from the occurrence of the accident involving hazardous substances [Ss. 5 and 6]. A claim for relief shall be disposed of expeditiously, say within three months of the receipt of the application for relief.

Section 14 provides the penalty for contravention of the provisions of this Act. Further, when an offence is committed by a company, the person in charge of and responsible to the company for the conduct of its business and the company shall be deemed to be guilty of the offence [S. 16]. Thus it enunciates the principle of "vicarious liability". It also provides that director, manager, secretary or other officer shall be deemed guilty if it is proved that the act was committed with his consent, connivance or is attributable to him. Head of Government Department shall also be held liable accordingly.

⁸⁰ *M.P. SEB v. Collector*, AIR 2003 MP 156.

⁸¹ Public Liability Insurance Act, 1991, S. 4

Provision for "Environment Relief Fund" has also been provided under the Act. The Act was passed by Parliament having in view the MIC gas leakage from the Union Carbide Corporation at Bhopal and Oleum gas leakage from the Shriram Food and Fertiliser Industry at Delhi. It was observed that it takes a long time to provide relief to the sufferers of accidents involving hazardous substance and, moreover to claim compensation from the erring industry is a tedious, lengthy and cumbersome procedure. Therefore, to provide immediate relief this benevolent Act was passed by Parliament.

3.12. The Environment (Protection) Act, 1986 (EPA)

Introduction

The Environment (Protection) Act was enacted in the year 1986. It was enacted with the main objective to provide the protection and improvement of environment and for matters connected therewith. The Act is one of the most comprehensive legislations with pretext to protection and improvement of environment. The Constitution of India also provides for the protection of the environment. Article 48A of the Constitution specifies that the State shall endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country⁸². Article 51 A further provides that every citizen shall protect the environment⁸³.

Premises of the Act

It is now generally accepted that environment is threatened by a wide variety of human activities ranging from the instinctive drive to reproduce its kind to the restless urge of improving the standards of living, development of technological solutions to this end, the vast amount of waste, both natural and chemical, that these advances produce. Paradoxically, this urge to grow and develop, which was initially uncontrolled is now widely perceived to be threatening as it results in the depletion of both living and non-living natural resources and life support systems.

⁸² The constitution of India, Art.48A.

⁸³ *Id* at Art. 51A.

The air, water, land, living creatures as well as the environment in general is becoming polluted at an alarming rate that needs to be controlled and curbed as soon as possible.

The 1986 Act was enacted in this spirit. From time to time various legislations have been enacted in India for this purpose. However, all legislations prior to the 1986 Act have been specific relating to precise aspects of environmental pollution. However, the 1986 Act was a general legislation enacted under Article 253 (Legislation for giving effect to international agreements. Notwithstanding anything in the foregoing provisions of this Chapter, Parliament has power to make any law for the whole or any part of the territory of India for implementing any treaty, agreement or convention with any other country or countries or any decision made at any international conference, association or other body)⁸⁴ of the Constitution, pursuant to the international obligations of India. India was a signatory to the Stockholm Conference of 1972 where the world community had resolved to protect and enhance the environment.

The United Nations conference on human environment, held in Stockholm in June 1972, proclaimed that *“Man is both creator and molder of his environment, which gives him physical sustenance and affords him the opportunity for intellectual, moral, social and spiritual growth. In the long and tortuous evolution of the human race on this planet a stage has reached when through the rapid acceleration of science and technology man has acquired the power to transform his environment in countless ways and on unprecedented scale. Both aspects of man’s environment, the natural and man made are essential to his well being and to the enjoyment of basic human rights even the right to life itself”*⁸⁵.

While several legislations such as The Water (Prevention and Control of Pollution) Act, 1974 and The Air (Prevention and Control of Pollution) Act,

⁸⁴ *Id* at Art. 253

⁸⁵ The Stockholm Declaration - World Government of World Citizens available at: www.worldservice.org/stockholm.htm (accessed on 12.12.2017)

1981 were enacted after the Conference, the need for a general legislation had become increasingly evident. The EPA was enacted so as to overcome this deficiency.

Scope and Applicability

The Environment (Protection) Act is applicable to whole of India including Jammu & Kashmir. It came into force on November 19, 1986.

Objectives

As mentioned earlier, the main objective of the Act was to provide the protection and improvement of environment and for matters connected therewith. Other objectives of implementation of the EPA are:

- To implement the decisions made at the UN Conference on Human Environment held at Stockholm in June, 1972.
- To enact a general law on the areas of environmental protection which were left uncovered by existing laws. The existing laws were more specific in nature and concentrated on a more specific type of pollution and specific categories of hazardous substances rather than on general problems that chiefly caused major environmental hazards.
- To co-ordinate activities of the various regulatory agencies under the existing laws
- To provide for the creation of an authority or authorities for environmental protection
- To provide a deterrent punishment to those who endanger human environment, safety and health.

Definitions

Section 2 of the EPA deals with definitions. Some important definitions provided in the Section are:

Section 2 (a) “Environment” includes water, air, and land and the interrelationship that exists among and between water, air and land and human beings, other living creatures, plants, micro-organism and property. This definition is not exhaustive but an inclusive one.

Section 2 (b) “Environmental Pollutant” means any solid, liquid or gaseous substance present in such concentration as may be, or tend to be injurious to environment.

Section 2 (c) “Environmental Pollution” means the presence in the environment of any environmental pollutant. This implies the imbalance in environment. The materials or substances when after mixing in air, water or land alters their properties in such manner, that the very use of all or any of the air water and land by man and any other living organism becomes lethal and dangerous for health.

Section 2 (e) “Hazardous Substance” means any substance or preparation which, by reasons of its chemical or physico-chemical properties or handling, is liable to cause harm to human beings, other living creatures, plants, micro-organism, property or environment.

Powers of Central Government to take measures to Protect and Improve Environment According to the provisions of the Act, the Central Government shall have the power to take all such measures as it deems necessary or expedient for the purpose of protecting and improving the quality of the environment and preventing controlling and abating environmental pollution. Such measures may include measures with respect to all or any of the following matters, namely:

a) co-ordination of actions by the State Governments, officers and other authorities-

(I) under this Act, or the rules made there under, or

(II) under any other law for the time being in force which is relatable to the objects of this Act;

b) planning and execution of a nation-wide programme for the prevention, control and abatement of environmental pollution;

c) laying down standards for the quality of environment in its various aspects;

d) laying down standards for emission or discharge of environmental pollutants from various sources whatsoever: Provided that different standards for

emission or discharge may be laid down under this clause from different sources having regard to the quality or composition of the emission or discharge of environmental pollutants from such sources;

e) restriction of areas in which any industries, operations or processes or class of industries, operations or processes shall not be carried out or shall be carried out subject to certain safeguards;

f) laying down procedures and safeguards for the prevention of accidents which may cause environmental pollution and remedial measures for such accidents;

g) laying down procedures and safeguards for the handling of hazardous substances;

h) examination of such manufacturing processes, materials and substances as are likely to cause environmental pollution;

i) carrying out and sponsoring investigations and research relating to problems of environmental pollution;

j) inspection of any premises, plant, equipment, machinery, manufacturing or other processes, materials or substances and giving, by order, of such directions to such authorities, officers or persons as it may consider necessary to take steps for the prevention, control and abatement of environmental pollution;

k) establishment or recognition of environmental laboratories and institutes to carry out the functions entrusted to such environmental laboratories and institutes under this Act;

l) collection and dissemination of information in respect of matters relating to environmental pollution;

m) preparation of manuals, codes or guides relating to the prevention, control and abatement of environmental pollution;

n) such other matters as the Central Government deems necessary or expedient for the purpose of securing the effective implementation of the provisions of this Act.

The Central Government may, if it considers it necessary or expedient so to do for the purpose of this Act, by order, published in the Official Gazette,

constitute an authority or authorities by such name or names as may be specified in the order for the purpose of exercising and performing such of the powers and functions (including the power to issue directions under section (5) of the Central Government under this Act and for taking measures with respect to such of the matters referred to in sub-section (2) as may be mentioned in the order and subject to the supervision and control of the Central Government and the provisions of such order, such authority or authorities may exercise and powers or perform the functions or take the measures so mentioned in the order as if such authority or authorities had been empowered by this Act to exercise those powers or perform those functions or take such measures. As considerable adverse environment impact has been caused due to degradation of the environment with excessive soil erosion and water and air pollution due to certain development activities therefore it is necessary to protect the environment. This can be achieved only by careful assessment of a project proposed to be located in any area, on the basis of an environment impact assessment and environment management plan for the prevention, elimination or mitigation of the adverse impacts, right from the inception stage of the project.

The Central Government has passed certain notifications laying that the expansion or modernization of any existing industry or new projects listed shall not be undertaken in any part of India, unless it gets environmental clearance by the Central Government, or the State Government.

Prevention, Control and Abatement of Environment Pollution

Chapter III of the EPA deals with prevention, Control and abatement of Environmental Pollution. Some important provisions of this chapter provide that, No person carrying on any industry, operation or process shall discharge or emit or permit to be discharged or emitted any environmental pollutant in excess of such standards as may be prescribed. No person shall handle or cause to be handled any hazardous substance except in accordance with such

procedure and after complying with such safe guards as may be prescribed⁸⁶. Where the discharge of any environmental pollutant in excess of the prescribed standards occurs or is apprehended to occur due to any accident or other unforeseen act or event, the person responsible for such discharge and the person in charge of the place at which the discharge occurs shall be bound to prevent or mitigate the environmental pollution and shall also:

(a) intimate the fact of such occurrence or apprehension of such occurrence; and

(b) be bound, if called upon, to render all assistance. On receipt of such information, the authorities or agencies shall cause such remedial measures to be taken as are necessary to prevent or mitigate the environmental pollution.

The expenses incurred by any authority or agency may be recovered from the person concerned as arrears of land revenue or of public demand.

Penalties

Section 15 provides for Penalties for contravention of the provisions of the Act as well as the Rules, Orders and Directions. Whoever fails to comply with or contravenes any of the provisions, rules, orders or directions of this Act shall be punishable with imprisonment for a term which may extend to five years or with fine which may extend to one lakh rupees, or with both. In case the failure or contravention continues, with additional fine which may extend to five thousand rupees for every day during which such failure or contravention continues.

If the failure or contravention continues beyond a period of one year after the date of conviction, the offender shall be punishable with imprisonment for a term which, may extend to seven years.

Offences by Companies

Offences by Companies are dealt with under Section 16. Where any offence is committed by a company, every person who, at the time the offence was committed, was directly incharge of, and was responsible to, the company

⁸⁶ Environment Protection Act, 1986

for the conduct of the business of the company shall be deemed to be guilty of the offence. If he proves that the offence was committed without his knowledge or that he exercised due diligence to prevent the commission of such offence he shall not be liable to any punishment. Where the offence has been committed with the consent or connivance of or is attributable to any neglect on part of , any director, manager, secretary or other officer of the company, such person shall be deemed to be guilty of the offence.

Cognizance of Offences and Bar of Jurisdiction of Civil Courts

As per the provisions of Section 19 of the EPA⁸⁷, no court shall take cognizance of any offence under this Act except on a complaint made by:

- (a) the central Government or any authority or officer authorized in this behalf by that Government; or
- (b) any person who has given notice of not less than 60 days, of the alleged offence and his intention to make a complaint, to the Central Government or the authority or officer authorized.

Section 22 provides that no civil court shall have jurisdiction to entertain any suit or proceeding in respect of anything done, action taken or order or direction issued by the Central Government or any other authority or officer in pursuance of any power conferred under the Act.

The National Environment Appellate Authority

The National Environment Appellate Authority (NEAA) was set up as an independent body to address cases in which environmental clearances granted by the ministry of environment are challenged by civil society. On January 30, 1997, the President of India, in exercise of the powers conferred under Article 123⁸⁸.

(1) If at any time, except when both Houses of Parliament are in session, the President is satisfied that circumstances exist which render it necessary for him to take immediate action, he may promulgate such Ordinances as the

⁸⁷ Environment Protection Act, 1986, Sec-19.

⁸⁸ The Constitution of India, Art.123 provides Power of President to promulgate Ordinances during recess of Parliament.

circumstances appear to him to require of the Constitution, promulgated an Ordinance to provide for the establishment of the NEAA to hear appeals with respect to restriction of areas in which any industries, operations and processes shall not be carried out or shall be carried out subject to the safeguards as provided under the EPA. The Ordinance was later on repealed with the enactment of the National Environment Appellate Authority Act, 1997. The NEAA Act, which was granted presidential assent on 26th March, 1997⁸⁹. This Act provides for the establishment of a NEAA. The Act was enacted with the following object:

- To hear appeals with respect to restriction of areas in which any industry, operations or processes or class of industries, operations or processes shall not be carried out or shall be carried out subject to certain safeguards under the EPA and for matters connected therewith or incidental thereto.
- This is to bring in transparency in the process, accountability and to ensure smooth and expeditious implementation of developmental schemes and projects. Jurisdiction of the Act.

Any aggrieved person may file an appeal within thirty days of passing of an order granting environmental clearance in the areas in which any industries, operations or processes shall not be carried out or shall be carried out subject to certain safeguards under the EPA. It is further provided that the Authority may entertain an appeal even after the expiry of the said term if a sufficient cause for delay in filing such an appeal exists. The Authority is required to dispose off the appeal within ninety days from the date of filing of the same. However, the Authority may, for reasons that are to be recorded in writing, dispose off the appeal within a further period of thirty days.

(2) An Ordinance promulgated under this article shall have the same force and effect as an Act of Parliament, but every such Ordinance—

⁸⁹ The NEAA has come into force from 9.4.97.

(a) shall be laid before both Houses of Parliament and shall cease to operate at the expiration of six weeks from the reassembly of Parliament, or, if before the expiration of that period resolutions disapproving it are passed by both Houses, upon the passing of the second of those resolutions; and

(b) may be withdrawn at any time by the President. Explanation.—Where the Houses of Parliament are summoned to reassemble on different dates, the period of six weeks shall be reckoned from the later of those dates for the purposes of this clause.

(3) If and so far as an Ordinance under this article makes any provision which Parliament would not under this Constitution be competent to enact, it shall be void.

3.13. National Green Tribunal (NGT), 2010

Way back in the year 1986, when India was reeling under the aftermath of the Oleum gas leak and the Bhopal gas tragedy, the Supreme Court in the landmark case of *M C Mehta v. Union of India*⁹⁰ opined that since environmental cases involve assessment of scientific data it would be desirable to have the setting up of environmental courts on a regional basis with a professional judge and two experts keeping in view the expertise required for such adjudication. Again in *A.P. Pollution Control Board vs. M.V. Nayudu*⁹¹, the Supreme Court, after a detailed analysis of the position in other countries, emphasised the need for establishing environmental courts, which would benefit from the advice of environmental experts as a part of the judicial process. These observations were taken care of by the Law Commission of India in its 186th Report on ‘Proposal to constitute Environment Courts’, wherein the Commission expressly recommended the constitution of environmental courts by the Union Government in each state, which would be “manned only by the persons having judicial or legal experience and assisted by persons having scientific qualification and experience in the field of

⁹⁰ *M C Mehta v. Union of India*, 1987 SCR (1) 819.

⁹¹ *A.P. Pollution Control Board v. M.V. Nayadu*, 1999 (2) SCC 718.

environment.”⁹² These events culminated in the enactment of the National Green Tribunal Act, 2010 (hereinafter “the Act”). The preamble to the Act aptly reflects the object of the Act, which is to “provide for the establishment of a National Green Tribunal for the effective and expeditious disposal of cases relating to environmental protection and conservation of forests and other natural resources including enforcement of any legal right relating to environment and giving relief and compensation for damages to persons and property and for matters connected therewith or incidental thereto.” This is to give effect to the International obligations undertaken by India at International Conferences to which it has been a Party and to implement the Supreme Court’s pronouncement that the right to healthy environment is a part of the right to life as guaranteed under Article 21 of the Indian Constitution.

Salient Feature of the Act

Following the enactment, the principal bench of the National Green Tribunal (NGT) has been established in New Delhi, with regional benches in Pune (Western Zone Bench), Bhopal (Central Zone Bench), Chennai (Southern Bench) and Kolkata (Eastern Bench). Each bench has a specified geographical jurisdiction covering several States in a region.⁹³ Section 4 of the Act provides that the NGT shall consist of a full-time Chairperson who shall be accompanied by not less than ten, but subject to a maximum of twenty, full-time judicial and expert members. Section 5 elaborately lays down the qualifications of such judicial and expert members. As regards their appointment, Section 6 provides that the Chairperson shall be appointed by the Central Government in consultation with the Chief Justice of India, while the other members shall be appointed on the basis of the recommendations of a Selection Committee in such manner as may be prescribed.

⁹² 186th Report on Proposal to Constitute Environment Courts, LAW COMMISSION OF INDIA (Feb. 26, 2015, 05:30 PM).

⁹³ Praveen Bhargav, Everything you need to know about the National Green Tribunal (NGT), CONSERVATION INDIA *available at* <http://www.conservationindia.org/resources/ngt>. (Feb. 26, 2017)

The National Green Tribunal has been vested with wide jurisdiction, and it can hear matters in the form of original, appellate, review and miscellaneous petitions. Section 14 confers on the Tribunal jurisdiction in respect of all civil cases where a substantial question relating to environment is involved and such question arises out of the implementation of the enactments specified in Schedule I to the Act. Civil cases within its ambit include all legal proceedings except criminal cases, which are governed by the provisions of the Criminal Procedure Code, 1973.⁹⁴ The term “substantial” has been explained under Section 2(m) to include an instance where there is a direct violation of a specific environmental obligation by a person whereby the community at large is affected or likely to be affected by environmental consequences, or the gravity of damage to the environment or property is substantial, or the damage to public health is broadly measurable. It is significant to note here that, in spite of such statutory definition, the term remains subjective. As such, no tangible method has been provided under the Act by which to measure the gravity of damage to environment and public health. Furthermore, it is ironical that the Act denies to an individual the right to question an environmental consequence that affects him or her unless it also affects the community at large or public health, when its preamble clearly states that the Act is intended to give meaning to the right to healthy environment, which is an essential ingredient of the right to life of an individual under Article 21.⁹⁵ The Tribunal is vested with appellate jurisdiction under Section 16 against orders or decisions under the enactments specified in Schedule I. Such appeal has to be filed before the Tribunal within 30 days from the date on which the order, decision or determination was communicated to an aggrieved party.

Recognising the degree of complexity involved in environmental matters, the Act provides that the Tribunal shall not be bound to follow the procedure laid down in the Civil Procedure Code, 1908, but shall be guided by

⁹⁴ M.P. Pollution Control Board v. Staller House, judgment dated 8 August 2013.

⁹⁵ Aruna B Venkat, The National Green Tribunal Act, 2010: An Overview, [2011] NALSARLawRw 7, 102.

the principles of natural justice.⁹⁶ The Tribunal is also free to devise its own procedures and is, therefore, not bound to comply with the rules of evidence as contemplated under the Indian Evidence Act, 1872.⁹⁷ The Tribunal, however, has the power of a civil court in respect of summoning, enforcing attendance, receiving evidence on affidavits, examining on oath, and granting ex parte and interim orders and injunctions.⁹⁸

The Act empowers the Tribunal to provide, by way of an order, relief and compensation to the victims of pollution and other environmental damage arising under the enactments specified in the Schedule-I to the Act, including accident occurring while handling any hazardous substance. It may also provide for the restitution of the property damaged and the restitution of the environment for such areas as the Tribunal may think fit.⁹⁹ An application for grant of any compensation, relief or restitution of property or environment has to be made within five years from the date on which the cause for such compensation or appeal first arose. It is argued, however, that such limited time-frame defeats the very purpose for which the Act has been enacted. Any legislation designed for dealing with environmental matters should take note of the fact that the impact of most of the environmental hazards is slow and continuous and, therefore, a time period as short as the one stipulated in the Act is insufficient to ascertain such impact.

If any person is aggrieved by any award, decision or order of the Tribunal, he or she may file an application to the Supreme Court within 90 days from the date of communication of such award, decision or order to him, on any one or more of the grounds specified in Section 100 of the Code of Civil Procedure, 1908.¹⁰⁰

The most salient feature of the Act is that the Green Tribunal is called upon to follow the internationally recognised and nationally applied principles

⁹⁶ Section 19(1), the National Green Tribunal Act, 2010.

⁹⁷ *Id.*, Section 19(3).

⁹⁸ *Id.*, Section 19(4).

⁹⁹ *Id.*, Section 15(1).

¹⁰⁰ *Id.*, Section 22.

of sustainable development, the precautionary principle and the polluter-pays principle when passing any order, decision or award.¹⁰¹ The precautionary principle, as elucidated by the Supreme Court, enjoins upon the State to anticipate, prevent and attack the causes of environmental degradation; lack of scientific certainty should not be used as an excuse for postponing measures to prevent environmental degradation in case of threats of serious and irreversible damage. In all such cases, the onus of proof is upon the polluter to show that his action is environmentally benign.¹⁰² Applying this principle, the Tribunal directed a project proponent to carry out cumulative impact assessment studies with respect to a proposed coal-based power plant, and stayed its environmental clearance when it failed to do so.¹⁰³ On the other hand, the polluter-pays principle requires the polluter to bear the costs of prevention, control and reduction of pollution, and accordingly, the Tribunal held the tannery industries located on the banks of the river Ganga liable to contribute for the establishment of a Common Effluent Treatment Plant (CTEP) and its maintenance.¹⁰⁴

3.14. Environmental Pollution and Disaster Management

The Bhopal gas disaster (leakage of MIC gas), which is supposed to be the worst industrial disaster in the world, raised an awareness that there must be a disaster management policy and law to deal with such manmade disasters¹⁰⁵. Therefore, disaster management has emerged as a high priority for a country. The disaster management plans develop and nurture the culture of safety and integration of disaster prevention, control and mitigation into development process. For this purpose, the Public Liability Insurance Act, 1991 was passed to provide immediate and inexpensive relief to the disaster victims. Later on, the recommendation of the High Power Committee on Disaster Management,

¹⁰¹ *Id.*, Section 20.

¹⁰² *Vellore Citizens' Welfare Forum v. Union of India* AIR 1996 SC 2715.

¹⁰³ *T. Muruganandam v. Ministry of Environment & Forests*, judgment dated 10 November 2014.

¹⁰⁴ *Krishan Kant Singh v. M/s. Hindustan Coca Cola Beverages Pvt. Ltd., Mehdiganj, Rajatalab, Varanasi*, judgment dated 20 January 2015.

¹⁰⁵ The disaster may be man-made or natural disasters. Flood, famine, Tsunami, Katrina, Rita, earthquakes are natural calamities or natural disasters. Bhopal Gas Disaster, Chernobyl Atomic Plant Disaster, fire in oil wells, spill of oil in sea are some of the examples of man-made disasters.

the Disaster Management Act, 2005¹⁰⁶ was passed by the Indian Parliament to meet the challenges in case of any disaster, man-made or natural. The Act has mandated the creation of National Disaster Management Authority, with Prime Minister, as its Chairman. Further, the Central Government has also come out with National Policy on Disasters Management in Nov. 2009. It is very comprehensive documents enumerating every aspect of holistic management of disaster in the country including institutional and legal management, of disaster prevention, mitigation and preparedness, technological regime, reconstruction and recovery, knowledge management and research and development.

The Supreme Court of India has also asserted that disaster management¹⁰⁷ is a part of the right to sustainable development and that this cannot be separated from sustainable development¹⁰⁸. In *M.C. Mehta v. Union of India (Oleum Gas Leakage case)*,¹⁰⁹ the Supreme Court laid down the "principle of absolute liability" of a person/ industry in case one deals in hazardous substance. It also declared that such a person has a "non-delegable duty" for the same. It also laid down duties of the entrepreneur to reduce hazards, prevent disaster, emergency measures to be adopted, on the site and of the site emergency planning and mitigating measures in case of happening of the disaster.

3.15. The Pre-colonial History of Water Law

The pre-colonial history of water law in India (2500 BC until sixteenth to seventeenth century) can be divided into ancient India (2500 BC until about the tenth century), and medieval India with the arrival of the Muslims through the Mughals after the sixteenth century. Water law in ancient India evolved slowly from custom, religion and written codes. This section elaborates briefly on the historical context and then focuses on the evolution of water law.

¹⁰⁶ It was passed on 26 Dec. 2005

¹⁰⁷ *Tehri band virodhi sangharsh samiti v. state of U.P.* 1992 supp (1) SCC 44

¹⁰⁸ *N.D. Jayal v. Union of India*, (2004) 9 SCC 362.

¹⁰⁹ (1987) 1 SCC 395; 1987 SCC (L&S) 37; AIR 1987 SC 1086.

3.15.1. Historical Context

The Indus Valley Civilization flourished around 2500 BC. Water was vital for the civilization and was used primarily for human personal use and irrigation. The most important structure in the city of Mohenjo-Daro was the Great Bath, which had water channels leading to and from it¹¹⁰. Its remains can still be seen today. The Indus Valley civilization gave way to Indo-European invaders who were initially less settled in their lifestyles. In societies of food gatherers, humans protected their environment because that was their resource base. Trees, groves, and water bodies were seen as sacred. As society evolved, specific trees and ponds were seen less as supernatural and the focus shifted to the earth, fire, wind, water, and sky. Varuna was the God of Waters and Indra was the God of thunder and rain. This often accompanied agricultural development that led to deforestation and changes in land use and forests then lost their supernatural powers.

Gadgil and Guha¹¹¹ explain how forests and forest creatures were sacrificed to the sun god in the Mahabharata and see this as a way for the Pandavas to convert forestland into agricultural land. Drinking water was obtained from rivers, springs, and artificial wells¹¹².

Agriculture was the principal source of employment and fields often required irrigation. Navigation was also a significant use of rivers¹¹³.

Between 500 BC and 300 AD, the large food surpluses implied no real shortage of water and supported trade development along water channels. At this time, Jainism and Buddhism were born as counter religious forces to promote conservation of natural resources. Mahavir Jain and Gautama Buddha, who lived in about the sixth Century BC, promoted right conduct and belief, and respect for fellow creatures. With the spread of agricultural settlements along the banks of rivers and on fertile lands, labour was needed to undertake

¹¹⁰R.C. Majumdar, , H.C. Raychaudhuri, &K. Datta, *An Advanced History of India* ,29(Delhi: Macmillan.4th ed. (1978).

¹¹¹ M. Gadgil , & R. Guha, *The use and abuse of nature* (New Delhi: Oxford University Press,1992).

¹¹² *Id* at 30

¹¹³ *Id.*at 34

specific tasks. Food gatherers were incorporated into the settled system of agriculture, through conquest or otherwise, as the lowest castes. Some argue that these lower castes subsequently began to follow Buddhist beliefs with its ideas of non-violence. After the devastating war of Kalinga, the victorious Emperor Ashoka himself embraced Buddhism and preached non-violence and Ahimsa to his people. Ashoka also called on his officers to build reservoirs and plant trees¹¹⁴.

By 400 AD, there was a decline in Buddhism and Jainism and this was accompanied by a decline in agricultural production possibly because of water shortages, decline in soil fertility, and the growth of human population. During the reign of the Gupta's and thereafter until about the 1000 AD, the lack of resources led once more to worshipping individual animals and trees and a focus on conservation. This was a period of low trade and urbanization. From around the ninth century, the development of new tank technologies and improved dams and canals in South India paved the way for the development of large-scale peasant agriculture that displaced pastoralist.¹¹⁵

3.15.2 Water Law in Ancient India

Hinduism is considered a living tradition that expresses universal truth. Each creature is made of parts and is part of the community and the cosmos. Harmony is achieved when human actions or karma match the nature of the human. Human actions are governed by dharma (law and order) that is concretized in the sacred books of the Hindus the Vedas, which include the Shrutis and the Smritis. The Laws of Manu (200–100 BC), within this tradition, provide indications of the water law of the time. Water was considered indivisible. Those who could were obligated to develop water works for the benefit of others¹¹⁶. Kings should protect public waters and collect fees for crossing waters¹¹⁷. Diversion or obstruction of waters was discouraged¹¹⁸ and

¹¹⁴ *Id.* at 100

¹¹⁵ D. Mosse, *The rule of water: Statecraft, ecology and collective action in South India*, 53 (New Delhi: Oxford University Press, 2003).

¹¹⁶ W. Doniger & B. K. Smith (Eds.), *Laws of Manu* (ch. IV, §§226, 229) (Penguin Books New Delhi).

¹¹⁷ *Id.* at (ch. VIII, §§61, 69; ch. IX, §§264–266, 281).

the laws imposed a system of social reprimands and punishments for those who polluted the water or who stole or diverted¹¹⁹. Destruction of embankments was illegal. The law encouraged the use of water bodies as boundaries between villages to ensure that as many villages as possible had access to water¹²⁰. Water bodies of enemies, however, could be destroyed in times of war¹²¹. A water controller was in charge of water administration.

A manuscript Arthashastra ('The Science of Politics') also provides a detailed account of governance in the Kautilian period. It reflects the legal and political system from around 350 BC to about 150 AD. The Arthashastra discusses the use of water for the development of water works, irrigation, and transport, specifying that all water belonged to the king and that users were to pay a water tax to withdraw water from irrigation systems installed by the king (Kautilya 300 BC–300 AD)¹²².

The system of taxes was very elaborate. When new tanks and embankments or renovation works were undertaken or when water works were cleaned and made ready for use, there was a 5, 4, or 3 year exemption from taxes. There were limited provisions for private ownership and these included immovable properties such as reservoirs, embankments and tanks, with the owners having the right to sell or mortgage these. Where such tanks were not in use for a period of 5 years, ownership rights lapsed. All those who leased, hired, or shared such a body had the responsibility to maintain them. Private owners were allowed to give waters to other parties through irrigation works in exchange for produce. The taxes that owed to the King were specified in great detail (Kautilya 300 BC)¹²³ and these were collected by the Chief Superintendent of Crown Lands (Kautilya 300 BC 315BC). The Arthashastra stated that in irrigating one's own field, no harm is to be caused to others. It prohibited the release of water from dams without a legitimate reason, the

¹¹⁸ *Id* at (ch. III, §151)

¹¹⁹ *Id* at (ch. IV, §§46, 48, 56; ch. XI, §174; ch. VIII, §309; ch. IX, §281)

¹²⁰ *Id* at (ch. VII, §§4–7)

¹²¹ *Id* at. (ch. IX, §28)

¹²² L. N. Rangarajan, *The arthashastra(Kautilya)*, 73-74(Penguin Books ,Delhi,1992).

¹²³ *Id.* at 231-232

obstruction of the legitimate use of water by others, the obstruction or diversion of the watercourse, and the building of water works on the land belonging to someone else. Where damage was caused to another party as a result of overflowing waters, compensation was owed to the other party.

The Arthashastra provides a list of damage types and the corresponding compensation or penalty due. These included the death penalty (death by drowning) (Kautilya 300 BC)¹²⁴. Water routes could be used for the purposes of transport and trade (Kautilya 300 BC)¹²⁵ and the principle of good neighbourliness was a civic duty. The Arthashastra explains that there were four sources of law: The Dharma based on truth; evidence provided by witnesses; customs and traditions accepted by the people; and royal edicts adopted by the king.

The Arthashastra submits that where a king rules over a territory, he should ensure dharma, and dharma only exists when there is order. Hence, if customs already exist in specific places, the king should allow the continuance of the custom. Once the king makes a rule, however, he should ensure enforcement.

The Arthashastra elaborates in great detail on foreign policy, but does not say much explicitly about water. It leaves room, however, for treaties to develop joint water works.

The home of Buddhism is India. Buddhism was nurtured by ideas, views, thoughts and morals of Indian Vedic scriptures as it has sprouted up there from. In truth it has coherence with the thoughts and noble ideas that are contained in Vedas, Upanishads etc. The Buddhism sprang from under a tree and, therefore, nature assumes a place of great veneration in the Buddhist ethos. The religious preachings stand for the human beings to live a life of prosperity, full of pleasure, and they must assume the essential duty not to harm nature which is the only source of every gaiety.

¹²⁴ *Id.* at 232-233

¹²⁵ *Id.* at 623

In Buddhism, the rivers, forests, grass, mountains are highly reputed and regarded as bliss bestowers and. Therefore, there is prohibition against behaviours endangering the environment¹²⁶. Water has been considered as the main object of the universe, life givers to all beings. There is a categorical instruction stating “purity must never be profaned by any means, and water must never be misused¹²⁷.” Highlighting the reverence attached to the Ganga one finds a reference as:

O! Bhagirathi Ganga the acceptor of all the rivers I pay my respects and in the absence of Rajaputra seek shelter of yours¹²⁸.

The emphasis has also been drawn over the proper and need based use of water. The intrepid use of water has been discouraged when it says:

O! monkeys the water is to be protected and saved by all means, you while watering the plants you first see their roots and circumferences where it lies and water then according to need. Do not miss use of the water for it may at any moment be difficult for us to get water¹²⁹.

The exemplary characters narrated in Jain mythology and history teach how to lead a life free from all types of pollutions whether internal (biological) or external(ecological). Since the pollution has effected every component of nature, the environment cannot remain imbalanced. The Jain literature therefore, dealing directly and indirectly with Ayurveda has instructions to prevent and cure the pollution. The Jaina idea of environment is engrained in public health and welfare as every living being has to seek its food from environment to appease its hunger, to search the water to quench its thirst. The cause of pollution as per the Jaina principle is rooted in the carelessness¹³⁰. The remedy to such problems has been the preventive measure. The use of

¹²⁶ Theragatha 5:87 as quoted in Ali Mehdi, *Water pollution Laws and their enforcement in India*, 14(R.Cambray and Co.pvt.ltd,2007).

¹²⁷ Jataka 1:271 as quoted in Ali Mehdi, *Water pollution Laws and their enforcement in India*, 14(R.Cambray and Co.pvt.ltd,2007).

¹²⁸ Gatha 318 as quoted in Ali Mehdi, *Water pollution Laws and their enforcement in India*, 14(R.Cambray and Co.pvt.ltd,2007).

¹²⁹ Jataka 1 as quoted in Ali Mehdi, *Water pollution Laws and their enforcement in India*, 15(R.Cambray and Co.pvt.ltd,2007).

¹³⁰ Ali Mehdi, *Water pollution Laws and their enforcement in India*, 15(R.Cambray and Co.pvt.ltd, 2007).

toxic substances in the river has been prohibited. The prohibition extend even to abstain from ritual baths as, “those with right faith are advised not to take baths in river, lakes etc that also being a prudent way to keep them free from pollution¹³¹.” Also the Jainas are advised not to ritually deposit their idols and such other things in river. Taking a holy dip in unclean water of a river is discouraged as it would not cleanse the body for sin.

3.15.3 Water Law in Medieval India

From the 10th century onwards, Islamic rulers governed Northern India. Subsequently, the Mughals came to power in the 16th century and stayed in power until European colonialists took power. This implies that Islamic rules were probably introduced in this period. Islamic law principles¹³² include that water is a gift of God, that no individual or ruler can own water, and that everyone should have access to water.¹³³

These principles include a right of thirst, which gives humans and animals the right to quench their thirst from any available water point.¹³⁴

The influence of Muslim rule in India on water regulation has not been conclusively ascertained¹³⁵. Islamic rulers refrained from significant intervention in existing arrangements, generally applying Islamic law to the Islamic population while allowing non-believers to follow their own systems. Possibly, the relatively high availability of water in India precluded conflicts with Islamic norms.¹³⁶ This may also explain the relative lack of attention towards water regulation during this era.¹³⁷

¹³¹ *Ibid.*

¹³² Naff, T., & Dellapenna, J. W., *Can there be a confluence? A comparative consideration of western and Islamic fresh water law*. Water Policy, 465–489(2002).

¹³³ *Ibid.* at 477

¹³⁴ N. I. Faruqui, *Islam and water management: Overview and principles*. In N. I. Faruqui, A. K. Biswas, & M. J. Bino (Eds.), *Water management in Islam*. (Tokyo: United Nations University Press 2001).

¹³⁵ I. A. Siddiqui, *History of water laws in India*. In C. Singh (Ed.), *Water Law in India*, 289–319 (New Delhi: Indian Law Institute, 1992).

¹³⁶ *Ibid.*

¹³⁷ *Ibid.*

3.15.4 Water Law in Colonial India

The European colonialism began in India in 16th century. It accelerated during the industrial revolution in England. Colonization brought three major influences, a transformation from a resource gathering and food production economy into a commodity-oriented economy; a change in long-standing social relations and customs as local social relations became less important and social cohesion declined; and the development of the market and the importance given to wealth¹³⁸.

Commercial production became more important than subsistence, exploitation more important than conservation, and the individual more important than the community. While colonization in India was less aggressive than in Africa, the British deforested large tracts in order to access coal and timber and to promote agriculture. The state gradually took ownership of forests and community irrigation and usufructuary schemes were dismantled. Water logging and salinity problems increased and small-scale irrigation schemes broke down leading to impoverishment of the small farmers.

The British introduced the concept of government control over surface waters. In the early stages, legal and administrative changes were motivated by the need for colonial expansion and to amass wealth, the East India Company focused on advancing trade and traffic, and law developed through practice and the judicial process¹³⁹.

Until 1857, the British did not interfere with local rules and customs unless it interfered with their policies. The Presidency areas were completely subject to British rule, *mofussil* areas experienced a plural system of law, and further away local systems of law existed. A few laws were enacted such as the Bengal Regulation VI of 1819 to regulate ferries and the Charter Act of 1833 was an initial attempt to codify the laws in India.

¹³⁸ Gadgil, M., & Guha, R., *The use and abuse of nature*, 116 (New Delhi: Oxford University Press, 1992).

¹³⁹ I. A. Siddiqui, *History of water laws in India*. In C. Singh (Ed.), *Water law in India*, 289–319 (New Delhi: Indian Law Institute, 1992).

Following the 1857 revolution, the British began to consolidate power focusing both on famine relief and the need to maintain the resource base of trade¹⁴⁰. The British began to invest in and regulate canals and irrigation facilities. British colonial water law had two main strands. First, control over water and rights to water were regulated through the progressive introduction of common law principles, emphasizing the rights of landowners to access water. For surface waters, riparian rights allow a landowner the right to take a reasonable portion of the flow of a watercourse¹⁴¹. For groundwater, landowners had a virtually unlimited right to access water under their holdings.

Common law principles, enshrined in the Indian Easements Act (1882), evolved over time but have substantially survived until the present day¹⁴².

Second, a series of regulatory statutes were enacted, including laws to protect and maintain embankments, to acquire land for embankments, and to entrust the Controller for implementing such laws (e.g., Embankment Regulation 1829; Bengal Embankment Act 1855)¹⁴³.

