



REPORT ON

International e-Conference on Taking Stock of Stockholm (1972-2022)



Organized by
Centre for Regulatory Studies, Governance and Public Policy,
The West Bengal National University of Juridical Sciences, Kolkata
&
Centre for Environmental Law, Advocacy and Research,
National Law University and Judicial Academy, Assam

12th-13th November, 2022



REPORT

ON

INTERNATIONAL *e*-CONFERENCE ON

TAKING STOCK OF STOCKHOLM @50

(1972-2022)

12th-13th November, 2022

Prepared and Compiled by

Dr. Jayanta Ghosh, Head and Research Fellow, CRSGPP, WBNUJS

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Vijoy Kumar Sinha, Research Assistant, CRSGPP, WBNUJS

Centre for Regulatory Studies, Governance and Public Policy

The West Bengal National University of Juridical Sciences, Kolkata

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FROM THE DESK OF VICE- CHANCELLOR, WBNUJS, KOLKATA

The two-day international e-conference on taking stock of Stockholm (1972-2022) addressed environmental crisis and issues pertaining to the environment. Various intricate and larger issues of the environment were acknowledged and discussed at an international platform. The conference focused on the alarming state at which the environment has been polluted, the climate change and biodiversity loss. With the conference coming to an end, I believe, it built more awareness of these environmental problems and the approaches to combat the most important environmental and developmental issues of our time because the international community came together at the Stockholm Conference. The recognition of environmental problems cutting across national borders and therefore require intergovernmental cooperation and concept of sustainable development are the significant outcomes of the Stockholm conference to us. The initiatives of the 1972 UN Conference on the Human Environment led to the United Nations Environment Program. The most important environmental principles and concepts that we know of now, the precautionary principle, the polluters pay principle and even the Environmental Impact Assessment were given to us by the 1972 conference. Various Environmental and Sustainable development issues were set out in the Stockholm Declaration and Action Plan. Similarly, this conference too, made the effort of recognizing the problems related to ecology through unique perspectives, raised awareness on the environmental challenges that are to be addressed and paved the path to live a more environmentally sustainable life. The conference can then be considered as the catalyst that readdressed all the principles undertaken during the 1972 UN Conference on the Human Environment.

I extend my wishes to both the organizing committees from the institutions CRSGPP, WBNUJS and CELAR, NLUJA Assam for their efforts in jointly organizing this conference and congratulate the effective collaboration of both the Centers. It was intriguing to witness the discussions and debates that developed during the plenary sessions and the parallel sessions of the conference.

Prof. (Dr.) N.K. Chakrabarti
Vice-Chancellor
WBNUJS, Kolkata



FROM THE DESK OF VICE- CHANCELLOR, NLUJA, ASSAM

In the context of global environmental governance, it is indeed a landmark year since 2022 marks fiftieth anniversary of the Stockholm Declaration on Human Environment, 1972. Also, at the same time, 2022 marks thirtieth anniversary of the Rio Declaration on Environment and Development, 1992. Taken together, this year extends to us a timely opportunity to take stock of climate health and listen to the warning- if we rename 'global warming' likewise- on priority basis; so far as possible. Besides, this year offers to us opportunity to take stock of major Multilateral Environmental Agreements (MEAs), e.g., CITES, UNFCCC, CBD, Ramsar, Basel, etc., to name few among them. Also, UNCLOS 1982 has had a specific chapter on marine environment and 2022 marks fortieth anniversary vis-à-vis law of the sea. Therefore, it is time to take stock of global marine environment as well. I'm happy to find that two-day international e-conference- jointly hosted by WBNUJS Kolkata and NLUJA Assam- has become a democratic forum to generate objective discussion, followed by debate, on myriad socio-legal and policy issues involved; thereby contributed to generate public debate on the common future of humankind in time ahead.

Prof. (Dr.) V. K. Ahuja
Vice-Chancellor
NLUJA, Assam

ORGANISING COMMITTEE

PATRONS

- Prof. (Dr.) N.K. Chakrabarti, Vice-Chancellor, WBNUJS, Kolkata
- Prof. (Dr.) V. K. Ahuja, Vice-Chancellor, NLUJA, Assam

CONVENORS

- Dr. Jayanta Ghosh, Head and Research Fellow, CRSGPP, WBNUJS, Kolkata
- Dr. Amol Deo Chavhan, Convenor, CELAR, NLUJA, Assam

TECHNICAL ADVISOR

- Prof. (Dr.) Debasis Poddar, Professor of Law, Advisor, CELAR, NLUJA, Assam

COORDINATING TEAM

- Sanghamitra Baladhikari, Research Assistant, CRSGPP, WBNUJS, Kolkata
- Vijoy Kumar Sinha, Research Assistant, CRSGPP, WBNUJS, Kolkata
- Mumuksha R. Vats, Research Assistant, CRSGPP, WBNUJS, Kolkata
- Agniva Chakrabarti, 5th Year, WBNUJS, Kolkata
- Samarth, 4th Year, WBNUJS, Kolkata
- Mainak Mukherjee, 4th Year, NLUJA, Assam
- Satrajeet Sen, 4th Year, WBNUJS, Kolkata
- Agniva Das, 5th Year, NLUJA, Assam
- Anushka Nigam, 5th Year, NLUJA, Assam
- Aneesh Raj, NLUJA, Assam
- Devanshi Srivastava, NLUJA, Assam
- Ekta Agarwal, NLUJA, Assam



PROGRAMME SCHEDULE

TWO DAY INTERNATIONAL *e*-CONFERENCE ON *TAKING STOCK OF STOCKHOLM @ 50 (1972-2022)*

Organised by

Centre for Regulatory Studies, Governance and Public Policy,

The West Bengal National University of Juridical Sciences,

Kolkata

&

Centre for Environmental Law, Advocacy and Research,

National Law University and Judicial Academy, Assam

Platform – Google Meet

12-13th of November 2022

SCHEDULE OF THE EVENT

Day 1

12th of November 2022

Inaugural and Plenary Session 1

Google meet link: <https://meet.google.com/pfn-wzwc-rit>

- 3:00 - 3:10 p.m.** **Inauguration** of the conference
- 3:10 - 3:20 p.m.** **Welcome Address:**
Prof. (Dr). N.K. Chakrabarti, Vice Chancellor, WBNUJS, Kolkata
and
Prof. (Dr.) V. K. Ahuja, Vice Chancellor, NLUJA, Assam.
- 3:20 - 3:40 p.m.** **Address by Chief Guest:**
Dr. Manas Ranjan Bhunia, Hon'ble Minister in Charge, Department of Environment, Government of West Bengal
- 3:40 – 5:20 p.m.** **Guest Speakers**
- Prof. Philippe Cullet (Professor of International and Environmental Law, SOAS University of London)
 - Mr. M.C. Mehta (Advocate, Supreme Court of India)
 - Prof. K Purushotham Reddy (Environmental Activist)
 - Prof (Dr.) Yogesh Pratap Singh (Vice Chancellor, National Law University Tripura)
 - Prof. Uma Outka (Professor of Law, School of Law, The University of Kansas, USA)
- 5:20 – 6:35 p.m.** **Plenary Session 1 – Stockholm+50: A Healthy Planet for Prosperity of All.**
- **Moderator:** Prof. (Dr.) S. Shanthakumar (Director, Gujarat National Law University)
- Speakers:**
- Prof. (Dr.) Sairam Bhat (Professor of Law & Centre Coordinator, Centre for Environmental Law Education, Research and Advocacy (CEERA), NLSIU Bangalore).
 - Mr. Ranjan Chatterjee (IAS, Former Expert Member of National Green Tribunal)
 - Prof. (Dr.) Uday Shankar (Registrar & Professor of Law, Hidayatullah National Law University)
 - Prof. (Dr.) Anand Pawar (Registrar and Professor of Law, Rajiv Gandhi National University of Law)

End of Day 1 of the conference

Day 2

13th of November 2022

Plenary Session 2

Google meet link: <https://meet.google.com/pfn-wzwc-rit>

10:00 – 11:15 a.m. Plenary Session 2 – Stockholm+50: Our Responsibility, Our Opportunity, Our Future

- Prof. (Dr.) A. P. Singh (Dean, University School of Law & Legal Studies, GGSIP University, Delhi)

Speakers:

- Prof. (Dr.) M.K. Ramesh (Professor of Law, NLSIU Bangalore)
- Dr. Kalyan Rudra (Chairman, West Bengal Pollution Control Board)
- Prof. (Dr.) Md. Nazrul Islam (Professor & Chairman, Department of Law, University of Dhaka)
- Prof. (Dr.) Snehamanju Basu (Registrar, Jadavpur University, Kolkata)

Parallel Session I (Paper Presentations)

11:30 a.m. – 1 p.m.

Google meet link: meet.google.com/isg-ogcq-bau

Chair - Prof. (Dr.) Bharti Kumar (Professor of Law & Director Centre for Environment Law, Policy & Research NLU, Delhi)

Moderator- Dr. Narendran Thiruthy (Assistant Professor, Rajiv Gandhi School of Intellectual Property Law, Indian Institute of Technology, Kharagpur)

Room no: 22

| Environmental Governance & Justice | |
|------------------------------------|---|
| SL No | Paper Title |
| 1. | Dr Jiya Matharani - Environmental Rule of Law: A key to the Environmental Good Governance |
| 2. | Abhishek Chakravarty - Independent Environmental Regulator - The Transformation India Needs in Environmental Governance |
| 3. | Paridhi Gupta - 1994 - 2022: Application and Implications of the Paris Convention |
| 4. | Shreya Bajpai, Vrinda Jain & Aaditya Bajpai - The Earth Summit: Towards a New Foundation for International Environmental Cooperation |
| 5. | Isabel Liao & Tharun Pranav - Criminalising Ecocide - An Indian Perspective |
| 6. | Abdul Basith - ENMOD Convention And Its Limitations; Problem With The 'Peaceful Purposes Clause' In Article III of The Enmod Convention |
| 7. | Dr. N.C. Patnaik, Dr. Nilanchala Sethy & Spinita Priyadarsini - Access To Green Justice: Needs Of The Hour |
| 8. | Dr. Jyoti Mozika & Ankita Sharma- Environmental Governance and Climate Change in India |

Parallel Session II (Paper Presentations)

11:30 a.m. – 1 p.m.

Google meet link: meet.google.com/fqi-qwmi-kct

Chair – Dr. Jyoti Mozika (Head & Professor of law, Department of Law, North Eastern Hill University)

Moderator – Dr. Amol Deo Chavhan (Convenor, CELAR & Associate Professor of Law, NLUJA, Assam)

Room no: 119

| Stockholm Declaration | |
|-----------------------|--|
| SL No | Paper Title |
| 1. | Satyam Chaurasia, Deepanshu & Adarsh Anand Amola - Stockholm Declaration, 1972: A Critical Analysis on the tribal sustainability in the face of transboundary harm |
| 2. | Diwakar Das & DR. Monica Kharola - Stockholm +50 Accountability, Opportunity and Future |
| 3. | Dr. Kalpana V. Jawale - Critical analysis of Protection of Human Environment and action plan in the light of Stockholm Declaration 1972 |
| 4. | Mrs Rakhee S Gadhave, Ms Munjarinbanu Sanadi & Ms Hrutvi Nerurkar - Environmental Learning: An Analytical Perspective, Stockholm Declaration, 1972 |
| 5. | Adithi Holla - The Case against Automobility: An Analysis of the Idea of Sustainable City-Planning in light of the Recent Bengaluru Floods |
| 6. | Anna - The Rise of Intergenerational Equity in Post Stockholm Period- Effects and Challenges |
| 7. | Manjari Singh & Harshita Prasad Balancing The Scales Of Development Vis-A-Vis Environment: Are We Compromising Environmental Protection Over The Economic Benefit? |
| 8. | Sapresh Suhas Devidas & Vaibhavi Rane - Energy Conservation: India's Role In Achieving The Goals Of Stockholm In Next 50 Years From Urgency To Agency |

Parallel Session III (Paper Presentations)

11:30 a.m. – 1 p.m.

Google meet link: meet.google.com/skb-zpso-ifi

Chair – Prof. (Dr). Manik Chakraborty (Former Head & Professor of Law, Burdwan University).

Moderator - – Prof. (Dr.) Debasis Poddar (Professor of Law, National Law University and Judicial Academy, Assam)

Room no: 107

| Rio Declaration | |
|-----------------|---|
| SL No | Paper Title |
| 1. | Sheena Das – Good Governance principle under Rio declaration. Whether the concept of good governance has been incorporated into the existing administrative arena? With reference to the state of Kerala. |
| 2. | Ishu Yadav & Mishti Jain - Contribution Of Rio Principles In Protection And Development Of The Environment |
| 3. | Anupa Dey - Sustainable Development In India, Challenges And Opportunities- Role Of International Community, Government And Citizens |
| 4. | Aswathi Sukumaran - Sustainable Development And Challenges In The Contemporary Era With Special Reference To Rio Declaration |
| 5. | Soham Banerjee - Are We Liable For The Damages Caused To The Environment In India? |
| 6. | Ms. Ditipriya Dutta Chowdhury - Polluter Pays Principle and the Conundrum of Space Debris |
| 7. | Jeffy Johnson - Critique On Precautionary Principle And Public Decision Making |
| 8. | Aranya Nath & Antara Paral - COVID-19 legislation in the light of the precautionary principle in India |

Parallel Session IV (Paper Presentations)

11:30 a.m. – 1 p.m.

Google meet link: meet.google.com/xmq-nqyp-aab

Chair – Dr. Shailendra Kumar Gupta (Faculty of Law, Banaras Hindu University)

Moderator – Dr. Pratyusha Das, (Assistant Professor of Law, St. Xavier's University)

Room no: 114

| Environmental Management | |
|---------------------------------|---|
| SL No | Paper Title |
| 1. | Ashish Haloi - Urban population and the wastage of water: A study of Chandmari locality in Kamrup (metro), Guwahati |
| 2. | Satabdi Dhar - The River as Legal Juridical Person- Enhancing the Status of River |
| 3. | Siddharth Kanojia , Dr. Sashi Bhushan Ojha & Dr. Muzaffar Hussain Mir - Untying a Gordian Knot: Paradox of Bio-Medical Waste Management and Legal Compliance in India |
| 4. | Vikranta Pradeep Barsay - Responsibility and Liability Of Upstream Cities For The Public Nuisance To The Downstream Cities Along The River Ganga |
| 5. | Anushmita Pramanik - Environmental Resource Management |
| 6. | Dr. Suyog Shankarrao Ingle - ENVIRONMENTAL IMPACT ASSESSMENT IN INDIA |
| 7. | Longjam Herojit Singh - Study Of Environmental Impact Assessment In India |
| 8. | Dr. M.P Chengappa- National Policy for Sustainable Coal Mining and promoting renewable energy- Deconstructing Stockholm+50 |
| 9. | Kathirtharsini Parameswaran - Coastal state governance on Oil Spilling Exclusive Economic Zone; Reference to the X Press Peral incident in Sri Lanka |

1p.m. – 2:30p.m. – Lunch

Parallel Session V (Paper Presentations)

2:45p.m. - 4:15 p.m.

Google meet link: meet.google.com/isg-ogcq-bau

Chair - Prof. (Dr.) Pushpa Kumar Lakshmanan (Professor of Law, Faculty of Law, University of Delhi)

Moderator - Dr. Stellina Jolly (Associate Professor, Faculty of Legal Studies, South Asian University)

Room no: 22

| Sustainable Development Vis-à-vis Food Safety, Health and Education | |
|---|---|
| SL No | Paper Title |
| 1. | Dr Anjana Hazarika - Corporate Responsibility and Sustainable Development Goals (SDGs): A nuanced relation |
| 2. | Saurabh Sood -Ascertaining the Effectiveness of Disclosure of Corporate Environment Liability in India |
| 3. | Niraj Kumar Seth - The 7Ss Theory of Sustainable Consumerism in Food Sector |
| 4. | Dr. Rupam Lal Howlader - Food Safety and Public Health in India: A Legal Study |
| 5. | Lakshmi Haritha Nakka & S.Sumitra - Equity In Resource Management in the Light of Public Trust Doctrine. |
| 6. | Dr. Sougata Talukdar - Right to Health under International Environmental Jurisprudence |
| 7. | Dr. Ashwini N.Dalal - Environmental Education Concerning Stockholm Declaration and Beyond Vis-A Vis Ancient Indian Practice of Environment Conservation |
| 8. | Dr. Munish Swaroop & Prof. (Dr.) Ashish Verma - National Education Policy, 2020 and Environment Education: Challenges and Opportunities |
| 9. | Amit Vikram Pandey- Environmental Education |
| 10. | Prof. (Dr.) J. Mahalakshmi- Right to Clean Water: An International and National Perspective |

Parallel Session VI (Paper Presentations)

2:45p.m. - 4:15 p.m.

Google meet link: meet.google.com/fqi-qwmi-kct

Chair – Prof. (Dr.) Azim B. Pathan (Head & Professor of Law, School of Law, G.D. Goenka University)

Moderator - Dr. Debashree Mukherjee (Head, Department of Law, Sister Nivedita University, Kolkata)

Room no: 119

| Sustainable Development & Sustainable Development Goals | |
|---|---|
| SL No | Paper Title |
| 1. | Amrita Chakraborty- A Study on Environmental Sustainability in India |
| 2. | Arunima Goel - Road to Sustainable Development |
| 3. | Ankit Anand & Bhavika Chandaliya - Development Goal of Sustainability and Sustainable Development |
| 4. | Somya Luthra - Exploiting the Nexus between the SDGs and Public International Law- A Gateway to Sustainable Development |
| 5. | Surja Kanta Baladhikari - Access to justice to women victims of crime with reference to Criminal Law Amendment Act, 2013 |
| 6. | Dr. Susmita Dhar - Stockholm +50 our responsibility towards sustainability and healthy planet for all – a study with special reference to India |
| 7. | Dr. Goda Mallikarjun - Human Rights Perspective Of Sustainable Development Goals – Organs Of Government In India Need To Work As A Team |
| 8. | Jyothi C.V - The Role of Good Governance and Social Obligation on the Achievement of Sustainable development in India |
| 9. | Sharon Singh - Cartagena Protocol and Sustainable development - embracing a one health perspective |
| 10. | Priya Kumari- The Impacts and Challenges of Sustainable Development Goal 13 |

Parallel Session VII (Paper Presentations)

2:45p.m. - 4:15 p.m.

Google meet link: meet.google.com/skb-zpso-ifi

Chair – Prof. (Dr). Arup Poddar (Professor of Law, WBNUJS)

Moderator – Dr. Subir Kumar (Associate Professor of Law, NUSRL, Ranchi)

Room no: 107

| Law of Seas, Biodiversity and Wildlife | |
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| SL No | Paper Title |
| 1. | Surya KS - UNCLOS III and the protection of distressed ships at Sea: An Analysis |
| 2. | Jatin Yadav & Kartik Mehta - Marine Spatial Planning: A Plausible And Sustainable Legal Solution To International Territorial Disputes And Fish Wars |
| 3. | Shatakshi Tripathi & Tivra Tripathi - Fraternizing the aspects of environmental principles and law of sea-An international regime |
| 4. | Shivesh Saini & Bhawna Mangla - The Triangle of Oil, Water and Armed Conflict: Tracing the Criminal Liability for effective deterrence |
| 5. | Divya Nimbalkar - Ushering the Indian Ocean into the UN Convention on the law of the Sea (UNCLOS) through Marine Environment |
| 6. | Arindam Basu & Sharda Mandal - The Post COVID-19 Pandemic Age & Current Encounters and Prospects to the International Governance: In Quest for a Unified and Sustainable Resolution for the Preservation of Marine Biodiversity in High Seas |
| 7. | Madhu Chandra Chakraborty & Prof. Madhumita Dhar Sarkar - Conservation Of Endangered Species With Reference To Chelonian Species In Barak Valley: Prospects And Challenges |
| 8. | Souradip Bandyopadhyay - Role Of Cites In Combating Transnational Wildlife Crimes In The Contemporary World : A Critical Analysis |
| 9. | Prajwal Vasuki, Aryan Rao & Nithish Balaji - Critical analysis of the challenges in the regulatory framework for international trade in endangered species |
| 10. | P. Vaishnavi Narayeni- Governing Principle for Marine Biodiversity beyond National Jurisdiction |

Parallel Session VIII (Paper Presentations)

2:45p.m. - 4:15 p.m.

Google meet link: meet.google.com/xmq-nqyp-aab

Chair – Prof. (Dr). Vishnu Konoorayar (Professor of Law, HNLU)

Moderator – Dr. Aswini Siwal (Assistant Professor of Law, University of Delhi)

Room no: 114

| Climate Change, Energy and Traditional Knowledge | |
|--|---|
| SL No | Paper Title |
| 1. | Puja Gupta - Vienna Convention For The Protection Of The Ozone Layer, 1985: A Critical Overview Of International Environmental Governance |
| 2. | Prateek Akash & Vidya Ann Jacob - Renewable Energy and Climate Justice in India |
| 3. | Dr. Makhan Saikia - Global Climate Diplomacy- Mapping Challenges & Opportunities |
| 4. | Dr. Niladri Mondal & Victor Nayak - Renewable Energy Obligations & Climate Legislation In India: A Sine Qua Non! |
| 5. | Shimul Dutta & Arindam Basu - On Noah's Ark: Building Arguments for Climate Migrants |
| 6. | Mohammad Asif, Dr. S. Sem Ali & Saood Ahmad - India and Malaysia's renewable energy law and policy: A critical review |
| 7. | A. Tamilselvan - Biodiversity Conservation and its Benefits sharing: An analysis from the Tribal Perspective |
| 8. | R. Chameli - Benefit Sharing And It's Impact On Protection Of Traditional Knowledge In India – An Analysis |
| 9. | Prantik Roy & Uday Krishna Mittra- Convergence of CSR with sustainable development goals: Evidence from CSR reporting practices of Indian companies |

Valedictory Session

4:30p.m – 6:30p.m.

Google meet link: <https://meet.google.com/pfn-wzwc-rit>

Keynote Speaker

Professor Dr. Bharat H. Desai (Professor of International Law, Jawaharlal Nehru Chair in International Environmental Law, Center for International Legal Studies, School of International Studies, Jawaharlal Nehru University)

Closing Address

Address by:

Prof. (Dr). N.K. Chakrabarti, Vice Chancellor, WBNUJS, Kolkata

And

Prof. (Dr.) V. K. Ahuja, Vice Chancellor, NLUJA, Assam.

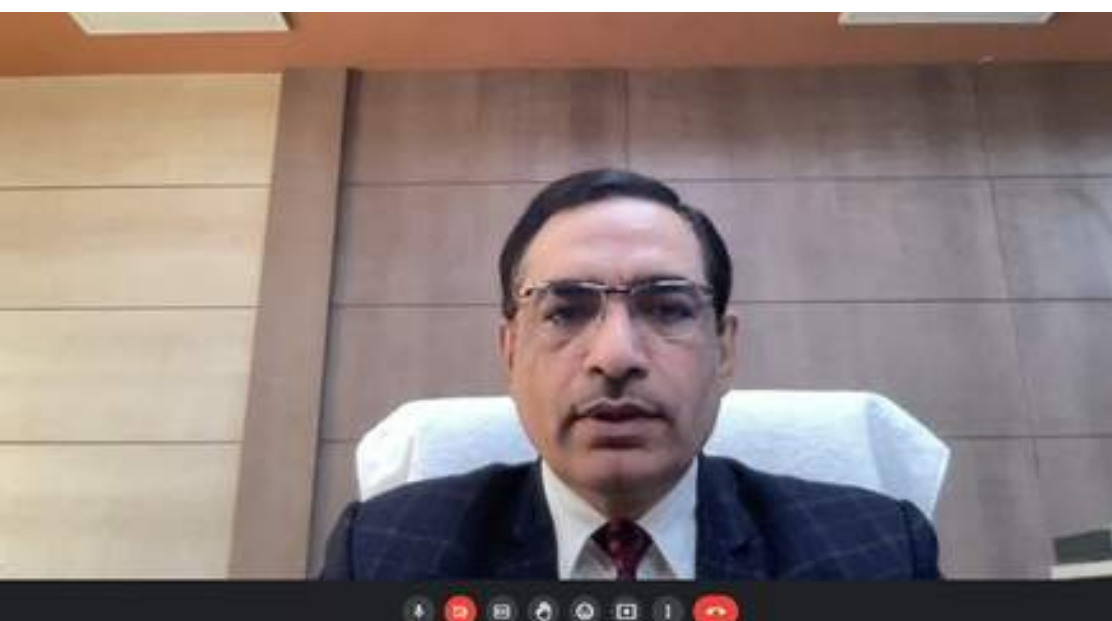
Vote of Thanks

- Dr. Jayanta Ghosh (Convenor of the conference & Head and Research Fellow CRSGPP, WBNUJS)
- Dr. Amol Deo Chavhan (Convenor of the conference & Associate Professor of Law, NLUJA, Assam)



INAUGURAL SESSION OF THE CONFERENCE

The Inaugural Ceremony began with the welcoming of all the participants, the dignitaries, involving the keynote and the guest speakers. The purpose behind the 2-day international e-conference was in brief highlighted, and then the welcome address was given by Prof. (Dr.) N.K. Chakrabarti, Vice Chancellor, WBNUJS, Kolkata, followed by Prof. (Dr.) V.K. Ahuja, Vice Chancellor, NLUJA, Assam. Prof. (Dr.) N.K. Chakrabarti stated that purpose of the conference originated in the United Nations Stockholm Conference held in the year 1972. It not only focused on securing a sustainable future but also developing a harmonious interface between man and nature. He stated that our environment, today, is at a crisis situation and it is important that as academicians we must address the planetary crisis through this conference.





The year 2022 marks the 50th year of the Stockholm Conference and with this conference we are commemorating it. He welcomed the eminent guest speakers of the inaugural session and the plenary session and extended his gratitude to the Chief Guest for the conference Dr. Manas Ranjan Bhunia, Honble Minister in-charge, Department of Environment, Government of West Bengal. He further thanked the Honble Vice Chancellor of NLUJA, Assam Prof. (Dr.) V.K. Ahuja. Prof. (Dr.) V.K. Ahuja, extended his regards to Prof. (Dr.) N.K. Chakrabarti, Vice Chancellor, WBNUJS, Kolkata, Dr. Debasis Poddar (Professor of Law, NLUJA, Assam), Dr. Jayanta Ghosh (Head & Research Fellow, CRSGPP, WBNUJS) and Dr. Amol Deo Chavhan (Associate Professor, NLUJA, Assam) for their efforts and collaboration in organizing the conference. He stated that the academic discussions in the “International e-Conference on Taking Stock of Stockholm@50 (1972-2022)”, will initiate a step towards revisiting these principles formed at the Stockholm Conference in the year 1972 and that various kinds of insights from students, scholars, researchers, academicians, professionals will kindle the spirit of environmental conservation. He hoped that this will be extremely applicable and helpful for practical implementation via policies, programmes and plans for environmental conservation. Moving forward with the course of the conference, the Chief Guest for the conference Dr. Manas Ranjan Bhunia, Honble Minister in-charge, Department of Environment, Government of West Bengal, addressed the e-conference through a video recording. In his recording, he talked about how pertinent is the issue of environmental legislations and how their evolution to match the contemporary day issues of continuously degrading environment due to a plethora of reasons. He stated that our environment has been at a crisis situation for a very long time and the crisis is gradually aggravating at a huge rate. The environment, today suffers from water crisis, various forms of pollution, deforestation, erosion and imbalances in the ecosystem. Therefore, it is imperative that we address these issues and focus on mitigating the crisis in our ecosystem. Globally, we must understand the planetary crisis and restore Earth's security. The United Nations Stockholm Conference held in the year 1972 was one of the significant initiatives towards understanding issues of the environment. The Stockholm+50 marks the commemoration of fifty years of the 1972 Stockholm Conference in Sweden. This international initiative acknowledges the need to address issues related to climate, nature and pollution and aims at building a healthy planet for all. He stated that we must focus on our individual and global responsibilities and commitments towards a sustainable, healthy, and inclusive future. The well being and the needs of the future generation must be given utmost significance. With the initiatives, policies and programmes on pollution control, mitigation of climate change crisis and environmental management, we must protect, conserve and build the environment. He referred to one of the significant outcomes of the Stockholm Declaration which is the formation of the United Nations Environment Programme (UNEP). This became a fundamental organisation that promotes agendas related to the environment, takes initiatives on the implementation of sustainable development.

Further, the Guest Speakers addressed the e-conference. Beginning with Prof. Phillippe Cullet (Professor of International and Environmental Law, SOAS University of London). He was formally introduced by the CRSGPP, after which he began his address. He highlighted how the Stockholm Conference was an emerging point for the environmental legislations that have been formulated across the globe, and how it was a movement which is still being referred to by the policy makers.

He also highlighted the international and national evolution of the principles over the last 50 years and how the concept of sustainable development is treated as a red thread. The questions arise to the extent to which the environment is being exploited. He further highlighted how the progress has not been uniform over all these years. He ended his address by focusing on how climate change regime is a slow and limited progress which reflects the overall trend.

Moving on further, the next speaker, Prof. K Purushottam Reddy, Environmental Activist began his address. He was formally introduced, following which he stated in short as to how during the course of his address he would focus on the sequence of events before Stockholm Conference. He then referred to Rachel Carson, the author of the famous book Silent Spring, the focus of which is on the future of the plant and all life on Earth. He also contended that Karl Marx for communism, is Rachel Carson for environment as a subject. He also highlighted how the UN's first conference on human environments, was attended by the then Prime Minister Indira Gandhi, who was one of the few people who attended the conference. After the conference, there was a significant growth in the literature on environment.

The next speaker was Prof. (dr.) Yogesh Pratap Singh, Vice Chancellor, National Law University, Tripura. After a formal introduction, he began his address by focusing on how temperature is on a constant rise along with the global heat waves, and the chances of them further increasing many folds over the next five years is potentially high. He also shed light on how eventually sustainable development was made a part of the corpus of Indian Constitutional Jurisprudence. Supreme Courts increased role in environmental jurisprudence was also talked about. Even though there have been various legislations and precedents based on principles of environmental law even then the progression has not been uniform over all these years. He ended his address by raising questions as to what should be done and what is the future for India being the fourth largest carbon emitter.

The inaugural ceremony ended with the last guest speaker Uma Outka, Professor of Law, School of Law, University of Kansas addressing the e-conference. After a formal introduction, she began her address by focusing on the intersection of energy law and environmental law. Stockholm marked the first global gathering to acknowledge the need to focus on environmental principles and law. The main focus of her address remained how legal frameworks endured to have substantially improved the environmental legislations.

Philippe Cullet is presenting

Future perspectives: From despair to hope

SOAS University of London

- Lack of enthusiasm for strengthening environmental protection measures reflected in the progressive development of a principle of 'non-regression'
- Each economic crisis seems to reinforce the priority given to economic growth over everything else (eg 'green economy')
- Yet, after three/five decades, the right to a clean environment eventually recognized internationally in 2022
- Yet, the limitations of sustainable development as a framing notion are being progressively recognized and addressed. Case of 'rights of nature' as a new framing paradigm:

Centre for Regulatory Studies

Philippe Cullet

VKS

Shallendra Kumar Gu...

J

Jatin Yadav SEC-C 2...