Other laws regulated canals for navigation purposes and levying taxes on the users, river conservation, and rules on ferries and fisheries (e.g., Northern India Ferries Act 1878; Indian Fisheries Act 1897). Regulations recognizing local practices and rules in villages were also enacted. One of the most important enactments was the Northern India Canal and Drainage Act (1873), which regulated irrigation, navigation and drainage. While this Act did not directly assert the state's ownership over surface waters, it recognized the right of the Government to 'use and control for public purposes the water of all rivers and streams flowing in natural channels, and of all lakes'¹⁴⁴.

This led to the progressive strengthening of state control over surface water and the concomitant weakening of people's customary rights. This

¹⁴⁰ R. C. Majumdar, H. C. Raychaudhuri, & K. Datta, *An Advanced History of India* (Delhi: Macmillan 4th ed., 1978).

¹⁴¹ J. W. Dellapenna, *The right to consume water under pure riparian rights*. In R. Beck (Ed.), *Waters and water rights* chapter 7. (New York, NJ: Lexis Nexis, 2001).

¹⁴² J. Getzler, *A history of water rights at common law*. (Oxford: Oxford University Press, 2004).

¹⁴³ I. A. Siddiqui, *History of water laws in India*, in C. Singh (Ed.), *Water law in India* 289–319, (New Delhi: Indian Law Institute, 1992).

¹⁴⁴ The Northern India Canal and Drainage Act, 1873; Preamble.

tendency was progressively strengthened. The Madhya Pradesh Irrigation Act 1931¹⁴⁵ provided that's 'All rights in the water of any river, natural stream or natural drainage channel, natural lake or other natural collection of water shall vest in the Government'.

Colonial legislation also introduced the division of responsibilities between the centre and the regions or states with regard to water. The Government of India Act (1935) empowered the provinces to take decisions on water supply, irrigation, canals, drainage and embankments, water storage and hydropower. Conflicts between provinces and/or princely states were subjected to the jurisdiction of the Governor General who could appoint a commission to investigate the sufficiently important conflicts.¹⁴⁶

3.15.5 Water Law and Policies in Independent India

Water law in the post-colonial period is shaped by the legacy of colonial times, constitutional and federal developments, specific rules on surface and groundwater irrigation, human rights, social and environmental issues, issue about dams, and questions of water cooperation with neighbouring countries.

Since independence in 1947, most states have regulated territorial water bodies, embankments, drinking water supply, irrigation, floods, water conservation, water pollution, rehabilitation of the displaced, fisheries, and ferries¹⁴⁷. While significant novel aspects were introduced, the evolution from colonial water law was slow. Many colonial acts have not yet been superseded and the basic structure of common law rights linking water rights and land rights has not yet been comprehensively reworked¹⁴⁸.

Since the early 1970s, signs of more fundamental changes have emerged, possibly attributable to the fast decreasing per capita availability of water, increasing pollution of existing water supplies, the fast increasing use of

¹⁴⁵ The Northern India Canal and Drainage Act, 1873, s.73.

¹⁴⁶ The Northern India Canal and Drainage Act, 1873, s s.130, 134.

¹⁴⁷ I. A .Siddiqui, "History of water laws in India" in C. Singh (Ed.), *Water law in India*, 289–319 ((New Delhi: Indian Law Institute, 1992).

¹⁴⁸ C. Singh, N.M.Tripathi, *Water rights and principles of water resources management* (Bombay,1991)

water for irrigation, and increasing competition among water users for a larger share of finite supplies.

Another colonial trend that has continued is the increasing displacement of customary and local rules and practices by formal state or central laws. While formal law and policymaking does not directly relate to customary practices, new water rules and policies have the direct or indirect effect of displacing or replacing existing local institutional arrangements and rules.

3.16. The Constitution and Union Legislation

The Constitution of India provides for the continuation of all laws in force at the time of the adoption of the Constitution¹⁴⁹. It generally follows the scheme introduced in the Government of India Act (1935), where water is a state subject. States have the exclusive power to regulate water supplies, irrigation and canals, drainage and embankments, water storage, water power and fisheries¹⁵⁰.

There are restrictions regarding the use of interstate rivers¹⁵¹. The Union is entitled to legislate on shipping and navigation on national waterways, on tidal and territorial waters¹⁵²; and on the adjudication of inter-state water disputes¹⁵³. The later was regulated by the Inter-State Water Disputes Act (1956). It provides for the creation of specific tribunals for addressing interstate water disputes.

This Act has been used in landmark disputes concerning the Cauvery, Krishna-Godavari, and Narmada rivers. The Krishna-Godavari began in 1951; a key issue was whether initial agreements about diversions from the river were justified given legal and political changes following independence¹⁵⁴. The Cauvery dispute between Karnataka and Tamil Nadu is more than a century old and relates to water sharing. The Narmada dispute focused on the use of

¹⁴⁹ Constitution of India: Art-372

¹⁵⁰ Constitution of India: Schedule 7, List 2, Entries 17, 21).

¹⁵¹ Constitution of India: Schedule 7, List 1, Entry 56

¹⁵² Constitution of India: Schedule 7, List 1, Entries 24, 25, 57

¹⁵³ Constitution of India: Art. 262

¹⁵⁴ R.D'Souza, *Interstate disputes over Krishna – law, science and imperialism*, 137 (Hyderabad: Orient Longman, 2006).

available water by riparian states and provided the framework for the construction of the Sardar-Sarovar dam, situated in Gujarat, but whose submergence zone is mostly in Madhya Pradesh and Maharashtra¹⁵⁵.

The Parliament also enacted the River Boards Act (1956) to allow the Central Government to establish river boards to advise state governments on the regulation or development of an interstate river or river valley. River boards can advise on conservation, control and optimum utilization of water resources, the promotion and operation of schemes for irrigation, water supply or drainage, or the promotion and operation of schemes for flood control¹⁵⁶. This Act, however, has not been used in practice.

3.17. Provisions under Different Laws Relating To Water Protection

Legal control for water pollution was available in British India also. Juristic archaeologists, willing to dig into legislative debris, will discover that the Britishers wanted Indians to keep away from pollution.

Perhaps, the first Act concerning control of water pollution in India is the Shore Nuisance (Bombay and Kolaba) Act, 1853. This statute was operative in Bombay and Kolaba only. It authorised the Collector of Land Revenue to issue notice to the party concerned requiring it to remove nuisance anywhere below high water mark or get it abated or removed himself. Another statute dealing with water pollution is the Oriental Gas Company Act, 1857; This Act provided punishment for pollution of water caused by the company.

After ten years, in 1867, the Sarais Act imposed a duty on innkeepers to keep water in the Sarai fit for consumption by people and animals using it, to the satisfaction of the District Magistrate. The violation of such duty entailed a liability of Rs. 20.

One of the important enactments was the Northern India Canal and Drainage Act, 1873. Section 70(3) of the Act provided that any interference with or alteration in the flow of water in any river or stream, so as to endanger,

¹⁵⁵ Narmada Water Disputes Tribunal 1979

¹⁵⁶ The River Boards Act (1956), Sec.13.

damage or render less useful any canal or drainage work would be an offence. This entailed the punishment of imprisonment not exceeding one month or a fine not exceeding Rs. 1000 or both.

The Easement Act, 1882 has recognised the doctrine of riparian rights to unpolluted water. Section 7 of the Act in Illustrations (F) and (H) mentions that every owner has a right to get unpolluted water without material alteration in quantity and temperature. It may be noted that prescriptive right as provided under Section 15 does not recognise the right to pollute water as the water (river, well, sea, underground water) belongs to government which has sovereign right to water.

Other legislative measures to control the water pollution were the Obstruction in the Fairways Act, 1881; the Ports Act, 1908; the Inland Steam Vessels Act, 1917; the Forests Act, 1927 and the Merchant Shipping Act, 1958. These enactments though did not deal directly and exclusively with water pollution but had some provisions dealing with it. The first Act directly dealing with water pollution and having specific provisions is the Penal Code, 1860 (IPC). Section 277 of the Code provides:

whoever voluntarily corrupts or fouls the water of any public spring or reservoir, so as to render it less fit for the purpose for which it is ordinarily used, shall be punished with imprisonment of either description for a term which may extend to three months or with fine which may extend to five hundred rupees or with both.

But this provision is narrow in scope as it does not apply to a public river or water flowing in a continuous stream in a river bed and canal and other running water. A general provision, Section 268 of the Code, defines "public nuisance" which can cover other cases of water pollution. This section covers any act or illegal omission which causes any danger, injury or annoyance to the public. Such act or illegal omission is punishable under Section 290 of the Code. Section 269 of the Code provides punishment for a negligent act likely to spread infection or disease dangerous to life and prescribes a punishment of

imprisonment which may extend to six months or with fine or with both. So this section also indirectly covers water pollution. Another relevant provision is Section 426 which punishes "mischief". Section 425 defines mischief. This section provides that :"*Whoever...causes the destruction of any property, or any such change in any property or in the situation thereof as destroys or diminishes its value or utility, or affects it injuriously, commits mischief*".

Thus, to render water unfit for human consumption or to injure the water-life or an act which diminishes its utility amounts to mischief this is punishable under the Code. The Factories Act, 1948 also has provisions regarding the disposal of water and effluents of a factory. Section 12 of the Act provides that effective arrangements shall be made in every factory for the disposal of water and effluents from them. section 92 provides punishment for non-observance or non-compliance with section 92 which is imprisonment for a term which may extend to two years or fine which may extend to Rs. 1,00,000 or both.

Some of the other statutes dealing with water pollution are the Fisheries Act, 1897; the River Boards Act, 1956; the Merchant Shipping Act, 1958 and the Municipal Acts of the states. some states have also passed their own water pollution laws, such as the Orissa River Pollution Prevention Act, 1953; the Maharashtra Prevention of 'Water pollution Act, 1969., The above mentioned sections do not firmly deal with water pollution and are not sufficient enough to deal with such problems. In *Babulal v. Ghanshamdas Birla*¹⁵⁷, the directors and manager of the Gwalior Silk Mill were prosecuted under Sections 268, 269, 277, 228 and 290 IPC. But the Madhya Pradesh High court held that the mill officials could not be prosecuted under the code unless a specific act or omission was attributed to them. It shows infirmities of the IPC provisions.

The Criminal Procedure Code, 1973 (CrPC) also has some general provisions which can cover pollution activities. Sections 133 and 144 CrPC empowers the District or Executive Magistrate to take immediate measures to

¹⁵⁷ Decided on 19-5-1976 (MP).

prevent or abate the noxious activity or public nuisance. The historic illustration of the application of these provisions is *Municipal council, Ratlam v. vardichan*¹⁵⁸. In this case, residents of Ratlam filed a complaint under Section 133 CrPC alleging that the municipality had failed to prevent the discharge from the nearby alcohol plant of malodorous fluids into the public street (nallah) and provide, sanitary facilities on the roads. The Supreme Court directed the municipality to allow the statutory duties and stop the effluents from the alcohol plant from flowing into the nallah or street. Krishna Iyer J while delivering the judgment observed:

The law will relentlessly be enforced and the plea of poor finance will be poor alibi when people in misery cry for justice. The dynamics of the judicial process has a new 'enforcement' dimension not merely through some of the provisions of the Cr.P.C. but also through activated tort consciousness. The officers in charge and even the elected representatives will have to face the penalty of the law if what the Constitution and follow-up legislation direct them to do are defied or denied wrongfully. The wages of violation is punishment, corporate and personal.

In some cases the Supreme Court has taken *sue motto* cognizance of water pollution, particularly river pollution cases.¹⁵⁹

The statute which directly and exclusively deals with water pollution passed by Parliament is the Water (Prevention and Control of Pollution) 'Act, 1974. Though water is a State subject under the constitution, but the Centre was requested by some of the States under Article 252(1) of the Indian Constitution to pass this law. The Act is quite comprehensive and it covers almost every type of water pollution, viz. rivers, water-courses (whether flowing or for the time being dry), inland water, natural or artificial and subterranean water, sea of tidal waters. This Act consists of 64 sections.

¹⁵⁸ (1980) 4 SCC 162: 1980 SCC (Cri) 933.

¹⁵⁹ News Item Published in Hindustan Times Titled "And Quiet Flows the Mainly Yamuna", re, (2012) 13 SCC 736.

Another significant case on water pollution is *Kerala State Board for Prevention and Control of Water Pollution v. Gwalior Rayon Silk Mfg (wvg) co. Ltd.*¹⁶⁰ in which Sukumaran J emphasising the purity of water observed:

Ninety-five per cent of the nations in the world have watery coasts. 'Water influences the life and health of the people, prominently and pronouncedly. It constitutes an important and integral part of our environment'

Preservation of the purity of water has engaged the attention of administrators all over the world even from the ancient times. H.A. Hawkes states:

*The sanitary laws of Moses are well known and the ancient Persians at least controlled river pollution. They were forbidden by law from discharging organic refuse and other filth into the rivers.*¹⁶¹

The main purpose under the Act is to ensure that trade effluents discharged into the river are so regulated as not to cause any health hazard to the public. The rules framed under the Act in minute details aim to achieve this objective. The Water (Prevention and Control of Pollution) cess Act, 1977 is dovetailed into the Pollution control Act, 1974. Therefore, Section 7, Cess Act must be read with the provisions of the Pollution Control Act. This Act enables the industry to earn a rebate if it installs a treatment plant. It subserves the purpose of the Pollution Control Act, namely of controlling the deterioration of the quality of trade effluents. The rebate can be claimed only during the period the treatment plant works to the satisfaction of the authorities.

3.18. Water (Prevention and Control of Pollution) Act, 1974

The main aim and object of the Act of 1974 is "to maintain or restore the wholesomeness of water and to prevent, control and abate water pollution". To achieve these objectives, the Act has provided various chapters which are very comprehensive. In view of section 2(e) read with Sections 17 and 18 of this

¹⁶⁰ AIR 1986 Ker 256.

¹⁶¹ See Gordon T. Goodman, "The ecology of sewage Bacteria Beds" in H.A. Hawkes (Ed'), *Ecology And Industrial Society*, 119.

Act, the fundamental objective of the statute is to provide clean water to citizens.¹⁶²

The Supreme court in *Susetha*¹⁶³ case made it clear that the state is under a constitutional obligation under Article 48 to protect the natural water bodies but not necessarily all the man-made water tanks if they have become useless and are no more in use. It was also declared that Water bodies are required to be retained. Such requirement is envisaged not only in view of the fact that the right to water as also quality of life are envisaged under Article 21 of the constitution of India, but also in view of the fact that the same has been recognised in Article 47 and, 48-A of the constitution of India.

Thus, the state is under an obligation to protect natural lakes, rivers, wetland, marshland, but the same principle is not applicable in relation to artificial tanks which were in a dilapidated conditions. In some of the cases, it has been made clear that to supply potable drinking water in sufficient quantity through an efficient water supply system must be given precedence over other developmental projects of the area. Such water project must be completed at the earliest even at the cost of other projects.¹⁶⁴

Section 2 of the Act has defined certain basic terms used in the Act. While defining water pollution, it provides:

"pollution" means such contamination of water or such alteration of physical, chemical or biological properties of water or such discharge of any sewage or trade effluent or of any other liquid, gaseous or solid substance into water (whether directly or indirectly) as may, or is likely to, create a nuisance or render such water harmful or injurious to public health or safety, or to domestic, commercial, industrial, agricultural or other legitimate uses, or to the life and health of animals or plants or of aquatic organism.[s. 2(e)]

The pollution means

¹⁶² *A.P. Pollution Control Board II v. Prof. M.V. Nayudu* (2001) 2 SCC 62.

¹⁶³ *Susetha v. State of T.N.*, (2006) 6 SCC 543; AIR 2006 SC 2893. See, for the protection of wetland, *People united for Better Living in Calcutta v. State of W.B.*, AIR 1993 Cal 2015; and for natural lakes, *T.N. Godavarman Thirumulpad v. Union of India*, (2006) 5 SCC 47

¹⁶⁴ *Vishala Kochikudivella Samarakshana samithi v. state of Kerala*, AIR 2006 NOC744(ker).

1. Contamination of water; or
2. Alteration of physical, chemical or biological properties of water; or
3. Discharge of sewage or trade effluent; or
4. Any other solid, liquid or gaseous substance which may or is likely to create
 - (a) Nuisance, or
 - (b) Render such water harmful or injurious to
 - (i) Public health or safety; or
 - (ii) Domestic, commercial, industrial, agricultural or other legitimate uses, or to the life and health of animals or plants or of aquatic organisms.

Thus, it is a very comprehensive definition and covers all changes in physical, chemical or biological properties of water. The definition also covers the rise in the temperature of water and discharge of radioactive substances in the water.¹⁶⁵

Further, the Act has used two terms in relation to water pollution stream and well. The "stream" here includes (1) river (2) water courses (whether flowing or for the time being dry) (3) inland water (whether natural or artificial); (4) subterranean water (underground water); and (5) sea or tidal water.

3.18.1. Summary of Water Prevention and Control of Pollution Act (1974) of India

The government formulated this act in 1974 to prevent the pollution of water by industrial, agricultural and household wastewater that can contaminate our water sources. Wastewaters with high levels of pollutants that enter wetlands, rivers, lakes, wells as well as the sea are serious health hazards.

Controlling the point sources by monitoring the levels of different pollutants is one way to prevent pollution, by punishing the polluter. Individuals can also do several things to reduce water pollution such as using biodegradable chemicals for household use, reducing the use of pesticides in

¹⁶⁵ *Bombay environmental action group v. State of Maharashtra* AIR 1991 Bom 301

gardens, and identifying polluting sources at work places and in industrial units where oil or other petroleum products and heavy metals are used.

Excessive organic matter, sediments and infecting organisms from hospital wastes can also pollute our water. Citizens need to develop a watchdog force to inform authorities to appropriate actions against different types of water pollution. However, preventing pollution is better than trying to cure the problems it has created, or punishing offenders.

The main objectives of the Water Act are to provide for prevention, control and abatement of water pollution and the maintenance or restoration of the wholesomeness of water. It is designed to assess pollution levels and punish polluters.

The Central Government and State Government have set up PCBs to monitor water pollution. The Water Act, 1974 with certain amendments in 1978 is an extensive legislation with more than sixty sections for the prevention and control of water pollution. Among other things, the Act provides for constitution of central and State Boards for preventing water pollution, power to take water samples and their analysis, discharge of sewage or trade effluents, appeals, revision, minimum and maximum penalties, publication of names of offenders, offences by companies and Government departments, cognizance of offences, water laboratories, analysis etc.

Prevention and control of water pollution is achieved through a permit or 'consent administration' procedure. Discharge of effluents is permitted by obtaining the consent of the State Water Board, subject to any conditions they specify. Any person who fails to comply with a directive of the State cannot, however, entertain a suit under this Act unless the suit is brought by, or with the sanction of the State Board.

Water Pollution Cess Act, 1977 According to this Act, anyone consuming water has to pay a certain amount of cess depending on:

1. Whether the industry is using water for industrial cooling, spraying in mine pits or boilers feed,

2. For domestic purposes.
3. In processing, whereby water gets polluted and pollutants are easily biodegradable.
4. In processing whereby water gets polluted and the pollutants are not easily biodegradable and are toxic.

Those industries that had installed a suitable treatment plant for the treatment of industrial effluents can get a rebate of 70 per cent on the cess payable.

3.19. Conclusion

The above historical overview of the evolution of Indian water law reveals how intricately water law is linked not only with the social, religious, and economic developments, but also with the rise and fall of rulers. Yet there are certain common elements. The common elements of water law, property law, the right to water, restrictions on nuisance, penalties, and monitoring systems can be found in ancient water law and all subsequent bodies of law. Within these key concepts there may be differences regarding who has ownership, and how rights are acquired, but the basic subject matter of water law has remained relatively constant. With conquest, the aim of the rulers was to consolidate then control, but not necessarily intervene in the lives in the villages and small cities. Thus, the closer one was to the capital, the more it was likely that rights to water and water ownership rules changed to suit the rulers, but there was a coexistence of systems of water rules from the early Hindu times until 1857. It is only as water became vital to trade, transport, agriculture, and industry, that a comprehensive system to control water works was established. And yet, given the vastness of India, the British may have changed the laws on the books but were not able to change rules and practices at local levels. Thus pluralistic systems of water laws have existed in India over the last 4,000 years. However, changes over the past 150 years have increasingly affected or displaced local rules and institutional arrangements. A great number still remain in place, but every new piece of legislation imposes new changes at the local level. Since 1857, there has been a steady increase in

government intervention in this area. The division of responsibilities between the states and the union initiated in the colonial era gives states primary control over water. Nevertheless, unifying efforts have taken place within national water and environmental policy.

In the past decades, a new trend promotes the use of government legislation to strengthen control over water use while strengthening the position of private actors. Ongoing water law reforms promise to bring about a completely revamped water law in coming years. These dramatic policy and law reforms together with other initiatives such as the interlinking of rivers seek to provide an answer to the problems identified in the water sector. It is unlikely that either ongoing water law reforms or the interlinking of rivers will provide comprehensive solutions to existing problems. Indeed, water law reforms are largely limited to changes to the management of the water system and fail, for instance, to effectively address social and human rights. Regarding interlinking and the new reservoirs that it seeks to create, the negative consequences of large dams have already been shown over the past decades. Neither reform strategy is likely to provide an effective answer to existing problems. Further law and policy reforms will thus be required in the future.

Chapter-IV

Chapter–4

National Programmes and Policies for Water Protection

4.1.Introduction

In pre-British India, management of water was a local matter and was in the hands of the community. Some rulers started taking interest in water supply projects. Ponds/tanks were made available for cultivation and drinking purposes. So gradually water resource management went from community to state. The control of water management then passed into the hands of engineers and bureaucrats. Traditional methods of water management went out of fashion, and large dams took its place. North India Canal and Drainage Act, 1873 states that the local government is entitled to use and control for public purposes the water of all lakes and other natural collections of still water¹. The riparian (bank of the river) rights also came under the Indian Easements Act, 1882. Various irrigation canal and drainage Acts were passed prior to independence. After independence, multipurpose river projects were taken up all over the country.

The Central Water Commission (CWC) set up in 1945, prior to independence was entitled with the responsibility of coordinating with the state Governments. Awareness programmes for control, conservation and utilization of water resources were the main tasks of CWC². The CWC, the Central Soil and Materials Research Station and eight subordinate offices came under the Ministry of Water Resources (MoWR). The Ministry is responsible to formulate policies, plans and programmes to manage the water resources.

The MoWR has estimated that the demand for water in the top 35 cities is expected to double as the population of these cities would shoot up from 107

¹National Water Policies by Iyer, 1998, Available at https://en.wikipedia.org/wiki/National_Water_Policy (accessed on 12/02/2017).

²Available at www.wrmin.nic.in/forms/list.aspx?lid=1190 (accessed on 12/02/2017).

million in 2001 to 202 million in 2021. A March – 2010, report by World Bank's Independent Evaluation Group found that the effects of water shortages are felt strongly by 700 million people in 43 countries. An annual water supply below 1700 m³ per person is defined as water stress³. Widespread water shortage problems have resulted in lesser availability of water to large number of masses in urban areas. The crisis is faced in both rural and urban areas due to improper management of water resources⁴. There has been lack of awareness about depleting water tables, lack of attention towards water use, water re-use, and ground water recharge and eco system sustainability. Intense competition among users viz. agriculture, industry, etc., is there resulting in supply shortages in many areas. This situation is aggravated by the contamination of water and further health problems accrue. Nearly 45 million people around the world are affected by water pollution due to excess fluoride, arsenic, iron or the ingress of salt water⁵.

India is to play a pivotal role in the community of nations in the twenty-first century. In order to realize this objective, it has to provide better water services, optimum utilization of land and natural resources, eliminate poverty and to provide full employment to the masses at large. Water is the very basis of human life. Sustainable and equitable use of water over millennia has to be ensured through water conservation methods, agricultural systems and conservation based life systems⁶. But in the last few decades, population growth, urbanization, industrialization, etc. have made the acute pressure on water supply. Overuse and pollution of vital water resources has deteriorated the quality of water.

In water short countries like India, national governments need to give water resource management their highest and first most priority so as to provide adequate drinking water to all. Crafting and implementing a national water

³Available at www.raeng.org.uk/gws (accessed on 12/02/2017)

⁴Available at www.rainwaterharvesting.org/Downloads/nwp1987.pdf (accessed on 12/02/2017)

⁵*Ibid.*

⁶Available at www.publications.iwmi.org/pdf/H042921.pdf (accessed on 15/02/2017)

strategy is essential for sustainable development, efficient allocation and usage of water for various uses including the highest important area of supplying the drinking water to all. Such policy or strategy should include⁷:

- Giving special emphasis on drinking water component.
- Instituting a workable water system/infrastructure so that national, regional and local water requirements can be met.
- Enforcing water regulations that help in conservation of water.
- Connecting water management to the needs of municipalities, agriculture and industry in an equitable fashion.

In India, first National Water Policy (NWP) was adopted in September 1987, since then a number of challenges and issues have come up in the development and management of the water resources. The NWP – 1987 was reviewed and updated in 2002 by MoWR, Government of India. The 2002 policy had a number of positive as well as contentious elements that did not exist in earlier policy. But, this policy too, did not go far enough in preparing the nation for the optimum management of water resources in 21st century. Last drafted National Water Policy-2012 has been prepared by Ministry of Agriculture, Government of India in consultation with National Water Board (NWB) and National Water Resource Council (NWRC)⁸. Noticeable changes were claimed under this policy, as previous water policies of 1987 and 2002 were designed by the government in consultation with few experts, but this policy was put in the public domain to enlist the suggestions from a wide spectrum.

⁷Available at www.wrmin.nic.in/writereaddata/NationalWaterPolicy/NWP2012Eng6495132651.pdf (accessed on 15/02/2017)

⁸Available at www.planningcommission.nic.in/reports/genrep/bkpap2020/10_bg2020.pdf (accessed on 17/02/2017)

4.2 NATIONAL WATER POLICY AND PROGRAMMES – AN ANALYTICAL EVALUATION

4.2.1. Need for a National Water Policy

Water is a prime natural resource, a basic human need and a precious national asset. Planning, development and management of water resources need to be governed by national perspectives. As per the latest assessment (1993), out of the total precipitation, including snowfall, of around 4000 billion cubic meter in the country, the availability from surface water and replenish able ground water is put at 1869 billion cubic meter. Because of topographical and other constraints, about 60% of this i.e. 690 billion cubic metre from surface water and 432 billion cubic meter from ground water, can be put to beneficial use. Availability of water is highly uneven in both space and time. Precipitation is confined to only about three or four months in a year and varies from 100 mm in the western parts of Rajasthan to over 10000 mm at Cherrapunji in Meghalaya. Rivers and underground aquifers often cut across state boundaries. Water, as a resource is one and indivisible: rainfall, river waters, surface ponds and lakes and ground water are all part of one system⁹.

Water is part of a larger ecological system. Realizing the importance and scarcity attached to the fresh water, it has to be treated as an essential environment for sustaining all life forms¹⁰. Water is a scarce and precious national resource to be planned, developed, conserved and managed as such, and on an integrated and environmentally sound basis, keeping in view the socio-economic aspects and needs of the States. It is one of the most crucial elements in developmental planning. As the country has entered in 21st century, efforts to develop, conserve, utilise and manage this important resource in a sustainable manner, have to be guided by the national perspective.

⁸ Available at www.wrmin.nic.in/forms/list.aspx?lid=1190 (accessed on 17/02/2017)

¹⁰ Available at www.faolex.fao.org/docs/pdf/bgd146075.pdf (accessed on 17/02/2017)

Floods and droughts affect vast areas of the country, transcending state boundaries. One-sixth area of the country is drought-prone. Out of 40 million hectare of the flood prone area in the country, on an average, floods affect an area of around 7.5 million hectare per year. Approach to management of droughts and floods have to be co-ordinate and guided at the national level.

Planning and implementation of water resources projects involve a number of socio-economic aspects and issues such as environmental sustainability, appropriate resettlement and rehabilitation of project-affected people and livestock, public health concerns of water impoundment, dam safety etc. Common approaches and guidelines are necessary on these matters. Moreover, certain problems and weaknesses have affected a large number of water resources projects all over the country. There have been substantial time and cost overruns on projects. Problems of water logging and soil salinity have emerged in some irrigation commands, leading to the degradation of agricultural land. Complex issues of equity and social justice in regard to water distribution are required to be addressed. The development and overexploitation of groundwater resources in certain parts of the country have raised the concern and need for judicious and scientific resource management and conservation. All these concerns need to be addressed on the basis of common policies and strategies.

Growth process and the expansion of economic activities inevitably lead to increasing demands for water for diverse purposes: domestic, industrial, agricultural, hydro-power, thermal-power, navigation, recreation, etc. So far, the major consumptive use of water has been for irrigation. While the gross irrigation potential is estimated to have increased from 19.5 million hectare at the time of independence to about 95 million hectare by the end of the Year 1999-2000, further development of a substantial order is necessary if the food and fiber needs of our growing population are to be met with. The country's population which is

over 1027 million (2001 AD) at present is expected to reach a level of around 1390 million by 2025 AD.

Production of food grains has increased from around 50 million tonnes in the fifties to about 208 million tonnes in the Year 1999-2000. This will have to be raised to around 350 million tonnes by the year 2025 AD. The drinking water needs of people and livestock have also to be met. Domestic and industrial water needs have largely been concentrated in or near major cities. However, the demand in rural areas is expected to increase sharply as the development programmes improve economic conditions of the rural masses. Demand for water for hydro and thermal power generation and for other industrial uses is also increasing substantially. As a result, water, which is already a scarce resource, will become even scarcer in future. This underscores the need for the utmost efficiency in water utilisation and a public awareness of the importance of its conservation. Another important aspect is water quality. Improvements in existing strategies, innovation of new techniques resting on a strong science and technology base are needed to eliminate the pollution of surface and ground water resources, to improve water quality. Science and technology and training have to play important roles in water resources development and management in general.

National water management policies are extremely important from legal and institutional perspectives as these reflect the direction of the government in context of water resources planning and management. To ensure that these policies are acceptable and beneficial to all, public consultation process plays an important role.

Throughout the five year plans, the Central Government introduced a variety of policies and programmes to address the issue of drinking water in India. The Central Government asked states to identify problem villages and towns and to make special plans for them¹¹.

¹¹Available at : www.prsindia.org/.../1345794528_Draft%20National%20Water%20Policy%202012 (accessed on 19/02/2017)

4.2.2. Historical evolution of the drinking water supply programmes and policies

- **In Year 1949**

The Environment Hygiene Committee in 1949 recommended the provision of safe drinking water supply to cover 90 percent of India's population in coming 40 years.

- **In Year 1950**

The Constitution of India gave ownership of all water resources to the government, specifying it as a state subject, giving citizens the right to drinking water.

- **In Year 1951-56 (1st Plan)**

Water supply and sanitation was added to the national agenda with sanitation first time mentioned under water supply.

1954

First National Water Supply and Sanitation Programme was launched as a part of health plan. Equal funding in the form of matching grants was provided by centre and states for rural piped water supply schemes, wells and bore wells etc.

- **In Year 1956-61 (2nd Plan)**

Water supply sector was not given much priority in this plan, but funding was provided to Public Health Engineering Departments (PHED).

- **In Year 1961-66 (3rd Plan)**

"Problem Villages" were identified as those without drinking water source within distance of 1.6 kilometers (in the plains) or an altitude of 100 meters

(in hill areas), those endemic to water- borne diseases and those where water sources contain excess salinity, iron, fluoride or toxic elements¹².

- **In Year 1968**

States were given financial authority to sanction rural water supply schemes, which were expanded to include population units less than 20,000. Priority was given to villages with acute scarcity of drinking water.

- **In Year 1969**

National Rural Drinking Water Supply Program was launched with technical support from United Nations International Children's Emergency Fund (UNICEF) and ` 254.90 crore was spent during this phase, with 1.2 million bore wells being dug and 17,000 piped water supply schemes being provided.

- **In Year 1972-73**

Accelerated Rural Water Supply Programme (ARWSP) was launched by the Government of India to assist States and UTs to accelerate the coverage of drinking water. The aim of the programme was to provide all rural habitations with population of 100 and above with a supply of safe drinking water through boreholes, hand pumps etc. An adequate supply was defined as 40 lpcd¹³.

- **In year 1975**

ARWSP was replaced by the 20 Point Minimum Needs Programme (MNP) which aimed at full coverage of population with safe drinking water.

- **In Year 1977-78**

ARWSP was reintroduced, but funds were provided by the states through MNP.

¹²Available at : www.inspiyr.com/3-year-plan/ (accessed on 20/02/2017)

¹³Available at : strategicdiscipline.positioningsystems.com/.../Your-3-5-Year-Plan-One-Page-Strategic... (accessed on 20/02/2017)

- **In Year 1980-85 (6th Plan)** Importance was given to the water supply sector in keeping with the UN de Mar del Plata declaration of March 1977 about the International Decade of Drinking Water Supply and Sanitation from 1981-90¹⁴.
- **In Year 1981**

India as a party to the International Drinking Water Supply and Sanitation Decade (1981-1990) declaration had set up a national level apex. A Problem village was defined as one where no source of safe water is available, within a distance of 1.6 km or where is available at a depth more than 15 meters or water source has excess salinity, iron, fluorides and other toxic materials or where water is exposed to the risk of cholera or guinea worm. Committee to define policies to achieve the goal of providing safe drinking water to all villages.
- **In Year 1985**

Rural Water Supply and Sanitation, which was under the Ministry of Urban Affairs and Employment, was handed over to the Department of Rural Development, then under the Ministry of Agriculture.
- **In Year 1986**

Central Rural Sanitation Programme and National Technical Mission were launched in 1986. National Technical Mission was created after a mid-term assessment of the progress made under the ARWSP. In the International Drinking Water Supply and Sanitation Decade it was revealed that the progress was slow. Also National Drinking Water Mission (NDWM) was launched in 1986 with following objectives:

 - a) Providing safe drinking water to all villages;

¹⁴Available at www.planningcommission.nic.in/plans/planrel/fiveyr/6th/welcome.html (accessed on 22/02/2017).

- b) Assisting local communities to maintain sources of safe drinking water in good condition; and
- c) Giving special attention for water supply to scheduled castes and scheduled tribes.

- **In Year 1987**

NWP was drafted for the first time by the MoWR with an emphasis on domestic water supply, protection of groundwater sources and water quality monitoring and mapping. Drinking water was given first priority under this policy.

- **In Year 1991**

National Drinking Water Mission (NDWM) 1986 became Rajiv Gandhi National Drinking Water Mission (RGNDWM)¹⁵.

- **In Year 1992**

74th Constitutional Amendment Act was passed in 1992 to create Urban Local Bodies (ULBs) to be known as Municipal Corporations, Municipal Councils and Nagar Panchayats depending on the population of each notified urban area of the country.

- **In Year 1993**

Accelerated Urban Water Supply Programme (AUWSP) was launched in 1993 to provide safe and adequate water supply facilities to the entire population of the towns having population less than 20000 as per 1991 census. Towns which would benefit from this scheme were selected by respective state governments and funding was provided by 50: 50 ratios by centre and state governments¹⁶.

- **In Year 1994-95**

¹⁵Available at www.phed.bih.nic.in/Docs/NRDWP.pdf (accessed on 22/03/2017)

¹⁶Available at www.ijss.publicationsupport.com/docs/paper/Volume-2/issue_4/IJSS2014-212.pdf (accessed on 25/03/2017)

Mega-city schemes were launched for five metro- cities.

- **In Year 1994** In 1994, Panchayati Raj Institutions (PRIs) were assigned the responsibility of providing drinking water as per the provisions of the 73rd Constitutional Amendment.

- **In Year 1992-97 (8th Plan)**

Problems with the water supply sector were identified and reform agenda was put forward. Emphasis was placed on treating water as a commodity. Privatization of water, responsibilities of local bodies for operation and maintenance and proper linkage between water supply and sanitation were the other important points of this plan¹⁷.

- **In Year 1999**

Sector Reform Pilot Project (SRPP) was launched in 1994 giving a new approach to the water supply, operationalizing the decentralized delivery of water services by focusing primarily on village level water supply management. Sector reform ushered in a paradigm shift from the government oriented supply-driven approach to the People-oriented demand-responsive approach¹⁸. The role of the government was envisaged to change from service provider to facilitator. Sector reform projects were introduced in 67 districts across the country on pilot basis¹⁸.

- **In Year 1997-2002 (9th Plan)**

The objective of ninth plan was to provide 100 per cent water supply coverage in urban and rural areas, 60 per cent sanitation coverage in urban areas and 30 per cent in rural areas. Emphasis was placed on decentralization and privatization, both in rural and urban sectors¹⁹.

¹⁷Available at www.yourarticlelibrary.com/planning/indias-eighth-five-year-plan-1992-97/23419/ (accessed on 25/03/2017)

¹⁸Available at www.gktoday.in/blog/9th-10th-and-11th-five-year-plans/ (accessed on 25/03/2017)

¹⁹Available at www.planningcommission.nic.in/plans/planrel/fiveyr/9th/vol1/v1c1-2.htm (accessed on 27/03/2017)

- **In Year 2002**

RGNDWM programme scaled up the Sector Reform Pilot Project to the whole country in the form of Swajaldhara Programme for National Drinking Water Supply (SPNDWS). The management of water supply and sanitation schemes became the responsibility of PRIs and local government bodies. An important element of this programme ushered to contribute to the cost of providing safe drinking water. NWP was revised to accord priority to villages that did not have adequate sources of safe water and to improve the level of service for villages classified as only partially covered. India committed itself to the Millennium Development Goals (MDGs) under which the proportion of people without sustainable access to safe drinking water and basic sanitation was to be reduced by 50 percent in 2015 from the level of 1990.

- **In Year 2002-07 (10th Plan)**

The objectives of tenth plan were 100 per cent coverage of urban and rural population, water to be managed as a commodity, change in the role of government from direct service provider to facilitator, leading to privatization. Focus was not only on investment requirements but on institutional restructuring, better services, people's participation, and also managerial improvement²⁰.

- **In Year 2004**

All drinking water programmes were brought under the umbrella of the RGNDWM.

- **In Year 2005**

Bharat Nirman Programme (BNP), a five year programme to build rural infrastructure, of which drinking water supply was one of six components.

²⁰Available at www.economywatch.com/five-year-plans/10th.html (accessed on 27/03/2017)

The drinking water supply target was to provide every habitation with a safe source of drinking water. No parameters for safe drinking water were specified but there was a specific mention of the need to address chemical contamination problems (arsenic, fluoride, salinity, iron and nitrate) and those with —multiple quality problems (there was no explicit mention of microbial water quality issues).

- **In Year 2007**

Pattern of funding under the Swajaldhara scheme changes from the previous 90:10 central-community share to 50:50 centre-state shares. Community contribution was optional²¹. The approach paper for the Eleventh Five Year Plan called for a comprehensive approach which encompassed individual health care, public health, sanitation, clean drinking water, access to food and knowledge about hygiene and feeding practice. It also stated the need to upscale more schemes related to community management of water reducing the maintenance burden and responsibility of the state. It was envisaged to provide clean drinking water for all by 2009 and ensure that there were no slip-backs by the end of the Eleventh Plan²².

- **In Year 2007-12 (11th Plan)**

The objective of eleventh plan was to cover 63 cities and 5098 towns to be covered under the JNNURM and UIDSSMT programmes, so as to provide adequate drinking water to the people. The main areas of importance in the plan were to strength ULBs, deregulation and development of lands for better productivity of cities and to create an environment to initiate the private sector investment in the urban infrastructure and also to establish a

²¹Available at <https://www.mainstreamweekly.net> › Archives (2006 on) › 2009 › August 2009(accessed on 27/03/2017)

²²Available at https://en.wikipedia.org/wiki/Five-Year_Plans_of_India(accessed on 27/03/2017)

regulatory framework to oversee the activities of the private as well as public sector²³.

- **In Year 2010**

Department of Drinking Water Supply was renamed as Department of Drinking Water and Sanitation.

- **In Year 2011**

Department of Drinking Water and Sanitation upgraded as separate Ministry of Drinking Water and Sanitation.

- **In Year 2012**

Draft NWP 2012 was prepared and drinking water was given utmost priority.

- **In Year 2012-17 (12th Plan)**

The reform agenda for Twelfth plan has five major thrust areas. It is proposed in the Plan that investments in water supply will focus on demand management, reducing intra-city inequity and on quality of water supplied. The other agenda is to protect the water bodies of each city and to build the infrastructure to enhance the water supply. It is proposed in the plan that no water scheme will be sanctioned without a sewerage component. The other areas of concern were to plan deliberately for recycling and reuse of treated wastewater. A regional planning approach for provision of drinking water supply and wastewater treatment and disposal is also considered as necessary so as to meet needs of both the rural and urban areas²⁴.

4.3 Evolution of National Water Policies

The Government of India drafted national water policies in the years 1987, 2002 and 2012. Each policy was considered as an effort to improve the previous

²³Available at www.planningcommission.gov.in/plans/planrel/fiveyr/11th/11_v2/11th_vol2.pdf(accessed on 28/03/2017)

²⁴Available at: planningcommission.gov.in/aboutus/committee/wrkgrp12/wr/wg_indus_rural.pdf, agritech.tnau.ac.in/pdf/12th_plan_GOI_2012-17/wg_migra.pdfwww.mdws.gov.in/12th-five-year-plan-rural-drinking-water-and-sanitation-2012-2017(accessed on 28/03/2017).

policies to meet the contemporary challenges and to apply the modern technology and management techniques to manage country's water resources. However, there are still many issues on which there is no unanimity among the professionals and few open ended questions still exist. The main elements of each of the national water policies/ drafts, starting from 1987, have been given in table as under²⁵.

²⁵Murty, K S, India's National Water Policy and Water Management, 2003

Elements	1987	2002	2012
1. Information System	A well developed information system with wide network of databases and databank regarding water availability and actual water use; it also includes comprehensive and reasonably reliable projections of future demands for water for alternative purposes. This information system will also help urban domestic water demand projections.	In addition, NWP 2002 includes standards for coding, classification, processing of data and methods of collection of data. Modern information system has to be introduced to promote free exchange of data among states, which will help in interstate transfer of data. Various problems regarding urban domestic water would be analyzed with this.	In addition, all hydrological data, other than those classified as a secret on national security consideration should be in public domain. A national water information centre is to be established to collect hydrologic data regularly from all over the country, conduct the preliminary processing and maintain in open and transparent manner on a Geographic Information System (GIS) platform. Online updating of data will help in solving urban domestic water

			problems and suggestions from water engineers can be easily accessed.
2. Maximizing availability	Water resources available in the country should be brought within the category of utilizable resources to the maximum possible extent. Recycling and re-use of water should be an integral part of water resource development. This will help in increasing water supply so that urban domestic water needs can be	In addition, non-conventional methods such as inter basin transfers, artificial recharge of groundwater and desalination of brackish or sea water, as well as traditional methods like rainwater harvesting should be used. These methods of water resources development will reduce the demand and supply gap of the drinking water in	In addition, water resources availability is to be assessed scientifically and reviewed at periodic intervals, say every 5 years. Direct use of rainwater and avoidance of inadvertent evaporate transpiration are the new additional strategies for augmenting utilizable water resources.

	fulfilled.	urban areas.	These new methods will help in meeting basic human need and achieving equity and social justice.
3.Project planning	Water resources development projects should be planned and developed as multipurpose projects. Provision of drinking water should be a primary consideration. The study of the impact of the project during construction, and later on other human lives, settlements and other aspects should be an essential component of project planning. These projects will	In addition, the drainage system should form an integral part of any project. The involvement and participation of beneficiaries and other stakeholders should be encouraged right from the project planning stage itself. These special efforts by NWP-2002 will help in providing sufficient amount of drinking water to all.	In addition, hydropower projects should be planned along with other water resources projects to the extent feasible as multipurpose projects with provision of storage to derive maximum benefits from available topology and water resources. These projects will make available adequate drinking water in urban areas

	help in providing adequate drinking water to the urban areas in particular and other areas in general.		and thus water conservation measures will also be adopted by all.
4. Maintenance and modernization	Structures and systems created through massive investments should be maintained properly. Regular Monitoring programmes should be undertaken. Modern methods to manage water resource will augment the existing water availability for drinking water in urban areas and rural areas and also for other purposes.	In addition, appropriate annual provisions should be made for massive investments in systems and structures in the budgets. These structures and systems should be monitored on regular basis, so if needed. Modernization programmes should be undertaken. Water users associations should be formed with due authority and	Going far in the maintenance and modernization aspect, NWP-2012 asserts that water resource projects which are multi disciplinary with multiple stakeholders, should be planned and implemented in a fragmented manner with due consideration to optimum utilization of water

		responsibility so as to facilitate the management of scarce resources in better and efficient way. These associations will help in a great way in reducing the gap between water demand and supply to a large extent.	resources keeping in view maximum benefits to the society at large. Water resources infrastructure should be maintained properly by entrusting public agencies to take water related decision on their own without any interruptions from stakeholders. The costs of maintenance should be met from collected water charges. For enhancing revenue water supply bills should include sewerage charges and for it urban water supply and sewage treatment schemes should be integrated and executed simultaneously.
--	--	--	---

5.Groundwater developments	A periodic re-assessment of the groundwater on a scientific basis is stressed, taking into consideration the quality of water available and economic variability. Exploitation should not exceed the recharge possibilities. Integrated and coordinated development of surface water and groundwater should be envisaged. Over-exploitation should be avoided. Further extraction of groundwater leads to contamination and puts stress on water availability.	In addition, the state and central governments should effectively prevent over exploitation of groundwater. Groundwater recharge projects should be developed and implemented for improving the quality and availability of groundwater resources. This was the welcome step by NWP-2002, by including government intervention to regulate extraction, so that urban domestic water needs are efficiently met.	In addition, the declining groundwater levels in over exploited areas need to be arrested by introducing improved technologies of water use, incentivizing efficient water use and encouraging community based management of aquifers. Artificial recharging projects should be undertaken so that extraction is less than the recharge. These projects will help in meeting minimum requirement of water in urban
-----------------------------------	---	---	---

			areas.
6. Water allocation priorities	In the planning and operation of systems, water allocation priorities should be: drinking water, irrigation, and hydropower, and navigation, industrial and other uses, subject to modification according to local needs. Priority being given to drinking water is the best part of the policy.	In addition, ecology, agro-industries and non- agricultural industries, navigation and other uses should receive due priority. Irrigation and multipurpose projects should invariably include a drinking water component, wherever there are no alternative sources of drinking water.	Human beings basic needs and ecology receives priority attention in NWP-2012. It is also mentioned that after meeting the minimum quality of water required for survival of human beings and ecosystem, water must be used as an economic good with high priority towards basic livelihood support to

			the poor and ensuring national food security.
7. Water rates	Water rates should be such as to convey the scarcity value of the resource to the users and to foster the motivation for economy in water use. Water rates for surface and groundwater should be rationalized with due regard to the interest of small and marginal farmers. Justified and adequate water rates will lead to saving of water and equitable access to all.	There is a need to ensure that the water charges for various uses should be fixed in such a way that they cover at least the operation and maintenance (O&M) charges of providing the service initially, and a part of the capital costs subsequently. To create additional water resources for alternative uses of it, water rates are the need of the hour. But subsidy on water rates	In addition, water charges are clarified at a length by stating that there should be a mechanism in every state to establish a water tariff system and fix the criteria for water charges, preferably on volumetric basis, at sub-basin, river basin and state level. Water users associations should be given statutory powers to collect

		to poorer sections should be there so as to make adequate water available to these strata of society.	and retain a portion of water charges, manage the volumetric quantum of water allotted to them and maintain the distribution system in their jurisdiction. Water pricing will lead to less wastage of water.
8. Water quality	Both surface and groundwater should be regularly monitored for quality. A phased programmed should be undertaken for improvement in water quality. Water should be free from contamination. Potable water should be made available by government to all.	In addition, effluents should be treated to acceptable levels and standards before discharging them into rivers. Minimum flow should be ensured in perennial rivers for maintaining ecology and social consideration. Principle of —Polluter Pays should be followed. With these additions, water quality can be	Sources of water and water bodies should not be allowed to get polluted. System of third party periodic inspection should be involved and heavy penalty must be imposed on the basis of —Polluter Pays principle. Quality conservation and improvements are more

		checked from being contaminated, as contaminated water leads to serious health implications.	important as cleaning up of groundwater is a difficult task. Fines in the form of pollution of water will help in increasing the revenue and will further help in strengthening water
9.Conservation of water	Efficiency of utilization in all diverse uses of water should Be improved and awareness of water as a scarce resource should be fostered. Conservation consciousness should be promoted through education, regulation, incentives and disincentives. Conservation of water through various alternatives will make water availability in water short	In addition, resources should be conserved and availability be augmented by maximizing retention, eliminating pollution and minimizing losses. For this, selective linings in the conveyance systems and other measures should be promoted. Awareness programme titled water as a scarce resource will help in conserving water and enhancing the drinking water	In addition, community should be sensitized and encouraged to adapt to utilization of water as per local availability of water. Community based water management should be institutionalized and strengthened. A system to evolve benchmarks for water uses for different purposes i.e. water footprints and

	regions.	availability in urban areas.	water auditing should be developed to promote and incentivize efficient use of water. An institutional arrangement for promotion, regulation and controlling efficient use of water needs to be established for this purpose at the national level.
10. Water zoning	There should be water zoning of the country and the economic activities should be guided and regulated in accordance with such zoning.	No additional features.	No additional features.
11.Participation of Farmers and voluntary	Farmers should be involved farmers and progressively in various aspects of management of	Water resources management for diverse uses should incorporate a participatory approach by	Integrated Water Resources Management (IWRM) taking river basin in a unit should

agencies	irrigation systems, particularly in water distribution and collection of water agencies will help in educating farmers in efficient use of water and its management. This will help in enhancing water availability for domestic use in urban areas.	involving not only governmental agencies but also users and other stakeholders in various aspects of planning, design, development and management of water resources schemes. A role for women should be envisaged and water users association, local bodies and private sector participation should be encouraged. All these measures will help in managing water resources in a better way, thus making water availability feasible for urban users.	be the main principle for planning, development and management of scarce water resources. The organizations and departments at centre and state should be restricted and made multi-disciplinary in nature. States should be encouraged and incentivized so that water resources can be efficiently conserved and maintained. Community participation is also vital for water resource management. So community based water management should be strengthened. A holistic and inter- disciplinary approach for water related problems should be started.
-----------------	--	--	--

Note: The review of National Water Policies of 1987 and 2002 was done by K.S. Murty in 2003 and it was, by and large, reproduced as such while the review of National Water Policy 2012 is done by the researcher to have a comparative view of various policies²⁶.

²⁶ K.S. Murty, India's national water policy and water management, available at: http://hydrologie.org/redbooks/a281/iahs_281_233.pdf (accessed on 25.12.2017)

4.4. National Water Mission

The National Water Mission (NWM) has been envisaged within the NAPCC, with the core objective of “*conservation of water, minimizing wastage and ensuring its more equitable distribution both across and within States through integrated water resources development and management*” (Comprehensive Mission Documents for National Water Mission, 2011²⁷). The specific orientation towards addressing climate concerns in this regard is embedded within its relatively larger agenda, which includes monitoring the key activities of the Ministry of Water Resources (MoWR). The Mission document, formulated by the MoWR, received Cabinet approval in April 2011, and brings within its scope several ongoing water sector schemes and initiatives in a significant attempt at integrated water resource management (surface and ground water resources across irrigation, industrial and domestic use purposes). The cross-cutting and multi-disciplinary nature of ongoing programmes in the water sector along with the relatively significant role of State governments²⁸ in their implementation has been duly acknowledged by the NWM.

The five identified goals of the Mission are:

- (a) comprehensive water data base in public domain and assessment of impact of climate change on water resource;
- (b) promotion of citizen and state action for water conservation, augmentation and preservation;
- (c) focused attention to vulnerable areas including over-exploited areas;
- (d) increasing water use efficiency by 20%, and

²⁷ Comprehensive Mission Documents for the National Water Mission, Available at <http://wrmin.nic.in/forms/list.aspx?lid=267&ld=4> (accessed on 28.12.201)

²⁸ Water is a State subject under List – II of the Seventh Schedule of the Constitution of India, with issues pertaining to inter-State rivers and water dispute settlements coming under the Centre's purview.

(e) promotion of basin level integrated water resources management.

Various strategies for achieving the goals have been identified which lead to integrated planning for sustainable development and efficient management with active participation of the stakeholders after identifying and evaluating the development scenario and management practices towards better acceptability on the basis of assessment of the impacts of climate change on water resources based on reliable data and information²⁹.

Relatively very large temporal and spatial variation in rainfall and consequently in the river flow and ground water aquifers is an important feature of the water resources in India. Although the impact of climate change on water resources has not been accurately quantified, various studies indicate that the likely impact of climate change on water resources could contribute to further intensification of the extreme events. Further, the features of water resources – both the availability and the quality may also be considerably affected by the changes in the land use in the form of urbanization, industrialization and changes in the forest cover. Realizing that the various processes which influence the hydrologic cycle are of dynamic nature, precise quantification of the impact specifically due to climate change may not be a simple task and it would be necessary to make suitable assumption at the initial stages and undertake detailed simulation studies with more and more data as they become available with time. However, the likely impact of climate change on water resources could be in the form of:

1. Decline in the glaciers and the snowfields in the Himalayas;
2. Increased drought like situations due to overall decrease in the number of rainy days in many parts of the country;

²⁹National Water Mission available at: <http://nwm.gov.in/> (accessed on 29.12.2017).

3. Increased flood events due to overall increase in the rainy day intensity;
4. Effect on groundwater quality in alluvial aquifers due to increased flood and drought events;
5. Influence on groundwater recharge due to changes in precipitation and evapotranspiration;
6. Increased saline intrusion of coastal and island aquifers due to rising sea levels³⁰.

From the above, it is apparent that in the context of likely impact of climate change on water resources, the most vulnerable areas in India would include (a) drought prone areas, (b) flood prone areas, (c) the coastal regions, (d) the region with deficient rainfall, (e) areas with over-exploited, critical and semi-critical stage of ground water development, (f) water quality affected areas, and (g) snow-fed river basins. For achieving the objectives of the National Water Mission, long-term sustained efforts both in terms of time bound completion of identified activities and ensuring the implementation of identified policies and enactment of necessary legislation through persuasion at different levels with the State Governments have been envisaged.

4.5. Water Conservation

Water Conservation scheme implemented by National Democratic Alliance(NDA) Government. In a bid to raise awareness about water conservation, the NDA government directed the states of India to ensure that 50% of the work taken up by MNREGA, should be for the improvement of water conservation. This includes construction of check dams and de-silting of water bodies. Narendra

³⁰National Water Mission available at: <http://nwm.gov.in/> (accessed on 29.12.2017).

Modi himself asked farmers across the country to adopt modern ways of conserving water³¹.

4.5.1. Inter Linking of Rivers

4.5.1.1. Achievements of Interlinking of Rivers (ILR) Programme

Interlinking of River (ILR) programme is of national importance and has been taken up on high Priority. Uma Bharti, Hon'ble Minister for Water Resources, RD & GR is monitoring the progress of ILR on weekly basis. The mission of this programme is to ensure greater equity in the distribution of water by enhancing the availability of water in drought prone and rainfed area³².

Under the National Perspective Plan (NPP) prepared by Ministry of Water Resources, NWDA has already identified 14 links under Himalayan Rivers Component and 16 links under Peninsular Rivers Component for inter basin transfer of water based on field surveys and investigation and detailed studies.

Out of these, Feasibility Reports of 14 links under Peninsular Component and 2 links (Indian portion) under Himalayan Component have been prepared³³.

4.5.1.2. Special Committee for ILR

As per the decision of the Hon'ble Supreme Court, a Cabinet Note on ILR was submitted to Union Cabinet on July 16, 2014.

(a) Union Cabinet in its meeting held on July 24, 2014 approved the constitution of the Special Committee on ILR

³¹6 Important Eco-Friendly Steps Taken By Narendra Modi Government, Available at: <https://www.skymetweather.com/content/weather-news-and-analysis/6-important-eco-friendly-steps-taken-by-narendra-modi-government> (accessed on 28/03/2017)

³²INTERLINKING OF RIVERS, Ministry of Water Resource, River Development & Ganga Rejuvenation, Available at: <http://mowr.gov.in/schemes-projects-programmes/schemes/interlinking-rivers>, (accessed on 29/03/2017)

³³Available at: <http://wrmin.nic.in/forms/list.aspx?lid=1279&Id=4> (accessed on 29/03/2017)

(b) Accordingly, Special Committee on ILR as per the directions of the Hon'ble Supreme court was constituted vide order dated September 23, 2014

Eight meetings of the Special Committee for Interlinking of Rivers (ILR) have been held so far on October 17, 2014, January 6, 2015, March 19, 2015, May 14, 2015, July 13, 2015, September 15, 2015, November 18, 2015 and February 08, 2016 at New Delhi. The committee, after considering the views of all the Stakeholders, is proceeding ahead to expedite the objectives of the interlinking of rivers as per terms of reference. Vigorous efforts have been taken up for generating consensus with development of alternative plans and also setting out road maps for implementation of mature projects.

4.5.1.3. Important decisions taken during meetings of Special Committee.

In the first meeting of the Special Committee for Interlinking of Rivers (ILR) it was decided to constitute four specific sub-committees

- i) Sub-committee for comprehensive evaluation of various studies / reports
- ii) Sub-Committee for system studies for identifications of most appropriate alternate plan
- iii) Sub-committee for consensus building through negotiations and arriving at agreement between concerned States and
- iv) Sub-Committee for restructuring of National Water Development Agency.

The sub-committee for Restructuring of NWDA has held various meetings and submitted its report on 21.09.2015.

Meetings of rest these Sub-Committees are being held regularly and their works is in progress.

4.5.1.4. Task Force for ILR

A Task Force for Interlinking of Rivers has been constituted by the Ministry on April 13, 2015 which also meets the requirement of Committee of experts as directed by the Cabinet while approving the constitution of Special Committee. Two meetings of Task Force was held on April 23, 2015 and November 05, 2015.

4.5.1.5. Prime Minister Krishi Sinchayee Yojana

Government of India is committed to accord high priority to water conservation and its management. To this effect the Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) has been formulated with the vision of extending the coverage of irrigation 'Har Khet ko pani' and improving water use efficiency 'More crop per drop' in a focused manner with end to end solution on source creation, distribution, management, field application and extension activities. The Cabinet Committee on Economic Affairs chaired by Hon'ble Prime Minister has accorded approval of Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) in its meeting held on 1st July, 2015³⁴.

PMKSY has been formulated amalgamating ongoing schemes viz. Accelerated Irrigation Benefit Programme (AIBP) of the Ministry of Water Resources, River Development & Ganga Rejuvenation (MoWR,RD&GR), Integrated Watershed Management Programme (IWMP) of Department of Land Resources (DoLR) and the On Farm Water Management (OFWM) of Department of Agriculture and Cooperation (DAC). PMKSY has been approved for implementation across the country with an outlay of Rs. 50,000 crore in five years. For 2015-16, an outlay of Rs.5300 crore has been made which includes Rs. 1800 crore for DAC; Rs. 1500 crore for DoLR; Rs. 2000 crore for MoWR(Rs. 1000 crore for AIBP; Rs. 1000 crores for PMKSY).

³⁴PradhanMantriKrishiSinchayeeYojana, Available at: <http://pmksy.gov.in/#>, (accessed on 16.08.2017)

4.5.1.6. Clean Ganga Mission

Clean Ganga Mission have been initiated by National Democratic Alliance Government, A clean Ganga is deemed as Narendra Modi's pet project. Three days after swearing in as the 15th Prime Minister of India, Modi resigned from Vadodra constituency and decided to represent Varanasi in order to serve 'Ganga Maa'. Prime Minister Modi also placed The Ganga Action Plan under the direct supervision of Water Resources Minister Uma Bharti. Modi's Clean Ganga Plan involves five ministries working in close co-operation to see the dream project through³⁵.

4.5.1.7. Group on Intra-state River Links

A Group on Intra-State River links has been constituted by MoWR, RD & GR on 12.03. 2015.

The Group has reviewed all relevant issues on Intra – State River Links including the definition of such link, consider and suggest about the funding of intra-state river link projects. The Group has held various meetings and submitted its report on 28.05.2015 to the Ministry of Water Resource, RD & GR.

4.5.1.8. Ken – Betwa Link Project**Phase-I**

Ken-Betwa link project has been declared as National Project by the Government of India.

Uma Bharti, Hon'ble Minister for Water Resources, RD & GR has reviewed the functioning of Ministry of Water Resources, RD & GR various

³⁵Available at : <http://www.skymetweather.com/content/weather-news-and-analysis/6-important-eco-friendly-steps-taken-by-narendra-modi-government/#sthash.M9CLQxOQ.dpuf>(accessed on 2/04/2017)

offices in Madhya Pradesh on 1st September, 2014 in which status of Ken – Betwa link was reviewed in presence of Hon'ble Chief Minister, Madhya Pradesh³⁶.

Terms of Reference (TOR) for Environmental Impact Assessment (EIA) study for the environmental clearance of the Project has got approved from Ministry of Environment and Forest and Climate Change on September 15, 2014.

Secretary, WR,RD&GR held a meeting with Principal Secretaries of Madhya Pradesh & Uttar Pradesh and officials of MoEF&CC to discuss the issues of Ken – Betwa link project on 21st August, 2014 at New Delhi in which benefits and submergence and report of National Tiger Conservation Authority of the project envisaged for States of Madhya Pradesh & Uttar Pradesh were discussed. Composition of the Proposed Special Purpose Vehicle for implementation of Ken – Betwa link was also discussed.

The Public hearings for the Ken – Betwa link project were held on 24.12.2014 and 27.12.2014

Detailed proceedings / documents of the public hearing under Phase – I of Ken – Betwa link have been submitted to Ministry of Environment and Forests and Climate Change by Madhya Pradesh Pollution Control Board in April, 2015³⁷.

Revised Environmental Impact Assessment (EIA) Report has been submitted to the Union Minister of Environment & Forest and C.C. in July, 2015.

Ken-Betwa link project phase-I was considered by Expert Appraisal Committee (EAC) of MoEF& CC for environmental clearance is its 86th, 88th & 91st meeting held on 24.08.2015, 26 October, 2015 & 08.02.2016 respectively at New Delhi.

³⁶Available at www.nwda.gov.in/writereaddata/linkimages/0723832353.PDF(accessed on 2/04/2017).

³⁷Times of India available at: <http://timesofindia.indiatimes.com> (accessed on 2/04/2017).

The wildlife clearance of Ken-Betwa Link Project, Phase-I has been cleared and recommended by the State Wildlife Board of Madhya Pradesh in its meeting held on 22nd September, 2015 under the Chairmanship of Hon'ble Chief Minister, Madhya Pradesh. The proposal has been submitted to MoEF&CC by PCCF (wildlife), MP vide letter dated 14.12.2015, for consideration by NBWL. The matter was under discussion in the meeting of NBWL held on 26.02.2016³⁸.

The FRA certificates for diversion of forest land in respect of Chhattarpur and Panna Districts have been received. The technical approval of Catchment Area Treatment (CAT) Plan from Chief Conservator of Forests Chhattarpur, Sagar, Damoh have been received. All required details/documents have been submitted to the Forest Department, MP and uploaded on MOEF & CC web site. The Forest Department, MP is processing the case of forest land diversion clearance.

The various clearances for Ken – Betwa link project are in the advance stages and the Government will start implementing this National Project as model link project of ILR programme after the statutory clearances.

Phase-II

The DPR of the link Project completed and submitted to Government of Madhya Pradesh and Uttar Pradesh on 17.01.2014.

Application of forest clearance of Lower Orr dam under Ken-Betwa Link Project Phase-II has been submitted online to MoEF& CC on 02.10.2014.

Approval of CAT plan from CCF, Shivpuri and Ashok Nagar, MP has been received and uploaded on website of MoEF& CC.

The Environment Impact Assessment (EIA) report of Lower Orr dam under Ken-Betwa Phase-II as per approved ToR of MoEF& CC has been completed. The

³⁸ Available at https://en.wikipedia.org/wiki/Indian_Rivers_Inter-link (accessed on 5/04/2017)

public hearing of Lower Orr dam has been conducted at 3 places. i.e. (i) Village Didauni district Shivpuri on 17.09.2015 (ii) Village Piprod, district Ashok Nagar on 18.09.2015 and (iii) Village Nauner, District Datia on 19.9.2015.

The Forest Department, MP is processing the case of forest land diversion clearance. NWDA is pursuing the matter with the concerned officials in this regard.

The issue of environmental clearances of Lower Orr dam has been considered by EAC in its 91st meeting held on 8.2.2016 wherein it was decided to issue the environmental clearances of the project.

The concerned Collector and District Forest Officer (DFO) of Ashok Nagar and Shivpuri has submitted the Form-I after completing their parts to APCCF (Land Management), Bhopal for further processing the case.

Additional Principal Chief Conservator of Forest (APCCF) will submit the complete proposal soon to Govt. of Madhya Pradesh for necessary approval. The same will be submitted to MoEF&CC with their recommendations for issuing forest clearance.

4.5.1.9. Damanganga – Pinjal Link Project and Par – Tapi – Narmada Link Project

The MOU for preparation of DPRs of Damanganga – Pinjal& Par-Tapi-Narmada links has been signed by the Chief Ministers of Gujarat, Maharashtra and Union Minister (WR) in the presence of Hon'ble Prime Minister on 3.05.2010³⁹.

Damanganga – Pinjal Link Project

The DPR of Damanganga – Pinjal link was completed in March, 2014 and submitted to Governments of Maharashtra and Gujarat. The Municipal

³⁹Available at www.narendramodi.in/mou-singed-between-gujarat-maharashtra-goi-on-par-tapi-nar. (accessed on 8/04/2017)

Corporation of Greater Mumbai (MCGM) which has been made the nodal organization by Govt. of Maharashtra has submitted the Detailed Project Report of Damanganga – Pinjal link project to Central Water Commission during January, 2015 for appraisal⁴⁰.

Hon'ble Minister (WR,RD&GR) held a meeting with the Hon'ble Chief Minister of Maharashtra at Mumbai on 7th January, 2015 to expedite the further course of action on the project.

The issue was discussed in the 8th meeting of Special Committee on ILR held on 08.02.2016 chaired by Hon'ble Minister of Water Resources River Development Ganga Rejuvenating, wherein it was observed the negotiations may be expedited. Further, it was suggested that the discussion may be taken up at the Governmental level.

4.5.1.10. Par – Tapi – Narmada Link Project

The Detailed Project Report (DPR) of Par-Tapi-Narmada Link Project has been completed by NWDA in August, 2015 and submitted to Government of Maharashtra and Government of Gujarat⁴¹.

The matter was discussed during the 8th meeting of the Special Committee on ILR held on 08.02.2016 chaired by Hon'ble Minister of WR RD & GR wherein the members desired that the process of water sharing agreement between the two States may be expedited.

A fresh Memorandum of Understanding (MoU) on water sharing between Gujarat and Maharashtra for Damanganga-Pinjal and Par-Tapi-Narmada link

⁴⁰Available at www.india-wris.nrsc.gov.in/wrpinfo/index.php?title=Damanganga-Pinjal_Link(accessed on 12/04/2017)

⁴¹Available at india-wris.nrsc.gov.in/wrpinfo/index.php?title=Par-Tapi-Narmada_Link(accessed on 12/04/2017)

project is proposed to be signed which would pave the way for implementation of these link projects.

4.5.1.11. Mahanadi – Godavari Link Project

Mahanadi Godavari link is the first and critical link of nine link system of Mahanadi-Godavari-Krishna-Pennar-Cauvery-Vaigai-Gundar under Peninsular Component of NPP⁴².

The Government of Odisha was not agreeable for the Mahanadi (Manibhadra) - Godavari (Dowlaiswaram) link due to large submergence involved in Manibhadra dam proposed under the link project.

As decided during weekly review meetings taken by the Hon'ble Minister for Water Resources, RD & GR on December 3, 2014, NWDA has examined feasibility of Mahanadi – Godavari link to address concerns of Govt. of Odisha due to considerable submergence involved in Manibhadra Dam in Mahanadi – Godavari link⁴³.

Alternate proposals of Manibhadra – Mahanadi with reduced submergence has been prepared and discussed with Principal Secretary, WRD, Odisha on 6.4.2015 by DG, NWDA.

Based on the suggestions of WRD, Govt. of Odisha, NWDA has proposed a revised preliminary proposal of Mahanadi-Godavari link project with reduced submergence. A presentation on the revised proposal of Mahanadi-Godavari link project has been made to the Hon'ble Chief Minister, Govt. of Odisha on 29.05.2015 by the senior officers of MoWR, RD & GR.

⁴²Available at www.india-wris.nrsc.gov.in/wrpinfo/index.php?title=Mahanadi-Godavari_Link(accessed on 22/04/2017)

⁴³Available at www.nwda.gov.in/index4.asp?ssslid=128&subsubsublinkid=40&langid=1(accessed on 22/04/2017)

Due to variation in availability of water/water balance of Mahanadi basin at proposed Manibhadra dam site, it was decided that NIH will carry out system studies of Mahanadi-Godavari link project (Flood moderation study) and NIH has taken up the study.

Hon'ble Minister (WR,RD&GR) held a meeting with the Chief Minister of Odisha on 3.2.2016 at Bhubaneswar regarding Mahanadi- Godavari link project. A positive response is expected from Govt. of Odisha in this regard.

4.5.1.12. Manas-Sankosh-Teesta-Ganga link

MSTG link envisages diversion of 43 BCM of surplus water of Manas, Sankosh and intermediate rivers, for augmenting the flow of Ganga and provide 14 BCM of water in Mahanadi basin for further diversion to South through Peninsular link system⁴⁴.

Pre-feasibility Report of MSTG link was completed in 1996 and the Feasibility Report (FR) as per the original alignment could not be completed as Manas-Sankosh-Teesta link is passing through Manas Tiger Reserve, Buxa Tiger Reserve and other forests.

Considering practical difficulties for surveys and investigation in the area, now NWDA has carried out alternate alignment studies avoiding various reserved forests with about 80 m lift.

The Hon'ble Union Minister (WR, RD & GR) has sent a D.O. letter to Hon'ble Chief Minister, West Bengal on 31.12.2015 soliciting her support to the link project, which would provide large benefits of irrigation, drinking water & flood control to Assam, West Bengal and Bihar⁴⁵.

⁴⁴Available at www.pib.nic.in/newsite/PrintRelease.aspx?relid=124152(accessed on 25/04/2017)

⁴⁵Available at www.india-wris.nrsc.gov.in/wrpinfo/?title=Manas-Sankosh-Tista-Ganga_Link(accessed on 29/04/2017)

The Feasibility Report of the Manas-Sankosh-Teesta-Ganga link for Alternate alignment is under final stage of preparation.

4.6. India Water Week – 2015

An International Water Conference with the theme “Water Management for Sustainable Development” was successfully organized during 13 – 17 January, 2015⁴⁶.

The conference was inaugurated by Sushri Uma Bharti, Hon’ble Minister of WR, RD & GR, Government of India on 13th January, 2015 at Vigyan Bhawan, New Delhi and was attended by about 1450 national and international delegates, Australia was the partner country. Concurrently running exhibition enriching the theme and showcasing the technologies and solutions available for the areas under deliberation of the meet was also organized at Pragati Maidan during 14 – 17 January, 2015.

4.7. India Water Week – 2016

India Water Week (IWW) 2016 was held from April 4-8, 2016 at Vigyan Bhawan, New Delhi and Pragati Maidan, New Delhi.

The theme of India Water Week 2016 was “Water for all: Striving Together”.

Ministry of Water Resources, River Development and Ganga Rejuvenation, Government of India has been organising India Water Week since 2012 as an annual international event. The fourth edition of India Water Week is proposed to be organised during 4th to 8th April, 2016⁴⁷.

Theme for the 4th India Water Week was “Water for all: Striving together”. The event became a multi-disciplinary conference enriching the theme with dialogue by National and International community and exhibition ‘Water

⁴⁶Available at www.indiawaterweek.in/ (accessed on 29/04/2017)

⁴⁷Available at: www.indiawaterweek.in/programme.aspx (accessed on 2/05/2017)

Expo-2016’ showcasing the technologies and solutions in water resources sector. Israel is the partner country. Many reputed national and international organizations, research institutes and NGOs from water resources sector, agriculture, power etc. are expected to participate in the event to share their knowledge and experience in the water management and water governance sector.

The inaugural function was held on 4th April, 2016 which was inaugurated by Hon’ble Minister (WR,RD&GR) Sushri Uma Bharati. The Hon’ble Minister of Finance has kindly consented to be the Chief Guest in the Inaugural Function. The Israel Minister for agriculture was a Guest of Honour in Inaugural Function. Irrigation / Water Resources Ministers of various States have also been invited to attend the Inaugural Function followed by a Plenary Session in VigyanBhawan. A Water Resources Minister’s conclave was also planned on the Inaugural day in the afternoon. Hon’ble President of India has kindly consented to be the Chief Guest on the Valedictory Function on 8th April, 2016⁴⁸.

It was proposed to have an exhibition from 5th – 8th April, 2016 at Pragati Maidan where leading businessmen function of water industry were likely to participate. This was being supported by FICCI.4th India Water Week Ministry of Water Resources, River Development and Ganga Rejuvenation, Government of India had been organising India Water Week since 2012 as an annual international event. The fourth edition of India Water Week was organised during 4th to 8th April, 2016.

Theme for the 4th India Water Week is “Water for all: Striving together”. The event will be a multi-disciplinary conference enriching the theme with dialogue by National and International community and exhibition ‘Water Expo-2016’ showcasing the technologies and solutions in water resources sector. Israel is the partner country. Many reputed national and international organizations,

⁴⁸Available at: www.indiawaterweek.in/images/uma.pdf(accessed on 2/05/2017)

research institutes and NGOs from water resources sector, agriculture, power etc. were expected to participate in the event to share their knowledge and experience in the water management and water governance sector.

The inaugural function was held on 4th April, 2016 which was being inaugurated by Hon'ble Minister (WR,RD&GR) Sushri Uma Bharati. The Hon'ble Minister of Finance has kindly consented to be the Chief Guest in the Inaugural Function. The Israel Minister for agriculture was a Guest of Honour in Inaugural Function. Irrigation / Water Resources Ministers of various States had also been invited to attend the Inaugural Function followed by a Plenary Session in Vigyan Bhawan. A Water Resources Minister's conclave was also planned on the Inaugural day in the afternoon. Hon'ble President of India has kindly consented to be the Chief Guest on the Valedictory Function on 8th April, 2016.

There was an exhibition from 5th – 8th April, 2016 at Pragati Maidan where leading businessmen function of water industry were likely to participate. This was supported by FICCI⁴⁹.

4.8. Jal Manthan-1

A three days conference 'JalManthan' was organized at Vigyan Bhawan, New Delhi from 20 – 22 November, 2014 to evolve strategies for better water resources development and management through wider consultations amongst various stakeholders⁵⁰. On the second day of the conference i.e. 21st November, 2014 issues related to 'Interlinking of Rivers programme' were discussed exclusively⁵¹.

⁴⁹Available at: wrmin.nic.in/forms/list.aspx?lid=642(accessed on 7/05/2017)

⁵⁰Available at:https://en.wikipedia.org/wiki/Jal_Manthan(accessed on 12/05/2017)

⁵¹Available at:<http://wrmin.nic.in/forms/list.aspx?lid=505&Id=4>(accessed on 12/05/2017)

4.8.1. Jal Manthan-2

A two days conference ‘Jal Manthan-2’ was organized at VigyanBhawan, New Delhi from 22 – 23 February, 2016. The consultation and discussion was held on first day on River Basin Approach for Sustainable Development, Ground Water Management, Water Security etc. whereas, discussions on the second day was focused on Water Management, Coordination between Centre and States, Water Conservation, Innovations in Water Governance and Interlinking of Rivers etc⁵².

4.9. Intra-State Links

NWDA has received 46 proposals of intra-state links from 9 States viz. Maharashtra, Gujarat, Jharkhand, Orissa, Bihar, Rajasthan, Tamil Nadu, Karnataka and Chhattisgarh⁵³.

Out of these 46 proposals, Pre-Feasibility Reports (PFRs) of 35 intra-state links have been completed by NWDA up to March, 2015.

In addition to National Perspective Plan link, the Detailed Project Report (DPR) of two Intra-State links of Bihar State viz BurhiGandak-Noon-Baya-Ganga and Kosi-Mechi link have been completed in December 2013 and March 2014 respectively. Detailed Project Report of Kosi-Mechi link in under technical appraisal in CWC⁵⁴.

DPRs of Ponnaiyar –Palar link (Tamil Nadu), Wainganga (Gosikhurd)-Nalganga (PurnaTapi) link (Maharashtra), Barakar-Damodar-Subarnarekha and Vamsadhara-Rushikulya (Nandaninalla) are under progress. Out of these, DPR ofPonnaiyar-Palar link is various stages of completion.

⁵²Available at:<http://wrmin.nic.in/forms/list.aspx?lid=505&Id=4>(accessed on 12/05/2017)

⁵³Available at: www.india-wris.nrsc.gov.in/wrpinfo/index.php?title=Intra_State_Links(accessed on 12/05/2017)

⁵⁴Available at: www.india-wris.nrsc.gov.in/wrpinfo/index.php?title=Intra-State_Links(accessed on 22/05/2017)

4.9.1. Benefit from Interlinking of Rivers (Inter basin water transfer)

The overall implementation of Interlinking of Rivers programme under National Perspective Plan would give benefits of 35 million hectares of irrigation, raising the ultimate irrigation potential from 140 million hectare to 175 million hectare and generation of 34000 megawatt of power, apart from the incidental benefits of flood control, navigation, water supply, fisheries, salinity and pollution control etc.