Shrey Goyal

Agniva Das

Madhureema Banerjee

144 others

You

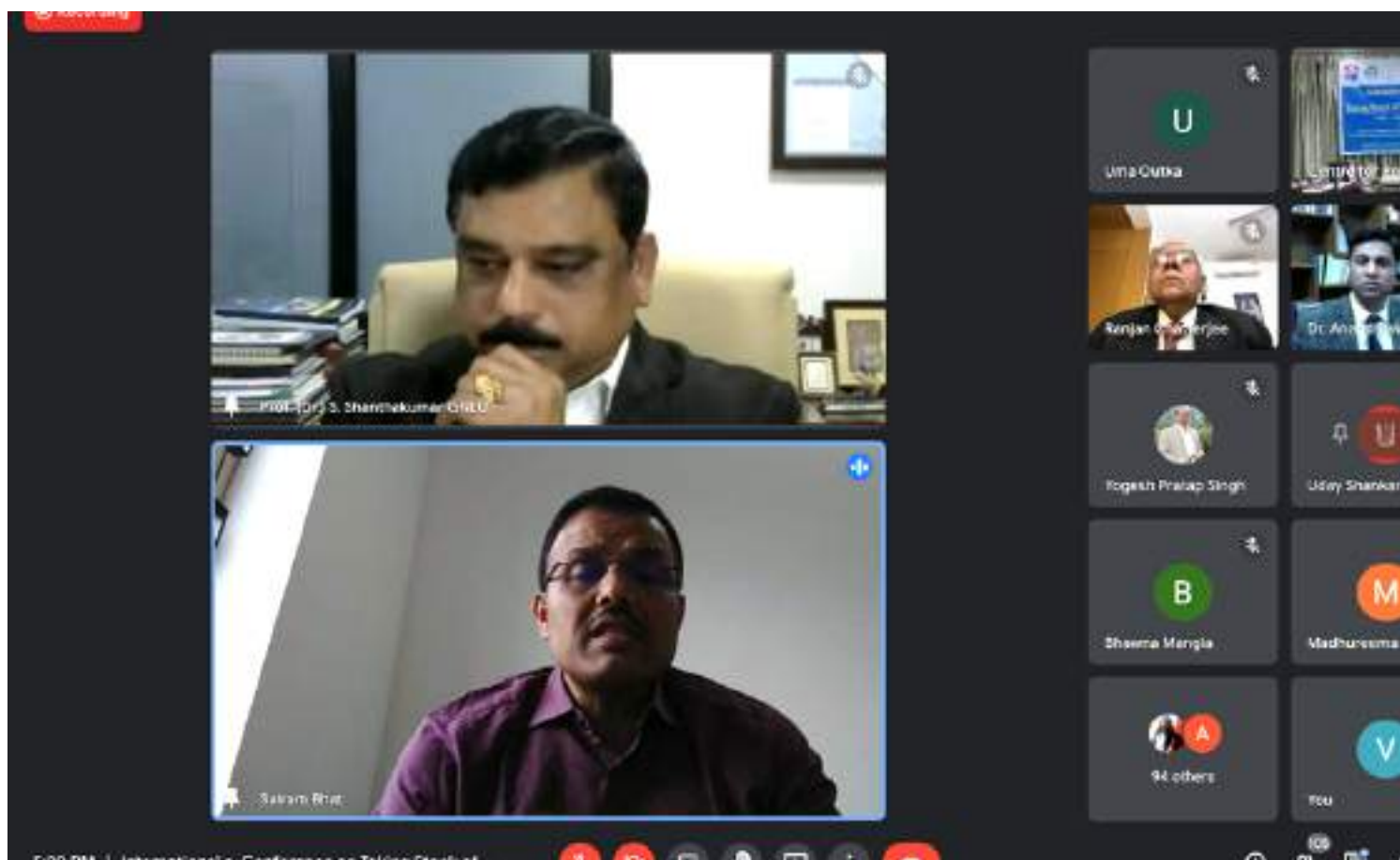
National e-Conference on Taking Stock of...

PLENARY SESSION 1 STOCKHOLM+50: A HEALTHY PLANET FOR PROSPERITY OF ALL

On account of the completion of 50 years of the historic Stockholm Conference, a two-day international e-conference titled "Taking Stock of Stockholm at 50 (1972-2022)" has been organised by the Centre for Regulatory Studies, Governance, and Public Policy, West Bengal National University of Judicial Sciences Kolkata, in collaboration with the Centre for Environmental Law, Advocacy, and Research, National Law University, and the Judicial Academy of Assam. The first plenary session of the e-conference, titled "Stockholm+50: A healthy planet for the prosperity of all," was organised on November 12, 2022, and moderated by Prof. (Dr.) S. Shanthakumar (Director, Gujarat National Law University). Eminent scholars from across the nation have presented their views in the e-conference and talked about various issues related to the environment.

The first speaker on the list to address the conference was Dr. Sairam Bhat. He is a Professor of Law at NLSIU Bangalore and Centre Coordinator at Centre for Environmental Law Education, Research and Advocacy (CEERA).

In his address, he emphasised the cardinal principle of the Stockholm Declaration. According to him, it is the most paramount initiative for the preservation and enhancement of the human environment. But he criticised the country for not following the policy to the letter and spirit. He additionally discussed briefly the speech that former Indian Prime Minister Indira Gandhi gave at the first United Nations conference on the human environment, which was held in Stockholm 50 years ago. He also talked about her vision for the environment. Further, he highlighted India's vulnerability to climate change. He emphasised both the "right to life" and the "quality of life". He urged for more and more development in science and technology and the adoption of cleaner technology. He exalted the government of India for its initiative to launch the Indian Solar Alliance, which is an action-oriented, member-driven, collaborative platform for increased deployment of solar energy technology.



The next speaker to address the session was Mr. Ranjan Chatterjee, who is a former IAS and expert member of the National Green Tribunal. He begins his speech with the important remark that "climate change is not only for academicians or scientists but for the common man too." In his speech, he discussed the governance elements that creep into the field of environmental control. He emphasised former Prime Minister Indira Gandhi's remark, "Are not poverty and need the greatest polluters?" which she made during her address at the first United Nations conference on the human environment, and contextualised why it is relevant today. Mr. Chatterjee also shared his experience about the dramatic and unprecedented climate conditions in Jorhat district, where he was posted as the deputy commissioner. He criticised elected rightwing regimes across the world for neglecting the indigent. He talked briefly about the effects of air pollution, water pollution, and cutting down trees. In his address, he established a link between gender inequality and climate change and highlighted gender-based violence faced by girls. He discussed solar geoengineering and its implications for the environment. He cited population growth as one of the causes of environmental degradation. In his address, he praised the state of Odisha for its effort to evacuate people during the hurricane and sought more such proactive steps by machinery. In his address, he criticised India's decision to attain "net zero emissions" by 2070 instead of 2050. He also chastised Indian political parties for failing to include environmental issues in their manifestos and urged nation-states to come forward to contravene climate change. He urged law schools in the nation to come forward to edify the common people about climate change.

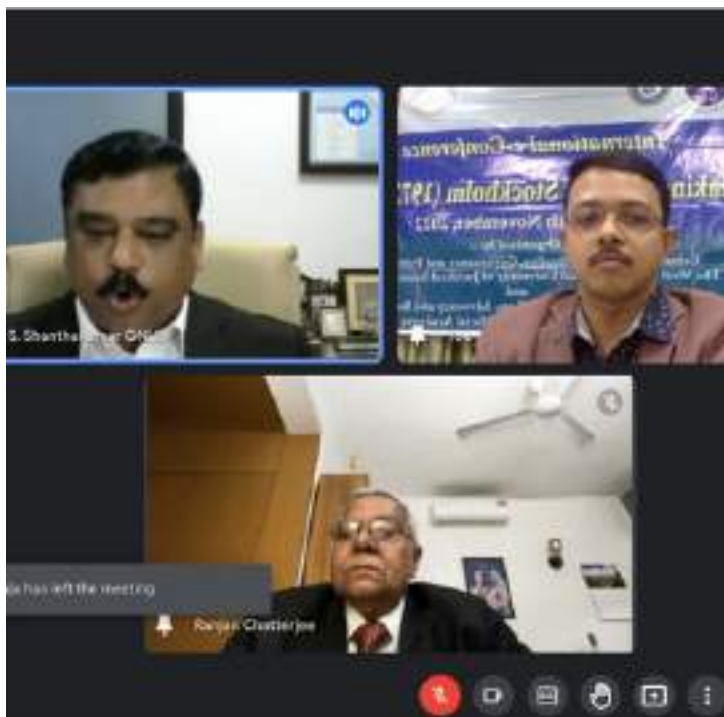
Moving further, the next speaker to address the session was Prof. Uday Shankar, who is the Registrar and Professor of Law at HNLU Raipur. In his address, he talked about sustainable development and highlighted the inter-relationship of rights like "the right to a healthy environment" and "the right to development." He emphasised reading rights from the standpoint of duties and also stressed "realization of rights" over "recognition of rights." After that, he talked about the role of judicial activism in India's environmental laws and how the court is pro-environment in cases like the Goa Foundation case and the Orissa Mining case, where the Supreme Court uses the right to freedom of religion of tribal people in the Niyamgiri Hills as a shield to protect the environment.





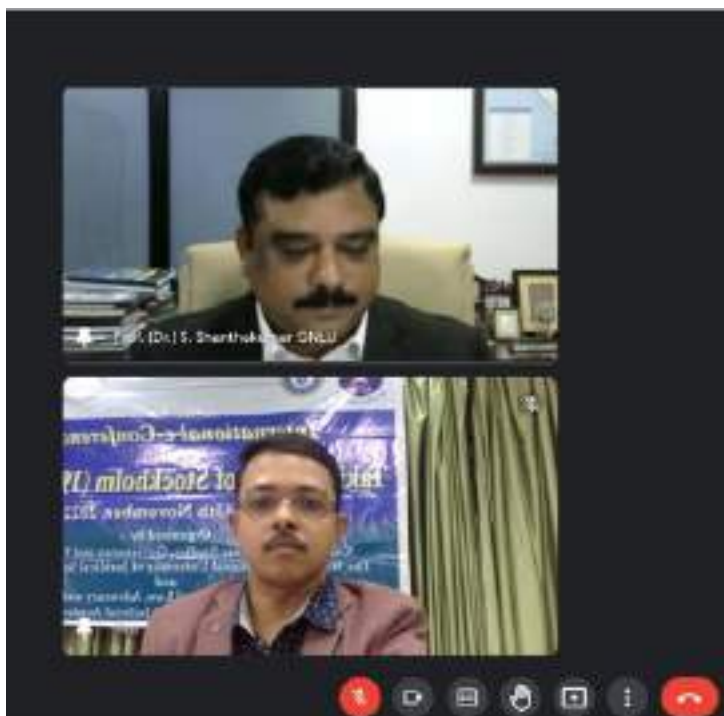
Prof. Uday's address highlights the Supreme Court of India's decision in *N.D. Jayal and Anr v. Union of India and Ors*, as well as the difficulties in implementing these points on the ground. He concluded his address by guiding the audience to look beyond the judicial process for efficacious implementation of the concept of sustainable development.

The next speaker to address the e-conference was Prof. (Dr.) Anand Pawar. He is the Registrar and Professor of Law at Rajiv Gandhi National University of Law, Patiala. He talked about the alarming issue of stubble burning in North India (mainly Punjab) by substantiating it with distressing figures. He addresses the problem of stubble burning in those regions through the lens of the per capita income of farmers who indulge in such activity. He highlighted several factors due to which farmers in Punjab are compelled to burn stubble despite knowing its repercussions. He showed the world how complicated the problem of burning stubble is and how, even though we have all the tools and resources, it is still not solved.



Following that, he harshly criticised the judiciary for remaining a silent spectator and failing to take proactive measures to address the problem of air pollution in North India. At the end of his speech, he asked the audience, which consists of well-known environmentalists and academicians, to come up with a way to solve the complicated problem of burning stubble. So that we can get closer to the goal set by the Stockholm conference.

His address concluded the first day of the e-conference. The organising committee presented votes of thanks to all the speakers and audience members.



DAY 2

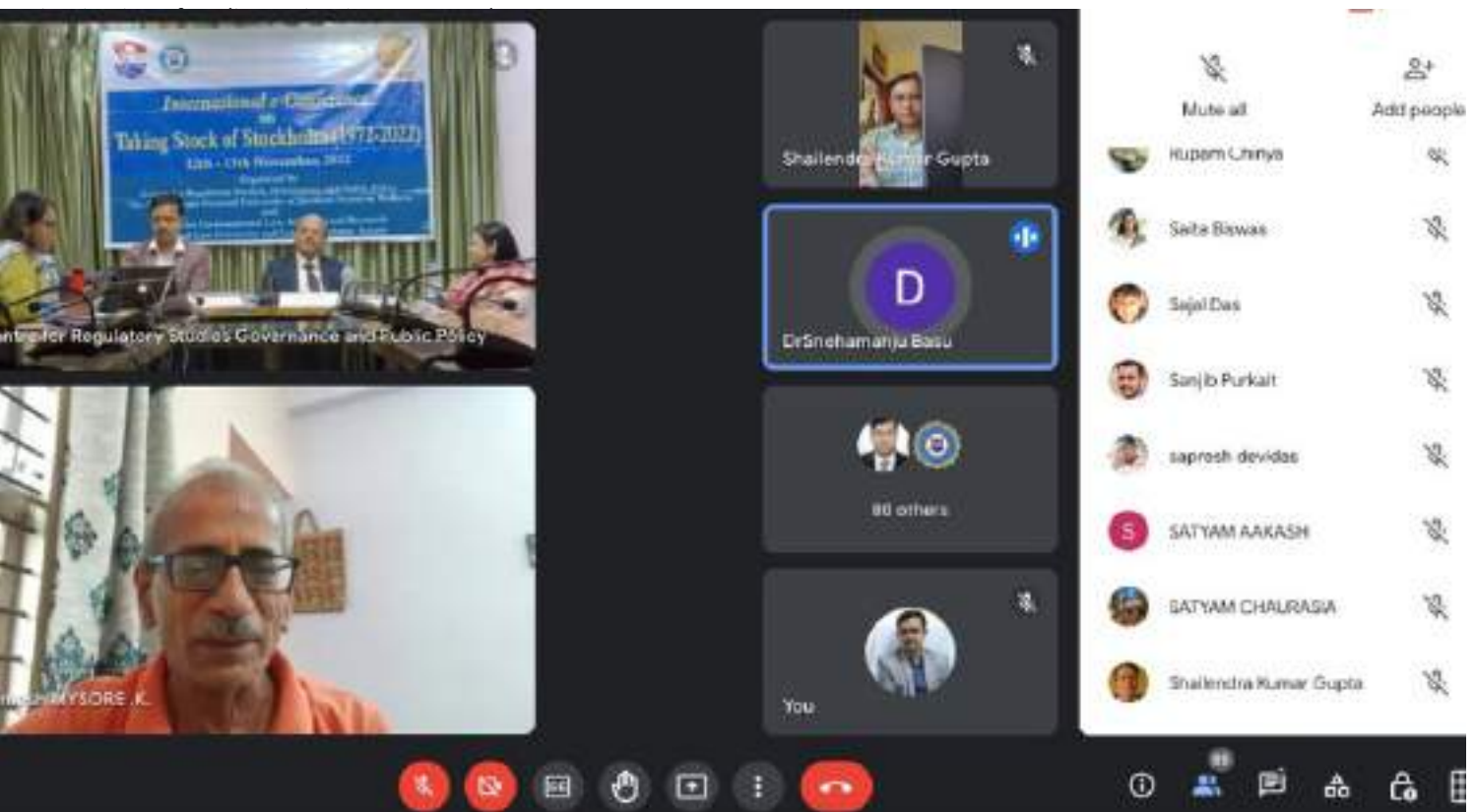
PLENARY SESSION 2

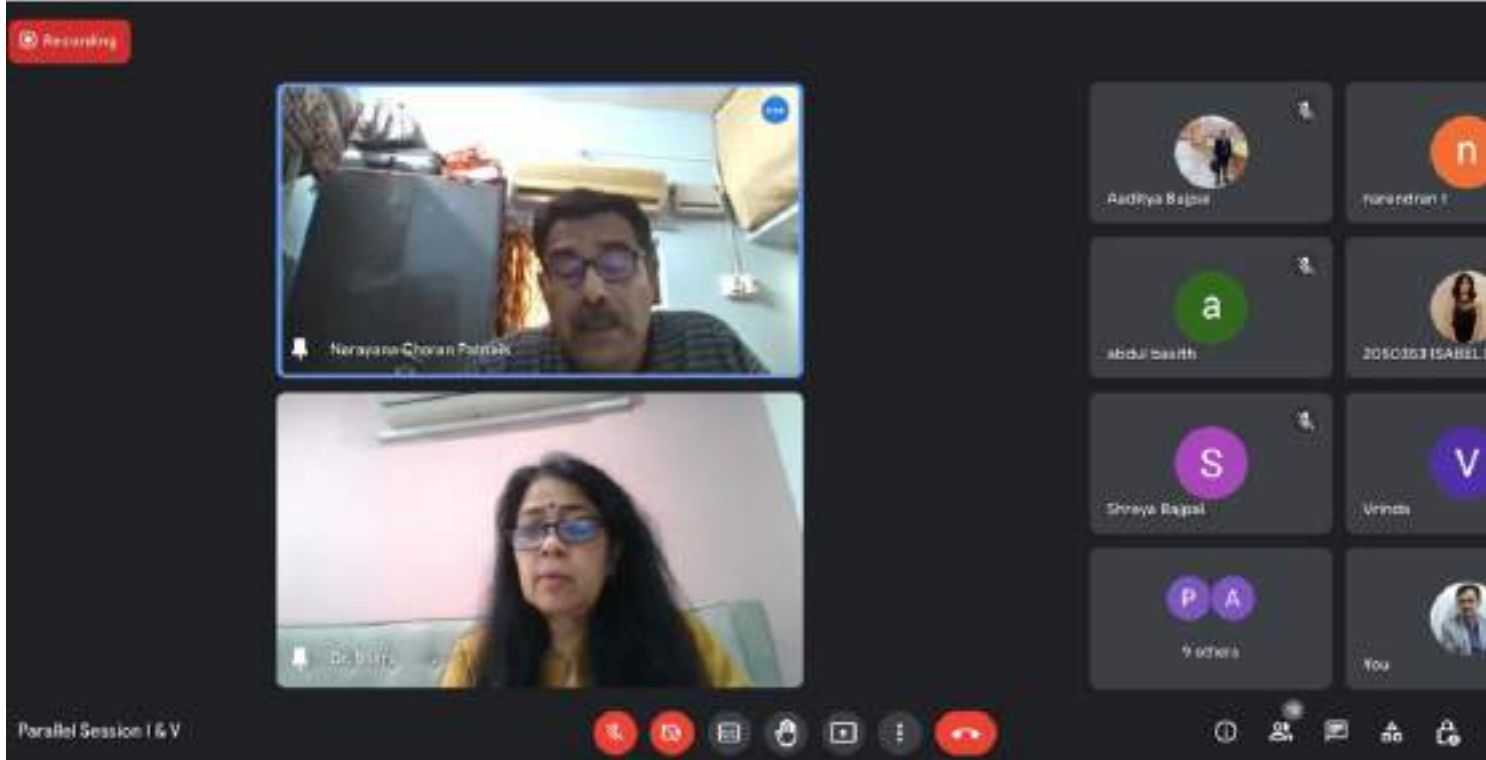
STOCKHOLM+50: OUR RESPONSIBILITY, OUR OPPORTUNITY, OUR FUTURE

The Plenary Session 2 was held on November 13, 2022. The session began on 10:00am.