4.10. JalKrantiAbhiyan

Jal Kranti Abhiyan is being celebrated during the year 2015-16 to consolidate water conservation and management in the country through a holistic and integrated approach involving all stakeholders, making it a mass movement. JalKrantiAbhiyan was launched on 5th June, 2015 across the country⁵⁵.

4.10.1. The objectives of Jal Kranti Abhiyan

Strengthening grass root involvement of all stakeholders including Panchayati Raj Institutions and local bodies in the water security and development schemes (e.g. Participatory Irrigation Management (PIM))⁵⁶;

- Encouraging the adoption/utilization of traditional knowledge in water resources conservation and its management;
- To utilize sector level expertise from different levels in government, NGO's, citizens etc; and
- Enhancing livelihood security through water security in rural areas.

The activities/components being undertaken the Abhiyanare :-

1. Jal Gram Yojana

⁵⁵Available at: wrmin.nic.in/forms/list.aspx?lid=1268(accessed on 22/05/2017)

⁵⁶Available at: [wrmin.nic.in/writereaddata/JKA_FAQ\(1\).pdf](http://wrmin.nic.in/writereaddata/JKA_FAQ(1).pdf)(accessed on 27/05/2017)

2. Development of Model Command Area

3. Pollution abatement

4. Mass Awareness Programme

5. Other Activities

This Ministry has issued two guidelines; one was general guidelines and second is step-by-step implementation guidelines where the implementation of programme detail have been enshrined. As per the guidelines, four tier of implementation committees from national level upto village level have been constituted. In addition, the Nodal Officers of CWC/ CGWB in all the States/UTs have been appointed who are responsible for implementation of the programme in their allocated States/UTs. Simultaneously, a group of ten Joint Secretary level officers have been nominated to personally monitor their areas of States given to them for successful implementation of the programme⁵⁷. The Ministry of Water Resources, River Development & Ganga Rejuvenation is also conducting video conferencing from time to time with the State Govt. officials and the Nodal Officers therein and keeping the watch regularly for implementation of the programme.

At the National level, there is a national level committee under the chairmanship of Special Secretary (WR, RD & GR) who is looking after the overall implementation of JalKrantiAbhiyan at the national level. Similarly, at the State level, there is a State Level Monitoring Committees under the chairmanship of Principal Committee of the respective States who are responsible for the implementation of the Abhiyan at the State level⁵⁸.

⁵⁷Available at: [www. wrmin.nic.in/writereaddata/JalKrantiAbhiyan_StepByStepGuide.pdf](http://www.wrmin.nic.in/writereaddata/JalKrantiAbhiyan_StepByStepGuide.pdf)(accessed on 28/05/2017)

⁵⁸Available at: [www. pib.nic.in/newsite/PrintRelease.aspx?relid=136060](http://www.pib.nic.in/newsite/PrintRelease.aspx?relid=136060)(accessed on 28/05/2017)

Jal Gram Yojana is one of the most important activity of the JalKrantiAbhiyan under which two villages in every district (preferably being a part of dark block or facing acute water scarcity) are being selected as Jal Grams. An integrated water security plan for water conservation, water management and allied activities have been prepared to ensure optimum and sustainable utilization of water.

A district level committee for each district has been constituted under the chairmanship of the District Magistrate/District Commissioner who are responsible for identification of two Jal Grams in their respective districts.

A committee at village/block level have formed for implementation and monitoring of works under Jal Gram Yojana for every Jal Gram. The role of the village level committee are :-

- (i) Providing inputs for formulation of water security plan
- (ii) Implementation of works
- (iii) Monitoring of works
- (iv) Advocacy of water conservation in village
- (v) Meeting once in a fortnight.

Under JalKrantiAbhiyan, a model command area of about 1000 hectare in a State has been identified. States adopted for model Command area have represent different parts of the country for example Uttar Pradesh, Haryana (North), Karnataka, Telangana, Tamil Nadu (South), Rajasthan, Gujarat (West), Odisha (East), Meghalaya (North East) etc. Model command area have selected from an existing irrigation project in the state where funds for development are available from various schemes. Selection of Model Command Area shall be done

by Ministry of Water Resources, River Development and Ganga Rejuvenation in consultation with States Governments.

Mass awareness campaigns designed to address problems and suggest solutions to meet the requirements of each segment of the society under the continuing scheme of “Information, Education and Communication”. The focus were on:-

- i. Use of Social Media like Facebook, Twitter, etc. to engage the citizens;
- ii. Awareness programme for the general public on radio and television;
- iii. Use of print media (e.g. booklets, posters and pamphlets) to spread awareness on JalKrantiAbhiyan.
- iv. Awareness programme for children and adult through essay, painting & other competitions;
- v. International Water User Exchange Programme;
- vi. Specific activities targeting the policy planners and opinion makers; and
- vii. Organization of conferences, workshops on important water development and management issues⁵⁹.

Under the mass aware programme, training/workshops across the country were organized to make about the water conservation and water management, apart from that essay competition and other national level conferences were also being conducted. Radio jingle programmes were conducted.

Under this component, States are being encouraged to adopt State Water Policy in line with National Water Policy, 2012. They were also encouraged to set

⁵⁹Available at: <https://wle.cgiar.org/thrive/2016/.../jal-kranti-abhiyan-indian-water-movement-initiati...> (accessed on 30/05/2017)

up / strengthen their State Water Resources Council and State Water Regulatory Authority.

This was a convergence programme and no separate fund was allotted for this Abhiyan. Expenditure on various works were taken in each Jal Gram had met from existing schemes of Central/State Governments, such as PMKSY, MGNREGA, RRR of water bodies, AIBP etc⁶⁰.

4.11 THE INDIA WATER WEEK - 2017

Indian President Ram Nath Kovind have inaugurated “the India Water Week – 2017” on 10 October 2017 in New Delhi. The 5-day international event had attended by over 1500 delegates from India and 13 other countries. The main theme of the event was ‘Water and Energy for Inclusive Growth’.

Key Highlights

- This year was India Water Week’s (IWW) fifth edition.
- It was celebrated with a multi disciplinary conference and a concurrently running exhibition.
- The exhibition, while enriching the theme was showcase the technologies and solutions available for the areas under deliberation of the meet.
- Water, Food and Energy Security – Essential requirement for sustainable development.
- Water for inclusive Growth
- Sustainable energy development – Key for all round economic growth.

⁶⁰Available at: www.kgbo-cwc.ap.nic.in/Events/Report_Vaspula%20Village.pdf (accessed on 30/05/2017)

- Water and Society⁶¹

4.12. Concluding Remarks

In nutshell, the water management in India passed through various rulers, bureaucrats and engineers etc. and many drinking water supply plans, policies and programmes were launched so as to manage the scarce natural resource. Time to time Government of India has framed various national water policies. These policies were successful on many fronts and on many areas these were failed. The government has failed to operationalize these policies because of the prevalence of various contentious issues in these policies. The government has also spent a large amount of funds on the drinking water projects, but still a major chunk of population is devoid of safe drinking water. In view of the vital importance of water for human and animal life, for maintaining ecological balance and for economic and developmental activities of all kinds, and considering its increasing scarcity, the planning and management of this resource and its optimal, economical and equitable use has become a matter of the utmost urgency. Concerns of the community needs to be taken into account for water resources development and management. The success of the National Water Policy will depend entirely on evolving and maintaining a national consensus and commitment to its underlying principles and objectives. To achieve the desired objectives, the State Water Policy backed with an operational action plan should be formulated in a time bound manner beside a National Water Policy should be revised periodically as and when the need arises. The effective implementation of these Government policies are required for more success.

⁶¹Available at: <https://www.jagranjosh.com/current-affairs/president-to-inaugurate-india-water-week-2017-1507375711-1> (accessed on 25.12.2017)

Chapter-V

Chapter-5

The Role of Judiciary on Environmental Protection and Water Pollution in India

5.1. Introduction

In developing countries like India, there has been environmental degradation due to over exploitation of resources, depletion of traditional resources, industrialization, urbanization and population explosion. Since, man is the creator and moulder of his environment, his conduct can be regulated through the instrument of law. In fact, India has always been in the fore-front of taking all possible steps for the protection and improvement of the environment and aiming at sustainable development. The changing pace of the environment is so fast that in order to keep the law on the same wave-length either laws have to be amended quite frequently to meet the new challenges or it has to be given new direction by the judicial interpretation.

India has enacted various laws at almost regular intervals to deal with the problems of environmental degradation. Apart from the provisions under the Water Act¹ and the Air Act², there exists a clear constitutional mandate for protection of environment including prevention of air and water pollution. By an activist interpretation of these provisions, the High Courts have substantially enriched environmental jurisprudence in India. Extricating itself from the principles of locus standi³ and using the instrument of public interest litigation to the maximum effect, the apex court has laid down that sustainable development is a legal obligation of every government.

In the first environment case before the Supreme Court itself, it was held that no municipality could put forth lack of money as a ground for not discharging its primary duty of looking after the health and safety of its residents⁴. The High Courts were the first to come up with direct and specific

¹ Water (Prevention and Control of Pollution) Act, 1974.

² Air (Prevention and Control of Pollution) Act, 1981.

³ *Locus Standi means*, 'A place of standing; standing in court. A right of appearance in a court of justice. A right of appearance in a court of justice, or before a legislative body, on a given question', Black's Law Dictionary, 6th Edn, West Publishing Company.

⁴ *Municipal Council Ratlam v. Vardhichand* AIR 1980 SC 1622.

pronouncements on citizens' Fundamental Right to Pollution Free Environment. Thus, the Andhra Pradesh High Court ruled in 1987 that nature's gifts without which the life cannot be enjoyed. The slow poisoning by the polluted atmosphere caused by environmental pollution and spoliation should also be regarded as amounting to violation of Art.21 of the Indian Constitution⁵. On the same lines, the Karnataka High Court pointed out that Entitlement to clear environment is one of the recognized human rights' and further held that Right to life inherent in Art.21 of the Constitution of India does not fall short the requirement of quality of life which is possible only in an environment of quality⁶.

The Kerala High Court reiterated the position by holding that the Right to Sweet Water and the Right to Free Air are attributes of the Right to Life, for, these are the basic elements which sustain life itself. Following these pronouncements, the Supreme Court also recognized and asserted the Fundamental Right to Clean Environment under Art.21 of the Constitution in very categorical terms. At the same time the judiciary in India has played a significant role in interpreting the laws in such a manner which not only helped in protecting environment but also in promoting sustainable development. In fact, the judiciary in India has created a new environmental jurisprudence⁷. The problem of environmental degradation is a social problem⁸. It is now well-settled principle of law that socio-economic conditions of the country cannot be ignored by a court of law because the benefit of the society ought to be the prime consideration of law courts. Thus the courts must take cognizance of the environmental problem⁹.

In pursuance of United Nations Conference on Human Environment convened at Stockholm in 1972, the nations of the world decided to take

⁵ *Damodhar Rao v. SO Municipal Corporation, Hyderabad*, AIR 1987 AP 170.

⁶ *V. Lakshimipathy v. State*, AIR 1992 Kant 57.

⁷ Paramjit S. Jaswal, *Directive Principles Jurisprudence And Socio-Economic Justice in India*, 543(1996). See also, Paramjit S. Jaswal and Nishtha Jaswal, *Human Rights And The Law*, 172-180 (1996).

⁸ *Calcuta Youth Forum v. State of W.B.*, 1986 (2) C.L.J.26.

⁹ *People United for Better Living in Calcutta v. State of W.B.*, AIR 1993 Cal.215 at 228.

appropriate steps to protect and improve human environment. The sequel to this, in India 42nd Amendment to the Indian constitution inserted articles 48-A directing the state to protect and improve the environment and to safeguard the forests and wildlife of the country and Article 51-A (g) mentioning fundamental duties of the citizens to protect and improve the natural environment including forests, lakes, rivers and wildlife and to have compassion for living creatures. The 42nd Amendment to the Indian Constitution also made certain changes in the seventh Schedule to the Constitution. Originally forest was a subject included in list II, entry 19.

Since no uniform policy was being followed by the State in respect of protection of forests, now this subject has been transferred to List III and hence, now the parliament and state Legislature both may pass legislations. Protection of wild animals and birds has also been transferred from List II, Entry 20 to List III, Entry 17-B. 42nd Amendment Act for the first time inserted Entry 20-A in the List III which deals with population control and family planning because enormous increase in population is main cause for environmental problems. Under Article 253 of the Indian Constitution, the parliament is empowered to make any law for implementing any treaty, agreement or convention with any other country or countries or even any decision made at international conference, association or other body, this power is limited to implantation of decision and that too for a limited period.

The broad language of Article 253 suggests that in the wake of Stockholm Conference in 1972, Parliament has the power to legislate on all matters linked to the preservation of natural resources. This 42nd Amendment to Indian Constitution and insertion of Article 48-A and 51-A (g) marked the beginning of Environmental protection in India. Environmental Jurisprudence includes the laws, both statutory and judicial, concerning varied aspects of environmental protection and sustainable development. In India various laws have been enacted for the protection of environment. But the movement to protect environment got momentum with the judicial vigil in 1980s and 90s.

Armed with the power of judicial review and constitutional scheme of independence of judiciary the Indian judiciary has performed a stellar role in protecting the environment and spreading environmental awareness among the Indian people.

India has not only enacted various specific laws to control the environmental pollution but has also incorporated significant provisions for the protection of the environment into its constitution¹⁰. Within the last three decades, the development of environmental jurisprudence in India, following these constitutional law changes, has been remarkable in the sense that it has led to the virtual creation of a fundamental right to a clean environment in Indian law. This forms part of the public law regime established by the constitution and appears to be based not only on modern concepts of fundamental human rights but also on indigenous notions of social justice, constituting a unique human rights approach adopted through affirmative action¹¹.

The main aim to analyze this chapter is to focus the distinct nature of the outstanding contribution of Indian judiciary to prevent and protect water from pollution and the control of pollution within a broader constitutional and jurisprudential framework. In fact, the emerging Indian environmental jurisprudence had relied on three interconnected elements. First, it manifests the new Indian Constitutional law rationale which now clearly accords importance to public concerns rather than to protecting private interests. Secondly, it reflects certain aspects of Indian legal culture through implicit and explicit reliance on autochthonous values based on ancient, pre-colonial indigenous notions and concepts of law. Thirdly, it bears testimony to the uniquely activist role of the higher Indian Judiciary in promoting this new rationale. These three interconnected elements characterizes role of higher judiciary in the recent development of Indian environmental jurisprudence¹².

¹⁰ Indian Constitution, 42nd amendment, 1976.

¹¹ Pathak R.S; *Human rights and the development of the environmental law in India*, (1988) .

¹² Abraham C.M; *Environmental Jurisprudence in India*, Kluwer Law International, (1999).

It is a paradox that despite the presence of such diverse laws, the pollution rate has crossed the dead line. This is probably because of the reason that the law is so complicated and vague that even the experts may not know the intricacies of it. The Judiciary in India has been taking steps for directing state agencies, to strictly adhere to the legislations in protecting the environment and totally arresting the various manmade disasters. The Judiciary has taken such steps especially, because of the various public interest litigations arisen out of manmade disasters such as Bhopal Gas tragedy etc. It was held in *MC Mehta v. Union of India*¹³ and others, that one of the principles underlying environmental law is sustainable development. This principle requires development to take place which ecologically sustainable. It was further held that there are two essential features of sustainable development such as precautionary principle and polluter pays principle.

The precautionary principle was elucidated by the Supreme Court in *Vellore Citizens' Welfare Forum v. Union of India*¹⁴ and other states that the state government and its agencies must anticipate, prevent, and attack the causes of environmental degradation. States should not take up any activity and measure which is not environmentally benign. It seems that lack of sufficient funds allocation to the Ministry of Environment and Forests, lack of sufficient number of qualified and trained staff such as academicians, legal professionals, medical experts and technologists in the Ministry and its subordinate offices all over the country, lack of commitment of the people and awareness about the environment protection and improvement, complicated procedures for approvals and authorizations of the Pollution Control Boards, are the main reasons for ineffective implementation of environmental laws. If proper reforms are made in this area, probably the environmental laws will be implemented effectively thereby ensuring problem free environment.

¹³ AIR 1987 SC 1086.

¹⁴ AIR 1996 SC 2715.

5.2. Environment Protection And The Judiciary

The right to live in a clean and healthy environment is not a recent invention of the higher judiciary in India. The right has been recognized by the legal system and the judiciary in particular for over a century or so. The only difference in the enjoyment of the right to live in a clean and healthy environment today is that it has attained the status of a fundamental right the violation of which, the Constitution of India will not permit. It was only from the late eighties and thereafter, various High Courts and the Supreme Court of India have designated this right as a fundamental right. Prior to this period, as pointed out earlier, people had enjoyed this right not as a constitutionally guaranteed fundamental right but as a right recognized and enforced by the courts under different laws like Law of Torts, Indian Penal Code, Civil Procedure Code, Criminal Procedure Code etc. In today's emerging jurisprudence, environmental rights which encompass a group of collective rights are described as third generation rights.

Principle 1, 1972 Stockholm Declaration affirms that Man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of quality that permits a life of dignity and well-being, and he bears a solemn responsibility to protect and improve the environment for present and future generations. This shows that it has been internationally recognized that man's fundamental rights embraces the need to live in an uncontaminated environment but it also puts forth man's obligation to protect the environment for posterity.

The Supreme Court has laid down that the Precautionary Principle and the Polluter Pays Principle are essential features of Sustainable Development. These concepts are part of Environmental Law of the country. The Precautionary Principle establishes that a lack of information does not justify the absence of management measures. On the contrary, management measures should be established in order to maintain the conservation of the resources. The assumptions and methods used for the determination of the scientific basis of the management should be presented.

The polluter pays' principle came about in the 1970's when the importance of the environment and its protection was taken in world over. It was subsequently promoted by the Organization for Economic Cooperation and development (OECD). The polluter pays' principle as interpreted by the Court means that the absolute liability for harm to the environment extends not only to compensate the victims of pollution but also the cost of restoring the environmental degradation.

The Court has also evolved the special burden of proof in environmental cases. In the case of *Vellore Citizens Welfare Forum v. Union of India*¹⁵, the Court has stated that the onus of proof is on the actor or the developer/industrialist to show that his action is environmentally benign. For the first time in the case of *Subhash Kumar v. State of Bihar*¹⁶, the court declared that the right to life under Art 21 includes the right to clean water and air. In the same case, the rule of locus standi was enlarged so that the court could take cognizance of environmental degradation and regulate the prevention of the same in an effective manner.

In *Virender Gaur v. State of Haryana*¹⁷, the Apex Court confirmed that for every citizen, there exists a constitutional right to healthy environment and further conferred a mandatory duty on the state to protect and preserve this human right. Another landmark and revolutionary judgement is *Indian Council for Enviro-Legal Action vs. Union of India*¹⁸, a case concerned serious damage by certain industries producing toxic chemicals to the environment of Bichchari District in Rajasthan. Directions for the closure of the industry were given and the decision in the *Oleum Gas Leak case*¹⁹ regarding absolute liability for pollution by hazardous industries was reaffirmed. Moreover, the polluter pays principle was explicitly applied for the first time in the Bichchari case.

A foundation for the application of the Precautionary Principle, the Polluter Pays Principle and Sustainable Development, having been laid down,

¹⁵ AIR 1996 SC 2715.

¹⁶ AIR 1991 SC 420.

¹⁷ (1995) 2 SCC 577, (1997) 10 JT 600.1994.

¹⁸ (1996) 5 SCC 647.

¹⁹ *M.C. Mehta v. Union of India*, AIR 1987 SC 965, 982, and 1086.

the three principles were applied together for the first time by the Supreme Court in *Vellore Citizens Welfare Forum v. Union of India*²⁰, a case concerning pollution being caused due to the discharge of untreated effluents from tanneries in the state of Tamil Nadu. The Court, referring to the precautionary principle, polluter pays principle and the new concept of onus of proof, supported with the constitutional provisions of Art.21, 47, 48A and 51A (g) and declared that these doctrines have become part of the environmental law of the country.

The Public Trust Doctrine, evolved in *M.C. Mehta v. Kamal Nath*²¹, states that certain common properties such as rivers, forests, seashores and the air were held by Government in Trusteeship for the free and unimpeded use of the general public. Granting lease to a motel located at the bank of the River Beas would interfere with the natural flow of the water and that the State Government had breached the public trust doctrine.

The Patna High Court in *Rajiv Ranjan Singh v. State of Bihar*²², held that failure to protect the inhabitant of the locality from the poisonous and highly injurious effects of the distillery's effluents and fumes amounted to an infringement of the inhabitants' rights guaranteed under Arts. 14 and 21 read with Arts. 47 and 48-A of the Constitution of India. The Court further directed in this case that if any person has contracted any ailment, the cause of which can be directly related to the effluent discharged by the distillery the company shall have to bear all the expenses of his treatment and the question of awarding the suitable compensation to the victim may also be considered.

Following a long course of active interpretation of constitutional and legislative clauses by the judiciary and vigorous efforts of some green citizens, the Indian environmental scenario has undergone a positive change. The Indian environmental jurisprudence was in a deep slumber. But today, the environmental consciousness imported by the courts, mingled with subsequent

²⁰ AIR 1996 SC 2715.

²¹ (1997) 1 SCC 388.

²² AIR 1992 Pat 86.

legislative efforts in the later years, introduced the right to environment as a fundamental right.

The law relating to environment under Article 21 is thus evolving in a phase wise manner and is getting shaped into a well defined commandment. The extended view of Article 21 recognizes an individual's right to live in a pollution free environment as it contributes towards improving one's quality of life. Thus any citizen can resort to filing writ petitions under Article 226 or Article 32 to take recourse against environmental pollution as it is detrimental to the quality of life.

5.2.1. Doctrines and Principles Evolved By Courts

The doctrines evolved by courts are a significant contribution to the environmental jurisprudence in India. Article 253 of the Constitution of India indicates the procedure on how decisions made at international conventions and conferences are incorporated into the legal system. The formulation and application of the doctrines in the judicial process for environmental protection are remarkable milestones in the path of environmental law in India. It is interesting to note that all such cases arose out of public interest litigation. The important doctrines evolved are,

- Public Trust Doctrine.
- Doctrine of Sustainable Development
- Polluter Pays Principle.
- Precautionary Principle.

5.2.1.1. Public Trust Doctrine

Indian legal system is essentially based on common law, and includes the public trust doctrine as part of its jurisprudence. The state is the trustee of all natural resources, which are by nature meant for public use and enjoyment. Public at large is the beneficiary of seashore, running waters, airs, forests, and ecologically fragile lands. The state as trustee is under a legal duty to protect

the natural resources. These resources meant for public use cannot be converted into private ownership²³.

In *M.C.Mehta v. Kamal Nath*²⁴, the Supreme Court applied this doctrine for the first time in India to an environmental problem. It took notice of a news item in the Indian Express newspaper dated 2 February 1996. The respondent's family had direct links with Span Motel, which owned a resort, Span Resorts. The family floated another venture, Span Club, encroaching upon a land, including forestland. It is reported that regularization of this encroachment was made when the first respondent was the Minister of Environment and Forest in the Central Government. Span Resorts management used bulldozers and earthmovers to control the course of river Beas, and to keep the high intensity of flow away from the motel. It is feared that this change caused landslides and floods. Once the diversion of the river is complete, the Span management has plans to go in for landscaping. In his counter affidavit, the Minister had denied the allegations against his involvement, and described the allegation as exaggerated and mischievous.

According to the Supreme Court, the public trust doctrine primarily rests on the principle that certain resources like air, sea waters and forests have such a great importance to the people as a whole that it would be wholly unjustified to make them a subject of private ownership. The court continued that the said resources being a gift of nature, they should be made freely available to everyone irrespective of the status in life. The doctrine enjoins upon the government to protect the resources for the enjoyment of the general public rather than to permit their use for private ownership or commercial purposes.

The court reiterated the principal that one who pollutes the environment must pay to reverse the damage caused by his acts. The court directed that the motel shall pay compensation by way of cost for the restitution of the

²³ *M.C.Mehta v. Kamal Nath* (1997) 1 SCC 388, p 413. For details see, P. Leelakrishnan, *Environmental Law in India*, Third Edition, First Reprint, (2009), Lexis Nexis Butterworths Wadhwa, Nagpur.

²⁴ (1997) 1 SCC 388.

environment, and ecology of the area. Kamal Nath case is not confined to ordering removal of hindrance to the environment. It went a step further, and emphasized that violators of the environment should be asked to restore it to the original position. In certain cases, these two steps may perhaps be part of the one and the same measure, but there are violations beyond redemption.

In *MP Rambabu v. Divisional Forest Officer*²⁵, interesting questions were dealt with. To whom does deep sub-soil and water belong? Is it a no-man's land or a region that belongs to everybody? In this case, Andhra Pradesh High Court had to deal with the problem of salinity of underground water. It was feared that digging bore wells and excessive usage of agricultural lands for aquaculture caused salinity. The court said that deep underground soil and water belong to the state in the sense that the doctrine of public trust extends to them. Manifestly, their use is subject to the state regulation even in the absence of a specific law. The underground water can be used only for a purpose for which the superjacent land is held. If it is used for a different purpose and causes pollution of underground water or soil, the state can interfere and prevent contamination. Applying the proposition to a person, who holds lands for agricultural purpose, the court held that under no circumstances, he can be permitted to restrict flow of water to the neighbouring lands or discharge the effluents in such a manner so as to affect the right of his neighbour to use water for his own purposes. On the same analogy he does not have any right to contaminate the water to cause damage to the holders of the neighbouring agricultural fields²⁶.

According to the court, not only the owner or occupier, but also anybody who makes the adjoining property defective can be proceeded against in an action for nuisance.

The applicability of the public trust doctrine to groundwater was discussed in a recent case *Perumatty Grama Panchayat v. State of Kerala*²⁷, and *Hindustan Coca-Cola Beverages (P) Ltd. v. Perumatty Grama*

²⁵ AIR 2002 AP 256.

²⁶ *Id.*, at 267.

²⁷ 2004 (1) KLT 731.

*Panchayat*²⁸. The issue is not yet resolved and the appeal against the decision of the High Court of Kerala is pending before the Supreme Court.

Plachimada and Coco Cola Case

The Plachimada panchayat decided not to renew the exploitation license granted to the Coca Cola Company because of the lowering of the water table and decreasing water quality. The Panchayat has refused to renew the license of the company by exercising its power under the Kerala Panchayat Raj Act, 1994. The panchayat also ordered the closure of the plant on the ground that over-exploitation of water had resulted in acute shortage of drinking water. The company challenged the panchayat's authority before the High Court of Kerala. The major legal issue was the right of a landowner to extract groundwater from his land and the power of the panchayat (or local bodies in general) to regulate the use of groundwater by private individuals.

The Single Judge observed that even without groundwater regulation, the existing legal position was that groundwater is a public trust and the state has a duty to protect it against excessive exploitation. The judge also made a link between the public trust and the right to life and thus recognized that a system which leaves groundwater exploitation to the discretion of landowners can result in negative environmental consequences. However, on appeal, the Division Bench asserted the primacy of landowners' control over groundwater in the absence of a specific law prohibiting extraction. The issue is now pending before the Supreme Court.

The issue in Plachimada remains unsettled. The victims are waiting for remedial action. The deterioration of groundwater in quality and quantity and the consequential public health problems and the destruction of the agricultural economy are the main problems identified in Plachimada. An examination of all these issues exposes several lacunae in the legal regime such as the absence of a specific and comprehensive groundwater laws, an efficient implementation of the pollution control laws or any desire in the judiciary to appreciate the legal transformation of decentralization of power. Despite the existence of the

²⁸ 2005 (2) KLT 554.

more competitive authority, that is, the Pollution Control Board, the Panchayat was the only authority that took some actions against the company. The victims of Plachimada have to wait for the Supreme Court decision for legal remedies. At the same time there is a need for strengthening the existing laws and the efficient implementation of the laws as the viable methods to regulate the groundwater use in the future and to avoid another Plachimada.

5.2.1.2. Doctrine of Sustainable Development

Environmental pollution and degradation is a serious problem nowadays²⁹. Judiciary to being a social institution, has a significant role to play in the redressal of this problem. The progress of a society lies in industrialization and financial stability. But, industrialization is contrary to the concept of preservation of environment. These are two conflicting interests and their harmonization is a major challenge before the judicial system of a country. The judiciary, in different pronouncements, has pointed out that there will be adverse effects on the country's economic and social condition, if industries are ordered to stop production. Unemployment and poverty may sweep the country and lead it towards degeneration and destruction. At the same time, polluting industries impend the stability of the environment.

The judiciary was, therefore, of the opinion that the pollution limit should be within the sustainable capacity of the environment. In fact, Roscoe Pound's concept of social engineering which advocates for the resolution of conflicting interests, whereby there will be maximization of interest with minimum fiction and waste, is quite appropriate in these cases³⁰. The court further added that there should be a balanced approach in the fulfilment of the social needs, through industrialization and preservation of environment, because the polluted environment is the major cause of health hazards, especially of persons working in the factories or residing in the surrounding

²⁹ Ayesh Dias, 'Judicial Activism in the Development and Enforcement of Environmental Law: Some Comparative Insights from the Indian Experience', *Journal of Environmental Law*, no 6, (1994).

³⁰ See MDA Freeman Lloyd's, *Introduction to Jurisprudence*, Sweet & Maxwell, sixteenth edn, pp524-31.

areas. It, may, therefore, be asserted that the Judiciary in India has found its appropriate answers in the concept of sustainable development.

In *Vellore Citizens Welfare Forum v. Union of India*³¹, the Supreme Court opined, the traditional concept that development and ecology are opposed to each other, is no longer acceptable, sustainable development is the answer. The genesis of the concept of sustainable development was in the Stockholm Declaration in 1972. Subsequently, the World Commission on Environment and Development 1987 (known as the Brundtland Report) in its report, called *Our Common Future*, gave a definite shape to this concept. In 1992, at the Rio Conference it was reaffirmed and contended that the implementation of this concept of sustainable development is the true mode of achievement of development. The court accepted the definition of sustainable development given by this commission. It reads as, Sustainable Development that meets the needs of the present without compromising the ability of the future generation to meet their own needs.

The court ascertained that sustainable development is a balancing concept between ecology and development. Its salient features were yet to be finalized by the jurists. However, they deliberated upon that aspect and said that from the Brundtland Report and other international documents, it appears that sustainable includes the following features:

- Inter-generational Equity;
- Use and conservation of Natural Resources;
- Environmental Protection and Precautionary Principles;
- Polluter Pays Principle;
- Obligation to assist and co-operate;
- Eradication of poverty and financial assistance to the developing countries.

The Supreme Court, in the instant case, enumerated that precautionary principle and polluter pays principle are the two most essential features of

³¹ AIR 1996 SC 2715.

sustainable development. As it is a well settled principle of law that if a rule of customary international law does not contradict with the municipal law, it could be incorporated in the domestic law of the land³², the court, therefore, tried to read these principles in constitutional and statutory provisions of this country. It said that, Art 21 of the Constitution of India guarantees the protection of life and personal liberty. The fundamental duties, Art 51A(g), and the directive principles, Arts. 47 and 48A, provide that it is the duty of the citizen as well as the state, to protect the material environment and ecology of the country. The other post independent legislations and precisely the anti pollution laws mandate the state to protect the environment and prevent its depletion. The latter have established implementing machineries in the form of Central and State Pollution Control Boards to obviate the possibility of environment degradation.

5.2.1.3. Polluter Pays Principle

The countries moving towards the industrial development had to face the serious problems of giving adequate compensation to the victims of pollution and environmental hazards. That the polluter must pay for the damage caused by him is a salutary principle evolved very early in Europe when that continent was haunted by a new spectre, that of unprecedented pollution. In the post *Bhopal Gas Leak* case, this principle was received great attention by and it has almost pushed the government and its institutions, including the judiciary.

In *M.C.Mehta v. Union of India*³³, a petition was filed under Article.32 of the Constitution of India, seeking closure of a factory engaged in manufacturing of hazardous products. While the case was pending, oleum gas leaking out from the factory injured several persons. One of the persons died. Applications were filed for award of compensation. Although the court avoided a decision on these applications by asking the parties to file suits before the subordinate courts; the significance of the case lies in its formulation of the

³² To support this contention the courts referred to HR Khanna J's opinion in *Addl Dist Magistrate's Jabalpur v. Shivkant Shukla*, AIR 1976 SC 1207.

³³ AIR 1987 SC 1086.

general principle of liability of industries engaged in hazardous and inherently dangerous activity.

The rule in *Rylands v. Fletcher*³⁴, was evolved in the year 1866. It provides that a person who for his own purpose brings on to his land and collects and keeps there anything likely to do mischief if it escapes, must keep it at his peril, and if he fails to do so, is prima facie liable for the damage which is the natural consequence of its escape. The liability under this rule is strict liability. The Supreme Court was quite sure that the exceptions evolved in England to Rylands rule of strict liability in subsequent decisions are not applicable at present in a rapidly developing country like India. These principles were formulated at a time when developments of science and technology had not taken place. Science and technology could not afford any guidance for evolving standards of liability consistent with constitutional norms, and the needs of current economy and social structure. Observing that law has to grow in order to keep abreast with the economic developments taking place in the country, the Supreme Court emphasized on their responsibilities in the following words:

“We have to evolve new principles and lay down new norms, which would adequately deal with the new problems, which arise, in a highly industrialized economy. We cannot allow our judicial thinking to be constructed by reference to the law as it prevails in England or for the matter of that in any other foreign country. We no longer need the crutches of a foreign legal order. The court thought that it should not hold its hand back and it ventured to evolve a new principle of liability known as absolute liability, which English courts had not done.”

In *Indian Council for Enviro-Legal Action v. Union of India*³⁵, it was held that the Central Government is empowered under the Environment Protection Act³⁶, to take all measures as it deems necessary or expedient for the purpose of protecting and improving the quality of environment‘. In the present

³⁴ (1866) LR & HL 330, pp 339,340.

³⁵ AIR 1996 SC 1446.

³⁶ Section 3 of the Environment Protection Act, 1986.

case, the said powers will include giving directions for the removal of sludge, for undertaking the remedial measures on the offending industry, and to utilize the amount so recovered for carrying out remedial measures.

The court did so by reiterating the *MC Mehta case* principle of absolute liability of hazardous and inherently dangerous industry. The court explained the *polluter pays principle*³⁷, according to which the responsibility for repairing damage is that of the offending industry. In the circumstances, the task of determining the amount required for carry out remedial measures is placed upon the Central Government.

5.2.1.4. Precautionary Principle

The precautionary principle or precautionary approach states that if an action or policy has a suspected risk of causing harm to the public or to the environment, in the absence of scientific consensus that the action or policy is harmful, the burden Of proof that it is not harmful falls on those taking the action. This principle allows policy makers to make discretionary decisions in situations where there is the possibility of harm from taking a particular course or making a certain decision when extensive scientific knowledge on the matter is lacking. The principle implies that there is a social responsibility to protect the public from exposure to harm, when scientific investigation has found a plausible risk. These protections can be relaxed only if further scientific findings emerge that provide sound evidence that no harm will result. Principle 15 of the Rio Declaration states, In order to protect the environment, the precautionary approach shall be widely applied by states according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost effective measures to prevent environmental degradation.

Thus, the precautionary principle got international recognition in the Rio Conference on Environment and Development 1992 and it has been reiterated in Rio Declaration, 2012 also.

³⁷ Carolyn Shelbourn, '*Historic Pollution*'- *Does the Polluter pay?*' Journal of Planning and Environmental Law, (1974).

In *Indian Council for Enviro-Legal Action v. Union of India* case discussed above accepted this principle along with the *polluter pays principle* as part of the legal system. In *Vellore Citizens Welfare Forum v. Union of India*³⁸ and *Andhra Pradesh Pollution Control Board v. MV Nayudu*³⁹, the Supreme Court applied the precautionary principle directly to the facts of the cases.

In *Vellore Citizens Welfare case* the Supreme Court was appraised of the pollution caused by the enormous discharge of untreated effluent by tanneries and other industries in the state of Tamil Nadu. The petitioner highlighted the evil on the strength of reports from Tamil Nadu Agricultural University Research Centre, an independent survey conducted by non-government organizations, and a study by two lawyers deputed by the Legal Aid and Advice Board of Tamil Nadu. The main allegation was that the untreated effluents contaminated the underground water resulting in non-availability of potable water, thereby causing immense harm to agriculture. Despite the persuasion of the Tamil Nadu Government and the Board, and despite the Central Government's offer of subsidy to construct common treatment plant, most of the tanneries hardly take any steps to control pollution. The court referred to its earlier orders. It also quoted extensively from the report of NEERI to bring to light the seriousness of the problem.

Petitioner, the Vellore Citizens Welfare Forum, filed this action to stop tanneries in the State of Tamil Nadu from discharging untreated effluent into agricultural fields, waterways, open lands and waterways. Among other types of environmental pollution caused by these tanneries, it is estimated that nearly 35,000 hectares of agricultural land in this tanneries belt has become either partially or totally unfit for cultivation, and that the 170 types of chemicals used in the chrome tanning processes have severely polluted the local drinking water. It was considered by the court that the industry is a Foreign Exchange Earner. It does not mean that this industry has the right to destroy the ecology,

³⁸ AIR 1996 SC 2715.

³⁹ AIR 1999 SC 812.

degrade the environment or create health hazards. Also it was considered that one moot point is whether all the cost of the lives of lakhs of people with increasing human population the activities of the tanneries should be encouraged on monetary considerations. They found that the tanners have absolutely no regard for the healthy environment in and around their tanneries. The effluents discharged have been stored like a pond openly in the most of the places adjacent to cultivable lands with easy access for the animals and the people. Sustainable development, and in particular the polluter pays principles and the precautionary principle, have become a part of customary international law. Even though Environment Protection Act⁴⁰ allows the Central Government to create an authority with powers to control pollution and protect the environment, it has not done so. Thus, the Court directed the Central Government to take immediate action under the provisions of this act.

The Court ordered the Central Government to establish an authority to deal with the situation created by the tanneries and other polluting industries in the State of Tamil Nadu. This authority shall implement the precautionary principle and the polluters pays principle, and identify the Loss to the ecology/environment Individuals/families who have suffered because of the pollution and then determine the compensation to reverse this environmental damage and compensate those who have suffered from the pollution. The Collector/District Magistrates shall collect and disburse this money.

If a polluter refuses to pay compensation, his industry will be closed, and the compensation recovered as arrears of land revenue. If an industry sets up the necessary pollution control devices now, it is still liable to pay for the past pollution it has generated. Each tannery in the listed district is subject to a Rupees 10,000 fine which will be put into an "Environment Protection Fund". This fund will be used to restore the environment and to compensate affected persons. Expert bodies will help to frame a scheme to reverse the environmental pollution. All tanneries must set up common effluent treatment plants, or individual pollution control devices, and if they do not, the

⁴⁰ Section 3(3) of Environment Protection Act, 1986.

Superintendent of Police and the Collector/District Magistrate/Deputy Commissioner in each of the respective districts is authorized to close the plants down. No new industries shall be permitted to be set up within the listed prohibited areas.

The court also explained the Precautionary Principle in the context of the municipal law as under

- Environmental measures by the state government and statutory authorities. They must anticipate, prevent and attack the causes of environmental degradation.
- Where there are threats of serious and irreversible damage, lack of scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.
- The onus of proof is on the actor or developer/ industrialist to show that his action is environmentally benign.

It was directed that a Green Bench would be constituted to deal with this case and other environmental matters. In Andhra Pradesh Pollution Control Board case⁴¹ the court relied on the Vellore case⁴² before pondering over the various dimensions of the precautionary principle. The court pointed out that earlier, the concept was based on the assimilative capacity, which assumed that science could provide the information and means necessary to avoid encroaching upon the capacity of the environment to assimilate impacts, and that relevant technical expertise would be available when environmental harm was predicted. In the UN General Assembly Resolution on World Charter for Nature, the emphasis shifted to the precautionary principle⁴³. This was reiterated in the Rio Declaration in its Principle 15⁴⁴. The principle of precaution involves the anticipation of environmental harm and taking measures to avoid it, or to choose the least environmentally harmful activity. It

⁴¹ *Andhra Pradesh Pollution Control Board v. MV Nayudu*, AIR 1999 SC 812.

⁴² *Vellore Citizens Welfare Forum v. Union of India*, AIR 1996 SC 2715.

⁴³ Principle 11 of the UN General Assembly Resolution on World Charter for Nature, 1982.

⁴⁴ Principle 15 of the Rio Declaration: In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage; lack of full scientific certainty shall not be used as a reason for proposing cost-effective measures to prevent environmental degradation.

is based on scientific uncertainty. Environmental protection should not only aim at protecting health, property, and economic interest, but also protect the environment for its own sake; precautionary duties must not only be triggered by the suspicion of concrete danger, but also by (justified) concern or risk potential⁴⁵.

In an article⁴⁶, it is commented that the precautionary approach is a principle meant to avert environmental disaster. The Supreme Court was of the view that it is better to err on the side of caution and prevent environmental harm than to run the risk of irreversible harm. The principle involves anticipation of environmental harm, adoption of preventive measures, and choice of the least environmentally harmful activity. The commentators went on to say that the Stockholm Declaration in 1972 laid emphasis on the assimilative principle, which assumed that the environment has the capacity, to some extent, to assimilate substances so as to render harmless the much quoted epigram the solution to pollution is dilution. The Rio Conference in 1992 has recognized the precautionary approach as a norm for various nations to pursue.

The precautionary approach is said to promote development of clean technology. Looking at its acceptance in the past, the precautionary approach is said to be a principle born before it was conceived. Indian courts started tending the principle with great care and enthusiasm as soon as it was born. As early as in 1993, reclamation of wetlands for building a trade Centre was prevented as the benefits of wetlands to the society could not be weighed on mathematical nicety. Extensive, semi-intensive, and intensive aquaculture was ordered to be dismantled to prevent possible disaster on coastal ecosystem. Closure of tanneries in certain districts of Tamil Nadu was directed with a view to preventing, among other things, serious damage to groundwater⁴⁷.

⁴⁵ *Andhra Pradesh Pollution Control Board v. MV Nayudu*, AIR 1999 SC 812, pp 820,21.

⁴⁶ P Leelakrishnan et al, 'Environmental Expertise and Judicial Review: Need for Strategy Shift and Law Reform', Journal of the Indian Law Institute, (1999), vol 41, pp 357, 362-63.

⁴⁷ P Leelakrishnan, *Environmental Law Case Book*, Second Edition, 2006, second reprint 2013, Lexis Nexis, p 362.

In *Vijayanagar Education Trust v. Karnataka State Pollution Control Board, Karnataka*⁴⁸ the Karnataka High Court accepted that the precautionary doctrine is now part and parcel of the Constitutional mandate for the protection and improvement of the environment. The court referred to *Nayudu cases*⁴⁹ which laid down that the burden to prove the benign nature of the project is on the developer if it is found that there are uncertain and non-negligible risks.

However, Andhra Pradesh High Court made an attempt to distinguish *Nayudu case*⁵⁰ from *Vijayanagar case*⁵¹. In *Nayudu case*, the Apex Court had every reason to believe that the potential dangers to be environment were non-negligible'. In the present case, the Board had not examined whether the risk involved could be said to be non-negligible. In applying the precautionary principle, it is absolutely necessary to identify the nature of the pollutant, and to find out whether it would cause non-negligible environmental risk. When it refused consent, the Board did not adopt such an analysis, nor did it make a reference to any pollutants that be emitted by the hospital, which would have caused non-negligible risk. The court held that it is impossible to draw inference of non-negligible danger to the environment.

5.2.1.5. Precautionary Principle and Sustainable Development

In *Narmada Bachao Andolan v. Union of India*⁵², the precautionary principle came to be considered by the majority judges in this case. The court took the view that the doctrine is to be employed only in cases of pollution when its impact is uncertain, and non-negligible. The majority is of the view that the doctrine has to be put on back burner when the impact of a development project is certain and can be quantified. Sustainable Development means what type or extent of development can take place, which can be sustained by nature/ecology with or without mitigation. The Court noted that

⁴⁸ AIR 2002 Kant 123.

⁴⁹ *Andhra Pradesh Pollution Control Board v. MV Nayudu*, AIR 1999 SC 812.

⁵⁰ *Ibid.*

⁵¹ *Vijayanagar Education Trust v. Karnataka State Pollution Control Board, Karnataka*, AIR 2002 Kant 123.

⁵² AIR 2000 SC 3751.

the question in the Narmada Bachao Andolan case⁵³ is not concerned with the polluting industry, and the effects of the project are already known⁵⁴.

5.3. Contribution of Doctrines to Environmental Jurisprudence

The application of the doctrines in the judicial process for environmental protection are remarkable milestones in the path of environmental law in India. It is interesting to note that all such cases arose out of public interest litigation. Undue influence of political bigwigs who make environmentally malign decisions is blocked. Skeletons in the governmental and administrative cupboards were revealed. Illegal contracts with adverse impact on ecology will be invalidated. The court directed to apply this jurisprudence when an entire village in Rajasthan was under an ecological catastrophe from non-disposal of hazardous wastes⁵⁵.

5.3.1. Judicial Activism

The term judicial activism is used to refer to the extended arm of judiciary' or the increasing active interest that the judiciary is taking in our everyday life. This activism on the part of the judiciary derives its constitutional legitimacy from Art. 141 of the Constitution which lays down that the Supreme Court's declaration of law is final and Art.13 which empowers the judges to declare any law null and void if it was found to be against the provisions of Part III of the Constitution. Its areas of activity are widening such as Public Interest Litigation, Writ Petitions under Art. 32, interpretation of Arts. 12, 14, 19, 21 etc.

Different interpretations are being given to the term judicial activism. Justice Kuldeep Singh has said that the term judicial activism was a misnomer as

⁵³ *Ibid.*

⁵⁴ In the words of the court: what is being constructed is a large dam. The dam is neither a nuclear establishment nor a polluting industry. The construction of a dam undoubtedly would result in the change of environment but it will not be correct to presume that the construction of a large dam like the Sardar Sarovar will result in the ecological disaster. India has an experience of over 40 years in the construction of dams. The experience does not show that construction of a large dam is not cost effective or leads to ecological or environmental degradation. On the contrary there has been ecological upgradation with the construction of large dams. What is the impact on environment with the construction of a dam is well known in India and, therefore, the decision in AP Pollution Control Board's case will have no application in the present case.

⁵⁵ *Indian Council for Enviro-Legal Action v. Union of India, AIR 1996 SC 1446.*

the judiciary was only doing what the Constitution had enjoined upon it. P.P. Rao, a Supreme Court lawyer and a jurist felt that the basic cause of judicial activism is the non-existence of effective government, whereas Rajeev Dhawan felt that activist judiciary was one which was dedicated to mould the law and its interpretations to achieve social justice and rule of law aims of the Constitution. Meera Sapatnekar, on the other hand feels that the object of the judiciary is to clear out all social, political and national maladies of the country as the executive has failed to perform its duties and made it necessary for the judiciary to intervene to give justice to the people and the nation. The Vice-President of India⁵⁶, has attributed the over-activism of the judiciary mainly to the downward spiral of the rule of law and malfunctioning of the institutions of the State, particularly the executive.

Governance, as we all know, is a decision making process, which has always existed since the dawn of human civilization. The role of judiciary lies in protecting the interest of individuals and others against the misuse of power by public authorities. Despite judicial review and Public Interest Litigation, there is an erosion of public confidence in the system itself due to lack of effective access to justice, huge backlog of cases and long delay in decisions.

"The keys to good governance, as articulated by the United Nations Development Programme, are rule of law, participation, and accountability and transparency." The role of the judicial branch of government is critical in ensuring the implementation of the principles of both the rules of law and accountability. Firstly, the functioning of a society according to the rule of law is based on the judiciary. Secondly, the judiciary ensures the accountability of other institutions of government and individuals.

In the case of environmental governance, the judiciary also has the difficult role of considering not only environmental instruments, but also economic, developmental and political as well as social instruments. The compliance and enforcement of sustainable development instruments also

⁵⁶ Honourable Vice- President Mr. Mohammad Hamid Ansari, the fourteenth Vice-President of India. For details see, www.presidentofindia.nic.in, last accessed on 18th May 2015.

serves in the promotion of synergies or inter-linkages among multiple issues, also known as the inter-linkages approach. This is because compliance and enforcement requires cooperation and coherence in policies across multiple departments and branches of government.

On environmental law interpretation and law making, although most people would argue that judges are there merely to interpret legislation and not to make laws, several distinguished jurists have pointed out that the judiciary also contributes to defacto "law making" through precedents. On the capability of jurists, several issues need attention, but one possible solution is the enhancement of their awareness and knowledge of global and regional environmental issues viewed from a wider context of sustainable development⁵⁷.

Judicial awakening and activism for protection of the environment in India began formally after the 1972 Stockholm Conference on Human Environment. The term judicial activism denotes a process where at one end there are the logically principled rules in the hands of court and at other end there are demands, desires for expectations of society pressing it to accommodate with the framework of law. This process of accommodation by court is called the civilization of law and in term is known as activism. Environmental provisions are introduced in the Constitution of India by its 42nd amendment in 1974 under Article 48 (A) and 51-A (g) as a fundamental duty for every state and citizen of India to protect and improve the natural environment. Several laws pertaining to the protection of the environment were enacted in India prior to it. There were a number of public laws existed which had environmental overtones. The Indian Penal Code, 1860 and the Code of Criminal Procedure, 1973 dealing with public nuisance assume special significance in this regard.

⁵⁷ In the Johannesburg Principles, the global judiciary expressly recognized this fact and called on UNEP and other organizations within and outside the United Nations to actively support a major capacity building programme for judges, prosecutors, enforcement officers and representatives of civil society organizations that are engaged in safeguarding the environmental rights of citizens. For details see, Dr.S.R.Myneni, Environmental Law, New Edition, (2008), Asia Law House, p.845.

The Environmental Protection Act, (EPA) of 1986 against industrial pollution and the Conservation of Forest and Natural Ecosystems Act of 1994 to stop deforestation and habitat destruction are, among others, good pieces of legislation for the protection of the environment in India. Public Interest Litigation (PIL) to prevent environmental degradation has been increasing in India and the judiciary has come to rescue the people on a number of occasions. There are several historic judicial decisions serving both man and environment in India. It can be seen that the Supreme Court of India has moulded a far-reaching and innovative environmental jurisprudence which no other constitutional court anywhere in the world has ever given shape to. The High Courts have also contributed their bit in developing this jurisprudence. In fact due to its proactive role in administering environmental law, the higher judiciary in the country has emerged as the exclusive dispenser of environmental justice. By doing so, they have succeeded to a great extent in altering the common man's perception of law courts as being mere fora for dispute adjudication thereby carving out a niche for itself as a unique human right friendly institution in justice dispensation.

The ever increasing number of PILs being filed in the Supreme Court and in the High Courts over every conceivable environmental problem by public interest groups and individuals, bear testimony to this unshaken faith which the public has reposed in the system and in this context, the role essayed by the superior judiciary can be gauged at two levels⁵⁸. The increasing intervention of Court in environmental governance, however, is being seen as a part of the pro-active role of the Supreme Court in the form of continual creation of successive strategies to uphold rule of law, enforce fundamental rights of the citizens and constitutional propriety aimed at the protection and improvement of environment. Unlike other litigations, the frequency and different types of orders/directions passed periodically by the Supreme Court in environmental litigation and its continuous engagement with environmental

⁵⁸ One as facilitator seeking to ensure better enforcement of the laws and secondly as pathfinder trying to wriggle its way out of the redundant obstacles thereby providing a panacea to the environmental ills plaguing the country.

issues has evolved a series of innovative methods in environmental jurisprudence⁵⁹.

A number of distinctive innovative methods are identifiable, each of which is novel and in some cases contrary to the traditional legalistic understanding of the judicial function⁶⁰. These innovative methods, for instance, include entertaining petitions on behalf of the affected party and inanimate objects, taking suo motto action against the polluter, expanding the sphere of litigation, expanding the meaning of existing Constitutional provisions, applying international environmental principles to domestic environmental problems, appointing expert committee to give inputs and monitoring implementation of judicial decisions, making spot visit to assess the environmental problem at the ground level, appointing amicus curiae to speak on behalf of the environment, and encouraging petitioners and lawyers to draw the attention of Court about environmental problems through cash award. It is important to note that these judicial innovations have become part of the larger Indian jurisprudence ever since the Court has started intervening in the affairs of executive in the post emergency period.

The innovative methods initiated in resolving environmental litigation, however, have been almost entirely dominating the environmental jurisprudence process for more than the last thirty years. The expansion of judicial activism through environmental cases, in particular, is widely debated and discussed in India. On the one hand, critics of the theory of separation of power view this kind of judicial activism as a sign of hope to correct shortcomings on environmental issue. On the other hand, the advocates of theory of separation of power argue that the intervention of Court in the affairs of implementing agency to protect the environment and enforce fundamental rights is violating the principle of separation of powers as the theory of

⁵⁹ Ramesh. M. K., *Environmental Justice: Courts and Beyond*, 3(1) Indian Journal of Environmental law 20 (2002).

⁶⁰ Jamie Cassel's, *Judicial Activism and Public Interest Litigation in India: Attempting the Impossible?*, 37(3) The American Journal of Comparative Law 495 (1989).

separation of power suggests that each organ of the government has to perform within the prescribed limits as designed by the Constitution of India.

In a number of cases, the Court has gone beyond its adjudication function to protect the environment thereby violating the principle of separation of powers and creating problems for other organs of the State. Its continuous intervention in the affairs of executive, questioning the validity of government policy and resuming administrative powers to protect the environment aggressively has invited steadfast resistance from administrative branches. The examination of the implications of Supreme Court's innovations for environmental jurisprudence reveals that the application of innovative methods to resolve environmental disputes and implement Court orders is certainly a deviation from the usual adjudicating function of the Court.

While the procedural innovations have widened the scope for environmental justice through recognition of citizens right to healthy environment, entertaining petitions on behalf of affected people and inanimate objects and creative thinking of judges to arrive at a decision by making spot visit, substantive innovations have redefined the role of Court in the decision-making process through application of environmental principles and expanding the scope of environmental jurisprudence. The judicial activism in environmental issues has increased people's faith in the judiciary of the country. Though there are number of laws dealing with various environmental issues, the judiciary has to perform the role of executive by issuing orders for enforcement of environmental laws and judicial orders for the protection of rights of people. The credit goes to the Supreme Court for implementation of principles of sustainable development in India.

The words of laws were mere letters but the judicial interpretation of these laws has given life and blood to them. We also cannot deny the criticism levelled against this activism that the judiciary has forgotten its role of adjudicator and taken the responsibility of executive and legislature as a law maker and law enforcer in India. These questions compel us to assess the

critical role of Indian judiciary in development of environmental jurisprudence in India and legitimacy of judicial activism in environmental jurisprudence.

Despite the absence of a concise environmental regulatory framework with respect to soil and groundwater contamination in India, progress in protecting the environment has been made through application and expansion of existing environmental laws, use of proactive concepts including the polluter pays principle and the precautionary principle, and aggressive use of public interest litigation (PIL).

5.3.2. Public Interest Litigation

Public Interest Litigation has had a profound effect on the development of environmental law in India. PIL allows any bona fide person to take a matter of public interest to the higher judiciary, even when the person who is supporting the cause is not personally or directly affected by the interest that is being brought to the courts.

The concept of public interest litigation (PIL) is well entrenched in India contrary to the past practices⁶¹, today a person acting bonafide and having sufficient interest can move the courts for redressing public injury, enforcing public duty, protecting social and collective rights and interests, and vindicating public interest⁶². In the eighties and nineties, a wave of environmental litigation was witnessed. Most of such cases were in the form of class action and PIL, as environmental issues relate to diffusing of interests, rather than to ascertainable injury to individuals.

The concept of class action is embodied in the Code of Civil Procedure 1908⁶³, where if numerous persons have common interests, one or more of such persons can file a suit. A recent example of class action is the Bhopal Gas Leak

⁶¹ Locus standi was the biggest hurdle. *JM Desai v. Roshan Kumar* AIR 1976 SC 578 is as an illustration. The District gave no objection certificate for a cinema house close to a burial ground, compost depot, a school and public latrines. The grant was manifestly against the rules. The High Court and the Supreme Court were, however, reluctant to interfere on the ground that the rival applicants who challenged the decision, had no locus standi.

⁶² *SP Gupta and others v. Union of India*, AIR 1982 SC 149, p 192. Also see P. Leelakrishnan, 'Access to legal service and justice', *Cochin University Law Review*, 1984, p 471, pp 476, 477.

⁶³ Order 1, Rule 8. It is an amplification of the concept of class action with the permission of the court. When a representative suit is filed, notice by personal service or by advertisement is to be given. The court has discretion to allow impleading a party. The decree will be binding on all parties on whose behalf or for whose benefit they sue.

disaster litigation. This community interest can also be agitated under the law of public nuisance incorporated in the CrPC. An individual, a group of individuals, or an executive magistrate, suo motu, can move the courts. This provision has proved to be a potent weapon for regulatory measures⁶⁴, as well as affirmative action⁶⁵ by the government and local bodies for protection of the environment, provided that the executive magistrates exercise their discretion independently without undue influence from their bureaucratic or political superiors.

These PILs have given the judiciary enormous scope for intervening in environmental matters. Indian courts have been categorical in their adoption of the values of sustainable development and the precautionary principle, which asserts that a lack of scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation where there are threats of serious and irreversible damage if the action is not taken. The range of issues addressed by PIL has been very broad. It extends from compassion to animals⁶⁶, privileges of tribal people and fishermen⁶⁷, to the ecosystem of Himalayas and forests⁶⁸, eco-tourism, land use patterns⁶⁹, and vindication of an eco-malady of a village⁷⁰. The cause of environment being taken up through PIL was championed by a wide spectrum of people in society. Lawyers, association of Lawyers⁷¹, environmentalists⁷², groups and centres dedicated to environmental protection⁷³ and forest conservation⁷⁴, welfare forums⁷⁵

⁶⁴ *Union Carbide Corporation v. Union of India* AIR 1990 SC 273., *Municipal Council, Ratlam v. Vardhichand*, AIR 1980 SC 1622, where local bodies were directed to provide amenities.

⁶⁵ *State of Madhya Pradesh v. Kedia Leather and Liquor Ltd*, (2003) 7 SCC389.

⁶⁶ *Satyavani v. Andhra Pradesh Pollution Control Board*, AIR 1993 AP 257.

⁶⁷ *Rural Litigation and Entitlement Kendra v. State of Uttar Pradesh*, AIR 1988 SC 2187; *Banwasi Seva Ashram v. State of Uttar Pradesh*, AIR 1987 SC 374.

⁶⁸ *V.Lakshmipathy v. State* AIR 1992 Kant 57; *Bangalore Medical Trust v. BS Mudappa*, AIR 1991 SC 1902.

⁶⁹ *V.Lakshmipathy v. State* AIR 1992 Kant 57; *Bangalore Medical Trust v. BS Mudappa*, AIR 1991 SC 1902.

⁷⁰ *Indian Council for Enviro-Legal Action v. Union of India*, AIR 1996 SC 1446.

⁷¹ *M.C.Mehta v. Union of India*, AIR 1986 SC 1086; *M.C.Mehta v. Union of India*, AIR 1987 SC 965; *M.C.Mehta v. Union of India*, AIR 1992 SC 382; *M.C.Mehta v. Union of India*, (1996) 4 SCC 750; *M.C.Mehta v. Union of India*, (1997) 1 SCC 368; *Animal and Environment Legal Defense Fund v. Union of India*, AIR 1997 SC 1071; *Niya Vedi v. State*, AIR 1993 Ker 262.

⁷² *Pradeep Krishen v. Union of India*, AIR 1996 SC 2040.

⁷³ *Executive Engineer, AV project v. EE Protection Samiti*, AIR 1993 Ker 320; *Dahanu Taluka Environment Protection Group v. BSES*, (1991) 2 SCC 539.

including those for tribal welfare⁷⁶, societies registered under the Societies Registration Act⁷⁷ and consumer research centres⁷⁸ have successfully agitated environmental issues before courts. Urban social activists⁷⁹, the women's wing of a society for animal protection⁸⁰, chairman of rural voluntary associations⁸¹ and residents of housing colonies⁸² were also involved in advocating environmental issues. While in some cases letters⁸³ were considered as writ petitions and in some others paper reports⁸⁴ induced judicial action. The powers of the Supreme Court to issue directions under Article 32 and those of High Courts to issue directions under Article 226 have attained great significance in environmental litigation.

To summarize the environmental issues that have been brought to the courts under PILs in the past include,

- Riverine pollution by tanneries, industrial effluents, and untreated sewage;
- Soil and groundwater pollution;
- Indiscriminate mining;
- Protection of forests;
- Fencing of parks and sanctuaries;
- Preservation of monuments of archaeological and historical significance and their protection from vandalism and industrial pollutants; and
- Automobile pollution.

The judicial prescriptions have included

- Remedial measures offered by cleanup technologies;
- Liability measures based on application of the polluter pays principle;

⁷⁴ *Banwasi Seva Ashram v. State of Uttar Pradesh*, AIR 1987 SC 374.

⁷⁵ *Vellore Citizens Welfare Forum v. Union of India*, AIR 1996 SC 2715.

⁷⁶ *LK Koolwal v. State of Rajasthan*, AIR 1988 Raj 2.

⁷⁷ *Nagarahole Budakattu Hakku Sthapana Samithi v. State of Karnataka*, AIR 1997 Kant 288

⁷⁸ *Goa Foundation v. Konkan Railway Corporation*, AIR 1992 Bom 471.

⁷⁹ *CERC v. Union of India*, AIR 1995 SC 922.

⁸⁰ *Satyavani v. Andhra Pradesh Pollution Control Board*, AIR 1993 AP 257.

⁸¹ *Jagannath v. Union of India*, (1997) 2 SCC 87.

⁸² *V. Lakshmiopathy v. State*, AIR 1992 Kant 57; *Bangalore Medical Trust v. BS Mudappa*, AIR 1991 SC 1902.

⁸³ *Banwasi Seva Ashram v. State of Uttar Pradesh*, AIR 1987 SC 374.

⁸⁴ *M.C.Mehta v. Kamal Nath* (1997) 1 SCC 388, PP 391, 397.

- Monetary penalties; and
- Revised environmental standards.

5.3.3. Tanneries and Discharge of Effluents:

Under the laws of the land the responsibility for treatment of the industrial effluents is that of the industry. However, it has been noticed that various tanneries operating in different parts of the country have not been complying with the laws of the land. They have been discharging effluents without any treatment and thus becoming one of the major sources of pollution. The courts in such cases have issued directions to such tanneries to either install primary treatment plant or stop working. The judiciary in India has followed the path of sustainable development in such case as well.

In *M.C. Mehta v. Union of India*⁸⁵, (popularly known as Ganga Water Pollution case or Kanpur tanneries case), a public interest litigation was filed for the issuance of directions restraining the tanneries from discharging trade effluent into the river Ganga till such time they put up necessary treatment plants for treating the trade effluents in order to arrest the pollution of water in the said river. The tanneries discharging effluents in the river Ganga did not set up primary treatment plant in spite of being asked to do so for several years. Nor did they care to put up an appearance in the Supreme Court expressing their willingness to set up pre-treatment plant. Consequently, the Supreme Court directed them to stop working.

K.N.Singh, J., who delivered concurring but separate judgement in this case, issued directions for the closure of those tanneries which have failed to take minimum steps required for the primary treatment of industrial effluent. It was further pointed out that closure of tanneries may bring unemployment, loss of revenue, but life, health and ecology have greater importance to the people⁸⁶. Thus, the concern of the Court for the life and health of the people and the ecology is evidence from the above observation.

⁸⁵ AIR 1988 SC 1037. See also *MC Mehta v. Union of India*, AIR 1988 SC 1115; *MC Mehta v. Union of India*, 1991 Supp (1) SCC 181 and *MC Mehta v. Union of India*, 1992 Supp (2) SCC 637; *MC Mehta v. Union of India*, 1992 Supp (2) SCC 633; *MC Mehta v. Union of India*, 1993 Supp (1) SCC 434.

⁸⁶ *Ibid*, AIR 1988 SC 1037, pp 1047-48.

*Vellore Citizens Welfare Forum v. Union of India*⁸⁷, (popularly known as *T.N. Tanneries case*), is a landmark judgement of the Supreme Court where the principle of sustainable development has been adopted by the court as a balancing concept. This case was also filed as public interest litigation (PIL) and was directed against the pollution which was being caused by enormous discharge of untreated effluents by the tanneries and other industries in the State of Tamil Nadu. The Supreme Court pointed out that the traditional concept that development and ecology are opposed to each other is no longer acceptable. Sustainable Development is the answer⁸⁸.

The Supreme Court after explaining the salient principles of sustainable development expressed the view that The Precautionary Principle and The Polluter Pays Principle are essential features of sustainable development and that they have been accepted as part of the law of the land⁸⁹. The Supreme Court also held that in view of the constitutional provisions contained in Articles 21, 47, 48-A, 51-A (g) and other statutory provisions contained in the Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981 and the Environment (Protection) Act, 1986, it had no hesitation in holding that the Precautionary Principle and the Polluter Pays Principle are part of the environmental law of the country⁹⁰. The Court further observed:

Even otherwise once these principles are accepted as part of the Customary International Law there should be no difficulty in accepting them as part of the domestic law. It is almost an accepted proposition of law that rules of Customary International Law which are not contrary to the municipal law shall be deemed to have been incorporated in the domestic law and shall be followed by the courts of law⁹¹. The Supreme Court issued so many directions in this case and also requested the Madras High Court to constitute a special

⁸⁷ (1996) 5 SCC 647.

⁸⁸ (1996) 5 SCC 647.

⁸⁹ *Ibid.*

⁹⁰ *Ibid.*, at pp 658-59.

⁹¹ *Ibid.*, at p 661. To support this proposition the Court relied upon *A.D.M. Jabalpur v. Shivkant Shukla*, AIR 1976 SC 1207, *Jolly George Varghese v. Bank of Cochin*, AIR 1980 SC 470 and *Gramophone Co. of India Ltd. V. Birendra Bahadur Pandey*, AIR 1984 SC 667.

Bench-Green Bench to deal with this case and other environmental matters. Finally the Supreme Court also directed the State of Tamil Nadu to pay Rs. 50,000 towards legal fee and other output of pocket expenses incurred by Mr. Mehta who was the petitioner in this case.

The Supreme Court in continuation of the *Kanpur Tanneries Case*⁹², took up the issue of Calcutta tanneries which were discharging untreated noxious and poisonous effluents into Ganga river and thus polluting the land and the river. In the case of *MC Mehta v. Union of India*⁹³, (popularly known as *Calcutta Tanneries case*), it was found that the Calcutta tanneries were not co-operating in their relocation to new complex even after giving clear undertaking in that behalf to the Supreme Court.

The Court held that even otherwise, these tanneries had been operating in violation of the mandatory provisions of the Water (Prevention and Control of Pollution) Act, 1974 and Environment (Protection) Act, 1986. The Court applied one of the essential principle of sustainable development, ie., the Polluter Pays Principle and accordingly issued various directions including for unconditionally closure of the tanneries on 30-9-97, their relocation, payment of compensation by them for reversing the damage to the ecology and for rights and benefits to be made available by them to their workmen⁹⁴. In view of the comprehensive directions issued for achieving end result and the fact that Green Bench was already functioning in the Calcutta High Court, the Supreme Court directed that the further monitoring of the case was to be done by the Calcutta High Court. The Supreme Court also imposed the cost of Rs.25,000 on the Calcutta tanneries.

In *M.C.Mehta v. Union of India*⁹⁵, the Supreme Court directed the State of West Bengal to file an affidavit indicating the steps taken by them to comply with the directions issued earlier by the Supreme Court in the Calcutta Tanneries Case and to specify the names of the defaulters, if any. In *Ambuja*

⁹² *M.C. Mehta v. Union of India*, AIR 1988 SC 1037.

⁹³ (1997) 2 SCC 448.

⁹⁴ *Ibid*, at pp 430-33.

⁹⁵ (1998) 9 SCC 448.

*Petrochemicals Ltd. v. A.P. Pollution Control Board*⁹⁶, The effluent treatment plant of the industry was not in operation and thereby causing water pollution resulting in danger to public life. The Pollution Control Board ordered the industry to be closed. It was held that the order of the Board was neither disproportionate nor excessively severe.

In order to treat the effluents from the industries the Supreme Court has always stressed that Central Effluent Treatment Plant (CETP) should be established wherein the effluents from the different industries could be treated. In *M.C.Mehta v. Union of India*⁹⁷, the Supreme Court clarified that towards the construction of Central Effluent Treatment Plant, contribution must be made by all industries in the area concerned and construction of Sewage Treatment Plants (STP) by individual industries cannot be a substitute for CETP.

The Supreme Court had been passing orders from time to time to control the pollution due to industrial effluents. In News item Hindustan Times *A.Q.F.M.Yamuna v. Central Pollution Control Board*⁹⁸, the Supreme Court considered the affidavit filed by the Central Pollution Control Board, which showed continuous discharge of polluting effluent/sewage into the river Yamuna, which indicated that the dissolved oxygen in the water was nil. The Court pointed out that the Government is expected to take curative as well as preventive measures. If any such measures had been taken then they clearly were not enough to ensure water of quality, which would justify the river Yamuna being classified as Class C which means whose water is fit for drinking with conventional treatment followed by disinfection. Therefore, the Court issued notice to the National Capital Territory Delhi to show cause as to why appropriate fine should not be levied for non-compliance of the order of the Court.

⁹⁶ AIR 1997 AP 41.

⁹⁷ (2000) 2 SCC 214. See also *Jajmau Tanners' Association. : In Re*, (2000) 9 SCC 499.

⁹⁸ (2000) 10 SCC 587. See also News item "*Hindustan Times*" *A.Q.F.M.Yamuna v. Central Pollution Control Board*, (2000) 9 SCC 440; News Item Published in Hindustan Times Titled "*And Quilt Flows The MAILY Yamuna*", In re, (2004) 8 SCC 638; (2004) 9 SCC 569.

In *U.P. Pollution Control Board v. Mohan Meakins Ltd.*,⁹⁹ the company was polluting the streams and rivers by discharging trade effluents into river Gomati and raising pollution level beyond permissible limits. Managers and Director of the company were also included in array of accused as it was alleged that they were responsible for contamination of the river water. In this case more than 17 years had elapsed after the filing of the complaint. The Supreme Court held that lapse a very long time is no reason to absolve the accused from the trial. The Court also held that the managers and the Director of the company if found liable can also be prosecuted under the Water Act of 1974.

In *P. Pramila and others Vs. State of Karnataka and another*¹⁰⁰

In respect of industries who are discharging their effluent without a valid consent under Section 25/26 of the Water (Prevention and Control of Pollution) Act, 1974 and under Section 23 of the Air (Prevention and Control of Pollution) Act, 1981, the Chairman is authorized to initiate legal action under relevant sections.

An analysis of the above cases shows that the Supreme Court has not only developed the essential principles of sustainable development but also actually applied them while dealing with environmental litigations. In view of the above cases, the concept of Sustainable Development has become a part of our New Environmental Jurisprudence and the law of the land.

5.4. Environmental Ethics

The first international conference on human environment was held in 1972¹⁰¹, and since then it takes place after every ten years¹⁰². The focal theme of the first international conference based on anthropocentric approach which was the crux of the declaration has been repeatedly followed in all other

⁹⁹ (2000) 3 SCC 745.

¹⁰⁰ [Criminal Appeal No. 152 of 2012]

¹⁰¹ Stockholm Declaration on Human Environment, 1972. The declarations made in this conference are known as Magna Carta on human environment.

¹⁰² Second was held in 1982 at Nairobi, third in 1992 at Rio de Janeiro, fourth in 2002 at Johannesburg and fifth in 2012 at Rio de Janeiro. For details see, Satish C. Shastri, *Environmental Ethics Anthropocentric to Eco-Centric Approach: A Paradigm Shift*, Journal of the Indian Law Institute, Vol. 55, No. 4, Oct-Nov 2013.

international conferences¹⁰³ which were held during last four decades. According to the anthropocentric approach other components or natural things are being maintained, preserved or protected as they are essential for the existence of human beings. The need for mankind is the sole criterion to safeguard the natural resources and to maintain the quality of them. This approach to maintain the ecological balance and prevent environmental degradation safeguarding *Homo sapiens* was adopted worldwide and the Supreme Court of India also reiterated it in many of its pronouncements.

The Supreme Court has always emphasized on the need to preserve the quality of the various components of environment-vegetation cover¹⁰⁴, air¹⁰⁵, water¹⁰⁶, fauna¹⁰⁷, *underground water*¹⁰⁸, etc. It was from the *M.C. Mehta* case to till *Vellore Tanneries* case or even thereafter the approach of the Supreme Court was only on anthropocentrism. But, recently there is a paradigm shift from anthropocentrism to eco-centricism. This eco-centric approach stresses on the intrinsic values of all the naturally present things and that they, if preserved and protected, would preserve and protect other forms of life on earth. The Supreme Court of India has adopted and implemented this eco-centric approach recently¹⁰⁹.

¹⁰³ In Rio Declaration, 1992, Principle 1 declared that, Human beings are at the centre of concern for sustainable development. They are entitled to a healthy and productive life in harmony with nature.’ Principle 6 of the Rio Declaration on Sustainable Development of 2012 observed that ‘We recognize that people are at the centre of sustainable development and in this regard we strive for a world that is just, equitable and inclusive, and we commit to work together to promote sustained and inclusive economic growth, social development and environmental protection and thereby to benefit all’.

¹⁰⁴ *Tarun Bharat Sangh v. Union of India*, AIR 1992 SC 514; *Rural Litigation & Entitlement Kendra, Dehradun v. Union of India*, AIR 1985 SC 652; *T.N. Godavarman Thirumulpad v. Union of India*, AIR 1997 SC 1228.

¹⁰⁵ *M.C. Mehta v. Union of India*, AIR 2002 SC 1696; *M.C. Mehta v. Union of India*, AIR 1997 SC 734.

¹⁰⁶ *M.C. Mehta v. Union of India*, AIR 1998 SC 1037, 1088, 2340.

¹⁰⁷ *Consumer Education & Research Society v. Union of India*, AIR 2000 SC 975.

¹⁰⁸ *Indian Council for Enviro-Legal Action v. Union of India*, AIR 1996 SC 1446.

¹⁰⁹ Some of the noteworthy decisions of the Supreme Court are as follows: First one is *T.N. Godavarman Thirumulpad* case, (2012) 3 SCC 277, the second one is *T.N. Godavarman Thirumulpad v. Union of India*, (2012) 4 SCC 362, 374, and the third one is *Centre for Environment Law, WWF-I V. Union of India*, (2013) 8 SCC 234 decided on April 15, 2013. The first case was about protection and preservation of the ‘Asiatic wild Buffalo’, second one was about the preservation of ‘Red Sandalwood’ and the third case was relating to safeguard the ‘Asiatic wild Lion’ an endangered species. Generally speaking, these three do not carry any value or are not of much use to human beings, but looking to their intrinsic value and that they are representative samples of nature, the court ordered for taking necessary safeguards to preserve and look after them as they are part of the nature-wildlife.

*Environment & Consumer Protection Foundation vs. Delhi Administration and others*¹¹⁰.

In this case, the right to water and sanitation has been interpreted as a fundamental component of the right to education. The Supreme Court ordered that water and sanitation facilities must be provided at all schools for the sole purpose of realising the right to education.

An NGO sought to improve the conditions of water and sanitation at all schools in India. Before this particular case, the Supreme Court had already and repeatedly ordered all States in India to provide basic infrastructure, including toilet facilities and drinking water, in schools to ensure that children could study in a clean and healthy environment. While some States did not comply with these orders, some States submitted details of infrastructure facilities in schools. The information submitted showed that a number of schools did not provide for adequate toilet facilities for boys and girls and some schools did not provide drinking water either.

As a result, the Court passed interim orders on several occasions throughout 2011 and 2012, stating for example “It is imperative that all the schools must provide toilet facilities. Empirical researches have indicated that wherever toilet facilities are not provided in the schools, parents do not send their children (particularly girls) to schools. It clearly violates the right to free and compulsory education of children guaranteed under Article 21-A of the Constitution”.

In this case, the Court reiterated the previous orders and stated: “We notice that some of the States have not fully implemented the directions issued by this Court in *Society for Unaided Private Schools of Rajasthan* (supra) as well as the provisions contained in the RTE Act. Considering the facts that this Court has already issued various directions for proper implementation of the RTE Act and to frame rules, there is no reason to keep this Writ Petition pending”. The Court directed all States to give effect to its previous orders to

¹¹⁰ WRIT PETITION (CIVIL) NO. 631 OF 2004 ,decided by Supreme Court of India, 3 October 2012

provide toilet and water facilities in schools within the following six months. The Court explained that this applies equally to all schools, both State and privately owned, aided or unaided, minority or non-minority. The Court emphasised the need to implement these decisions by stating: “We make it clear that if the directions are not fully implemented, it is open to the aggrieved parties to move this Court for appropriate orders”.