Prof (Dr) MK Ramesh, Professor of Law, NLSIU Bangalore was the moderator of the session.

Starting the Plenary Session 2 for Day 2 the International Conference, Taking Stock of Stockholm-1972, the ripe timing of convening the Conference after a six-month period of the convening of Stockholm+50 Conference was highlighted. Such a time period facilitates the collective brain storming of intellectual minds on the after-effects of Stockholm+50 Conference. The first Speaker for the Session was Prof (Dr.) Snehamanju Basu, Registrar at Jadavpur University, Kolkata. Prof (Dr) Basu spoke about the topic of Urban Growth in India and Environmental Challenges associated therein. She addressed the concept of urbanisation from an Indian perspective. She traced the growth of urbanisation through a historical lens and highlighted the problems associated with urbanisation as a colonial legacy. Further, Prof (Dr.) Basu highlighted India's commitment to the provisions under the Stockholm Convention, 1972 and the efforts towards maintaining balanced urbanisation and socio-economic enviro justice. In her closing comments, she emphasised the need to develop indexes and criterions for calculating urban cities' sustainability. She also hinted towards developing Smart City Assessment Framework which could be helpful. The next Speaker for the Session was Prof (Dr) MK Ramesh, Professor of Law, NLSIU Bangalore. Prof (Dr) Ramesh started his presentation by highlighting the need to push for accountable, effective and enforceable measures for 'Climate Justice'. He traced the history of the various International Conferences and deliberations that have taken place since the Stockholm Conference, 1972. He highlighted the various important agendas and issues that these various Conferences have sought to deliberate and address pertaining to environmental issues. Prof (Dr.) Ramesh succinctly explained the gradual shift from addressing environmental issues from being titled as 'environment problems' to 'sustainable developments goals' in the international sphere. With the convening of various International Conferences, the Speaker showed how the rift between Global North and Global South has played out on topics of equitable remedy, climate injustice and global resource management. The Speaker opined that this rift and suspicion has come in the way of effective implementation of climate justice on a global scale. The Speaker suggested for Global Collective Action, a cry for 'Think Globally and Act Locally.' In his closing comments, solutions such as environmental planning, stringent laws, need for affixing accountability on nation states, dedicated forums and





PARALLEL SESSIONS

PARALLEL SESSION 1 – ENVIRONMENTAL GOVERNANCE AND JUSTICE

Parallel Session 1 started at 11.15 a.m. The Chair of this session was Dr. Bharti Kumar, Professor of Law & Director Centre for Environment Law, Policy & Research NLU, Delhi; and the session was moderated by Dr. Narendran Thiruthy, Assistant Professor, Rajiv Gandhi School of Intellectual Property Law, Indian Institute of Technology, Kharagpur.

Paper Presentation 1: Dr Jiya Matharani - Environmental Rule of Law: A key to the Environmental Good Governance

The first presenter of the session was Dr Jiya Matharani whose paper was titled “Environmental Rule of Law: A key to the Environmental Good Governance.” She started her presentation by quoting former United States President Barack Obama: “we are the first generation to feel the effects of climate change and the last generation to do something on it.” She then spoke about India’s good performance in the global Environment Democracy Index. She then went on to discuss the judiciary’s effort to recognize right to safe environment as a constitutional right. She ended her presentation by discussing the Hanuman Laxhman and Citizen of Green Doon cases where the Supreme Court and National Green Tribunal have found the importance of environmental rule of law and sustainable development.

Paper Presentation 2: Abhishek Chakravarty - Independent Environmental Regulator - The Transformation India Needs in Environmental Governance

The second presenter of the session was Abhishek Chakravarty whose paper was titled: “Independent Environmental Regulator – The Transformation India Needs in Environmental Governance.” In his presentation, he spoke about the role of environment regulator and how they can transform the current environment structure. He also mentioned Principle 17 of the Stockholm Declaration by lamenting the need for appropriate national institutions to control and plan environmental resources. The speaker also talked about the TSR Subramanian Committee which highlighted certain issues like absence of penal provision, inefficient enforcement institution, weak finances and weak pollution control mechanism. He also highlighted the drawbacks of the Central Pollution Control Board.

Paper Presentation 3: Paridhi Gupta - 1994 - 2022: Application and Implications of the Paris Convention

The third presenter of the session was Paridhi Gupta and the title of her paper was “1994 - 2022: Application and Implications of the Paris Convention.” The presenter discussed the implications of the Paris Accord. She then went on to speak about the problem of desertification, and how natural draughts, wind and water erosion has led to desertification over the past few decades. She then relied on a report published by the European Union which states that land degradation, which stands at 35% currently, will reach a record high of 90% by the year 2050. She recommended that to solve the problem of desertification, the world requires conventions on desertification. The other solutions she spoke about were: asking countries to achieve their goals; financing of developing countries by developed countries; and use of science and technology.

Paper Presentation 4: Shreya Bajpai, Vrinda Jain & Aaditya Bajpai - The Earth Summit: Towards a New Foundation for International Environmental Cooperation

The fourth presenters of the session were Shreya Bajpai, Vrinda Jain & Aaditya Bajpai. Their paper was titled “The Earth Summit: Towards a New Foundation for International Environmental Cooperation.” In this paper, the presenters discussed the principle of *en dubio pro natura*. They even discussed the Gabcikovo-Nagymaros and Southern Bluefin Tuna cases. While concluding, the presenters criticized the Earth summit as it has not been able to attain the goals that it had set-forth while coming into effect.

Paper Presentation 5: Isabel Liao & Tharun Pranav - Criminalising Ecocide - An Indian Perspective

The fifth presenter of the session were Isabel Liao and Tharun Pranav. The title of their paper was “Criminalising Ecocide - An Indian Perspective”. The presenters defined ecocide and how it has a detrimental effect on the health of humans and other species. The presenters argued that ecocide should be declared as a crime and be punishable by the International Criminal Court: Rome Statute. The presenters, then, discussed the Public Trust Doctrine with respect to India, and relied on the case: MC Mehta v. Kamal Nath. The possible solutions suggested were: replacement of imprisonment with higher penalties; adjudicating officer and establishing three new funds to take care of the environment.

Paper Presentation 6: Abdul Basith - ENMOD Convention And Its Limitations: Problem With The ‘Peaceful Purposes Clause’ In Article III of The Enmod Convention

The sixth presenter of the session was Abdul Basith. The title of his paper was “ENMOD Convention And Its Limitations; Problem With The ‘Peaceful Purposes Clause’ In Article III of The Enmod Convention”. The presenter mentioned the connection of the ENMOD Convention with the Vietnam war. He discussed the purpose of forming the convention, which was: prohibition of environmental modification technique as a mean for warfare and changing and manipulating natural processes. He further discussed Article 3 of the ENMOD which allows parties to use technique for peaceful methods. He concluded by discussing the limitations of the ENMOD Convention.

Paper Presentation 7: Dr. N.C. Patnaik, Dr. Nilanchala Sethy & Spinita Priyadarsini - Access To Green Justice: Needs Of The Hour

The seventh presenter of the session were Dr. N.C. Patnaik, Dr. Nilanchala Sethy & Spinita Priyadarsini. They presented a paper titled “Access To Green Justice: Needs Of The Hour.” The presenters discussed the way to green justice can only be attained by setting up green law. The presenters also suggested strong coordination between the State and Centre for the upliftment of rural area who are not sensitized about the law. Dr. Patnaik then spoke about his personal experience as he belongs to the state of Odisha which faces a major cyclone problem more often. The solutions suggested were: there must be a strong coordination between judiciary and local authorities to create awareness; strong local laws; comprehensive observation from local area to international area; and easy access to justice for local people.

Paper Presentation 8: Dr. Jyoti Mozika & Ankita Sharma- Environmental Governance and Climate Change in India

The last paper of this session was presented by Dr. Jyoti Mozika & Ankita Sharma on “Environmental Governance and Climate Change in India.” The presenters discussed about the weather events and global warming, and how it has led to a rise in temperature. The presenter mentioned that an anthropocentric approach towards the environment has led to such pressing issues in the environment. They then discussed about India’s role in the current climate change governance. The presenter concluded by stating that the need of the hour is to pass climate legislations that reflect mitigation and adoption.

After the presentations, Dr. Bharti Kumar addressed the gathering, and gave feedback on the presentations.

PARALLEL SESSION 2 – STOCKHOLM DECLARATION

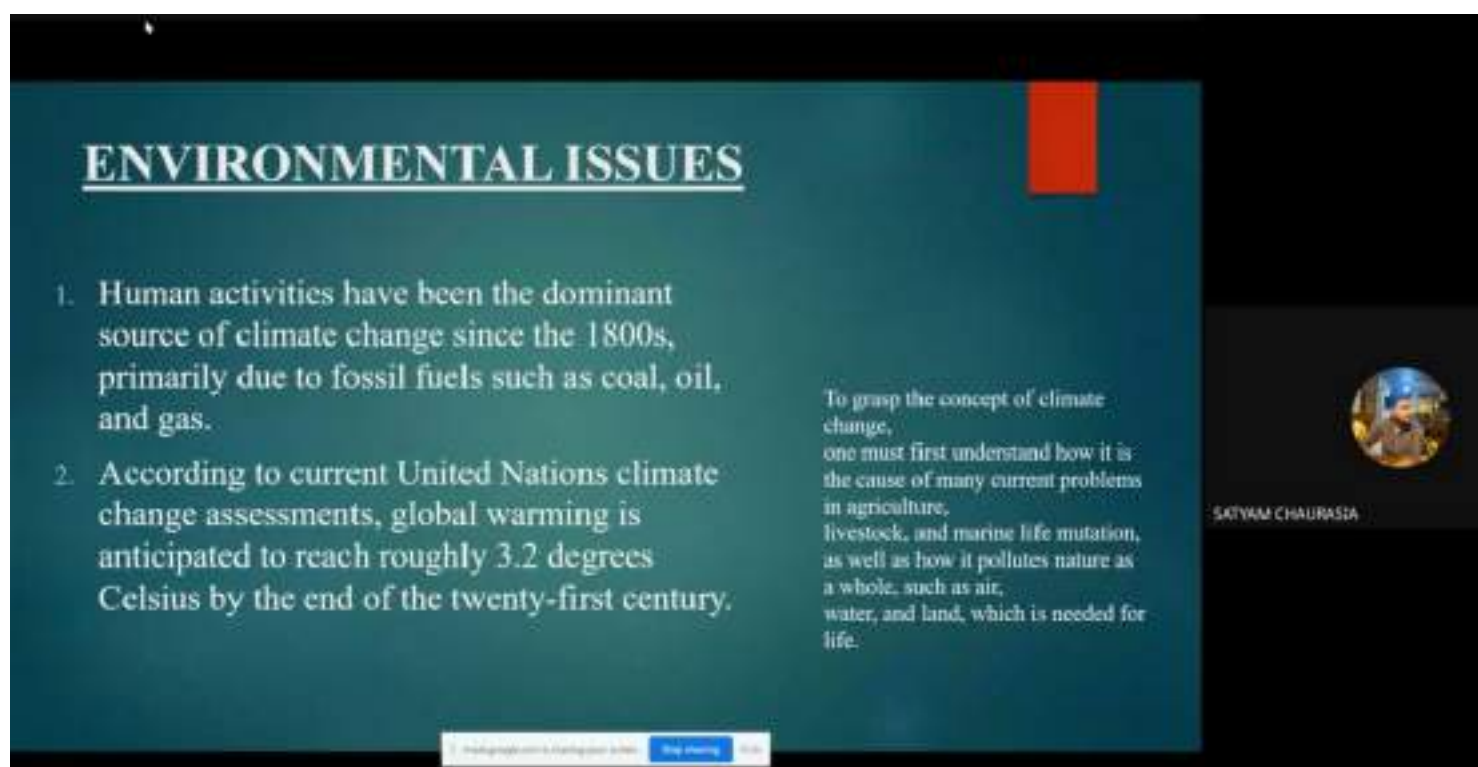
The session started off with the introduction of the esteemed chairperson, Dr. Jyoti Mozika, Head & Professor of law, Department of Law, North Eastern Hill University, who was looking forward to be a part of the “International e-Conference on Taking Stock on Stockholm”, organized by Centre for Regulatory Studies, Governance and Public Policy, West Bengal National University of Juridical Sciences and Centre for Environmental Law, Advocacy and Research, National Law University and Judicial Academy, Assam. She thanked the organizers for taking up the most relevant topic in today's world and creating and offering a platform to varied individuals to show up their perspective on the topic and present their papers that dealt with the themes of the environment.

Paper Presentation 1: Satyam Chaurasia, Deepanshu & Adarsh Anand Amola - Stockholm Declaration, 1972: A Critical Analysis on the tribal sustainability in the face of transboundary harm.

The presenters of the paper talked about the growth of industrialization and urbanization that has given rise to escalated economic growth in human lives, but not free of cost. The cost of such growth has been environmental degradation causing extreme climate change which has disrupted human lives in ways unimaginable. Tribal communities have been forced to leave their habitat and migrate to other places owing to such environmental disruption. The paper goes on to focus on the point that the idea of a green environment as propounded by the Stockholm Conference of 1972 should not be compromised, whatsoever. The Stockholm Conference highlighted that overpopulation, industrialisation and unplanned urbanization leads to environmental degradation which leaves us with its hazardous effects. The presenter said that human activities have been the dominant source of climate change since the 1800s. They then suggested that transboundary harm also requires urgent attention from the policy makers, and collaborative attempts must be made nationally and internationally to face the environmental challenges and positively respond to them.

Paper Presentation 2: Diwakar Das & Dr. Monica Kharola - Stockholm +50 Accountability, Opportunity and Future.

The presenter started by focusing on the Indian Tradition of “Vasudhaiva Kutumbakam” and stated that there has to be harmony between people and nature as sustainable living is an integral part of Indian culture. They went on to focus on the results of such environmental degradation such as global warming and pandemic and that environmental crisis is confronting the whole world, no matter how strong or resourceful the country is and its us, the humans who are responsible for it, and no one else. The paper stressed upon the importance of time, reiterating that it is the high time to act. The idea of the Stockholm Conference in 1972 was to check chemical pollution, diversity loss, and the unprecedented challenges brought by environmental degradation. Emotional and intellectual development is paramount for sustainable development and long-term policies and introspection is extremely necessary to formulate the plans.



ENVIRONMENTAL ISSUES

1. Human activities have been the dominant source of climate change since the 1800s, primarily due to fossil fuels such as coal, oil, and gas.
2. According to current United Nations climate change assessments, global warming is anticipated to reach roughly 3.2 degrees Celsius by the end of the twenty-first century.

To grasp the concept of climate change, one must first understand how it is the cause of many current problems in agriculture, livestock, and marine life mutation, as well as how it pollutes nature as a whole, such as air, water, and land, which is needed for life.