The court also stated the necessity to change the approach from anthropocentric to eco-centric keeping in mind the vulnerability of the species. Therefore, this approach must be adopted to safeguard the existence of vulnerable, endangered species on the verge of extinction. Enormous number of species has been destroyed by human activities, but whatever is left must be preserved and looked after by this generation and for progeny. Thus the apex court has pronounced various landmark judgments for protecting the environment for the sake of preserving the interests of human beings. However, the Supreme Court’s pronouncements in the above stated cases revealed that it come out with the new philosophy for the protection of environment which includes water, a precious natural resource.

Recently, in *Mohd. Salim V. State of Uttarakhand & others*¹¹¹, the Uttarakhand High Court had declared the Ganga and Yamuna rivers as 'living persons' Under the clause, those who polluted the two rivers, were liable to be punished by law.

The Supreme Court on July 7, 2017 stayed the order of the Uttarakhand High Court recognizing the rivers Ganga and Yamuna as “living entities”. The high court’s order of March 20 was challenged by Uttarakhand’s government in the apex court. By recognizing the rivers as living entities, the court gave the rivers the rights of a “juristic person.” The order describes “juristic person” as “recognition of an entity to be in law a person which otherwise it is not.” The rivers were recognised as minors in the order and the director of Namami Gange, the Chief Secretary of the State of Uttarakhand and the Advocate

¹¹¹ Writ Petition (PIL) No.126 of 2014, available at: <http://www.livelaw.in/first-india-uttarakhand-hc-declares-ganga-yamuna-rivers-living-legal-entities/> (accessed on 29.12.2017)

General of the State of Uttarakhand were made the river's guardians. The idea here was the same that brings corporations—which are non-persons—under law. The Uttarakhand government had challenged the order on the ground that could the victims of floods in Ganga and Yamuna sue the guardians of the rivers?

“This argument of victims of floods isn't a strong one. These are people who have encroached on the flood plain and are therefore affected by floods,” says Manoj Mishra of Yamuna Jiye Abhiyaan. He also says that the high court order was in line with the traditional understanding of a river as a mother, which is a living, giving entity. However, he says that the order would mean nothing more than just words on paper in the absence of implementation.

In, *Kalia Sethi And Another v. State Of Odisha And Others*¹¹²

National Green Tribunal Chairperson Justice Swatanter Kumar submits that to enforce the various Environmental Laws, National Green Tribunal has been enacted with the scope to maintain the Environmental Laws for the larger issue, hence the National Green Tribunal has every reason to interfere in cases where there is violation of Environmental Laws or ask the regulatory body to look into as to whether the Environmental Law is being followed or not, in that capacity, the National Green Tribunal has passed an order in O.A. No.124/2015/EZ in the case of *Biranchi Narayan Mahapatra V. State of Odisha and Others* which was disposed of vide order dtd.15th December, 2016 directing the State Pollution Control Board to consider before granting consent to operate.

In various Landmark judgements, Hon'ble Justice Swatanter Kumar, during his tenure as NGT chief, passed several landmark orders and judgements. These include the ban on 10- year-old diesel and 15-year-old petrol vehicles¹¹³, the slew of directions for rejuvenation of the Ganga and

¹¹² Available at: <https://indiankanoon.org/doc/198796622/>

¹¹³ Vardhaman Kaushik Vs. Union of India & Ors, Original Application No.21 of 2014, <http://www.livelaw.in/ngt-disallows-15-year-old-vehicles-roads-national-capital/>

Yamuna¹¹⁴, the demolition of illegal hotels in Himachal Pradesh and the ban on plastic items in Delhi, Haridwar and Punjab. His recent order capping the number of pilgrims at Vaishno Devi to 50,000 per day and his direction to maintain silence at Amarnath invited ire from various quarters¹¹⁵.

5.5. Conclusion

The formulation and recognition of various doctrines and strategies signify a judicial awareness on the need for reconciliation of the developmental, socio-economic, and ecological conflicts in the present day Indian society. This awareness is reflected in the cases that came before the courts for review. Man must live and he must live well, in a healthy and safe atmosphere this has been the judicial dictum and its entire efforts have been directed towards achieving that goal. It has, therefore, evolved diverse principles such as absolute liability, and public trust doctrine to preserve the human environment and to uphold man's right to live in a wholesome environment. It has ordered the closure of hazardous industries, the shifting of the place of industrial operation and the imposition of criminal responsibility on directors, for their failure in taking necessary anti-pollution measures.

The court has also directed the payment of compensation to victims of environmental calamities. It has clearly specified that there can be no compromise with environmental preservation; it has to be done to ensure the survival of the coming generations and to give them a life with human dignity. The Apex Court has also opined that the High Court has the proper authority to consider what should be the appropriate remedy for such type of cases. The decisions of the Apex Court, while strengthening the application of the principle of polluter pays, also adds new dimension regarding the qualification of punishment under this principle, though, the Apex Court has been silent about developing sound principles of quantification of pecuniary liability.

¹¹⁴ Lalit Miglani Vs. State of Uttarakhand & others, Writ Petition (PIL) No.140 of 2015, <http://www.livelaw.in/cleaning-ganga-uttarakhand-hc-issues-directives-authorities-calls-cag-audit-schemes/>

¹¹⁵ Gauri Maulekhi Vs. State of J&K & Ors., Original Application No. 473 of 2015, <http://www.livelaw.in/pilgrim-must-keep-silence-standing-front-amarnath-shivling-no-restriction-daily-aartis-rituals-clarifies-ngt-read-orders/>

On the whole, one may appreciate the bold attempts made by the Indian Judiciary to ensure the establishment of a clean, pollution-free environment. The recent pronouncements of the Supreme Court have stated about its new approach based on eco-centricism for the purpose of maintaining environmental ethics. However, the problem of locus standi is still to be sorted out. Protection and improvement of the environment is the constitutional commitment. It is pity if this public cause is lost on the ground of bias, prejudices and malafides of the litigant approaching the court. In several instances proponents make heavy investments for eco-unfriendly projects and attempt to raise the plea of fait accompli. Although the courts have expressed concern on this aspect, a more bold and consistent judicial policy has to emerge for the purpose of strengthening the regime of environment in the country. The problem of environmental justice cannot be solved only by giving the opportunity to access the court for seeking justice unless and until the judicial pronouncements are enforced effectively to provide environmental justice and put justice in place of injustice done to the public. Therefore, there is a need for fair, honest, competent and responsive enforcement machinery.

Chapter-VI

Chapter-6

Water as Human Rights: The Challenges in Globalized Era

6.1 Introduction

In the past century, the world's population tripled while global demand for water has increased six-fold¹. Today, more than a billion people lack safe drinking water and almost two and a half billion live without access to sanitation systems². An estimated 14 to 30 thousand people, mostly young and elderly, die every day from avoidable water-related diseases³. If current trends persist, by 2025 two-thirds of the world's population will be living with serious water shortages or almost no water at all⁴. The availability of adequate water supply is critical to every aspect of human life, a water crisis would have adverse impacts on health and welfare, the environment and economics world-wide. The year 2003 was identified by the United Nations as the International Year of Freshwater with one of its aims to reassert the UN's Millennium Declaration Goal: "to halve, by the year 2015, the proportion of people who are unable to reach, or to afford, safe drinking water"⁵ and "to stop the unsustainable exploitation of water resources."⁶ The Goal, endorsed by the World Summit on Sustainable Development held in Johannesburg in 2002, also set a new target of halving the proportion of people who do not have access to basic sanitation by 2015. It recognised the key role of water in agriculture, energy, health, biodiversity and

¹ UNFPA, Population Issues (1999) "Population and Sustainable Development", Available at : www.unfpa.org/modules/6billion/populationissues/development.htm (accessed on 25.12.2017)

² UNDP, Millennium Development Goals, Available at: <http://www.undp.org/mdg/>(accessed on 25.12.2017).

³ UN Press Release, WaterYear2003: International Year Aims to Galvanize Action on Critical WaterProblems. Published by the United Nations Department of Public Information.DPI/2293A December2002.

⁴ UNESCO Courier, February 1999.

⁵ Para 19 of the Millenium Declaration (2000) Resolution referred by the General Assembly at its fifty-fourth session. (A/55/2) Adoption by fifty-fifth session.

⁶Id at Para 23.

ecosystems as well as in combating poverty. These goals are timely given that “the availability of clean, fresh water is one of the most important issues facing humanity today and will be increasingly critical for the future, as growing demands outstrip supplies and pollution continues to contaminate rivers, lakes and streams.”⁷ The link between social well-being and environmental health will become increasingly important and securing social well-being without acknowledging the environmental realities will ultimately fail. The active participation of all sectors of national and international society is critical for ensuring better management and planning for meeting basic water needs. The outcome of our efforts will be vital to the health and well-being of billions of people. Formally acknowledging water as a human right, and expressing the willingness to give content and effect to this right, may be a way of encouraging the international community and governments to enhance their efforts to satisfy basic human needs and to meet the Millennium Development Goals. It could further serve to increase the pressure to translate such a right into specific national and international legal obligations and responsibilities, and to focus attention on the need to resolve conflicts over the use of shared water⁸. Water as a human right may be a useful tool for addressing one of the major failures of the 20th century.

The researcher define a ‘right to water’ as the right to access sufficient water, with the term ‘access’ also including economic accessibility, i.e. affordability, and with the term ‘sufficient’ referring to both the quality and quantity of water necessary to meet basic human needs. This formulation is proposed to distinguish it from the ‘right to access to water’, which as seen by the researcher is only one facet of the right analysed in this chapter⁹. To consider a

⁷ UN Press Release, WaterYear2003: International Year Aims to Galvanize Action on Critical WaterProblems. Published by the United Nations Department of Public Information.DPI/2293A December2002.

⁸ For example by identifying environmental flow requirements and allocations for all basin parties.

⁹ The elimination of the term ‘access’ was proposed by Mr El HadjiGuisse, Special Rapporteur for the Sub-Commission on the Promotion and Protection of Human Rights who prepared a report on the right to drinking water, which was then accepted and further elaborated in General Comment No. 15.

‘right to access to water’ in isolation may not touch upon fundamental issues such as quality and quantity. The first part of this chapter comprises a legal analysis of whether such a right is present in international legal instruments. The researcher conclude that a right to water has not yet explicitly entered into human rights framework and environmental spheres. The next part of this chapter addresses the relevance of linking human rights and water. Why do we need such a right? What would be the benefits, if there were any? Why should we go into another academic debate when action is really what is necessary? These ‘whys’ will lead to another essential question: if there were to be such a right, what shape should it take? This issue is addressed in the third part of this chapter. What do we mean exactly by a ‘right to water’? Would it be another fashionable piece in the shop-window of the human rights domain or are there any mechanisms to ensure its implementation? Do we only want to create duties for governments or do we want to strive for the inclusion of all sectors with regards to ensuring basic water and sanitation supplies for all? Is the main question before us which need to be answered.

6.2 Human rights to water under international law

There have been both explicit and implied references to a right to water in public international law. Some of the instruments included in the following analysis are traditional human rights instruments. Instruments arising in the humanitarian law arena, as well as more traditional environmental legal instruments, where the importance of water for human need is emphasised, are also considered. Art. 38(1) of the Statute of the International Court of Justice is relied upon in determining sources of international law for the purposes of the legal analysis.

1. UN Charter Although no express mention of water is made in the UN Charter¹⁰, the contemporary challenges that we face as a global community elevate the central role played by water in the achievement of the Charter's goals. Art. 55 of the Charter promotes:

a. Higher standards of living, full employment, and conditions of economic and social progress and development;

b. Solutions of international economic, social, health, and related problems; and international cultural and educational cooperation; and

c. Universal respect for, and observance of, human rights and fundamental freedoms for all without distinction as to race, sex, language or religion. Given an uncertain climatic future, population increases, and ultimately water shortages, a right to water may be a necessary avenue to uphold many of these undertakings.

2. Universal Declaration of Human Rights

In 1948, the General Assembly adopted the text of the Universal Declaration on Human Rights; though not binding, many of its provisions are now considered to be customary international law, reasserted in many international legal instruments. Art. 25 proclaims "everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services..." One may wonder why 'water' was not incorporated in this formulation; perhaps water was considered to be implicitly included. The term 'including' shows that the component elements listed were not meant to form an all-inclusive list, but serve as an indication of certain factors essential for an adequate standard of living.

¹⁰ Charter of the United Nations, adopted 26 June 1945, entered into force 24 October 1945, as amended by G.A. Res. 1991 (XVIII) 17 December 1963, entered into force 31 August 1965 (557 UNTS 143); 2101 of December 1965, entered into force 12 June 1968 (638 UNTS 308); and 2847 (CCVI) of 20 December 1971, entered into force 25 September 1973 (892 UNTS 119).

Satisfying the standards of the Declaration cannot be done without water of sufficient quantity and quality to maintain human health and well being¹¹.

3. Geneva Conventions and Protocols

The Geneva Conventions and their Additional Protocols explicitly recognise a right to water, but such a right focuses on drinking water. A right to drinking water is found in: Arts. 20, 26, 29 and 46, Geneva Convention III (1949); Arts. 85, 89 and 127, Geneva Convention IV (1949); Arts. 54 and 55, Additional Protocol I (1977); Arts. 5 and 14, Additional Protocol II (1977)¹².

4. The 1966 Covenants

The legally binding human rights covenants of 1966, the International Covenant on Civil and Political Rights (ICCPR)¹³ and the International Covenant on Economic, Social and Cultural Rights (ICESCR)¹⁴ implicitly recognise a right to water, although perhaps more strongly so in the ICESCR. The ICCPR affirms the “right to life”¹⁵, which has conventionally been interpreted to mean that no person shall be deprived of his or her life in a civil and political sense. According to the Human Rights Committee (HRC) in adopting a General Comment on this issue, this should now be interpreted expansively to include measures to reduce infant mortality and to increase life expectancy, especially in adopting measures to eliminate malnutrition and epidemics. “HRC has noted that the right to life has been too often narrowly interpreted. The expression ‘inherent right to life’ cannot properly be understood in a restrictive manner, and the protection of this right

¹¹ Peter H. Gleick, “The Human Right to Water” *Water Policy* 1(5) (1999) at 487–503.

¹² *Ibid.*

¹³ International Covenant on Civil and Political Rights, adopted 16 December 1966, entered into force 23 March 1976, G.A. Res. 2200A (XXI), UN Doc A/6316 (1966), 99 UNTS 171, reprinted in 6 ILM 368(1967).

¹⁴ International Covenant on Economic, Social and Cultural Rights, adopted 16 December 1966, entered into force 3 January 1976, G.A. Res. 2200A (XXI), UN Doc. A/6316 (1966), 993 UNTS 2, reprinted in 6 ILM 360.

¹⁵ ICCPR Art. 6(1): “Every human being has the inherent right to life. This right shall be protected by law. No one shall be arbitrarily deprived of his life.”

requires that States adopt positive measures.¹⁶” Disregarding this new development in the understanding of Art. 6 and assuming a narrow interpretation of such a right would nevertheless require the inclusion of the protection against arbitrary and intentional denial of access to sufficient water, because this is one of the most fundamental resources necessary to sustain life.

In the ICESCR, it may be argued that the right to water is already apparent in Arts. 11–12. The newly adopted General Comment¹⁷ by the UN Committee on Economic, Social and Cultural Rights left little doubt as to its view of the correct legal position: “The human right to water is indispensable for leading a life in human dignity. It is prerequisite for the realization of other human rights.” There is no obligation on State parties to implement the Covenant’s provisions immediately. Hence, even though there is an implied right to water, such a right does not necessarily have to be given immediate effect. Member States do have certain immediate obligations, which include the obligation to take steps Art. 2(1) towards the full realization of Arts.11(1) and 12. Therefore, because the above-mentioned General Comment (which amounts to an interpretative instrument for Arts. 11 and 12) specifically recognises the human right to water, Member States “have a constant and continuing duty¹⁸” to progressively take active steps (including the development of policy, strategy and action plans) in order to ensure that everyone has access to safe and secure drinking water and sanitation facilities. This should be undertaken equitably and without discrimination of any kind, as Art. 2(2) requires.

¹⁶ Human Rights Committee, General Comment No. 6 adopted at the Sixteenth session (1982) on Art. 6 of ICCPR.

¹⁷United Nations Economic and Social Council, Committee on Economic Social and Cultural Rights, General Comment No.15 (2002). The right to water (Arts. 11 and 12 of the International Covenant on Economic, Social and Cultural Rights) Twenty-ninth session, Geneva, 11–29 November 2002. E/C.12/2002/11.

¹⁸*Id.* at 8.

5. Declaration on the Right to Development

Several international documents, among them the Vienna Declaration, state that the right to development is a “universal and inalienable right and an integral part of fundamental human rights”¹⁹. Art. 8(1) of the Declaration on the Right to Development says that “states should undertake, at the national level, all necessary measures for the realization of the right to development and shall ensure, inter alia, equality of opportunity for all in their access to basic resources ...” In interpreting this article, the General Assembly clarified and reaffirmed in its Resolution 54/175 that “the rights to food and clean water are fundamental human rights and their promotion constitutes a moral imperative both for national Governments and for the international community.”²⁰

6. CEDAW and the Convention on the Rights of the Child

To date, only two human rights treaties have referred directly to a right to water, the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW)²¹, and the Convention on the Rights of the Child²². CEDAW obliges the States Parties to eliminate discrimination against women, particularly in rural areas to ensure that women “enjoy adequate living conditions, particularly in relation to housing, sanitation, electricity and water supply, transport and communications.”²³ Does international law recognise a human right to water? recognition of water may be viewed as a testament to the uneven burden

¹⁹ Art I(10) of the Vienna Declaration and Programme of Action, GA/CONF.157/23, adopted by the World Conference on Human Rights on 25 June 1993.

²⁰ GA/RES/54/175, 15 February 2000.

²¹ Adopted 18 December 1979, entered into force 3 September 1981, G.A. Res. 34/180, 34 UN GAOR, Supp. (No. 46), UN Doc. A/34/46, at 193 (1979), reprinted in 19 ILM 33 (1980).

²² Adopted and opened for signature, ratification and accession by General Assembly Resolution 44/25 of 20 November 1989, entry into force 2 September 1990.

²³ Adopted 18 December 1979, entered into force 3 September 1981, G.A. Res. 34/180, 34 UN GAOR, Supp. (No. 46), UN Doc. A/34/46, at 193 (1979), reprinted in 19 ILM 33 (1980). Art. 14(2)(h).

traditionally placed on women in developing countries to collect water over long distances and represents an attempt to redress this burden²⁴.

A different emphasis is made in the Convention on the Rights of the Child. It recognises a child's right to enjoy the highest attainable standard of health in order to "combat disease and malnutrition, including within the framework of primary health care, through, inter alia, the application of readily available technology and through the provision of adequate nutritious foods and clean drinking-water, taking into consideration the dangers and risks of environmental pollution..."²⁵ In contrast to CEDAW, the pressing water issue for children is related more to health, and hence water quality rather than any other issue is emphasised.

6.2.1. Right to Water

Various courts have upheld that the right to clean and safe water is an aspect of the right to life. For instance, in *Narmada BachaoAndolan v. Union of India*²⁶, the Supreme Court said that —water is the basic need for the survival of human beings and is part of right to life and human rights as enshrined in Article 21 of the Constitution of India. Pollution caused by tanning industry, existed in *M.C.Mehta cases*²⁷. Though there is no reference to the right to life, the main judgment took for granted that the fundamental right is violated by the alleged pollution, and that this violation entails the court to interfere and issue directions for a remedy despite the mechanisms available in the Water Act.

²⁴ Research shows that households in rural Africa spend 26% of their time fetching water, and it is generally women who perform this duty. (DFID, 2001a).

²⁵ Adopted 18 December 1979, entered into force 3 September 1981, G.A. Res. 34/180, 34 UN GAOR, Supp. (No. 46), UN Doc. A/34/46, at 193 (1979), reprinted in 19 ILM 33 (1980).Art. 24(2)(c).

²⁶ AIR 2000 SC 3751, pp3825, 3830.

²⁷ *MC.Mehta v. Union of India* AIR 1988 SC 1037. The tanning industries located on the banks of Ganga were alleged to be polluting the river. The court issued directions to them to set up effluent plants within six months from the date of the order. It was specified that failure to do so would entail closure of business.

In the supporting judgment, however, KN Singh J noted that the pollution of river Ganga is affecting the life, health and ecology of Indo-Gangetic plain and concluded that although the closure of tanneries might result in unemployment and loss of revenue; life, health and ecology had greater importance. The first time when the Supreme Court came close to declaring the right to environment in art 21 was in the early nineties. In *Chhetriya Pardushan Mukthi Sangarsh Samati v. State of Uttar Pradesh*²⁸, Sabyasachi Mukerjee CJ observed: Every citizen has a fundamental right to have the enjoyment of quality of life and living as contemplated in Art 21 of the Constitution of India²⁹.

In *Subhash Kumar v. State of Bihar*³⁰ K.N.Singh J observed that Right to live... includes the right to enjoyment pollution free water and air for full enjoyment of life'. However, in both the cases, the court did not get an opportunity to apply the principles because the petitioners had made false allegations due to personal towards the respondent companies alleged to be polluting the environment. The real opportunity came before the Supreme Court in the year 1991 in *Bangalore Medical Trust v. B S Mudappa*³¹, the court laid emphasis on the constitutional mandate for the protection of individual freedom and dignity and attainments of a quality of life, which a healthy and clean environment guarantees.

In *Indian Council for Enviro-legal Action v. Union of India*³², remedial action was sought for the loss received by the villagers of Bichari where the

²⁸ AIR 1990 SC 2060.

²⁹ *Id* at 2062.

³⁰ AIR 1991 SC 420, p 424.

³¹ AIR 1991 SC 1902.

³² AIR 1996 SC 1446, Sludge percolated into the earth, making the soil reddish and groundwater highly polluted. The water in wells became dark in colour, and was no longer fit for human consumption or by cattle. The leaves of the trees got stunted. Sludge flowed into irrigation canal. Crops were affected. In addition, the respondents without taking adequate measures were discharging untreated toxic water emanating from the sulphuric acid plant. Toxic water was flowing over the sludge. This was unauthorized.

chemical industries for manufacture of toxic H⁺acid were located. Although the respondents stopped producing the toxic material, they did not comply with various orders of the court in completely removing the sludge or storing them in a safe place³³. All facts and materials were brought to the notice of the court³⁴. The Court categorically fixed the responsibility on the errant industry and asked the Central Government to recover, in case the industry failed to take effective remedial action, the expenses for the action³⁵. Further, it was stated that, it was a social action litigation on behalf of the villagers, whose right to life was seriously invaded and infringed by the respondents. When the industry is run in blatant disregard of the law to the detriment of life and liberty of the citizens living in the vicinity, it is self-evident that court shall intervene and protect the fundamental right and liberty of the citizens³⁶.

In *MC Mehta v. Kamal Nath*,³⁷ it was made clear that _any disturbance of the basic environmental elements, namely, air, water, and soil, which are necessary for _life_, would be hazardous to life within the meaning of art 21 of the Constitution'. But judgments do not constitute law or policy; at best, they provide directions for the formulation of laws and policies. As yet, no laws or policies have been formulated asserting that water is a fundamental and inviolable right enjoyed by every citizen of the country. The right to water can therefore be obtained in India only on a case-by-case basis, by going to court.

³³AIR 1996 SC1446, p 1449.

³⁴ NEERI prepared a report, which also contained the opinion of experts from the Ministry of Environment and Forests, and views of the pollution control board.

³⁵AIR 1996 SC 1446, p 1468.

³⁶AIR 1996 SC 1446, p 1468.

³⁷ AIR 2000 SC 1997, PP 2000,2003.

6.2.2. Right to Water and the Supreme Court of India

The Supreme Court in *Subhash Kumar v. State of Bihar*³⁸, held that, —The right to live is a fundamental right under Article 21 of the Constitution and it includes the right of enjoyment of pollution free water and air for full enjoyment of life.

In *State of Karnataka v. State of Andhra Pradesh*³⁹, the Supreme Court had pointed out that, There is no dispute that under the constitutional scheme in our country right to water is a right to life and thus a fundamental right.

6.2.3. Right to Water and the High Courts of various States

F.K. Hussain v. Union of India:⁴⁰

The right to life is much more than the animal existence and its attributes are many folds, as life itself. A prioritization of human needs and a new value system has been recognized in these areas. The right to sweet water, and the right to free air, are attributes of the right to life, for, these are the basic elements which sustain life itself.

*Hamid Khan v. State of Madhya Pradesh*⁴¹

³⁸ *Subhash Kumar v. State of Bihar*, AIR 1991 SC 420.

³⁹ *State of Karnataka v. State of Andhra Pradesh*, (2000) 9 SCC 572.

⁴⁰ AIR 1990 Ker.321 at 323. See also *Madhaviv. Tilakan*, 1988 (2) Ker. L.T. 730&731.

⁴¹ AIR 1997 MP 191, where a public interest litigation was filed to protect the right to life of the villagers from the supply of polluted drinking water containing excessive fluoride contents. Thousands of villagers were suffering from bone diseases due to consumption of such polluted water. The court held that failure of the State to take proper precaution to provide proper drinking water to citizens amounts to failure of the State in discharging its responsibility under Article 47 of the Constitution. The Madhya Pradesh High Court further directed the State Government to give free medical treatment to such affected persons including free surgical treatment along with compensation as specified by the Court. See also *Dr. Ashok v. Union of India*, (1997) 5 SCC 10.

The state —is also covered by Article 21 of the Constitution of India and it is the right of the citizens of India to have protection of life, to have pollution free air and pure water. Therefore, it was the duty of the state towards every citizen of India to provide pure drinking water.

*Vishala Kochi KudivellaSamrakshanaSamiti v. State of Kerala*⁴²

The failure of the state to provide safe drinking water to the citizens in adequate quantities would amount to a violation of the fundamental right to life enshrined in Article 21 of the Constitution of India and would be a violation of human rights. Therefore, every government, which has its priorities right, should give foremost importance to providing safe drinking water even at the cost of other development programmes. Besides the judgments of courts, however, there is relatively little in the legal and policy framework that recognizes the fundamental right to water.

The National Water Policy, 2002 calls water a basic human need rather than a right⁴³. The National Rural Drinking Water Programme is concerned with the provision of safe water for basic needs rather than water as a fundamental right. There are a large number of laws relate to water and water-based resources but they pay scant attention to the implementation of the right to water. Therefore, it may not be possible to hold the government legally liable for the failure to respect protect and fulfil the fundamental human right to water.

Unlike India, however, the constitutions of some countries expressly include access to water as a fundamental human right. South Africa (1996): Everyone has the right to have access to sufficient food and water (Article 27(1)).

⁴² 2006 (1) KLT 919; See also *Shajimon Joseph v. State of Kerala*, 2007 (1) KLT 368.

⁴³ The National Water Policy, 2002, para 1.1.

Uruguay (1967) (amended in 2004): Access to drinking water and access to sanitation constitute fundamental human rights (Article 47).

6.3 Global environmental instruments

The right to water is more often expressed within non-legally binding resolutions and declarations. These instruments, both international and regional in scope, accept that fundamental human rights, such as life, health, and well being are dependent upon the premise that people are guaranteed access to sufficient quality and quantity of water. The following takes note of some of these instruments, which recognise a right to water to varying degrees⁴⁴.

1. Stockholm Declaration

The Declaration is one of the earliest environmental instruments that recognises the fundamental right to “an environment of a quality that permits a life of dignity and well being⁴⁵” and also that “the natural resources of the earth including water must be safeguarded for the benefit of present and future generations...”⁴⁶

2. Mar del Plata Action Plan

Specific water instruments, such as the Action Plan from the United Nations Water Conference held in Mar del Plata in 1977, recognised water as a “right”, declaring that all people have the right to drinking water in quantities and of a quality equal to their basic needs⁴⁷. The primary outcome of this conference

⁴⁴ For a fuller list, the reader is referred to Appendix I.

⁴⁵ Principle 1: “Man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being, and he bears a solemn responsibility to protect and improve the environment...”

⁴⁶ Principle 2: “The natural resources of the earth including the air, water, land, flora and fauna and especially representative samples of natural ecosystems must be safeguarded for the benefit of present and future generations through careful planning or management, as appropriate.”

⁴⁷ Preamble, United Nations. (1977). Report of the United Nations Water Conference, Mar Del Plata. March 14–25, 1997. No E 77 II A 12, United Nations Publications, New York.

was the launching of the International Drinking Water Supply and Sanitation Decade (1980–1990) with the slogan ‘Water and Sanitation for All’

3. Dublin Statement

Principle 4 of the Dublin Conference on Water and Sustainable Development explicitly reaffirmed the human right to water: “ it is vital to recognize first the basic right of all human beings to have access to clean water and sanitation at an affordable price.”

4. Agenda 21

Agenda 21, the blueprint for sustainable development, is possibly the primary non- binding international environmental legal instrument. Chapter 18 on freshwater notes that a right to water entails three elements: access, quality and quantity, including not only a “general objective ...to make certain that adequate supplies of water of good quality are maintained for the entire population of this planet⁴⁸”, but also to provide that “all peoples, whatever their stage of development and their social and economic conditions, have the right to have access to drinking water in quantities and of a quality equal to their basic human needs.⁴⁹” Overall, an integrated approach is promoted throughout the chapter, which emphasises the three elements of sustainable development as equally important; water is to be viewed as “a natural resource and a social and economic good, whose quantity and quality determine the nature of its utilization.⁵⁰”

5. Millennium Declaration and Political Declaration of Johannesburg

Both the Millennium Declaration and the discourse adopted at the recent World Summit on Sustainable Development (WSSD) enhance the possibility of linking environmental health with human development goals in the global effort to

⁴⁸Agenda 21, Para 18.2.

⁴⁹*Id* Para 18.47.

⁵⁰*Id* Para 18.48.

eliminate poverty. However, WSSD together with the World Water Forums (Hague, Bonn, and Kyoto) failed to expressly recognise a fundamental human right to water. The indivisibility of human dignity and a right to water has been included in the Political Declaration of the World Summit on Sustainable Development through the commitment “to speedily increase access to such basic requirements as clean water, sanitation, adequate shelter, energy, health care, food security and the protection of biodiversity...⁵¹”

6.4 Regional arrangements

Regionally too, there are numerous legal instruments which explicitly or implicitly recognise a right to water are following:

1. ECEL Resolution

The European Council of Environmental Law (ECEL) Resolution on the right to water⁵², forms yet another definitive link between human rights and water and “considers that access to water is part of a sustainable development policy and cannot be regulated by market forces alone”, and “considers that the right to water cannot be dissociated from the right to food. The right to housing which are recognized as human rights and that the right to water is also closely linked to the right to health.”⁵³ Art. 1 of the Resolution states “each person has the right to water in sufficient quantity and quality for his life and health.”

2. ECE Protocol

The European Commission of the United Nations for Europe (ECE) Protocol on Water and Health to the 1992 Convention on the Use of Transboundary Watercourses and International Lakes specifically states that

⁵¹ Para 18, Johannesburg Declaration on Sustainable Development, agreed to at the World Summit on Sustainable Development, Johannesburg, South Africa 26 August–4 September 2002 (A/Conf.199/L.6/Rev.2).

⁵² ECEL Resolution, adopted 28 April 2000, published in Environmental Policy and Law, 30/5 (2000).

⁵³ *Id* at Preamble.

“parties shall, in particular, take all appropriate measures for the purpose of ensuring: (a) adequate supplies of wholesome drinking water ; (b) adequate sanitation ”⁵⁴. It mentions the three central aspects of a human right to water, stating that “equitable access to water, adequate in terms of both quantity and of quality, should be provided for all members of the population, especially those who suffer a disadvantage or social exclusion.”⁵⁵ Access to water and sanitation services are reinforced in Art. 6(1), which provides that “the Parties shall pursue the aims of: (a) access to drinking water for everyone; (b) provision of sanitation for everyone”.

3. African Charters

There are a few instruments specific to the African region, such as the African Charter on Human and People’s Rights, which notes broadly that “all peoples shall have the right to a general satisfactory environment favorable to their development”⁵⁶, and the African Charter on the Rights and Welfare of the Child, which states that “every child shall have the right to enjoy the best attainable state of physical, mental and spiritual health”⁵⁷ and States Parties are required to take measures “to ensure the provision of adequate nutrition and safe drinking water.”⁵⁸

4. Protocol of San Salvador

Art. 11 of the Additional Protocol to the American Convention on Human Rights in the Area of Economic, Social and Cultural Rights provides that “everyone shall have the right to live in a healthy environment and to have access to basic public services.” It is undoubtable that basic public services include water

⁵⁴ Art. 4(1) of the ECE Protocol, adopted on 17 June 1999 at the Third Ministerial Conference on Environment and Health.

⁵⁵ *Id* at Art.5(1).

⁵⁶ Art. 24 of the African [Banjul] Charter on Human and Peoples’ Rights, adopted June 27, 1981, OAU Doc. CAB/LEG/67/3 rev. 5, 21 I.L.M. 58 (1982), entered into force Oct. 21, 1986.

⁵⁷ Art. 14(1) of the African Charter on the Rights and Welfare of the Child, OAU Doc. CAB/LEG/ 24.9/49 (1990), entered into force Nov. 29, 1999.

⁵⁸ *Ibid*. Art. 14(2)(c).

supply and sanitation: a report made by the Inter-American Commission on the human rights situation of Brazil clearly proves this by claiming that “there was inequality in the access to basic public services: 20.3% of the population have no access to potable water and 26.6% lack access to sanitary services...”⁵⁹

6.5 Customary international law

The development of environmental law as a recognised body of law has created an additional source of law for analysis of the existence of a right to water. This is because of uniform State practice may provide evidence of *opinio juris*. It is appropriate to consider national constitutions as a source of an emerging right to water and court interpretations of fundamental rights contained in those constitutions. Whilst over sixty constitutions refer to environmental obligations, less than one-half expressly refer to the right of its citizens to a healthy environment⁶⁰. Only the South African Bill of Rights enshrines an explicit right of access to sufficient water⁶¹. In view of the foregoing, a position that a uniform constitutional practice has emerged is rather doubtful, especially considering the fact that despite the increasing prevalence of constitutional environmental norms, most countries have yet to interpret or apply such norms⁶². In many countries, particularly those with a civil law tradition, traditionally constitutional rights were not regarded as being self-executing; legislation was required to implement a constitutional provision and to empower a person to invoke protections. However, with the rise of constitutionalism globally, courts increasingly view the constitution as an independent source of rights, enforceable even in the absence of

⁵⁹ Report on the Human Rights Situation in Brazil by the Inter-American Commission on Human Rights, Available at :<http://www.cidh.oas.org/countryrep/brazil-eng/chaper%202%20.htm> (accessed on 10/07/2017)

⁶⁰ Paula M. Pevato, “A Right to Environment in International Law: Current Status and Future Outlook”, in RECIEL, vol. 8 issue 3 (1999) at 315.

⁶¹ *Ibid.*

⁶² Environmental Law Institute Research Report, “Constitutional Environmental Law: Giving Force to Fundamental principles in Africa”, (May 2000) at 6.

implementing legislation⁶³. Thus, courts could and do rely on the environmental provisions of their constitutions when protecting water from pollution or ensuring access to water to meet basic human needs. Where constitutions lack environmental provisions, reliance has been placed on the right to life, a provision contained in most constitutions worldwide. Constitutions many times incorporate ‘penumbral rights’, rights that are not explicitly mentioned in the constitution, but are consistent with its principles and existing rights⁶⁴. These rights could easily adopt emerging fundamental human rights.

Both civil and common-law countries have incorporated the ‘Public Trust Doctrine’ in their constitutions⁶⁵. The doctrine dates back to the Institutes of Justinian (530 A.D.) and requires governments to protect certain resources, like water, that the government holds in trust for the public⁶⁶. Many of the US state constitutions have incorporated this doctrine, and courts in at least five states have used them to review state action⁶⁷. Similarly, Indian and Sri Lankan courts have relied on the doctrine to protect the environment. In the *M.C. Mehta v. Kamal Nath Case*⁶⁸ (1977), which concerned the diversion of a river’s flow, the Supreme Court held that the government violated the public trust by leasing the environmentally sensitive riparian forest land to a company. In a landmark decision concerning the Eppawela Phosphate Mining Project, the Sri Lankan Supreme Court said that the ‘Public Trust Doctrine’ on which the petitioners depended was “comparatively restrictive in scope”. The court instead put forward a broader doctrine revolving around “Public Guardianship” to protect the site of an ancient kingdom and agricultural lands, and prevent the forced relocation of

⁶³*Ibid.*

⁶⁴*Id* at 8.e.g. Art. 29 of Eritrea’s Const.: “The right in this Chapter shall not preclude other rights which ensue from the spirit of the Constitution and the principles of a society based on social justice, democracy and the rule of law”; Art. 32 of Algeria’s Const.: “The fundamental liberties and the Rights of Man and of citizen are guaranteed.”

⁶⁵ The public trust doctrine also exists by operation of the common law.

⁶⁶*Ibid.*

⁶⁷*Ibid.*

⁶⁸*M.C.Mehta v. Kamal Nath*, 1 S.C.C. 388 (Supreme Court of India, 1977).

residents in Sri Lanka's North Central Province. The Court said that "[t]he organs of the State are guardians to whom the people have committed the care and preservation of the resources of the people."⁶⁹ In many cases, courts have applied the provisions of the right to life, environment, etc. where an environmentally destructive activity directly threatened people's health and life. The cases set out in Appendix II show that while there might not be a constitutional right to water, courts have been prepared to liberally interpret existing constitutional provisions.

6.6 Judicial decisions

Recent decisions show that recognition of a human right to water, though not recognised within the law of nations *per se*, is an emerging trend. In the *Gabcikovo-Nagymaros Case*⁷⁰ (1997), Judge Weeramantry wrote that "[t]he protection of the environment is...a vital part of contemporary human rights doctrine, for it is a *sine qua non* for numerous human rights such as the right to health and the right to life itself...damage to the environment can impair and undermine all the human rights spoken of in the Universal Declaration and other human rights instruments."⁷¹ While there is no express recognition, human rights courts have been prepared to be creative and liberally interpret existing provisions in their decisions. The following shows how water has been recognised as an integral part of several fundamental human rights.

6.7 The human rights to water is not yet explicitly recognized.

The human right to water does exist, as water is the most essential element of life. However, as the overview of the present instruments indicated, this right has not been clearly defined in international law and has not been expressly

⁶⁹*Bulankulama v. The Secretary, Ministry of Industrial Development* (2000) Vol. 7 No. 2 South Asian Environmental Law Reporter 1. The judgment was delivered on 2 June 2000.

⁷⁰Case Concerning the Gabcikovo-Nagymaros Project (Slovakia-Hungary) Judgment of 25 September 1997, B. ICJ/692 9210707575.

⁷¹Quote from: P.M.Pevato, "A Right to Environment in International Law: Current Status and Future Outlook", RECIEL, vol. 8 issue 3 (1999), at 315.

recognised as a fundamental human right. Rather, a right to water is interpreted as being an implicit component of either existing fundamental human rights, or is expressly included in non-binding instruments that are designed to achieve specific ends⁷². Following both the Millennium Declaration and World Summit on Sustainable Development, the possibility has arisen for the creation of stronger linkages between all these instruments in recognition of their common objectives. The meaningful implementation of sustainable development can now be further advanced to help link social development and human rights aspects of sustainable development with the environment, as well as ensuring economic well-being through the benefits that adequate supplies of water can provide. This is important to ensure there is access to water of adequate quality and quantity to meet the needs of all societies, both now and in the future. If we are to consider the possibility of formulating a human right to water as a separate notion, then consolidation and clear definition of scope will be necessary, particularly as it will potentially relate to present international environmental principles and conventions.

6.8 Relationship between Water with Human Rights

What is the value of explicitly recognizing water as a human right? Would there be any practical benefit to recognizing a human right considering that despite the declaration of a human right to food, there are still nearly one billion people undernourished, and 25,000 people dying of hunger every day⁷³? Why waste more time on academic debates on whether or not to acknowledge water as a human right when it is already considered to be an integral part of other fundamental human rights? Why tackle the issue when in the end it is up to the political will of

⁷² In the circle of highly qualified publicists, there has been a growing consensus of the urgent need to define a human right to water. Authors, like Stephen McCaffrey, Peter Gleick, Henri Smets, William James Smith Jr, etc, UN organizations like FAO, UNESCO, WHO and NGOs, e.g. the Friends of the Earth, have made prestigious work in order to enhance water as a human right.

⁷³ Only in developing countries there is some 777 million people undernourished – WHO (2003).

each state whether to initiate effective implementation of a recognised human right to water?

More than ten years have passed since the Rio Earth Summit, but the international community has witnessed only limited implementation of the commitments made then. Achim Steiner, Director General of IUCN made the following observations when presenting to the Global Ministerial Environment Forum in the lead-up to the World Summit on Sustainable Development:

“The Earth Summit in Rio was a time of excitement and great hope and the adoption of Agenda 21 is a milestone that is unlikely to be repeated in the near future. What we have learnt over the past ten years is that while the adoption of Agenda 21 was a magnificent feat, it was a lot easier to draft than to implement. The reality is that the breadth of the challenge was not matched by:

- the levels of investment in sustainable development, including through overseas development assistance,
- the strengthening of governance arrangements, or
- the level of political commitment that was necessary to make substantial progress in implementing Agenda 21 in just ten years.⁷⁴”

Hence, it is time to consider new and more effective approaches that improve meaningful commitment to implementing sustainable development on-the-ground. Academics, human rights experts, NGOs worldwide, and the Commission on Human Rights have all promoted international recognition of a human right to water, their statements being based on the premise that the right to life and to development cannot be realized in the absence of the right to water. Improving the implementation of sustainable development objectives, including

⁷⁴Achim Steiner, *Intervention to the Global Ministerial Environment Forum*, Cartagena, Colombia 12–15 February 2002.

securing adequate access and supply of good quality water to human populations requires us to move beyond academic consideration of the problem.

The principles of sustainable development are widely accepted, but the practical application of these has not enjoyed much success. In this part of the chapter an emerging approach to sustainable development is analysed. That approach is essentially a rights-based approach founded on the principles of equity. The link between sustainable development and human rights is a basic one. The protection of human life, health, and living standards is a fundamental precondition of economic development based on social equity and respect for the environment. The World Summit on Sustainable Development Plan of Implementation acknowledges “peace, security, stability and respect for human rights and fundamental freedoms, including the right to development, as well as respect for cultural diversity, are essential for achieving sustainable development benefits for all.”⁷⁵

Strengthening universal human rights in the environmental and the social spheres will enable us to make significant changes towards the eradication of poverty which is critical to the successful realization of any programmes aiming at the achievement of sustainable development. That human rights, including realization of the right to development, are a prerequisite for effectively combating poverty is reflected in the Millennium Declaration⁷⁶, the Copenhagen Declaration⁷⁷, the Vienna Declaration⁷⁸ and the work of the General Assembly⁷⁹. The inextricable link between sustainable development, poverty, and environment

⁷⁵The Concept of Sustainable Development: Definition and Defining Principles, Rachel Emas, Florida International University, Brief for GSDR 2015, Available at: https://sustainabledevelopment.un.org/content/documents/5839GSDR%202015_SD_concept_definiton_rev.pdf, (accessed on 12.07.2017)

⁷⁶*Ibid.*

⁷⁷Copenhagen Declaration on Social Development, World Summit for Social Development, Copenhagen, 6–12 March 1995. Available at: http://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A_CONF.166.9_Declaration.pdf, (accessed on 13.07.2017)

⁷⁸*Ibid.*

⁷⁹A/RES/46/121, 17 December 1991, General Assembly Resolution on ‘Human rights and extreme poverty’. Available at: <http://www.un.org/documents/ga/res/46/a46r121.htm>, (accessed on 13.07.2017)

was also recognised in the World Summit for Sustainable Development Plan of Implementation:

“The goals of sustainable development can only be achieved in the absence of a high prevalence of debilitating diseases, while obtaining health gains for the whole population requires poverty eradication. There is an urgent need to address the causes of ill health, including environmental causes, and their impact on development, with particular emphasis on women and children, as well as vulnerable groups in society, such as people with disabilities, elderly persons and indigenous people.⁸⁰”

The human rights aspect of the two pillars of sustainable development, i.e. the social and the environmental was made visible in the UN/ECE Aarhus Convention⁸¹, which states in its Preamble that “every person has the right to live in an environment adequate to his or her health and well-being.” This regional Convention may provide an important link to a new human rights-based approach to sustainable development as it ensures the right to information, justice and participation within the sustainable development context. Such an approach would also protect the most vulnerable in society. The elevation of the issue of safe water to the human rights sphere needs to be enhanced, as it is a fundamental precondition for working on both poverty and environment.

So what can explicit recognition of a right to water achieve? Non-binding agreements may prove inadequate tools to handle the present water crisis. Indirect environmental rights do not provide a sufficient basis for ensuring effective control of environmental protection and equity. An alternative can be the enactment of specific legislation and the associated institutional change in order to give effect to substantive and procedural aspects of a right to water. A right to a

⁸⁰*Ibid.*

⁸¹Statement to the 57th Session of the Commission on Human Rights in 2001, in ‘The Right to Water’ (WHO, 2003) at 21. Available at: http://www.who.int/water_sanitation_health/en/righttowater.pdf, (accessed on 14.07.2017)

clean and healthy environment could not have been enshrined in a global human rights instrument to date owing partly to the complexity of the implications of defining such a right. On the other hand the issue of including access to water in the human rights debate raises fewer doubts, at least regarding the scope and definition of such a right.

This means that particular interests referred to in Art. 10 (vital human needs) and Art. 21 (pollution harm) of the Watercourses Convention must be treated within the rule of allocation established under Arts. 5-7. Access to safe and sufficient water as a basic human right, and the consequential duty on governments to provide basic water supply for its populations will enable its consideration within such an allocation framework, i.e. minimum water requirements have to be agreed upon among co-basin states.

To maintain at least a minimum water requirement to serve human populations, and to resolve conflict over the use of shared water resources, an integrated and co-operative approach should be undertaken. Chapter 18 of Agenda 21 and more recently the World Summit on Sustainable Development Plan of Implementation recognised that an ecosystem approach is the most appropriate way to move forward on the issue of managing water resources. This reinforces the need to improve the efficient use of water resources and promote their allocation among competing uses in a way that gives priority to the satisfaction of basic human needs and balances the requirement of preserving or restoring ecosystems and their functions, in particular, in fragile environments, with human domestic, industrial and agricultural needs, including safeguarding drinking water quality. Recognizing a right to water as a 'human' right would have a mutually reinforcing effect upon both the advancement of human rights protection, and the strengthening of what has been seen as environmental principles.

6.9 Globalization Trends

Globalization is an abstract concept that refers to a complex process involving political, economic, and socio-cultural changes. Certainly it is not a new process, because the world has been globalizing for several centuries. However, much has been written about its intensification since the 1990s.

Globalization can be defined as "a process that deepens the extent and form of cross-border transactions among peoples, assets, goods and services and that deepens the economic interdependence between and among globalizing entities, which may be private or public institutions or governments."⁸².

Globalisation has not only affected people at locale village level but the national and regional levels economic systems also get affected. The global economic and social transactions are also influenced by easier and quicker flows of people and information across borders.⁸³ Now the world has become global village due to its close connectivity.⁸⁴

Globalization affects not only the production and consumption of products, but also culture, security, the environment, and the exchange of ideas. Globalization also has important implications for environmental challenges such as deforestation, climate change, pollution, biodiversity loss, and water resources⁸⁵.

6.10 Impacts of Globalization on Environment and Water Resources

In a globalizing system, environmental policy issues are intricately bound together with issues of trade policy, human rights, and economic security. For

⁸²Available at : http://www.cawater-info.net/library/eng/dukhovny_globalization.pdf (accessed on 15/07/2017)

⁸³ Harvey, David. 1990. *The Condition of Postmodernity*. Malden, MA.: Blackwell Publishers Inc.

⁸⁴ McGrew, Anthony G. 1998. 'The Globalisation Debate: Putting the Advanced Capitalist States in its Place.' *Global Society: Journal of Interdisciplinary International Relations* 12(3): 299–323.

⁸⁵Available at : http://www.waterencyclopedia.com/Ge-Hy/Globalization-and-Water.html#ixzz4Xs_Rkj089 (accessed on 15/07/2017)

example, the U.S.–Mexico border area has experienced an explosion of growth in response to international economic conditions and trade agreements in the 1990s, and the increased employment opportunities have led to a large influx of people into the border regions. These rapid changes in manufacturing and agricultural trends are greatly influencing water use as well as wastewater production patterns, and the potential implications of all these trends on water quality remain to be evaluated⁸⁶.

In the water resources sector, local water management issues are increasingly tied to events and people distantly located. For example, some private water utility headquarters are located thousands of miles away from the municipalities they manage⁸⁷; environmentally minded citizens halfway around the world mobilize to oppose the construction of dams; and multinational banks promote full cost recovery for water investments⁸⁸.

As globalization continues, environmental problems increasingly are being addressed through international management. In a complex global world, those concerned with the Earth's environment now must be concerned with economic and institutional factors such as⁸⁹:

6.11 Comodification and Privatisation of Water

Globalization trends have affected the water sector, most notably by opening it up to significant competition and external influences. Water privatization activity has increased since 1997. Although all geographic regions

⁸⁶ Earth Sciences › General & Introductory Earth Sciences , Available at : onlinelibrary.wiley.com (accessed on 17/07/2017)

⁸⁷ Available at : escholarship.org/uc/item/34x9877m.pdf (accessed on 17/07/2017)

⁸⁸ Available at : faculty.washington.edu/categ/wordpress/wp..Access-to-Safe-Drinking-Water.pdf (accessed on 17/07/2017).

⁸⁹ Available at : www.waterencyclopedia.com › Ge-Hy (accessed on 17/07/2017).

have seen some water privatization, it has occurred predominately in Latin America and the Asian and Pacific Basin regions⁹⁰.

The privatization of previously public assets generates revenue from sales and promotes greater efficiency from revamped operations while promoting profits for the new owners. As a basic necessity of modern life, many corporations view water as a good investment. In many places, past fiscal mismanagement of the public sector's provision of local water services has increased the appeal of privatization⁹¹. On the other hand, privatization of water services has drawn criticism from those concerned with the accountability of large private corporations, the needs of the poor for basic services, and environmental integrity.

Trends toward free trade also affect water resources. The stated goal of free trade is economic growth and rising standards of living. Deregulation often is implied as well, and environmental problems can be exacerbated when environmental externalities are present.

The ability of nation-states to regulate environmental quality may be affected by the power that trade agreements confer upon corporations. The relatively weak level of existing national environmental policies and enforcement activities around the world amplifies this concern. The constraint Globalization promotes the free movement and exchange of ideas and commodities over vast distances. International shipping plays a key role in the transport of products between countries⁹².

Globalization promotes the free movement and exchange of ideas and commodities over vast distances. International shipping plays a key role in the transport of products between countries.

⁹⁰Available at :www.enviroalternatives.com/waterglobal.html (accessed on 20/07/2017).

⁹¹Available at : www.thirdworldtraveler.com/Water/Impact_Globaliz_BG.html (accessed on 20/07/2017)

⁹²Available at : pacinst.org/publication/new-economy-of-water/ (accessed on 21/07/2017)

Globalization and trade have many important implications for both water quantity and quality. The unregulated taking of natural resources can lead to rapid depletion, as has occurred in extractive industries such as forestry and mining. Extracting water through pumping or diversion is a substantial concern in many places, because it can deplete the natural water supply if not managed properly (e.g., groundwater mining).

Water quality concerns can arise from extractive industries as well as from various manufacturing and agricultural production processes. For example, various pollutants generated as byproducts in the production of plastics, synthetics, pesticides, detergents, pulp and paper, and other materials can pose a water-quality and conceivably a human health hazard if not regulated and managed properly. The continued growth of large-scale, corporate agriculture implies an extensive use of pesticides and fertilizers. Production levels of toxic wastes also are a concern to environmental quality, particularly as trade in toxic wastes increases⁹³.

In wake of globalization, particularly through privatization, the accumulation of common natural resources particularly water resources are done by the corporations or MNCs, it tends to commodification of water. Now water has become the marketability goods which are bottled and are being sold by several big companies. Over extraction of water from the earth also led to the problem of water scarcity or reduces the water level of ground water resources.

Globalisation also advocates about neo-liberalism whose main actors are like World Bank and International Monetary Fund (IMF) promotes intensification and expansion of the market governance in the world. Under the impact of neo-liberalism, water has been considered as marketable commodity. This has negative ramification over the availability of water resources.⁹⁴ There are scholars who

⁹³Available at : www.berghahnjournals.com/view/journals/nature-and-culture/6/3/nc060301.xml (accessed on 21/07/2017)

⁹⁴ Briscoe, J. 1996. 'Water as an Economic Good: The Idea and What it Means in Practice.' Pp. 177–201 in

argues that commodification of water, which is natural resources should not be done. For them water cannot be fitted into market logic.⁹⁵

In the late 20th century, the water scarcity has led to social instability and unrest in different parts of the world. Water riots, bombings, and many deaths occurred from 1995-2005 in various conflicts over water in Pakistan, India, in provinces of arid North China, in Cochabamba (Bolivia), between Kenyan Tribes, among Somalia villages and in the Darfur region of Sudan.⁹⁶

In respond to privatization of water resources, in some parts of the world people have resisted and protested specifically for water marketization. Campaigns against privatization of water have been emerged worldwide, from India, Bolivia, and Chile to Canada and the United States.

Since the 1980s, private ownership of water utilities has increased markedly across countries⁹⁷. Two French firms, Suez and Veolia (formerly Vivendi), dominate the private sector and have interests in water projects in more than 120 countries⁹⁸. Large numbers of companies are under taking commercialization of drinking water. Bottled water industries are growing rapidly all over the world. The corporate giants like Coca-Cola and Pepsi- Cola have spread its manufacturing unites all over the world and extracting huge profit by exploiting natural water resources. Several international organizations have been pro-active in organinsing protest movements against privatization of water and campaigning for water as human rights. Barlow, of the Council of Canadians and

Transactions of the 16th Congress on Irrigation and Drainage, Volume 1E, New Delhi: International Commission on Irrigation and Drainage

⁹⁵RashtriyaParyavaranManch (SiddhrajDhadda, V. D. Sharma, Vijay Pratap and Rajendra Singh). Statement of Shared Concern: A Policy for Indians, by Outsiders. Jaipur, India, October 2004.

⁹⁶ Solomon, Steven. 2010. Water: The Epic Struggle for Wealth, Power, and Civilization. New York: HarperCollins Publishers

⁹⁷Whiteley, John M., Helen Ingram and Richard Perry. 2008. Water, Place, and Equity. Cambridge, MA: The MIT Press.

⁹⁸ Peter Gleick(etl)the world's Water 2002-2003: The Biennial Report on Fresh Water Resources . Washington , DC: Island Press (2002)

Clarke, of the Polaris Institute in Ottawa are pioneers in the fight for water as human rights.

In Cochabamba, Bolivia the people carried out a full-scale protest against privatization of their water by a global consortium led by Bechtel between December 1999 and April 2000⁹⁹. The indigenous people like tribes (Adivasis) in India have opposed privatization of water and supported collective ownership of resources such as forest and water rather than individual control. The Cola Quit Plachimada movement in India was protest movement by tribal, where the permit to extract ground water was granted to Coca-cola company as result the company had extracted much water that had reduced the ground water level and people were not even getting water for drinking. People protested to shut down the company. Protests by local peasants led to the local panchayat (local governance institution) to cancel the license to The Coca Cola Company¹⁰⁰.

The peoples movement for conserving water resources got the world wide attention. Similar types of peoples movements also occurred world-wide, particularly in peripheral nations like Bolivia, Uruguay, Argentina, and Ghana, where local resistance were made against the commoditization of water and against “corporate theft”¹⁰¹ and other forms of “water terrorism”¹⁰²

6.12 Water as an Important Subject of World Attention

The transformation caused by propagation of the understanding that the world water deficit and its regional manifestations are growing have stimulated

⁹⁹ Olivera, Oscar. 2004. Cochabamba! Water War in Bolivia. Cambridge, MA: South End Press., Morberg, David. 2006. ‘Plunder and Profit.’ Pp. 446–9 in Beyond Borders: Thinking Critically about Global Issues. edited by Paula S. Rothenberg. New York, NY: Worth Publishers.

¹⁰⁰ Shiva, Vandana. undated. Building Water Democracy: People’s Victory against Coca-Cola in Plachimada. New Delhi, India: Research Foundation for Science, Technology, and Ecology

¹⁰¹ Barlow, Maude and Tony Clarke. 2002. Blue Gold: The Fight to Stop the Corporate Theft of the World’s Water, New York: New Press.

¹⁰² Swyngedouw, E. 2004. Social Power and the Urbanization Of water: Flows of Power. New York: Oxford University Press.

active establishment of international organizations and initiatives, involving a lot of governmental and non-governmental organizations, decision-makers, intellectuals and water professionals in the process of mankind development with its water-intellectual, water-ethical, informational and technological dimensions.

The World Water Council, four World Water Forums, the Global Water Partnership (GWP), the Kyoto Protocol to the United Nations Framework Convention on Climate Change (1997), the “World Water Vision” Report at the Second World Water Forum in The Hague and the Bonn Conference resolution played an immense role in attracting the attention of policy makers (and not only water management and nature conservation agencies) to imminent water resources depletion and a necessity for a radical reorientation of the water sector from meeting water demands to managing water demands and achieving potential productivity of water use in all sectors and industries while reducing unproductive water losses. Dissemination of advanced approaches to address water issues and methods of management and their popularization facilitated practical steps along these lines in many countries¹⁰³.

In this respect, of great importance is the understanding that the possibility of meeting the needs of societies (with a specific water consumption of 250–450 m³ yr⁻¹ per capita even in the arid climates of Jordan and Israel) is based not only on modern technical networks and decisions, but also on very strict and principal policies pursued by these states, which stimulate water saving and conservation techniques, support pertinent financial and legislative systems of modern water use and management, and demonstrate public participation and involvement in management and maintenance of the water sector¹⁰⁴.

Of no less importance are efforts undertaken by the ADB, the Swiss Agency of International Development and Cooperation (SDC), the GWP and the

¹⁰³ Available at : <https://lkyspp.nus.edu.sg/cag/research/water-politics> (accessed on 22/07/2017)

¹⁰⁴ Available at : <https://www.nowtheendbegins.com/.../stellaLOHMANN-globalization.htm> (accessed on 22/07/2017)

EU with its Water Framework Directive (European Commission, 2000) in order to demonstrate the advantages of integrated water resources management (IWRM)¹⁰⁵. Instructive examples are the basin management system in France, water confederations in Spain which have already been in existence for 70 years and water communes in Italy. All of them combine basin hydrographic management with active participation of water users and their representatives. The Japanese experience is worthy of praise, in particular the way this country manages to harmonize the interests of nature and society with an immense population density. Appropriate attention needs to be given to the similar careful and respectful attitude to water as demonstrated in the Netherlands, Canada and Switzerland. Developed countries would have to undertake appropriate activities with countries in transition in order to organize the process of following these and other good examples, and what is essential to make use of the instruments of rational natural resources use.

6.13 Concluding remarks

Linking human rights and the environment appears *prima facie* straightforward especially in view of the now well-accepted fundamental relationship between human rights and sustainable development, one key element of which is environmental protection. Human rights cannot be secured in a degraded or polluted environment. Many national constitutions support this basic premise by recognising a right to a clean/safe environment. Nevertheless, acknowledging a human right to a safe/clean environment has proven to be anything but an easy task as is evident from debates over the last decade under the leadership of the Sub- Commission's Special Rapporteur, MrsFatma Zohra Ksentini, who explored the environmental dimension of human rights¹⁰⁶. Klaus

¹⁰⁵ Available at :https://www.researchgate.net/.../252070558_Globalization_Mega-projects_and_the_Env... (accessed on 23/07/2017)

¹⁰⁶ For a chronological view of the evolution of the debate on human rights and environment, see Appendix III.

Toepfer, Executive Director of UNEP said, “it is time to recognize that those who pollute or destroy the natural environment are not just committing a crime against nature, but are violating human rights as well.”

Many of today’s conflicts have been attributed to the lack of water. There are presently 261 international river basins, and 145 nations have territory in shared basins¹⁰⁷. According to the United Nations, some 3000 basins are the scenes of current conflicts¹⁰⁸. Many of the most difficult cases involve upstream/downstream controversies, but competition over scarce resources raises complex issues for all users¹⁰⁹. The customary rule of ‘reasonable and equitable utilization’, governing international watercourses, has been most recently codified in the UN Watercourses Convention¹¹⁰. Art. 6(3) stipulates that all relevant factors are to be considered together when determining what is a reasonable and equitable use. This provision was directly taken from Art. V of the International Law Association’s Helsinki Rules, the commentary for which stated that to be relevant, a factor must aid in the determination of the social and economic needs of the co-basin states¹¹¹.

While globalization transforms the world, the quantity of the Earth's water resources remains roughly the same as throughout the ages¹¹². Globalization may prove to be one of the most salient factors driving the human search for effective management of the Earth's water resources.

¹⁰⁷*Ibid.*

¹⁰⁸T. Swartzberg, “The World’s Freshwater Supplies: The Crunch is Here”, *International Herald Tribune*, (30 September 1997), at 13.

¹⁰⁹Conflicts, e.g. over the Jordan River, shared by Lebanon, Syria, Israel and Jordan; Turkey’s hydroelectric power plants on the Tigris and Euphrates basins, which resulted in a serious controversy with Syria and Iraq; the Arab Sea basin, where more than 20 million people in five basin states struggle to share the “shrinking and polluted” resource; the dispute over the Danube between Slovakia and Hungary; Ethiopia’s planned measures on the Blue Nile, which may adversely affect downstream uses in Egypt; etc.

¹¹⁰In May 1997, the General Assembly adopted the Convention on the Law relating to the Non-Navigational Uses of International Watercourses, which is not yet in force.

¹¹¹P. Wouters, “The Legal Response to International Water Scarcity and Water Conflicts: The UN Watercourses Convention and Beyond”, *Available at* : www.thewaterpage.com/pat_wouters1.htm (accessed on 24/07/2017)

¹¹²*Available at* : www.academia.edu/3187129/Water_Globalization_and_Global_Security. (accessed on 24/07/2017)

Chapter-VII

Chapter-7

Conclusion and Suggestions

7.1 Conclusion

Man in his bid to conquer over the nature is committing many mistakes for which not only he but his coming generations will have to suffer. One of such mistake, which the man is committing, has been discussed at length. All the areas touching, “Protection of Environment in India” have been gone through. The question still remains: Are we successful in our mission to save Our Environment from Pollution? About many long years have passed after the Ministry of Environment and Forests (MEF) drafted a state of Legislations following the ruling of our Apex Court. But has the State Government shown any interest and tried to show an inclination strictly and effectively to implement the Rules and Regulations? The answer is big “NO”. Like other States, Punjab & Haryana are making some efforts in this regard. The other states will also have to make a similar move otherwise it will be too late and our future generations will curse us.

The problem of Water Pollution assumes special significance in the world because it affects the well being of people and economic developments. For the prevention and control of Water Pollution, the Parliament enacted the Water Act, 1974. The Main objective of the Act is “To Prevent and control of Water Pollution and To Maintain or Restore Wholesomeness of Water.” No law, howsoever, perfectly or meticulously drafted can remain free from ambiguities or drawbacks; therefore, this Water Act is not an exception.

Among all the sources of noise pollution, noise originating from religious places is becoming a major irritant in modern life. Each and every religious sect in India is responsible for such disturbance. However, this source of noise pollution can be completely controlled. Even though the Noise Rules are unambiguous, there is a lack of awareness among the citizens as well as the implementation authorities on the Rules or their duty to implement the same. In

addition, the controlling authorities generally lack the technical expertise to measure the intensity of polluting noise. However, with regard to noise emanating from religious places, the Delhi High Court in the Free Legal Aid Case¹, directed, “The House of God should be kept peaceful and noise-free as it is rightly said that God is not deaf.”

The present environment protection movement is an enigma difficult to explain. What we promise, be it national or international, seldom we practice. What we preach, we seldom perform. What we decide, we seldom implement. In spite of so much promise unless our basic human nature transcends from narrow limitation, there will be no end of exploitation and oppression of the poor tribal forest people. Therefore, if we had to measure success of environment protection movement in the background of tribal peoples right to livelihood as human right, then we are to lament in despair that the entire movement is nothing but a fine rhetoric empty of all meaning and worth.

Despite these initiatives, the quality of the urban and rural environment continues to decline. The root cause of this problem is the slack performance of the enforcement agencies. Several factors inhibit agency functioning, not least among them being a lack of budgetary support.

Depriving the enforcement agencies of funds has meant inadequate technical staff and supporting infrastructure for monitoring and control. Ten years after Parliament enacted the Water Act in 1974, Some Pollution Control Boards did not have a single laboratory or analyst to test effluent samples²

Political interference³ and a lack of will to confront entrenched industrial and Commercial interests also contribute to poor administration. Besides, it is widely perceived that the effectiveness of some agencies is curtailed by

¹ AIR 2001 Delhi 435

² B. Desai, *Water Pollution in India*, p.131 (1990)

³ Haryana Pollution Board Disbanded, *Time of India*, Delhi, 13 May 1992. The board was dissolved shortly after it served a prosecution notice on the chief minister's son-in-law.

institutional graft⁴. This laxity and indifference has invited judicial structures from the High Courts and the Supreme Court⁵

Quite apart from that the Central and State Pollution Control Boards should be allowed to function independently outside the clutches of politicians. It is concluded that without the backing of the public opinion, Laws are of little avail. An aware and informed person can play a positive role in promoting environment protection programmes. Therefore, it is very essential to provide civic consciousness among the people through Newspapers, electronic media, seminars, symposia, street plays and also by introducing the subject in educational institutions.

It is true that in recent past, we have caused considerable damage to environment all around on account of industrialization, urbanization and population explosion at global level. The environmental Engineers/ scientists have issued the note of caution repeatedly regarding degradation of environmental standards, which have reached at dangerous level mainly due to human activities.

It is highly regretted that despite legislative measures we are utterly failing to bring wide-spread environmental awareness among public at large. On a number of occasions the Supreme Court of India has passed directions to the Government to introduce and inculcate environmental consciousness from the primary school level to the university level. But, we are yet to follow the directions of Hon'ble Court in letter and spirit.

The vast network of environmental regulations has little impact on the quality of the air or water. The leading environmentalist and advocate, M.C. Mehta, blames the pollution control boards and other bureaucracies for failing to enforce the statutes, many of which have been part of the Indian courts for decades. He argues that despite the statutory framework, there will be no

⁴ The Punjab pollution control board was superseded in 1996 after the state government received complaints regarding maladministration and harassment. An enquiry revealed that some of the board decisions were „highly suspect. □ See, G.S. Oberoi V. State of Punjab, (AIR 1998 P & H 67).

⁵ *M.C. Mehta V. Union of India*, 1998 (3) SCALE 602 and 1998 (4) SCALE 326.

visible results unless a political will spurred by greater citizen involvement forces the sub-competent bureaucracy to set about implementing and enforcing natural resource laws⁶. Recently, the Supreme Court lamented:-

“If the mere enactment of laws relating to the protection of environment was to ensure a clean and pollution free environment, then India would, perhaps, be the least polluted country in the world. But, this is not so. There are stated to be over 200 central and state statutes which have at least some concern with environmental protection, either directly or indirectly. The plethora of such enactments has, unfortunately, not resulted in preventing environmental degradation which, on the contrary, has increased over the years⁷”.

Today, the menace of "Environmental Degradation" is staring us in our faces. To grapple with this problem has been the concern of mankind over the world. International Conventions have been held for the last more than three decades on Climate Change, Global Warming, and Ozone Depletion etc., and the dangers they pose to Mankind. Air Pollution has now become a major killer with three million people dying of it every year.

Carbon emissions doubled in three decades. The IPCC report forecasts that India would be among the countries worst affected by the rising temperatures due to global warming. Among the various consequences, there may be drop of 38 per cent in per capita water availability by 2050 for Indians as great dries become frequent. Sea levels will rise 40 cm higher by 2100 and 50 million people in coastal India would be displaced by flooding. In the planes, winter precipitation would decline causing water shortages, shrinking grass lands and triggering a fodder crisis. There will be a fall of 17 per cent in wheat yields in India if temperatures rise by even half a degree centigrade. 2035 is the year when the Himalayan Glaciers may totally disappear causing

⁶ M.C. Mehta, „Environmental Issues: The Challenges That Face us Today and in the Next Millennium“, Indian Habitate, 1 (2000)..

⁷ Indian Counsel for Enviro-Legal Action V. Union of India, (5) SCC 293

catastrophic disruptions. Food grain production in India is likely to drop by as much as 30 per cent. Wheat crop in northern India would in particular bear the burnt. It is expected that by the end of 21st century, there will be overall rise in global temperature by 5 degree centigrade. Vector borne diseases such as dengue and malaria are expected to rise sharply across India as changes in temperature make it conducive for mosquitoes to thrive. Deaths from diarrhoeal diseases associated with floods and draughts could go up. There may be risk of 50 percent of the total bio diversity in India because of climate change, because the grass lands are expected to decline sharply. Forty percent of Himalayan glaciers would perish and Mumbai's Nariman Point will be submerged. Human activities are wiping out three animal or plant species every hour. It is estimated that everyday, up to 150 species are lost. Every year, between 18,000 and 55,000 species become extinct.

R.K. Pachauri in his Nobel Lecture, delivered on December 10, 2007 warned:

“Neglect in protecting our heritage of natural resources could prove extremely harmful for the human race and for all species that share common space on planet Earth.”

There can't be two opinions that for a country like India trying to overcome the demons of population explosion, poverty and disease, energy and production and conservation, insanitation and pollution, etc., education about these issues and those of climate change and environment is of vital importance. Whereas study of other subjects is mainly based on rote cramming, the study of environment is related to our day to day life and can be experience based, interactive and Action-Oriented. Three main objectives of this type of study should be

- (i) To Create Environmental and Health Awareness among students,
- (ii) Carry out Awareness-cum-Action programmes and

(iii) Promote Community Participation in these programmes.

Under this perspective, this study can constitute a Unique Educational Experience.

It is worth mentioning here that remarkable steps in this move have already been taken by State Pollution Control Boards especially by Haryana State Pollution Control Board as is clear from the activities performed and various milestones achieved by it through exercise of their powers in its jurisdictions.

“It may well be asked why it is that there should be a growing conflict between economic and technological advance on the one hand, and the quality of the environment on the other. There are two main reasons. One is rooted in a basic law of nature. The second reason for the growing conflict is largely economic. Little can be done about the first reason, for even the most powerful legislatures cannot change the laws of nature, but many things can be done about the second. Governments can protect the environment through legal and institutional arrangements.”

Royal Commission on Environment Pollution, First Report, 4 (1971)

A clean environment is the basic need for the existence of life on the earth. On the other hand the technological, scientific and industrial development is also very necessary. Man has achieved a lot of materialistic abundance and advancement in every sphere of life, but all this has been achieved at the cost of “environment” and the ecological balance.

The large-scale industrialization, increased transport, denudation of forests for housing and other projects; swift and reckless encroachments on the country side to make more place for cities, factories, highways and aerodromes; continued and unending industrial discharge into rivers and spewing of thousands of tons of particulates and poisonous gases into the atmosphere; disappearance of wild life and accumulations of untreated waste

and mounds of rubbish and garbage all are resultants of technological advancement and skill. The industrial disasters and the environmental episodes clearly exhibits that the environment surrounding us is not safe and the “air” which we take to respire contains poisonous gases. The scenario at global level is also not satisfactory due to buildup of carbon dioxide in the atmosphere, transboundary air pollution, acid rain and depletion of ozone layer.

Climatic changes are also noticed due to high concentrations of Carbon Dioxide, Carbon Monoxide, Chlorofluro Carbons and Nitrous Oxide. They are responsible for “green-house effect” or „global warming□ which consequently can cause increase in sea-level, expansion of sea, floods, changes in weather systems, increase in temperature and alterations in rain-fall patterns. Human health too will be severely affected due to increase in the number of viruses, parasites and insects which thrive in warmer conditions.

“Acid-rain” is another effect of pollutants on the climate. The pollutants which are responsible for the formation of acids in “acid rain” as generally emitted from power plants, fossil fuel burning, industries and motor vehicles. “Acid-rain” can damage property, fish, other animals, soils and crops. One of the prominent and distinct polluter of “air” is “noise” also which is generated from industrial and non-industrial sources and is capable of disturbing the natural calmness and concentration, physical discomfort, and temporary or permanent damage to „hearing□. So environmental pollution is hazardous for the existence of plants and human beings and is capable of disturbing the natural eco-system.

The problem of environmental pollution is now assuming a dangerous proposition throughout the world and global concern is discernible to protect environment. “Today is late, tomorrow may be too late”. Law is regarded as a means of controlling human conduct. Therefore various legislations have been passed and regulated in this regard at national as well as international level.

Sustainable Development is the only solution of these tragic problems. Sustainable development means an integration of developmental and environmental imperatives. To be sustainable, development must possess both economical and ecological sustainability.

Some of the salient principles of sustainable development, which have been identified in various international documents, are the intergenerational equity; use and conservation of natural resources; environmental protection; the precautionary principle; the polluter pays principle; the obligation of the States to co-operate; eradication of poverty; and financial assistance of developing countries. Today if we want to save this planet Earth from further deterioration then it is necessary to implement the principles of sustainable development.

The international concern for tackling this problem was bound to arise keeping in view its diversity and serious impact on the life supporting systems. It was, therefore, the “Stockholm Conference on Human Environment” in 1972 wherein the international community took up the problem of air and environmental pollution at global levels and has shown its joint and serious concern to save the “human environment”. In addition to provide a structural framework for various international bodies, the convention discussed the important issues like planning and management of the environment, natural resource management, identification and control of various pollutants, social and cultural aspects of the problem, economic development *vis a vis* environmental conservation etc. More so, a comprehensive action plan was also finalized for managing the human environment.

The International Union for Conservation of Nature is committed to support nations in collaborating policies, strategies and plans directed to achieve “sustainable Development”. The World Charter for Nature adopted by the General Assembly suggests the need for appropriate and effective measures at the national and international, individual and collective, and public and private levels to protect nature.

“The Earth Summit organized at Rio under the auspices of the “UN Conference on Environment and Development” in 1992 witnessed hot and live discussion on various global environmental issues and the delegates of about 170 countries including head of States, joined their hands to decide on a “New global partnership” to save the “planet earth” for coming generations.

Viewed in Indian perspective of legal control of protection of environment, there is a flood of legislations. In India, after Stockholm Conference of 1972, three major environmental legislations, namely Water Act of 1974, Air Act of 1981 and Environment (Protection) Act of 1986, have been passed by our Parliament as a means of legal control of environmental pollution.

The Constitution of India under Article 21, guarantees the right to life and personal liberty to individuals which has been interpreted by the Supreme Court to cover “right to live in a pollution free atmosphere” also. Besides this Article 48-A, and Article 51A (g) impose a duty on “State” and “Citizens” respectively for the protection and improvement of environment.

The Indian Penal Code, 1860 contains several provisions which make pollution a crime and also prescribes punishment for the same. Section 277 of IPC is related to water pollution, Section 268 deals with public nuisance under which inter alia noise pollution can be controlled.

Criminal Procedure Code, 1973 also gives power⁸ to the District Magistrate or Sub-Divisional Magistrate to abate public Nuisance. According to Section 91, of CPC the right of action in case of public nuisance is provided.

The Factories Act, 1948, though, primarily a labour legislation, yet contains some provisions for the maintenance of cleanliness in and around the factory (Section 11).

⁸ The Criminal Procedure Code, Sec. 133.

Noise, air and visual pollution can be controlled under the Motor Vehicles Act, 1939.

The Water (Prevention and Control of Pollution) Act, 1974 and The Air (Prevention and Control of Pollution) Act, 1981, are the direct legislations for the prevention, control and abatement of water pollution and air pollution respectively.

The Environment (Protection) Act, 1986, is another specific legislation for the prevention and control of environmental pollution in general and for the improvement of the quality of environment in particular. The act also prescribes for handling of hazardous substances.

The owner of the hazardous units and industries are also subject to and liable to the provisions of “Strict liability” and “Absolute liability”. The Public Liability Insurance Act, 1991 is a novel legislation to provide for public liability insurance for the purposes of providing “immediate relief” to the persons (other than workers) affected by accidents-arising in the course of handling any hazardous substance. The Act is based on “No-fault liability” principle and the owner or occupier is liable to give “relief” or “compensation” for death or injury to a person or property and the claimant shall not be required to prove any “wrongful” act on the part of owner. Owners of hazardous undertakings are to take out compulsory insurance policies for the public liability and to get them renewed periodically. The Act contains several penal provisions for the violations of the provisions of the Act. The Act gives wide powers to the Central Government for the purposes of effective administration of the Act and also to provide immediate “relief” to the victims of the accidents resulting from handling of hazardous substances and to minimize the hardships likely to be experienced by the victims after such accidents, as happened in the Bhopal Gas Disaster and the Delhi Oleum Gas Leakage.