SATYAM CHAURASIA

Paper Presentation 3: Dr. Kalpana V. Jawale - Critical analysis of Protection of Human Environment and action plan in the light of Stockholm Declaration 1972

The presenter through this paper stressed upon a very fundamental aspect of life which is right to a healthy environment as it is the very essence on which life exists. The paper pointed out some of the objectives of the Stockholm Conference 1972 as, a) to save the world from evils, b) to preserve the natural resources bestowed upon us by mother earth and, c) to protect environment issues and work on it in a holistic manner. There needs to be environmental management activity at both national and international levels. It also stressed upon the responsibility of the State to protect the environment, whereby they should formulate policies and rules which should not hinder the environment protection, rather they should improve the same. By ignoring the right to a healthy environment, Article 21 of the Indian Constitution is violated which stresses upon the right to life. It talked about a very famous and important case, *M. C. Mehta v Union of India*, which is a landmark case for environment protection. Even unemployment is one of the many challenges faced by the people owing to environmental degradation and to improve the situation, every country has to contribute, howsoever.

Paper Presentation 4: Mrs Rakhee S Gadhave, Ms Munjarinbanu Sanadi & Ms Hrutvi Nerurkar - Environmental Learning: An Analytical Perspective, Stockholm Declaration, 1972

The presenter by way of his paper emphasized upon the fact that sustainability is the goal of human existence. It focussed on the youth, and their role in improving the environmental state of the world, it is them who hold the power. They can voice the environmental concerns at various platforms, to bring the focus of everyone before it's too late. It stated that although India has integrated a plethora of laws to safeguard the environment and eliminate the evils, yet there is not much satisfactory result that has come out of it. The presenter suggested that unnecessary consumption should be minimized, people should use sustainable swaps to their products, and should wake up to the call of bad effects of using plastics. The presenter even conducted analytical surveys, among 9- to 54-year-olds, and took workshops in college teaching hydroponic systems, whereby 62% people had insight of what green plastic is, and 50% were aware of waste management. It further stated that we should give back to nature as we are a community of activists.

Paper Presentation 5: Adithi Holla - The Case against Automobility: An Analysis of the Idea of Sustainable City-Planning in light of the Recent Bengaluru Floods

The presenter began with stressing upon the Bangalore floods that has taken place recently, which stated the effects of making a city, specifically for automobiles, in terms of flyovers, roads, etc. Further, the presentation stated that one cannot move from one place to another without an automobile in such cities and highlights the rapid and unplanned urbanization, whereby authorities have prioritized cities like that of San Francisco, whereby automobiles have been the primary thing kept in mind to design the cities. The planning of cities catering to automobile priorities, certainly ignores the people who drive bikes, bicycles, even the people who prefer to walk or cannot afford to buy automobiles. Locomotives have been replaced by automobiles. Centering the cities around automobiles is antithetical to Principles 13, 14, 15, 16, 17 of the Stockholm Conference. The presenter also took a very interesting approach whereby she talked about the importance of feminist urban planning and participatory urban planning, and how cities are built for men to facilitate them as argued by feminists.

Paper Presentation 6: Anna - The Rise of Intergenerational Equity in Post Stockholm Period- Effects and Challenges

The presenter stated that there has been very little notice on protection of the environment by most of the world. It stated that environmental protection is utterly essential for social and economic development. The paper brought to notice the importance of intergenerational equity which states that the present generation has certain duties and responsibilities towards future generations and sustainable development also is basically about fulfilling the needs of present generations without compromising on the needs and wants of future generations. Even 1992 Rio strengthened policies propounded by the Stockholm Conference of 1972. Every generation should preserve diversity because it's not the duty of one. The Wildlife Protection Act, 1972, Water (Prevention and Control of Pollution) Act, 1974 and every step that has been taken, should be analyzed correctly and necessary enhancements should be made. The paper also highlighted the Goa Mining case which has been about protection of the environment and reiterated that every citizen should take part to create a cleaner environment.

Paper presentation 7: Manjari Singh & Harshita Prasad Balancing The Scales Of Development Vis-A-Vis Environment: Are We Compromising Environmental Protection Over The Economic Benefit?

The presenter here, brought to light the importance of protecting the environment as a gift of God, which we should try to preserve, which can be traced back to Bhagavad Gita and Quran. They said that balancing the environment and development is of priority and must go hand in hand. Additionally, Environmental Impact Assessment was talked about which was established in the year 1994, and amended in the year 2020, but still consists of certain loopholes which should be addressed at the earliest. 50 years of Stockholm, and 30 years of Rio, yet we find ourselves in trouble. In the Environment Performance Index, 2022, India stood at the lowest rank among the 180 countries. Therefore, environmental concern should be prominent in policy creation and growth strategies. The paper also stated that it is viable to use sustainable development as a unifying concept that encompasses all the areas of environmental policies and brought to notice the hindrance created by the Environmental Impact Assessment, 2020 to the precautionary principle because of its post factor clearance. That is why, Environmental Impact assessment needs to be strengthened as there is a very thin line between human development and environment protection and one should not overpower the other.

Paper Presentation 8: Sapresh Suhas Devidas & Vaibhavi Rane - Energy Conservation: India's Role In Achieving The Goals Of Stockholm In Next 50 Years From Urgency To Agency

The above-mentioned presenter started off by focusing on the importance of energy conservation. They stated that India has set a target of producing 175 GW of renewable energy by 2022, but has been able to achieve only 66% of the target. This paper provided India's stride towards renewable energy and stressed upon the need for necessary amendments in the energy Conservation Bill, 2022. The presenters suggested that the government should map the present and future achievements, potentials and problems so that enough efficiency is brought to the table so that fruitful implementation of the plans can be made, that are bound to produce the required result. The paper also highlighted that by 2040, India will have the fastest growing energy consumption among the other countries. Today, India is the 3rd largest energy consumer and 3rd largest renewable energy producer. They also suggested that the amount of incident solar energy can be used to generate enough electricity and even the Energy Conservation Bill, 2022 strives to lessen India's reliance on energy and tries to promote usage of renewable energy resources.

Dr. Jyoti Mozika's Address:

The esteemed chair, Dr. Jyoti Mozika was elated with the presentations and said that they were interesting and insightful. She was impressed by the presenters for the way they covered every aspect of the "Stockholm+50", whereby its objects were talked about and India's improvement and progress was critically analyzed. She went on to say that we must take care of ecology and diversity and we must strive to work in the interest of present generations without compromising on the interests of future generations, and that we must use sustainable resources as much as possible. Even Article 21 of the Indian Constitution recognizes the right to a pollution free and healthy environment. She most importantly focused on the need to educate the youth of the world to build a connection between people and mother earth.





PARALLEL SESSION 3 – RIO DECLARATION

The third parallel session of the "International e-Conference on Taking Stock of Stockholm at 50 (1972-2022)" was held on November 13, 2022. The session began at 11:30 a.m. The chairperson for this session is Prof. (Dr). Manik Chakraborty (Former Head & Professor of Law, Burdwan University). This session was moderated by Dr. Debasis Poddar. The title for the Paper Presentation is Rio Declaration.

The session-III began with the chairperson's address, Prof. (Dr). Manik Chakraborty. In his speech, he emphasised the significance of the 1972 Stockholm Declaration. The Stockholm Declaration placed environmental issues at the forefront of international concerns and marked the start of a dialogue between industrialised and developing countries on the link between economic growth, pollution of the air, water, and oceans, and the well-being of people around the world. The moderator of the session Dr. Debasis Poddar welcomed the students in the International Conference and wished them luck for their presentations. Thereafter, each participant presented their views.

Paper presentation 1: Sheena Das - Good Governance principle under Rio declaration. Whether the concept of good governance has been incorporated into the existing administrative arena? With reference to the state of Kerala

The first presenter for the session was Sheena Das. Her title of the paper presentation was "Good Governance principle under Rio declaration. Whether the concept of good governance has been incorporated into the existing administrative arena? With reference to the state of Kerala." In her presentation, she primarily discussed the floods in Kerala. It further highlighted the basic principle of Rio declaration: relationship between states and environment. Although the Stockholm declaration is non-binding, the Rio declaration has resulted in changes in our administration through some rules and regulations. Her presentation concluded with the idea that a conversation oriented approach is the need of the hour.

Paper presentation 2: Ishu Yadav & Mishti Jain- Contribution Of Rio Principles In Protection And Development Of The Environment

The next presenter was Ishu Yadav & Mishti Jain on the title, "Contribution Of Rio Principles In Protection And Development Of The Environment." Her presentation focused on the contribution of Rio principles in the protection and development of the environment. It even brought to light that the earth summit forced people to rethink how to allot resources and the current environment and create a link between the economic growth and environment protection. Her presentation also provided for various landmark judgments emphasising on the precautionary principle as per principle 15 which safeguards both human health and environment by avoiding exposure to harmful substances. Polluter pays principle was also discussed in the light of S. Jagannath v. Union of India case. The presentation concluded on the idea of maintaining balanced economic and environmental growth.

Paper presentation 3: Anupa Dey- Sustainable Development In India, Challenges And Opportunities- Role Of International Community, Government And Citizens

Following up the line was, Anupa Dey on the topic, “Sustainable Development In India, Challenges And Opportunities- Role Of International Community, Government And Citizens.” Her presentation discussed the right to life and right to live in a healthy environment and the fundamental duty to protect the environment in the light of Article 47, Article 21, Article 51 A(g) and Article 48 to protect the environment. The major idea was that sustainable development must meet the current needs without jeopardising future development and their needs. Poverty and lack of development is a major issue. People shall not be able to think about safeguarding the environment without the fulfilment of daily individual needs. The presentation concluded with the idea that protection of the environment is a global issue and not an isolated one. Sustainable development has to occur so that development and protection of the environment can coexist with one another.

Paper presentation 4: Aswathi Sukumaran- Sustainable Development And Challenges In The Contemporary Era With Special Reference To Rio Declaration

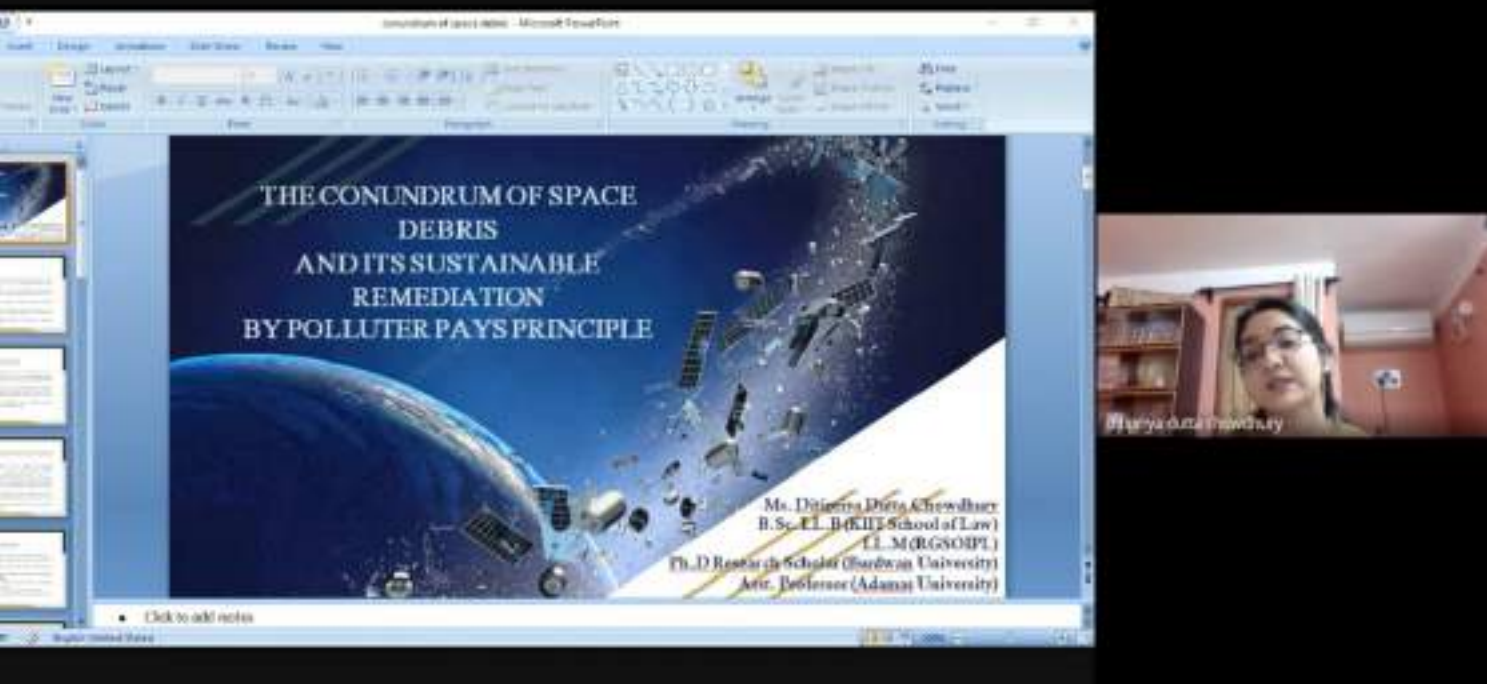
Next presenter was Aswathi Sukumaran on the topic, “Sustainable Development And Challenges In The Contemporary Era With Special Reference To Rio Declaration.” The presentation emphasised the need for protection of the environment and that sustainable development is the need of the hour. It brought to light the importance of the Earth Summit and Rio Declaration in bringing advancement in the society along with the protection of the environment. The presentation focused upon major landmark judgments such as M.C. Mehta v. Union of India and Vellore Citizens Welfare Forum v. Union of India and other such cases. It enumerated the key challenges for sustainable development such as poverty, inequality, illiteracy, unemployment, population explosion, environmental degradation, and pollution. The presentation concluded with the need for implementation of climate change

Paper presentation 5: Soham Banerjee- Are We Liable For The Damages Caused To The Environment In India?

Soham Banerjee on the topic, “Are We Liable For The Damages Caused To The Environment In India?” was the next presenter in the parallel session. The presentation majorly revolved around incorporation of polluter pays principle in legislation. It highlighted the pollution of brahmaputra and ganga river. Pollution of rivers from negligent actions and waste disposal and the deteriorating water quality. Presence of microplastics in the river thereby, resulting in marine pollution. Furthermore, untreated sewage is being dumped in brahmaputra thereby increasing pollution along with effluents from oil industries and disposal of plastics. The recommendations by the presenter as the conclusion of the presentation was that owing to the huge amount of pollution in our rivers, it is imperative to allow the legislation for a polluter pays system with an initial fine which increases per repetition and also, to allow for an imprisonment period who exceeds the grace period of fine educate people with more resources on keeping our rivers clean and allow for the creation of watchdog groups, special cells carved out of the police and forest guards to keep a vigil on the river banks and prohibit its littering by the people. Stricter regulations for industry effluents and a proper system of checks to be more vigilant about the condition of water purity is necessary.

Paper presentation 6: Ms. Ditipriya Dutta Chowdhury- Polluter Pays Principle and the Conundrum of Space Debris

Next presenter was Ms. Ditipriya Dutta Chowdhury on the topic, “Polluter Pays Principle and the Conundrum of Space Debris.” The presentation specified on Space Debris Mitigation Guidelines by IADC containing “preventative practices” which are intended to manage the amplification of “space congestion in popular orbital regions such as low Earth orbit (LEO) and geostationary orbit” in order to “preserve the commercial and scientific value”, while maintaining the “use of and access to space by future space users”. Space debris is inevitable, yet guidelines can be come up with that remedy its creation. However, these guidelines are space centric and fail to take into consideration private corporations that venture into space. Another issue faced is that some debris possesses state protected secrets and thus salvaging them requires permission of the state, whose interests are vested in the debris. Thus, there is a need for funding for the cleaning of these debris. Thus, the conclusion of the presentation concluded with the idea that the States should re-register the space objects and identify the functioning and nonfunctioning space objects, i.e., the debris.



Paper presentation 7: Jeffy Johnson- Critique On Precautionary Principle And Public Decision Making

Next in line was Jeffy Johnson on the topic, "Critique On Precautionary Principle And Public Decision Making." The presentation was a critique on the precautionary principle and public decision making. It highlighted that sustainability favoured in the long term should be implemented to ensure environment friendly goods are produced. The conclusion of the presentation focused that instead of imposing specific procedural constraints on regulatory decision- making, the authorities must ensure that scientific uncertainty is taken into account during the process and that science itself is not stretched beyond the limits of its utility and capacity to inform decisions on risk regulatory measures provides the international community with the best opportunity to prevent severe ecological degeneration in the coming decades.

Paper presentation 8: Aranya Nath & Antara Paral- COVID-19 legislation in the light of the precautionary principle in India

The last presenter was Aranya Nath & Antara Paral on the topic, "COVID-19 legislation in the light of the precautionary principle in India." The focus of the presentation was the damage to biodiversity and salt water systems and how the same is rampant nowadays. protection is needed for the animal displacement was another issue discussed upon. The concluding remarks of the presentation were that the support of the judiciary is required so that protection of the environment gets a legal sanctity. As an offshoot of legal recognition, the Precautionary Principle was also adopted by the National Environmental Policy as a guiding principle. However, there is still a long way to go for the Precautionary Principle to gain its rightful place in the field of environmental law. And till it does not get its rightful place, it will be very difficult to implement it.





PARALLEL SESSION 4 – ENVIRONMENTAL MANAGEMENT

The fourth parallel session of the "International e-Conference on Taking Stock of Stockholm at 50 (1972-2022)" was held on November 13, 2022. The session began at 11:30 a.m. The chairperson for this session is Dr. Shailendra Kumar Gupta. He is a Faculty of Law, Benaras Hindu University. This session was moderated by Dr. Prayusha Das, Assistant Professor of Law, St. Xavier's University Kolkata. The theme of the paper presentation is "Environment Management." The session-IV began with the chairperson's address, Dr. Shailendra Kumar Gupta. In his speech, he emphasised the significance of the 1972 Stockholm Declaration.

Paper Presentation 1: Siddharth Kanojia , Dr. Sashi Bhushan Ojha & Dr. Muzaffar Hussain Mir- Untying a Gordian Knot: Paradox of Bio-Medical Waste Management and Legal Compliance in India

The paper focused on ponder on the idea of biomedical waste, its effects on the environment and legal provisions dealing with the concerns pertaining to disposal of biomedical waste, status of compliance of these provisions in some states and eventually recommending the innovative techniques and best practices which can be uniformly adopted by every state for increasing the efficacy of waste management.

Paper Presentation 2: Vikranta Pradeep Barsay- Responsibility and Liability of Upstream Cities for The Public Nuisance To The Downstream Cities Along The River Ganga

The paper focused on sources of pollution in River Ganga, pollution in Uttar Pradesh, and citations of eminent legal cases working for the conservation.

Paper Presentation 3: Anushmita Pramanik- Environmental Resource Management

This paper deals with some of the key areas of Stockholm declaration and some of the equitable principles like Intergenerational and Intragenerational equity both requires sustainability; proper distribution of renewable and non-renewable resources is the key of the concept of sustainable development. Author studies the significance and relevance of the concept of sustainable development in the light of development and environment. The paper also addresses the concept of Resource management and the need of environmental education to combat further environmental degradation.

Paper Presentation 4: Longjam Herojit Singh- Study of Environmental Impact Assessment in India

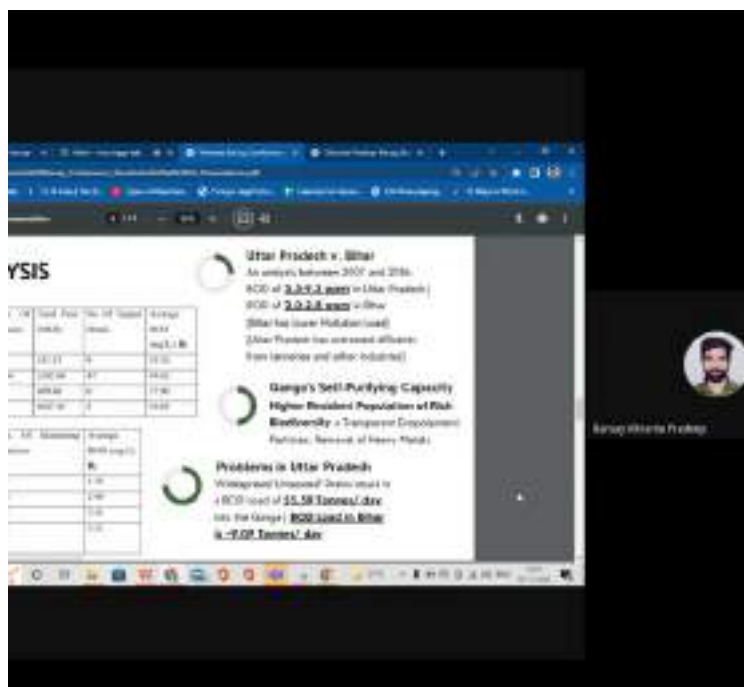
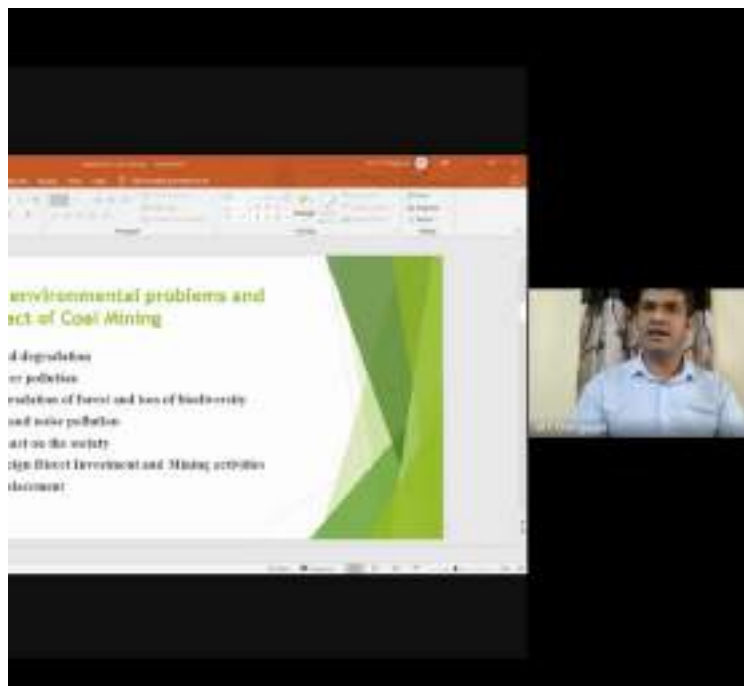
This paper aims to study the overview of the Environmental Impact Assessment and its development in India. Environmental Impact Assessment which was introduced in 1994 is to be followed before any developmental project is to be made.

Paper Presentation 5: Dr. M.P Chengappa - National Policy for Sustainable Coal Mining and promoting renewable energy- Deconstructing Stockholm-50

The presenter presented a paper on the paradigm shift in the concept of sustainable mining from the Stockholm conference in 1972 to Stockholm+50 in 2022. The paper discusses India's feasibility in achieving the COP 26 energy goals. The paper lights upon the legal instrumentality like the National Mining Policy, The Mines and Mineral (development and regulation) act, 2021, governing the mining sector for a sustainable future.

Paper Presentation 6: Kathirtharsini Parameswaran - Coastal state governance on Oil Spilling Exclusive Economic Zone: Reference to the X Press Peral incident in Sri Lanka

The paper focused on the complications of oil spill which is a growing concern for the environment fraternity across the world since its a dynamic industry, technology is ever evolving and this needs to fall in line with the environmental concerns in order to observe and implement sustainable development goals.



PARALLEL SESSION 5 – SUSTAINABLE DEVELOPMENT VIS-À-VIS FOOD SAFETY, HEALTH AND EDUCATION

Parallel Session 5 started at 2.45 p.m. The Chair of this session was Dr. Pushpa Kumar Lakshmanan, who is an Assistant Professor at University of Delhi since 2005; and the session was moderated by Dr. Stellina Jolly, Associate Professor at the Faculty of Legal Studies, South Asian University (SAU).

Paper presentation 1: Dr Anjana Hazarika - Corporate Responsibility and Sustainable Development Goals (SDGs): A nuanced relation

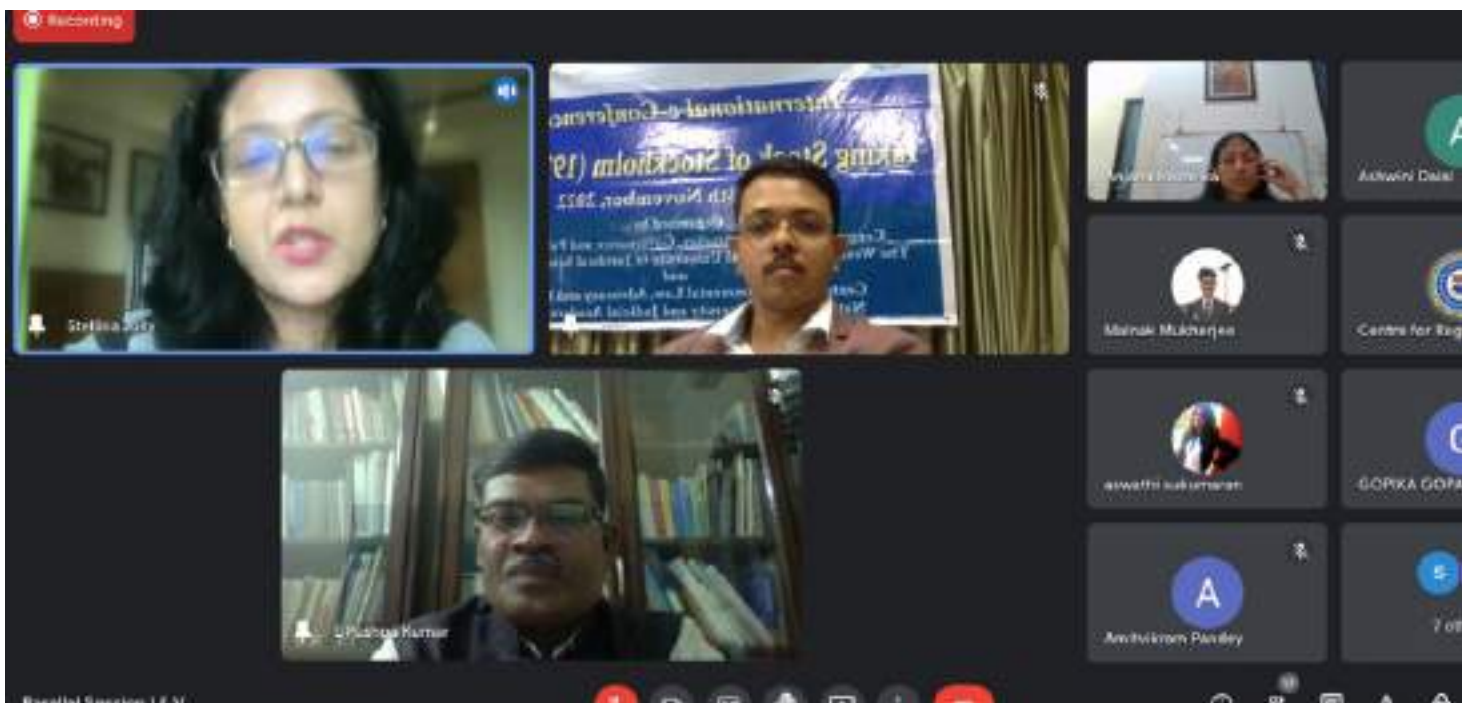
The first presenter of the session was Dr Anjana Hazarika. The title of her paper was “Corporate Responsibility and Sustainable Development Goals (SDGs): A nuanced relation.” The presenter spoke about the connection between corporate responsibility and environment impact, she relied on examples such as emission of greenhouse gases; over-usage of land by companies; and pollution. The solution which was presented was that we should work with all stakeholders to ensure more harmony and mitigate environment impact.

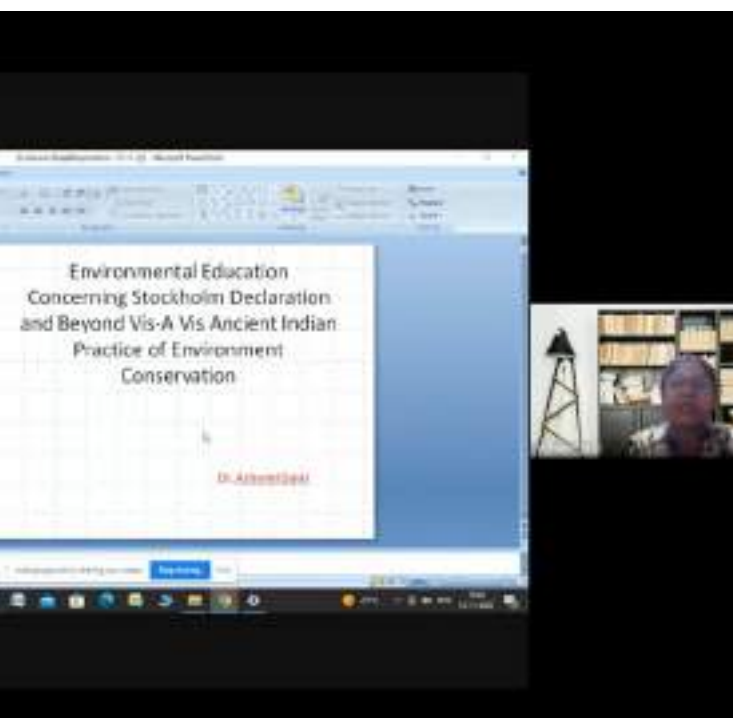
Paper presentation 2: Niraj Kumar Seth - The 7Ss Theory of Sustainable Consumerism in Food Sector

The second presenter of the session was Niraj Kumar Seth. The title of his paper was “The 7Ss Theory of Sustainable Consumerism in Food Sector.” The presenter initially spoke about sustainable consumerism. The 7s stood for: sensible; sensitive; shared; sufficiency; spirituality; salvage; and savings. The presenter's recommended solutions were: labelling to cover restaurants; more coverage on appropriate Body Mass Index; and decentralized food stall to take care of malnutrition people.

Paper presentation 3: Lakshmi Haritha Nakka & S.Sumitra - Equity In Resource Management in the Light of Public Trust Doctrine.

The third presenter of the session were Lakshmi Haritha Nakka and S. Sumitra. The title of their paper was “Equity In Resource Management in the Light of Public Trust Doctrine.” During the presentation, the presenter spoke about Intergenerational equity and sustainable development are integral parts of public doctrine, and how the needs of the current generation should not affect the needs of the future generation. The presenter then stated that the state should manage its resources properly, and should reduce and eliminate unsustainable patterns of production and consumption. The presenter also relied on a few case laws such as: Prof. NB Naidu and Amravati cases.



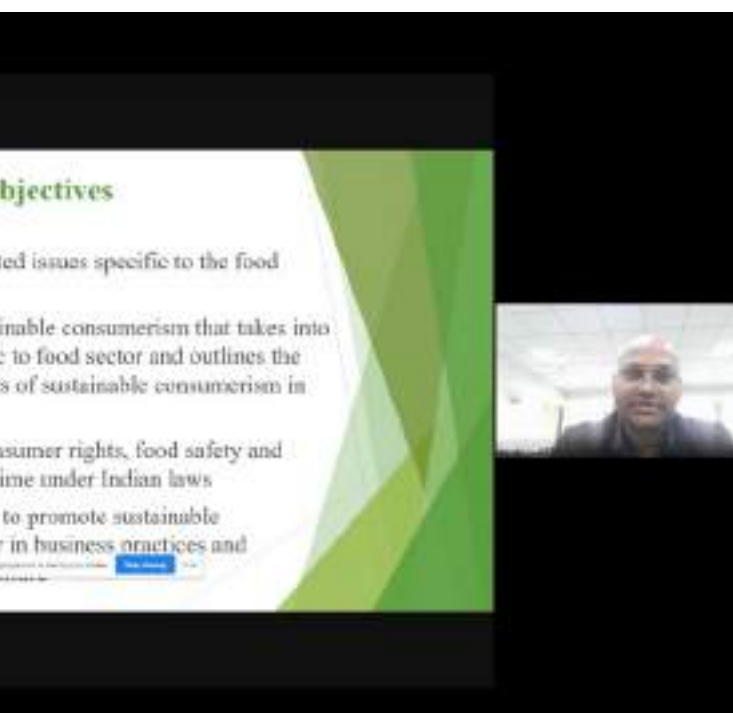


Paper presentation 4: Dr. Sougata Talukdar - Right to Health under International Environmental Jurisprudence

The fourth presenter of the session was Dr. Sougata Talukdar. He presented on the topic "Right to Health under International Environmental Jurisprudence." During his presentation, he spoke about right to health being recognized as a human right. He stated Principle 1 of the Rio Declaration. He spoke about the need for India to formulate a new health policy to tackle new-age diseases. He concluded by stating that the environment is the most issue for improving the health system in the country.