The judiciary has interpreted the aforesaid laws to give widest possible meaning and scope, through the process of judicial activism in order to protect and preserve the natural environment. The Court has boosted and encouraged the public interest litigation by awarding immediate and effective remedies including compensation, appreciation and costs in the matters of serious complaints regarding the infringement of the aforesaid right of the public due to air and environmental pollution. The “Public Interest Litigation” is certainly proving useful in the protection and improvement of the quality of environment and the maintenance of ecological balance as is exhibited by the judgments of the apex court on numerous PIL petitions including Dehradun-Massorie Hills Case, Oleum Gas Leakage Case, Delhi Hazardous Industries Case, Ganga Pollution Case, the Taj Pollution Case.

Effective environmental protection and improvement is, therefore, a matter of legal rights and duties.

Therefore, it is essential that the people should be aware of the adverse consequences of environmental pollution and they should not only protect and improve the environment but also ensure the compliance of anti-pollution laws and if need be, to take help of the judicial forum to enforce such laws to maintain the ecological balance.

Fortunately, in India, the people’s response to ecological crises has been very positive. In certain cases they have formed the pressure groups and exerted influence on the government to take decision on certain developmental projects only after making proper environmental impact assessment (EIS). For example, Silent Valley Movement in Kerala. The role of NGO’s (non-governmental organizations) in this regard is very important. The scientific and academic community has contributed their share in environmental decisions by new researches. For example, National Environmental Engineering Research Institute, Nagpur (NEERI); The Centre for Science and Environment, New Delhi; the Centre for Environment Education, Ahmedabad, are a few institutions among many others in the country which are continuously engaged

in conducting research in the field of environment. Some people have shown their deep concern for environmental issues by filing Public interest litigations (PIL) and got favourable directions from the Courts in appropriate case. In this regard the name of Mr. M.C., Mehta comes in the forefront who singlehandedly has filed a number of public interest litigations in the Supreme Court relating to different aspects of the environment protection. Thus, the environmental activists, lawyers and judges have made their significant contributions. Local people of the municipality (e.g., in Ratlam) have raised their voice against the local authorities for the non-performance of their duties. Thus, in India, the people have responded to the environmental issues at local level, zonal level, State level and at the national level in different ways. In India different laws relating to environment protection recognize the role of people in protecting the environment.

“CHIPKO” movement and “APPIKO” movement (in Karnataka) for saving the forests from exploitation are the examples of peoples responses for the protection of environment by their involvement. The judicial response to almost all environmental litigations has been very positive in India. The primary effort of the Court while dealing with the environmental related issues is to see that the enforcement agencies, whether it be the State or any other authority, take effective steps for the enforcement of the law. Even though it is not the function of the Courts to see the day to day enforcement of the law, that being the function of the executive, but because of the non-functioning of the enforcement agencies to implement the law, the courts as of necessity have to pass orders directing them to implement the law for the protection of the fundamental right of people to live in healthy environment. Passing of the appropriate orders requiring the implementation of the law cannot be regarded as the Court having usurped the function of the legislature or the executive.

Though the judicial development of environmental law has been vigorous and imaginative, yet at times it may be found wanting. It has certain limitations of its own. For example, in some cases frivolous or vexatious writ

petitions are filed in the name of public interest litigation involving environmental matters. It has been noticed that such litigations are filed mala fide and arise out of enmity between the parties. Sometimes the judicial order is not fully obeyed by the parties concerned. Even the government and its agencies like Pollution Control Board (PCB) have been issuing directions contrary to the orders of the court. The courts also do not have any scientific and technical expertise in environmental cases and thus it has to depend upon the findings of various commissions and other bodies. It is because of this reason that the courts have suggested for setting up of environmental courts to deal with environmental matters. The government has set up the National Environment Appellate Authority in 1998 to hear the appeals with respect to restrictions of area in which any industries, operations or processes shall not be carried out or shall be carried out subject to certain safeguards under the Environment (Protection) Act, 1986.

7.2 Suggestions

The trends of deterioration of environmental conditions and increase in air and environmental pollution which exist at present are likely to continue in future to make the problem more complicated for the present and future generations. In order to contain and eradicate the air and environmental pollution and to improve the quality of air and environment so as to make it a “human environment” and to save it for the present and future generations, following practicable and realistic suggestions may be useful.

1. The existing legal provisions are inadequate to control the enormous problems of environmental pollution of various types in the country. Therefore, the judiciary has to play a more active and constructive role. This has become all the more essential in view of the lack of awareness in the masses about the problem of pollution. New jurisprudential techniques have to be devised to deal adequately

with the problems of pollution control and protection of environment.

2. Environmental law should be implemented effectively by adopting new instruments, mechanisms and procedures like environmental impact assessment and environmental audit and incorporate environmental objectives in manufacturing processes, minimum usage of hazardous materials and toxic chemicals, careful usage of toxic gases will reduce environmental load.
3. Legal provisions granting a perspective of right to pollute air and water should be construct/Interpret restrictively by the courts so that environmental rights of citizens can be protected. For e.g. right to setup a Factory, to drive a vehicle etc.
4. Legal provisions intended to prevent or control pollution should be interpreted in such a way that even the subtle invasions of the antipollution laws are covered.
5. Government must initiate the programmes to create public awareness with regard to relation between human rights and environmental protection.
6. Sincere commitment to good environmental practices must be supported throughout the globe for sustenance of life and adopting green technologies, viz, using solar energy, low CFC emitting technology, those which are highly innovative, cost-effective, eco-friendly technologies.
7. Preparation of action plan for sewage management and restoration of water quality in aquatic resources by State Governments;
8. Installation of Online Effluent Monitoring System to check the discharge of effluent directly into the rivers and water bodies;
9. Setting up of monitoring network for assessment of water quality;

10. Action to comply with effluent standards is taken by SPCBs / PCCs to improve the water quality of the rivers;
11. Financial assistance for installation of Common Effluent Treatment Plants for cluster of Small Scale Industrial units;
12. Issuance of directions for implementation of Zero Liquid Discharge in the rivers by the industries, so that the water pollution can be controlled;
13. Issuance of directions under Section 5 of Environment (Protection) Act, 1986 to industries and under Section 18(1) (b) of Water(Prevention and Control of Pollution) Act, 1974;
14. Environmental Partnership and Global Co-operation Based on Fraternity: - The problem of environmental and air pollution does not have its geographical limits and boundaries. Therefore, the damage caused to environment by one country will certainly affect the other countries also. Therefore, a global environmental partnership based on equality and fraternity is to be evolved. The broad global consensus is required to be mobilized on vital, complex and conflicting issues relating to environment and development. A global policy must be formulated to ban nuclear arms, production of CFCs and Halons and preservation of natural eco systems, wild life and forests in order to save the “human environment” and the planet “earth” for the coming and future generations.
15. The Study of “Neighborhood Environment” should include sanitation, knowledge about eco-friendly plants and trees and their protection from pollutants of various kinds, and ways to eradicate congress grass. In the “Community Environment”, stress should be laid on the teaching of population control, air and water and soil contamination, ailments prevalent in the area in different weather

conditions and ways to prevent and cure these, pollution caused by smoke and gases emanating from vehicles and factories and noise pollution and its detrimental effects.

16. Implementation of National Lake Conservation Plan (NLCP) and National Wetland Conservation Programme (NWCP) for conservation and management of identified lakes and wetlands in the country which have been merged in February, 2013 into an integrated scheme of National Plan for Conservation of Aquatic Ecosystems (NPCA) to undertake various conservation activities including interception, diversion and treatment of waste water, pollution abatement, lake beautification, biodiversity conservation, education and awareness creation, community participation etc.

BIBLIOGRAPHY

BIBLIOGRAPHY

ACTS, STATUTES AND INTERNATIONAL INSTRUMENTS

- Air (Prevention and Control of Pollution) Act, 1981.
- Biological Diversity Act, 2002.
- Civil Procedure Code, 1908.
- Criminal Procedure Code, 1973.
- Delhi Declaration, 2002.
- Environment (Protection) Act, 1986.
- Essential Commodities Act, 1995.
- Forest (Conservation) Act, 1980.
- Indian Penal Code, 1860.
- Mines and Minerals (Development and Regulation) Act 1957.
- National Water Policy, 1987.
- National Environment Policy, 2006.
- National Green Tribunal Act, 2010.
- National Green Tribunal (Practices and Procedure) Rules, 2011.
- The Constitution of India 1950.
- The Public Liability Insurance Act, 1991.
- The Earth Summit - United Nations Conference on Environment and Development 1992, (Rio de Janeiro).

- The Motor Vehicles Act, 1939.
- The Factories Act, 1948.
- The Indian Fisheries Act, 1897
- The Drugs and Cosmetic Act, 1940.
- The Prevention of Food Adulteration, Act 1954.
- The Atomic Energy Act, 1962.
- The Specific Relief Act, 1963.
- The Consumer Protection Act, 1986.
- The Insecticide Act, 1958.
- The Indian Forest Act, 1927.
- The Wildlife Protection Act, 1972.
- The Easement Act, 1882.
- The Coast Guards Act, 1978.
- The Industries Act, 1968.
- The Petroleum Act, 1948.
- The Johannesburg Declaration on Sustainable Development, 2002.
- United Nations Charter.
- United Nations Conference on Human Environment, 1972, (Stockholm).
- Water (Prevention and Control of Pollution) Act, 1974.
- Water (Prevention and Control of Pollution) Cases Act, 1997.
- Wild life (Protection) Act, 1972.

BOOKS

- A. K. Shrivastava, *Encyclopedia of Environmental Pollution, Agriculture and Food* (New Delhi, APH Publishing Corporation, 2004).
- A. K. Tewari, *Environmental Law in India* (New Delhi, New Elegant Printers, 2006).
- A. K. Thukral, & G .S. Virk, *Environmental Protection* (Jodhpur Rajasthan, Scientific Publishers, 2000).
- Abdul Aziz, *Man and Environment* S.M. Ali(ed.) (Discovery Publishing House, 1983).
- E. Alan Boyle & David Freestone, *International Law and Sustainable Development: Past Achievements and Future Challenges* (UK, Oxford printing Press, 1999).
- Alan Grainger, & Martin Purvis, *Exploring Sustainable Development: Geographical Perspective*, (London (UK) Earthscan Publications Limited, 2005)
- Ali Mehdi, *Water Pollution Laws and Their Enforcement in India* (R. Cambray and Co. Private Ltd, 2007)
- Andree Kirchner, *International Marine Environmental Law*, (The Hague/New York/London, Kluwer Law International, 2003).
- Anil Agarwal (Ed.), *The Prices Of Forests* (New Delhi,Cse,1992)
- Anne Bayle & Tracey Strange, *Sustainable Development, Linking Economy, Society and Environment*, (Academic Foundation, 2010).
- Aparna Sawhney, *The New Face of Environmental Management in India* (UK, Ashgate Publishers, 2004).
- Archana Ghosh, *Management of Urban Environment: A Study of Post-Plague initiatives of Surat Municipal Corporation* (New Delhi, Institute of Social Sciences, 1998).
- Armin Rosencrantz, (1st Ed.) *Economic Approaches for a Green India*, New

- Delhi, Mumbai, Calcutta, Lukhnow, Chennai*, (Allied Publishers Limited, 1999).
- Aruna Venkat, *Environmental Law And Policy*(2011)
 - Arvind Khare (Edt.), *Community-Based Conservation in India. In Communities and Conservation: Natural Resource Management in South and Central Asia* (New Delhi, Ashish, Sage Publications, 1998).
 - Arya B. Majumdar, Debosmita, Nandy & Swayambhu, Mukherjee, *Environment and Wildlife Laws in India* (Gurgaon, Chennai, Mumbai, Lexis Nexis-A Division of Reed Elsevier India Pvt. Ltd., 2013).
 - Asayehgn Desta, *Environmentally Sustainable Economic Development* (Praeger, Greenwood publishers, 1999).
 - Ashwin N. Karia, *Environmental Law* (Mumbai, C. Jamnadas and Company, 2008).
 - B. N. Tiwari, *Hindu Culture and Ecology* (South Asian Horizon, 1986).
 - B. S. Sinha, *Law and Social Change in India* (New Delhi, 1983).
 - Benimadhab Chatterjee, *Environmental Laws: Implementation Problems and Perspectives* (Deep & Deep Publication, 2002).
 - Benjamin J. Richardson, & Stepan, Wood, *Environmental Law for Sustainability-A Reader* (Oregon (USA, Hart Publishing, 2006).
 - Benu Singh, *Principles of International Environmental Law* (Raj Publication House, 2012).
 - Bharti Desai, *Water Pollution in India: Law and Enforcement* (South Asia Books, 1990).
 - Bimal N. Patel & Mamta Biswal, *Law Development and Socio-Economic Policy* (Eastern Book Company, New Delhi, 2013).
 - Binayak Ray, *India Sustainable Development and Good Governance Issues- A Case for Radical Reassessment* (New Delhi, Atlantic Publishers and Distributors, 1999).
 - Bindu N. Lohani, *Environmental quality Management* (New Delhi, South

Asian Publisher, 1984).

- Bodansky Daniel, Jutta.Brunnee, & and Ellen.Hey, *The Oxford Handbook of International Environmental Law* (New Haven, Yale University Press, 1986).
- Bosselmann Klaus, *The Principle of Sustainability Transforming law and Governance* (England, Ashgate Publishing Limited, 2008).
- Bridger M. Hutter, *A Reader in Environmental Law* (New York, Oxford University Press Inc, 1999).
- C. Kartik Roy & Raj Kumar Sen, *Economics Development and Environment: A Case Study of India* (Delhi, Bombay, Madras, Oxford University Press, 1999).
- C. K. Varshney, & Dr. Sardesai (Edt.), *Environmental Challenges* (New Delhi Bangalore, Lucknow, Madras, Bombay,Wiley Eastern Ltd. Publishers, 1993).
- C. M. Jariwala, *Environment And Justice* (APH Publishing Corporation, 2004)
- Carson Patrick, & Julia, Moulden. (IST Ed.) *Green is Gold: Business Taking to Business about the Environmental Revolution* (New York, Harper Business, 1991).
- N. K. Chakrabaru, *Environment Protection and the Law* (New Delhi, Punjabi Bagh Publications, 1994).
- Chandra Pal, *Environment Pollution and Development: Environmental Law, Policy and Role of Judiciary* (New Delhi, Mittal Publication 1999).
- Chetan Mehta, *Environmental Protection And The Law* (New Delhi,Ashish,1991)
- Chetan Singh Mehta, *Environment Protection and the Law* (New Delhi, Ashish Publishing House, 1997).
- Christopher Miller, *Environmental Rights-Critical Perspectives* (New York (USA), Routledge, 1998).
- D. D. Basu, *Introduction to the Constitution of India*, (Nagpur, Wadhwa and Company, 2001).
- Dalal Barry, Clayton & Stephen Bass, *Sustainable Development Strategies* (A

- Resource Book, Landon: Earthscan Publications Ltd, 2002).
- Davis Hughes, *Environmental Law* (UK, Reed Elsevier Ltd, 1996).
 - De Sombre & R. Elizabeth, *Global Environmental Institutions*, (London & New York, Taylor and Francis Group, 2006).
 - Dharmendra S. Senger, *Environmental Law*, (New Delhi, Prentice Hall of India Pvt. Ltd, 2007).
 - Dommen & Edward (Ed.), *Fair Principles for Sustainable Development Essays on Environmental Policy and Developing Countries* (USA, Published on behalf of United Nations by Edward Elgar, 1996).
 - Dr. N. Maheshwara Swamy, *Law related to environmental pollution and Protection* (Asia Law House, 2013).
 - Dr. Rathin Bandopadhyay and Dr. Rajendradhar Dubey, *An Introduction to Environmental Rights* (CLP Publication, 5th ed. 2013).
 - E. Alan Boyle, & Freestone David *International Law and Sustainable Development: Past Achievements and Future Challenges* (U.K., Oxford printing Press, 1999).
 - Elisa Morgera, *Corporate Accountability In International Environmental Law, Environment* (London, Earthscan Publications Limited, 2009).
 - F. Harris, *Global Environmental Issues* (U.K., John Wiley Publishers, 2004).
 - Geetanjoy Sahu, *Environmental Jurisprudence and the Supreme Court* (Publisher: Orient Blackswan Private Limited - New Delhi; First edition, 2014)
 - G. K. Ghosh, *Environment Pollution: A Scientific Dimension* (New Delhi, Sage Publications, 1992).
 - G. S. Virk, & A. K. Thukral (Edt.) *Environmental Protection* (Jodhpur, Scientific Publishers, 2000).
 - G. S. Karkara, *Environment and International Law* (Allahabad, U.P., Central Law Publications, 1999).
 - G. S. Nathawat, S. C. Shastri. & J. P. Vyas, *Man, Nature and Environment Law* (Jaipur, RBSA Publishers, 1998).

- Gurdip Singh, *Environmental Law- International and National Perspective* (India, Lawman Publications, 1995).
- H. Bharat Desai, *International Environmental Governance: Towards UNEPO*, (Boston, USA, 2014)
- H. Bharat Desai, *Settlement of Disputes by Courts & Tribunals: A Preliminary Stocktaking* (New York, USA, Cambridge University Press, 2015).
- H. Bharat Desai, *Strengthening Environmental Legislation in India, Presented to Asian Development* (New Delhi, WWF India, 1999).
- H. M. Seervai, *Constitutional Law of India: A Critical Commentary*, (Bombay, N.M. Tripathi Publications, 1991).
- H. N. Tiwari, *Environmental Law* (Allahabad Law Agency, 1999).
- Hajira Kumar, *Social Work, Social Development and Sustainable Development*, (Daya Publishing House, 2002).
- I. A. Khan, *Environmental Laws* (Allahabad: Central Law Agency, 2002).
- I. Sundar, (1st. ed.), *Sustainable Development* (New Delhi, A.P.H. Publishing Corporation, 2006).
- Indrajit Dube, *Environmental Jurisprudence* (Nagpur, Lexis Nexis Butterworths, 2007).
- J. J. R. Upadhyay, *Environmental Law* (Allahabad, Central Law Agency, 2012).
- J. M. Ovasdi, *Management of Non-Governmental Organizations* (New Delhi, Macmillan, 2006).
- J. N. Pandey, *Constitutional Law of India* (CLA publication, 2007).
- Jennifer A. Elliot, *An Introduction to Sustainable Development* (New York, The Taylor & Francis Group, 2006).
- Jerome O. Nriagu, *Arsenic in Environment, Part-2, Human Health and Ecosystem Effects* (United States, John Wiley, 1994).
- Joel Makower, (1st ed.), *Strategies for the Green Economy: Opportunities and challenges in the New World of Business* (New York, Mcgraw Publishers,

2008).

- Jon Reeds, *Smart Growth: From Sprawl to Sustainability* (England, Published by Green Books, 2011).
- Jyoti Parikh & Heman Datye. (ed.), *Sustainable Management of Wetlands Biodiversity and Beyond* (New Delhi, Sage Publications, 2002).
- K.C.Sivaramakrishnan, & L. Green (eds.), *Metropolitan: The Asian Experience* (New York, Oxford University Press, 1986).
- Kailash Rai, *The Constitutional Law of India* (Allahabad, Central Law Publication, 2012).
- S. Kirit Parikh & R. Radhakrishna, *India Development Report- 2004-2005* (India, Oxford University Press 2005).
- Krishn Kumari, *Environment and Sustainable Development* (Hyderabad, Icfai University Press, 2007).
- L. Martha Noble, *Environmental Law and Policy in India* (New Delhi, Tripathi Publishers, 2001).
- Lester R. Brown, *State of the World, 1992: A Worldwatch Institute Report on Progress towards a Sustainable Society* (USA, W. Norton & Co. Inc, 1992).
- Lyuba Zarsky, *International Investment for Sustainable Development Balancing Rights and Rewards* (Landon, Earth scans Publishers, 2005).
- M. K. Satapathy, *Environment and Sustainable Development* (Delhi, Shipra Publications, 2007).
- M. P. Dubey, *Role of Supreme Court in Indian Constitution*, (New Delhi, Deep and Deep Publications Pvt. Ltd, 1987).
- M. P. Jain, *Indian Constitutional Law* (Nagpur, Wadhwa and Company, 1992).
- Mahesh Mathur, *Legal Control of Environmental Pollution* (New Delhi, Deep and Deep Publications, 1999).
- Maheshwara N Swamy, *Textbook on Environmental Law* (Hyderabad, Asia Law House, 2008).
- Marie-Claire Cordonier Segger, & Ashfaq Khalfan, *Sustainable Development*

- Law- Principles, Practices and Prospects*, (UK, Oxford University Press, 2004).
- Martha Honey, *Ecotourism and Sustainable Development* (Washington, Covelo, and London, Island Press, 2008).
 - Mawhinney, *An Introduction to Sustainable Development* (New York, The Taylor & Francis Group, 2001).
 - Micheal Hill & Hupe, Peter, *Implementing Public Policy* (New Delhi, Sage Publications, 2002).
 - Mukund Rajan, *Global Environmental Politics*, (New Delhi, Oxford University Press, 1997).
 - N. Jerath, *Ozone Depletion: What is being done about it* (Chandigarh, PSCST Publications, 1995).
 - Nirmal Kanti Chakrabarti, *Environmental Law*, (New Delhi, Deep and Deep Publications Pvt. Ltd, 2007).
 - O. V. Nandimath, *Handbook of Environmental Decision Making in India* (New Delhi, Oxford University Press, 2009).
 - P. K. Malik, & S. Datta, *Environmental Science and Policy*, (New Delhi, TIMES:Teri Information Monitor on Environmental Science, 2000).
 - P. & J. Anastas Warner, *Green Chemistry: Theory and Practice*, (London, Oxford University Press, 1998).
 - P. Leelakrishnan, *Environmental Law Case Book* (New Delhi, Lexis-Nexis Publications, 2007).
 - P. Parameswaran & K. P. Shivkumar, *Akshaya Vikas-Sustainable Development* (Chennai, Hi-tech Offset (P) Ltd, 2011).
 - P. B. Sahasranaman, *Handbook of Environmental Law* (New Delhi, Oxford University Press, 2009).
 - P. D. Sharma, *Ecology and Environment* (Meerut, New Delhi, Rastogi Publishers, 2007),
 - P. H. Collins, *Dictionary of ecology and Environment* (New York, Peter

Collins Publications Pvt. Ltd, 1992).

- P. K. Gandhi, *Social Action through Law, Concept* (Publishing Co., New Delhi, 1985).
- P. K. Goel, *Water Pollution: Causes Effects and Control* (New Age International, 2006).
- P. S Jaswal and Nishtha Jaswal, *Environmental Law* (Allahabad Law Agency, 1999).
- P. S. Jaswal, & Nistha Jaswal, *Environment Protection, Sustainable Development and Law* (Delhi, Pioneer Publication, 2008).
- Paramjit Singh, *Urbanization and Environment*, (Ghaziabad (U.P), Keshav Publications, 2014).
- Paras Diwan (Ed.), *Environmental Protection, Law, Policy And Administration* (Deep & Deep, New Delhi, 1987).
- Paras Diwan, & Peeyushi. (2nd Ed.) *Environmental Protection: Issues and Problems in Environment Administration Law and Judicial Attitude* (New Delhi, Deep and Deep Publications, 1999).
- Paras Diwan, & Peeyushi, *Environmental Laws- Implementations, Problems and Perspectives* (New Delhi, Deep and Deep Publications Pvt. Ltd, 2002).
- Paras Diwan, (2nd ed.), *Environment Administration Law and Judicial Attitude*, New Delhi, Deep & Deep Publications, 1997).
- Parduman Singh, *Health Protection in India* (Amritsar (India), Conway Printers, 2000).
- Peter P. Rogers, Kazi F. Jalal. & John A. Boyd, *An Introduction to Sustainable Development* (USA, Harvard University Press, 2005).
- Philip Sarre, & Paul Smith, *One World for One Earth- Saving the*(1999)
- Philippe Sands, & Paolo Galizzi, *Documents in International Environmental Law*, (UK, Cambridge University Press, 2004).
- Phillip Cullet , *Water law Poverty and Development* (Oxford University Press, 2009)

- Phillip Cullet and Gowlland Gualtieri, *Water Governance in Motion* (Cambridge University Press, 2010).
- Phillip Cullet and Joyeeta Gupta, *India: Evolution of Water and Policy* (Springer, 2009).
- Phillip Cullet and Sujith Koonan, *Water Law in India* (Oxford University Press, 2011).
- V. K. Prabhakar, *Pollution Monitoring and Control* (New Delhi, Anmol Publications Pvt. Ltd, 2001).
- Preston Schiller, (1st ed.), *An Introduction to Sustainable Transportation: Policy, Planning and Implementation*, (London, Earthscan Publications, 2010).
- Pure Taylor, *An Ecological Approach to International Law-Responding to Challenges of Climate Changes* (New York, USA, Routledge, 1998).
- R. K. Khitoliya, *Environment Protection and Law*, (New Delhi, A.P.H.Publishing Corporation, 2005).
- R. K. Lekhi, *The Economics of Development and Planning* (New Delhi, Kalyani Publishers, 2005).
- R. K. Turner, *Economic of Natural resources and the Environment* (Baltimore, Johns Hopkins University Press, 1990).
- R. Kumar, *Environmental Pollution and Health Hazards in India*, (New Delhi, Ashish Publication House, 1987).
- Ratnesh Kumar, *Environmental Economics-Theory and Practices*, (New Delhi, Deep and Deep Publications Pvt. Ltd, 2006).
- Ritwick Dutta, & Bhupendra, Yadav. (2nd ed.), *Supreme Court on Forest Conservation- Judgments, Orders and Commentaries* (Azampur, New Delhi, Universal Law Publishing Co. Pvt. Ltd, 2007).
- Robert Noyes, *Handbook of Pollution Control Processes*, Mumbai, Delhi, Kolkata, Bangalore, Hyderabad, Chennai, (Jaico Publishing House, 2001).
- Roberto Repetto, *World Enough and Time* (New Haven, Yale University Press, 1986).

- Roman Lopez, & Micheal A. Thoman (Edt), *Economic Development and Environmental Sustainability- New Policy Options* (UK, Oxford University Press, 2006).
- S. Lele, *Sustainable Development: A Critical Review* (London, Elsevier Ltd, 1991).
- S. Radha, & Amar Singh Sankhyan. (Ed.) *Environmental Challenges to the 21st Century* (New Delhi, Deep and Deep Publications Pvt. Ltd, 2002).
- S. Radha. (Ed.), *Environmental Challenges of 21st Century* (New Delhi, Deep and Deep Publications Pvt. Ltd, 2002).
- S. Shantakumar, *Introduction to Environmental Law* (Nagpur, Wadhwa and Company, 2005).
- S. C. Tripathi, *Environmental Law* (Allahabad, Central Law Publications, 2010).
- S. K. Kapoor, *International Law and Human Rights* (Allahabad, Central Law Agency, 2006).
- S. K. Shukla, *The Environment Pollution and the Law* (Jaipur, Shashi Publications, 1989).
- S. K. Singh, *Triple Bottom Line Reporting and Corporate Sustainability* (England, PHIL Professional Title Publishers, 2007).
- S. K. Singh, *Ministry of Urban Development and Poverty Alleviation* (India, Personal Communications, 2002).
- S. K. Verma, & A. Afzal Wani, *Legal Research and Methodology*, (New Delhi, Shivam Offset Press, 2001).
- S. K. Agarwal, *Eco-Informatics-Environmental Monitoring* (Volume-II, New Delhi, A.P.H. Publishing Corporation, 2002).
- S. M. Khopkar, *Environmental Pollution Monitoring and Controll* (New Delhi, New Age International Publishers, 2004).
- S. M. Shafi, *Environment Pollution* (New Delhi, Atlantic Publishers, 2005).
- Sakarama Somayaji, *Environmental Concerns and Sustainable Development:*

- Some Perspectives from India* (New Delhi, Teri Press, 2011).
- Saligram Bhatt, *Environment Protection and Sustainable Development* (New Delhi, A.P.H. Publishing House, 2004).
 - Sanjiv Kumar *Lectures on Environmental Law* (Allahabad, Central Law Publications, 2010).
 - Satish C. Shastri, *Environmental Law* (Lucknow, Eastern Book Company, 2012).
 - Shyam Diwan, & Armin. Rosencrantz, (4th ed.), *Environmental Law & Policy in India: Cases, Materials & Statutes* (New Delhi, Oxford University Press, 2005).
 - Siddhratha Sarkar, *Economic and Environment Accounting for Sustainable Development* (Delhi, Abhijeet Publications, 2006).
 - Sidharth Mishra, & V. K. Sibal, A. K. Thukral & G. S. Virk (Ed.) ,*Environmental Protection- Environmental Sustainability and Transport: Jodhpur* (Scientific Publishers Jodhpur, 2000).
 - Simon Ball & Stuart Bell, *Environmental Law* (Delhi, Universal Law Publishing Company Pvt. Ltd, 1996).
 - Simon Bell & Mores Stephen (2nd ed.), *Sustainability Indicators-Measuring the Immeasurable?* (Landon, Earthscan Publications, 2007).
 - Stephen Gill, & James H. Mittleman, *Innovation and Transformation in International Studies* (UK, Cambridge University Press, 1997).
 - Sumeet Malik, *Environmental Law* (Lukhnow, Eastern Book Company, 2008).
 - T. S. Doabia, *Environmental and Pollution Laws in India* (New Delhi, Wadhwa and Company, Nagpur, 2005).
 - Tom Tietenberg, *Environmental and Natural Resources Economics* (New York, Harper Collins, 2005).
 - Upendra Baxi, *Environment Protection Act: An Agenda for Implementation*, (Delhi, ILI, 1987).
 - V. H. Heywood, *Global Biodiversity Assessment* (Landon, Cambridge

University Press, 1995).

- V. K. Sibal, & Sidharth, Mishra. (Edt.) *Environmental Protection Environmental Sustainability and Transport* (Jodhpur, Scientific Publishers, 2000).
- V. K. S. Chaudhary, *A Pillar of the Constitution in the Ivory Tower, 51 years of the Supreme Court of India* (Delhi, Universal Law Publishing Co. Pvt. Ltd, 2002).
- V. M. Topani, *Textbook on Jurisprudence* (New Delhi, Universal Law Publishing Company, 2010).
- V. R. Krishna Iyer, (Justice) *Environmental Protection and Legal Defence*, (Delhi, Sterling Publishers Pvt. Ltd, 1992).
- V. R. Krishna Iyer, (Justice), *Legally Speaking* (Delhi, Universal Law Publishing Co. Pvt. Ltd, 2007).
- V. S. Despande, *Environment, Administration Law and Judicial Attitude-I*, (New Delhi, Deep and Deep Publications).
- Vikash Vashista, *Law and Practice of Environmental Laws in India*, (New Delhi, Bharat Law House, New Delhi, 1999).
- W. Clark & Woodrow, *Sustainable Communities* (Berlin, Springer Verlag Publishers, 2009).
- W. C. Clark, & R. E. Munn, *Sustainable Development of the Biosphere* (Cambridge, Cambridge University Press, 1986).
- Y. Anjaneyulu, *Introduction to Environmental Science*, (Hyderabad, B. S. Publications, 2005).

ARTICLES/ JOURNALS

- Arun B Venkat, *The National Green Tribunal act 2010: An overview* (2011).
- B. Jayant Kumar & Saurabh Mishra, *National Green Tribunal: A step Toward Environment Justice ?* (The Lex Warriar, 2013).

- B.R. Sharma, “*Environmental Management in India An Overview*” (2000).
- Bounder, “*Environmental Management Problem in India,*” 1988.
- Chhatrapati Singh, “*Legal Policy for Environmental Protection*”(1984).
- Chhatrapati Singh, “*Water Right in India,*” Aligarh Law Journal, 1990.
- N.S. Chandrsekharan, “*Environmental Protection: Two Steps Forward, One Step Back*”(1988).
- C. McCaffrey and Robert E. lutz (Eds.) *Environmental Pollution and Individual Rights; an international symposium* (1978).
- C. Suman, “*Public Participation in Environment Decision Making*”(2008).
- Darriyl, D.J. Monte, “*Environment Law Has No Teeth*”, *Indian Expression*,(1986).
- Gellhorn. E, “*public participation in Administrative Proceeding*” (1972).
- G. Gill & Ghanshyam Singh, “*Right to Environment: A constitutional Right through public interest litigation in India*” (1999).
- H. M. Mittal, “*Public Participation in the Enforcement of the Environment (Protection) Act 1986.*” (1992).
- S. N. Jaun, “*Legal control of water pollution in India,*” in Indian law Institute (cd.), *Legal control of Environment Pollution* (1980).
- Muchlinski, P.T. “*The Bhopla Case: controlling Ultra hazardous Industrial Activities undertaken by foreign Investors*”, (1987).
- M. Zakaria Siddiqi (Ex. Dean Faculty of Law, Aligarh Muslim University Aligarh), “*Environmental Laws and Limits of Criminal Sanctions,*” *Indian Bar Review*, (1994).
- N.R. Mdhava Menon, “*Right to Development, cleans Environment and Work*”. *Cochin University Law Review* (1999).
- Rana Naveet Roy, *National Green Tribunal in India; Environmental Alternative Dispute Resolution Mechanism*.(2011).
- Sumitra Sripada, “*Right-Duty dichotomy in the Context of environment*

Protection” (1980).

- Shyam A. Divan, “*constitution and the environment,*” (1990).
- Santosh Kumar, *Environment, Development and Disaster: The Panchtatva Equilibrium.*(2012).
- Justice Yatindra Singh, *The Green Pathway* (2010).
- *Environmental Jurisprudence: Indispensable for growth with sustainability* (2010).
- H.Salve “*Justice between Generations: Environment and Social Justice*”. (2000).
- D.Kaur, “*Environment Protection in India: Constitutional Conspectus*”.(2014).
- P.N. Bhagwati “*Judicial Activism and Public Interest Litigation*” (1984).
- S.K. Bhattacharyya “*Protection of Environment and Role of Law*” (2003).
- U. Baxi “*Introduction: Quest for Environmental Justice*” (2010).
- V. Venkatesan “*Bhopal Gas Tragedy Diluting Guilt*”(2009).

Journals, News papers And Periodicals

- All India Reporter
- Annual Survey Of Indian Law
- Apex Court Expression.
- Delhi Law Review
- Economic and Political Weekly
- India Today
- Indian Bar Review
- Indian Express
- Journal of Indian Law Institute.
- Supreme Court Cases
- Supreme Court Journal
- The Hindustan Times.

- The Hindu
- The Times Of India
- Dainik Jagran
- The Tribune
- Seminar
- Frontline
- Outlook
- World Focus
- Science Reporter
- chronicle

WEB SOURCES:

- www.indiankanoon.org/doc
- www.wikipedia.org/wiki
- www.slideshare.net
- www.governindia.org
- www.legaleserve.com
- www.legalservicesindia.com
- districtcourtallahabad.up.nic.in
- www.legalsutra.org
- www.indianetzone.com
- www.manupatrainternational.in/supremecourt
- <http://www.lead-journal.org/abstracts>
- [http://www. timesofindia.indiatimes.com/article show](http://www.timesofindia.indiatimes.com/article/show)
- <http://www.up.gov.in/bgtrrdmp/relief.htm>
- [http://www. legalserviceindia.com/articles/jjj.htm](http://www.legalserviceindia.com/articles/jjj.htm)
- <http://www.aajtaknews.com/new.etc>
- <http://www.who.int/en/>

- <http://www.downtoearth.org>.
- <http://www.punenvvis.nic.in>
- www.moef.nic.in
- http://www.unfccc.int/cop8/latest/1_cpl6rev1.pdf.
- <http://www.admiraltylawguide.com/convex/oilpol1954.html>.
- <http://unesdoc.unesco.org/images/0014/oo1471/147152eo.pdf>.
- <http://www.unep.org/ozone/pdfs/viennaconvention2002.pdf>.
- http://en.wikipedia.org/wiki/united_nations_environment_programme.
- http://www.cms.int/documents/convtxt/cms_convtxt.htm.
- <http://www.unep.org/document.multilingual/default.asp?documentID=1503>.
- <http://www.indiaenvironmentportal.org.in/category/thesarus/mining>.
- <http://www.deccanherald.com/content/84665/karnatak-bans-ironoreexports.html>.
- http://unfccc.int/cop8/latest/1_cpl6rev1:pdf.
- http://www.c-fam.org/docilib/20080625_rio_declaration_on_environment.pdf.
- <http://www.inhabitat.com/2008/01/23/amazing-green-roof-art-school-in-singapore/&isImage=0&BlockImage=0>.
- www.cprindia.org
- www.pbforests.gov.in
- <http://greentribunal.in>
- www.interscience.wiley.com.
- http://en.wikipedia.org/wiki/file:text_document_with_red_question_mark_.svg.
- <http://www.unep.org/law/PDF/Nairobideclaration1982.pdf>.
- <http://www.world-tourism.org>
- <http://www.unep.org/documents.Multilingual/Default.asp?documentid=52>.
- www.ppcb.gov.in/AR-2010-11.pdf.
- www.ppcb.gov.in/AR-2010-11.pdf.

- www.ppcb.gov.in/latest_news/ActionPlan.
- [www.ppcb.gov.in/AR-2010-11,pdf](http://www.ppcb.gov.in/AR-2010-11.pdf).
- <http://www.neeri.res.in>
- <http://timesofIndia.Indiatimes.com/city/ludhiana/asthma-incidence-ontherise/articleshow/7421271cms>.
- [.http://www.expressIndia.com/latest-news/ludhaina-most-polluted-amritsarleast-in-india/852177/](http://www.expressIndia.com/latest-news/ludhaina-most-polluted-amritsarleast-in-india/852177/).
- <http://www.un.org/en/development/desa/publications/world-economic-and-social-survey-2013-sustainable-development-challenges.html>.
- www.sadgurupublications.com.
- <http://www.ppcb.gov.in>
- <http://www.supremecourtindia.nic.in>.
- <http://www.un.org/millenniumgoals/beyond2015.shtml>.
- www.brics6.itamaraty.gov.br/agreements.
- http://www.g20.org/g20_priorities/g20_2014_agenda/growth_development.
- <http://www.theguardian.com/globaldevelopmentprofessionalsnetwork/2014/jul/24/human-development-report-2014-undp>.
- www.brics6.itamaraty.gov.br.
- www.pscst.gov.in.
- www.dswcpunjab.gov.in
- http://articles.economictimes.indiatimes.com/20140809/news/52620596_1_industrialised-countries-climate-change-edna-molewa.
- <http://www.afprm.org/policy-petroleum-coke/petroleumcokeoverview>.
- www.epa.gov/compliance/nepa/esidata.html.
- <http://www.downtoearth.org.in/content/green-tax-vehicles-made-mandatory>.
- www.indiaenvironmentportal.org.in/category/36/thesaurus/air-pollution
- <http://www.who.int/mediacentre/factsheets/fs313/en>.