Paper presentation 5: Dr. Ashwini N. Dalal - Environmental Education Concerning Stockholm Declaration and Beyond Vis-A Vis Ancient Indian Practice of Environment Conservation

The fifth presenter of the session was Dr. Ashwini N. Dalal. She presented on the topic "Environmental Education Concerning Stockholm Declaration and Beyond Vis-A Vis Ancient Indian Practice of Environment Conservation." She spoke about environmental education concerning Stockholm Declaration. She also spoke about how the population needs to be controlled or else we might see a time where the resources that this planet has to offer, is not able to meet the needs of the population at large. The outline of this paper was that our greed is infinite, however, the Earth's resources is finite.



Paper presentation 6: Dr. Munish Swaroop & Prof. (Dr.) Ashish Verma - National Education Policy, 2020 and Environment Education: Challenges and Opportunities

The sixth presenters of the session were Dr. Munish Swaroop and Prof. (Dr.) Ashish Verma. The title of the paper was "National Education Policy, 2020 and Environment Education: Challenges and Opportunities." The presenter spoke about the historical perspective of environmental law in India. He then spoke about the Kothari Commission.

Paper presentation 7: Amit Vikram Pandey- Environmental Education

The seventh presenter of the session was Amit Vikram Pandey. The title of the paper was "Environmental Education." In his presentation, the presenter spoke about the Indian culture inculcating a love for nature. The presenter then stated the importance of environmental education for the purpose of protection of the environment.



Paper presentation 8: Prof. (Dr.) J. Mahalakshmi- Right to Clean Water: An International and National Perspective

The eight presenter of the session was Prof. (Dr.) J. Mahalakshmi. She presented on the topic "Right to Clean Water: An International and National Perspective." She started her presentation by discussing the issue of access to clean water. She then discussed the importance of water, its religious significance. She cited the Global Risk Report where water is one of the three major factors of global risk due to bacterial contamination.

Justice

- Philosopher Chaim Perelam being one of the philosophers stated that "each will defend a conception of justice that puts him in the right and his opponent in the wrong". He propounded the concept of 'to each the same thing'; 'to each according to his needs'; 'to each according to his ranks'; 'to each according to his legal entitlement'.
- Gautam Buddha stated that the concept of justice is not about respecting the law but also showing non-conformity with the law when the law is evil.
- Goal 16 of Sustainable Development Goals states that "Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable, and inclusive institutions at all levels".
- Whether access to courts in access to justice?



PARALLEL SESSION 6 – SUSTAINABLE DEVELOPMENT AND SUSTAINABLE DEVELOPMENT GOALS

The parallel session 6 started by the introductory words of the respected moderator, Dr. Debashree Mukherjee, Head, Department of Law, Sister Nivedita University, Kolkata who then introduced the esteemed chairperson, Prof. (Dr.) Azim B. Pathan, Head & Professor of Law, School of Law, G.D. Goenka University, who welcomed everyone to share the platform so that fruitful discussion could be held on the various topics. He said that the idea of sustainable development is continuously being talked about and spread around the world, and added that sustainable development is nothing but meeting the needs of the present generation without compromising on the needs of the future generations. Previously, Indira Gandhi had also stressed upon poverty as an important aspect of promoting sustainable development. He went on to say that we should not only think of, and act for the human lives, but every living and non-living thing that co-exists. Sustainable development is a collective responsibility of every stakeholder.

Paper Presentation 1: Amrita Chakraborty- A Study on Environmental Sustainability in India

The presenter through her paper tried to make a point that while we think of and work towards economic development and growth of the country, we cannot ignore the environment. We should strike a balance between the two, without letting the environment be compromised for the sake of economic development. She discussed the biotic and abiotic elements of the environment and said that the function of the environment transgresses that with social, human, political and economic. India has abundant natural resources in forms of flora and fauna, which needs to be protected. Air pollution, water contamination, wildlife extinction, biodiversity loss, land degradation are the heating threats looking upon the world. Development that allows all future generations to have a potential average quality of life is the need of the hour and even the Brundtland Commission has emphasized on protecting the future generations. She moreover argued that the non-conventional sources of energy should be used and there should be judicious use of every resource available to us, whatsoever.

Paper Presentation 2: Arunima Goel - Road to Sustainable Development

The above presenter started off by saying that every country differs in the amount of resources available to them, and it is upto all of them how they should use those resources to ensure minimum depletion of the same by undertaking more efficient plans. She focused on the multi-dimensional approach to the sustainable development, which includes economic development which talks about the limited resources and their just use, social development which was propounded by Dudley who talked about poverty as a major part of sustainable development, political development as propounded by Dr. Amartya Sen, who was of the opinion that it is the political body with which the whole power rests to make policies and implement them, and hence, this dimension is of utmost importance while promoting sustainable development. Even human development is an important aspect of sustainable development which takes humans as the center point of all developments as professed by the Rio Declaration. She also talked about the problem of displacement faced by a major part of the society owing to the depletion of the environment and consequently lands and their habitat. Hence, sustainable development should be for all, and must be implemented effectively and efficiently.

Paper Presentation 3: Ankit Anand & Bhavika Chandaliya - Development Goal of Sustainability and Sustainable Development

The presenters via their paper said that conservation is a state of harmony between man and land and it would be wrong to say that sustainable development has become the language of every national and international forum to protect that harmony. The right policies and their implementation is very important to avoid the global crisis looming over the world. The World Conservation Strategy Report of 1980 explains the need to preserve the needs of present generations without compromising those of future generations. They also went on to mention the Earth Summit of 1992 and the Brundtland Report that mentioned the need for social justice and environmental protection. Carbon level should be limited and climate should be taken care of as part of the 17 Sustainable Development Goals. The presenters even suggested some remedies such as undertaking environmental changes, producing solar power from kerosene oil, and international investment for rural livelihoods.

Paper Presentation 4: Somya Luthra - Exploiting the Nexus between the SDGs and Public International Law- A Gateway to Sustainable Development

The presenter in this paper discussed the 17 Sustainable Development Goals and the 169 targets set by the Stockholm Conference of 1972, which are grounded in the International Laws of the day. Sustainable Development Goals and International Laws complement each other as said by her and that the International Laws have adopted the concept of Sustainable Development to bring a holistic approach to safeguard the environment. She went on to talk about the target 15.7 of the Sustainable Development Goals, which calls to take urgent action to end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wildlife products.

Paper Presentation 5: Surja Kanta Baladhikari - Access to justice to women victims of crime with reference to Criminal Law Amendment Act, 2013

The fellow presenter focused on the Sustainable Development Goal 16, which talks about promoting peaceful and inclusive societies for sustainable development. He stressed upon the concept of "access to justice" which can be derived from the concepts such as fair trial, as per the case of Varinder Kumar v. State of H.P. Administration of justice includes information, truth-telling, empowerment and restitution or vindication. The case of Hussain & Anr. v. Union of India discouraged the practice of boycotting the courts and furthermore, he stated that access to justice depends on six factors, a) law enforcement network, b) defendant network, c) prosecution network, d) adjudicative network, e) correctional service network and lastly, f) appellate network. He went on to talk about the efficiency of capital punishment to eliminate the evils of rape and acid attacks and there upon highlighted the statistical figures that the pendency of rape cases is 94 to 95% as of now, and the pendency of acid attacks cases was 100% in 2020. He also talked about the rights of victims under the Declaration of Basic Principle of Justice for Victims of Crime and Abuse of Power, 1985. He suggested that judicial processes should be more mobilized because there may be access to courts but there is no access to justice.

Paper Presentation 6: Dr. Susmita Dhar - Stockholm +50 our responsibility towards sustainability and healthy planet for all - a study with special reference to India

The presenter of the above mentioned paper talked about the importance of harmony between environment and development, and how they should be for the people, planet and profit. She said that the three pillars of sustainable development are, a) International Environmental Laws, b) International Human Rights Law and, c) International Economic Law. She talked about the importance of poverty when we mention environmental upgradation and how poverty has the last say in it. The presenter stressed upon the international solidarity that respects all human rights and guarantees a safe space for environmental defenders. All the stable parties should take note and awareness should be spread in every nook and corner of the society because we should always remember that we are receiving the earth from ancestors and borrowing from children.

Paper Presentation 8: Jyothi C.V - The Role of Good Governance and Social Obligation on the Achievement of Sustainable development in India

The main objective of the presenter here was to highlight that the main purpose of governance is to promote and achieve sustainable development. Governance is important for the development of every nation leading to prosperity. Johannesburg Summit of 2002 is an important International forum to promote the idea of sustainable development. The important aspects of such forums are to eradicate poverty, fight inequality and address climate change. Moreover, it was argued that main objectives of sustainable development are, a) equality, b) social development, c) preserving natural resources and, d) protecting the environment. Accountability, transparency, law of participation, and efficiency drive good governance which is a major part of sustainable development whereas corruption is a hindrance to sustainable development. Bureaucracy is a necessity in every society and state and India's bureaucracy has been weak which comes in between the road to sustainable development, and it should be taken care of urgently.

Paper Presentation 9: Sharon Singh - Cartagena Protocol and Sustainable development embracing a one health perspective

The presenter here talked about the significant relationship between environmental protection and economic development. While pursuing economic development, the quality of the environment cannot be compromised. We have to adopt a preventive cum precautionary approach, and natural resources should be used in a sustainable manner. She also emphasized on the Cartagena Protocol which is a hard law on regulation of genetic resources. Sharing of information between two countries becomes very essential for sustainable and wholesome development on a global scale. The exchange and use of genetic resources is the collective responsibility of all human kind. The main cause of the environmental stress is trade globalization, and anthropogenic factors which should be brought to the center table for the discussion so that necessary actions can be taken.

Paper Presentation 10: Priya Kumari - The Impacts and Challenges of Sustainable Development Goal 13

The above presenter started by saying that climate change is a global phenomenon and the concept of anthropogenic climate change has changed since the 1900s. Human activities have enlarged and have broadened environmental degradation, which is specifically unfortunate for women and children who are drastically affected by the negative impacts. Even the COP 27 discussed how the government private sector can become more involved in the issues of climate change. As per the various data available online, the Greenhouse Gas emissions reduced during Covid-19, which shows how crucial human activities are with regards to environmental degradation. The presenter also focussed on the Millenium Development Goals and argued that although India has introduced various schemes to protect the environment, yet not much progress has been made. There has been absence of public information on adaptation, mitigation and resilience. She suggested that businesses should be provided with incentives and their goals should be related to environmental goals to bring them in line with the plans of the policies to safeguard the environment.

Prof. (Dr.) Azim B. Pathan's address:

The chairperson thanked the presenters for the enriching experience and critically analyzed the presentations to bring out a more holistic view on the Stockholm Conference, 1972 and its progress in 50 years. He emphasized on the Cartagena Protocol, Kyoto Protocol, Access to Justice and Access to Education. He further emphasized that different models are working on the backdrop of the United Nations targets of sustainable development, where there needs to be a multi-dimensional approach. He concluded by expressing his gratitude to the organizers for providing such a platform for the discussion.



PARALLEL SESSION 7 – LAW OF SEA, BIODIVERSITY AND WILDLIFE

The seventh parallel session of the "International e-Conference on Taking Stock of Stockholm at 50 (1972-2022)" was held on November 13, 2022. The session began at 2:45 p.m. The chairperson for this session is Prof. (Dr.) Arup Poddar. He is a professor of law at the West Bengal National University of Judicial Sciences, Kolkata. This session was moderated by Dr. Subir Kumar. The theme of the paper presentation is "Law of the Seas, Biodiversity, and Wildlife."

The session-VII began with the chairperson's address, Prof. (Dr.) Arup Poddar. In his speech, he emphasised the significance of the 1972 Stockholm Declaration. The Stockholm Declaration placed environmental issues at the forefront of international concerns and marked the start of a dialogue between industrialized and developing countries on the link between economic growth, pollution of the air, water, and oceans, and the well-being of people around the world. Thereafter, each participant presented their views.

Paper presentation 1: Surya KS - UNCLOS III and the protection of distressed ships at Sea: An Analysis

The first presenter for the session was Surya KS from the Hindustan Institute of Technology, Chennai. Her topic for the presentation was "UNCLOS III and the Protection of Distressed Ships at Sea: An Analysis." In her presentation, she primarily discussed "the refuge of distressed ships at sea." She began with the definition of the term "distressed ship" and demonstrated that the provisions of the UNCLOS Convention are silent on it. She analysed the provisions and principles of environmental law in connection with the refuge for distressed ships under UNCLOS 1982.

Paper presentation 2: Jatin Yadav & Kartik Mehta - Marine Spatial Planning: A Plausible And Sustainable Legal Solution To International Territorial Disputes And Fish Wars

The next presenters for the session were Jatin Yadav and Kartik Mehta from Hidayatullah National Law University, Raipur. They presented on the topic "Marine Spatial Planning: A Plausible and Sustainable Legal Solution to International Territorial Disputes and Fish Wars." In their presentation, they mainly talked about how the foundational principles of the law of the sea have resulted in escalating ecological degradation, demanding a conversation on the status quo of UNCLOS with regard to its applicability and jurisdictional framework. She highlighted China's incursions, which have resulted in fish wars on the territorial limits of its South-East Asian counterparts, and how the international law of the sea has failed to abridge such wars.

Paper presentation 3: Shatakshi Tripathi & Tivra Tripathi - Fraternizing the aspects of environmental principles and law of sea-An international regime

The next two presenters in line were Shatakshi Tripathi and Tivara Tripathi from South Asian University and Galgotias University, respectively. They gave a presentation titled "Fraternizing Environmental Principles and Law: An International Regime." They discussed how a customary standard is required in any subject of international law. Following that, they emphasised the founding of the International Sea-Bed Authority, whose purpose was to regulate the area beyond national authority while remembering that the resources were humanity's shared heritage. Then they discuss numerous concerns such as rising sea levels, melting polar ice caps, coastal erosion, ocean acidification, and so on.

Paper presentation 4: Shivesh Saini & Bhawna Mangla - The Triangle of Oil, Water and Armed Conflict: Tracing the Criminal Liability for effective deterrence

Shivesh Saini and Bhawna Mangla from GGSIPU were the next presenters in line. They spoke on "The Triangle of Oil, Water, and Armed Conflict: Tracing Criminal Liability for Effective Deterrence." The presenters began by discussing the oil spill that occurred in Lebanon in 2006. They discussed the environmental consequences of such leakage, as well as the negative repercussions on regional economics. According to the presenters, there are numerous treaties and conventions addressing civil liability for oil spills; however, there are fewer provisions addressing criminal liability for oil spills. The presenter focused primarily on the framework established by marine laws in the event of armed conflicts, as opposed to the newly emerging branch of law known as ecocide. Their argument focuses on procedural issues, namely how the effective Mens Rea shall be introduced for the purpose of establishing culpability under the Rome legislation.

Paper presentation 5: Divya Nimbalkar - Ushering the Indian Ocean into the UN Convention on the law of the Sea (UNCLOS) through Marine Environment

The next presenter was Divya Nimbalkar from ICFAL Law School, Hyderabad. Their presentation was titled "Ushering the Indian Ocean into the United Nations Convention on the Law of the Sea (UNCLOS) through Marine Environment." The presentation was focused on the protection and preservation of the maritime environment on the Indian Ocean rim. The paper further gives a brief overview of UNCLOS in the Indian Ocean. She explained how UNCLOS evolved into its current form.

Paper presentation 6: Madhu Chandra Chakraborty & Prof. Madhumita Dhar Sarkar Conservation of Endangered Species with Reference to Chelonian Species In Barak Valley: Prospects And Challenges

The next presenters were Madhu Chandra Chakraborty & Prof. Madhumita Dhar Sarkar from Assam University Silchar. Their topic for the presentation was "Conservation of Endangered Species with Reference to Chelonian Species In Barak Valley: Prospects And Challenges". It was mainly focused on the protection of endangered species. They have described how environmental issues can pose an immense threat to species. Her study highlighted reasons for the extinction of turtles and tortoises. In their presentation, they described the Wildlife Protection Act of 1972 and the Wildlife (Protection) (Assam Amendment) Act of 2009. The presenter has tried to highlight the inference between wildlife protection and Article-48 A of the Indian Constitution, which places an obligation on the state to save endangered species. They concluded their presentation with suggestions on how endangered species could be conserved.

Paper presentation 7: Souradipta Bandyopadhyay - Role Of Cites In Combating Transnational Wildlife Crimes In The Contemporary World : A Critical Analysis

Souradipta Bandyopadhyay was the next presenter. He presented her paper on topic "Role Of Cites In Combating Transnational Wildlife Crimes In The Contemporary World : A Critical Analysis". He described about rising cases of environmental crimes throughout the global. He highlighted factors that have caused tremendous increase in wildlife crime and how it affects sustainable development. Thereafter, presenter has explained role and paradigm of CITES in the contemporary era.

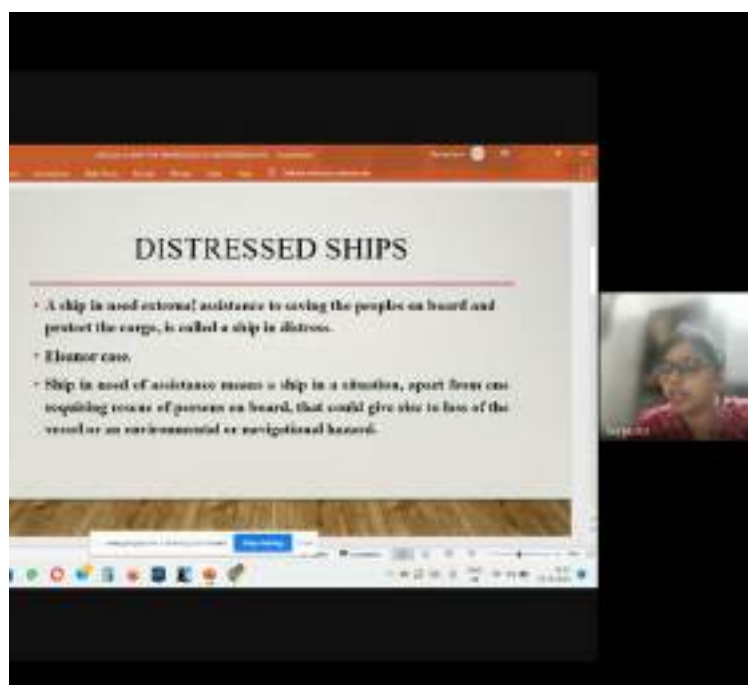
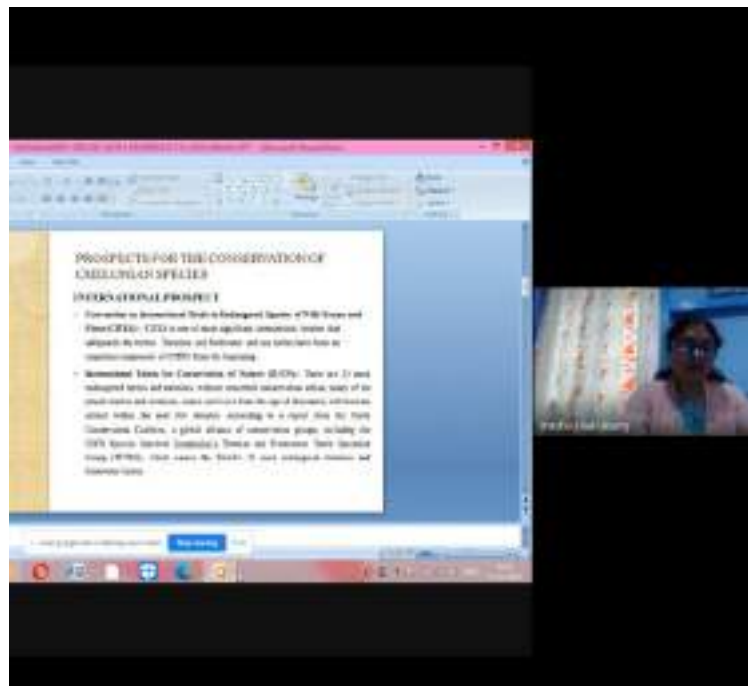
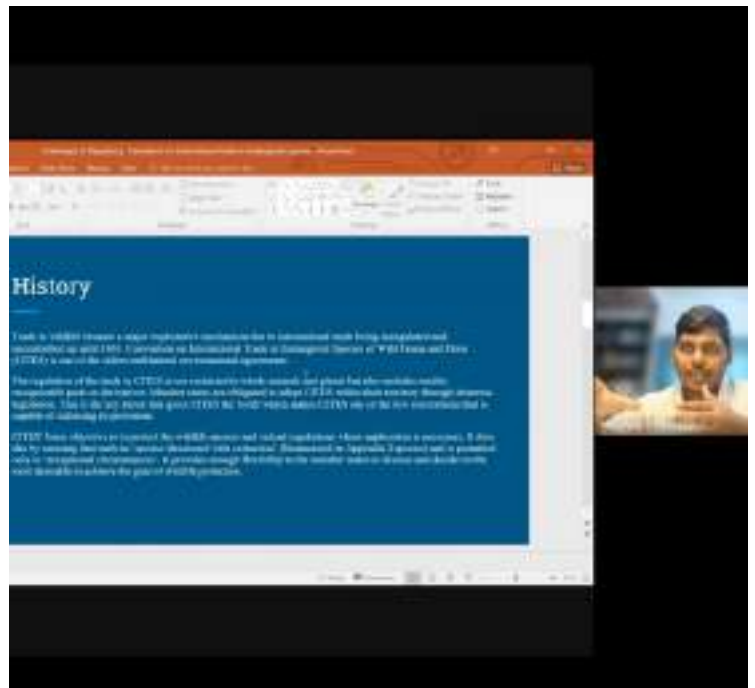
Paper presentation 8: Prajwal Vasuki, Aryan Rao & Nithish Balaji - Critical analysis of the challenges in the regulatory framework for international trade in endangered species

The next presenters were Prajwal Vasuki, Aryan Rao & Nithish Balaji. They have presented on the topic "Critical analysis of the challenges in the regulatory framework for international trade in endangered species." The presenter starts with Charles Darwin's theory of evolution and says that animals are killed because they didn't evolve like people did. Thereafter, he described the illegal trade of endangered species and transnational crime. He deals with the provisions of CITES and is criticised for not amending it after 1983.

Paper presentation 9: P. Vaishnavi Narayeni- Governing Principle for Marine Biodiversity beyond National Jurisdiction

The last presenter was P. Vaishnavi Narayeni. Her topic for presentation was "Governing Principle for Marine Biodiversity beyond National Jurisdiction". She highlighted various regulatory gaps under UNCLOS. She described her concern for the environment and showed how the earth is subject to excessive pressure from human activities. Thereafter, she mentions the objective of Goal 14, which talks Conserve and sustainably use the oceans, seas, and marine resources. Further, the presenter provides an analysis of the historical background of the diverse regime and its influence and present status in the BBNJ negotiation process.

This led to end of the presentation. Thereafter, the chairperson for this session Prof. (Dr.) Arup Poddar briefly summarised whole things and gave his valuable feedback to all the presenters. The session ended with his address.



PARALLEL SESSION 8 – CLIMATE CHANGE, ENERGY AND TRADITIONAL KNOWLEDGE

The eighth parallel session of the "International e-Conference on Taking Stock of Stockholm at 50 (1972-2022)" was held on November 13, 2022. The session began at 2:45 p.m. The chairperson for this session is Prof. (Dr). Vishnu Konoorayar (Professor of Law, HNLU). This session was moderated by Dr. Aswini Siwal (Assistant Professor of Law, University of Delhi). The theme of the paper presentation is "Climate Change, Energy and Traditional Knowledge". The session-VIII began with the chairperson's address, Prof. (Dr). Vishnu Konoorayar. In his speech, he emphasised on India's foreign policy as well as India's internal policy relating to environmental protection. He also spoke about the population explosion resulting in poverty. He referred to the Lancet Commission report on Land Use, Land-Use Change, and Land-Use Reporting which essentially speaks about the pollution related deaths. The Moderator, Dr. Siwal thanked the Chairperson and began the session.

Paper Presentation 1: Puja Gupta presented a paper on "Vienna Convention for The Protection Of The Ozone Layer, 1985: A Critical Overview Of International Environmental Governance". The paper begins with a brief overview of the 1985 Vienna Convention for the Protection of the Ozone Layer, followed by an analysis of the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer, showing how International Environmental Governance responds to science and how countries can work together to prevent common vulnerability. The paper comes to the conclusion that more leadership is needed to put the Paris Agreement into place and cut HFC use by more than 80% by 2047.

Paper Presentation 2: Prateek Akash & Vidya Ann Jacob presented a paper on "Renewable Energy and Climate Justice in India". The paper focused to understand the promising steps to be undertaken in India to move towards smooth solar energy transitioning, keeping in mind the various barriers in a welfare state to achieve climate justice and meet India's Nationally Determined Contributions (NDCs) at the international level. The paper concludes by proposing incorporation of climate justice mechanism in the existing legal framework towards fueling economic growth, job opportunities, and promoting energy independence in India.

Why do we need a Climate Change Law?

- India currently meets about a quarter of its electricity demand with non-fossil energy, about 160 gigawatts of power generation capacity in all.
- It added 15.4 gigawatts of solar and wind capacity in 2021-22, the third-highest increase in the world.
- In its national policies, India has stated that it intends to more than triple non-fossil electricity capacity to 500 gigawatts by 2030.
- Climate change threatens lives, crops and India's economy today.
 - New Delhi endured extreme heat for several weeks in early 2022, with temperatures regularly crossing 104 degrees Fahrenheit (40 Celsius).
 - The previous year, cyclones, flash floods and extreme rainfall destroyed more than 12 million acres of crops, contributing to a global spike in food prices.



victor nayak

REVIEW OF LITERATURE

process and consequences of CSR from the perspective of Indian Companies

and Kaur(2016)

CSR is associated with social development under a holistic approach. It is common knowledge that corporations, and private, play a significant role in societal, economic, and ecological growth through CSR initiatives.

I Bhattacharya(2019)

CSR is based on the mechanism of better execution of pre-determined parameters of CSR for the socio-economic and environmental development of India. Therefore, institutional theory and financial performance of the firms play a role in this field. The institutional theory and financial performance are based on a resources-based approach to CSR, target, resources, duration, and proposed program.

and Verma(2014)

CSR regime in India has brought about a transition and marked the beginning of journey from philanthropy to CSR. Indian companies are now increasingly aiming to integrate CSR with inclusive and sustainable business instead of mere conventional philanthropic engagement.

(2011)

need for structural changes in the development practices of Indian companies under the perspective of pre-determined parameters of CSR in India. Hence, there is a need to manage the emerging challenges in the context of CSR.



Paper Presentation 3: Dr. Makhan Saikia presented a paper on “Global Climate Diplomacy- Mapping Challenges & Opportunities”. This paper focused on the discordant debates, dialogues and narratives at diplomatic level that is primarily responsible for plaguing the global climate regime. The paper highlights how the participation of almost all actors starting from the civil society, grassroots governance agencies, national governments, global corporate conglomerates, human rights bodies, international institutions, and individual concerns on the issue of global warming has made it more complex, leading to a multi-layered conflicting debate and finally concludes by stating suggestions to fight the climate change crisis.

Paper Presentation 4: Dr. Niladri Mondal & Victor Nayak presented a paper on “Renewable Energy Obligations & Climate Legislation In India: A Sine Qua Non!” This article focused on identifying the gap between climate legislation and reducing carbon emissions through renewable energy for a developing country like India, given its international obligations and opportunities. The article also highlights the necessity of linking climate laws with renewable energy obligations to achieve the desired target instead of adopting a piece-meal approach.

Paper Presentation 5: Shimul Dutta & Arindam Basu presented a paper on “On Noah’s Ark: Building Arguments for Climate Migrants”. The presenter focuses that the obstacle is primarily related to the conflict of state interests and it is, thereby, possible to review the status of climate migrants under the emerging consensus supporting the dilution of the principle of state lack of operability.

Paper Presentation 6: Mohammad Asif, Dr. S. Sem Ali & Saood Ahmad presented a paper on “India and Malaysia’s renewable energy law and policy: A critical review.” This paper, in light of the comparisons of various state practices, critically reviews the problems of India and Malaysia’s renewable energy law and policy such as problems with fragmentation, obsolescence, and further identifies the consequent disadvantages, this review also presents improvement and recommendations sovereignty.

Paper Presentation 7: Tamilselvan presented a paper on “Biodiversity Conservation and its Benefits sharing: An analysis from the Tribal Perspective”. The paper addresses the details of the conservation of biodiversity according to tribal knowledge in India, what are the legal measures taken in India for tribal people to access bio-resources and share its benefits, and review and analyses the current policies in India.

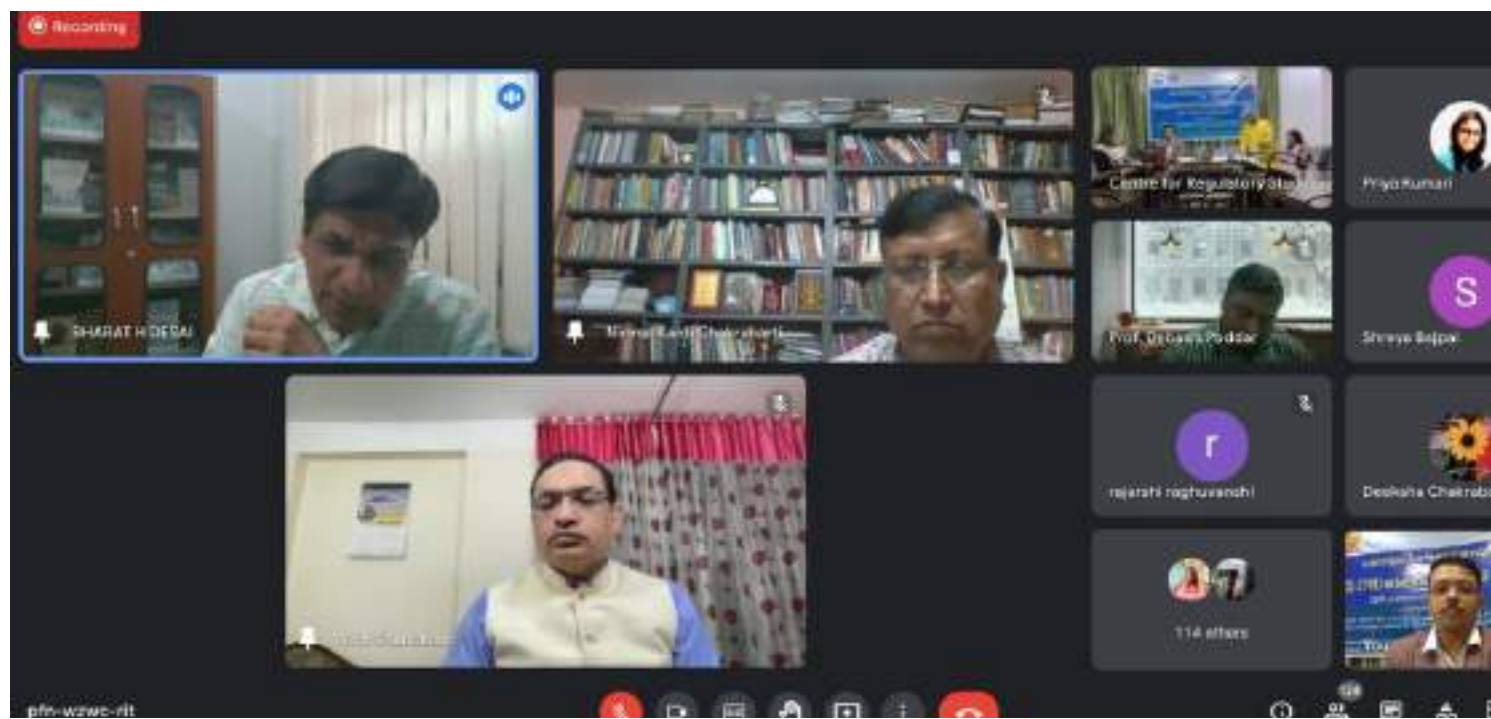
Paper Presentation 8: R. Chameli presented a paper on “Benefit Sharing and its Impact on Protection Of Traditional Knowledge In India – An Analysis”. The paper emphasizes that stringent rules to be framed with regard to the process of benefit sharing and the punishment for misusing such rights has to be framed.

Paper Presentation 9: Prantik Roy & Uday Krishna Mittra presented a paper on “Convergence of CSR with sustainable development goals: Evidence from CSR reporting practices of Indian companies”. The paper primarily analyzed how Indian companies report their CSR efforts. Factor analysis, t-tests, ANOVA, and regression analysis are all statistical methods used to examine data. The findings of the study as stated in the paper, should encourage policymakers, researchers, and academics to delve further into the reporting habits of Indian businesses in this area, as companies are required to report on their social activities within the purview of Section 135 and Schedule VII of the Act.

VALEDICTORY CEREMONY

The Valedictory Session of the two-day international e-conference held jointly by Centre for Regulatory Studies, Governance, and Public Policy and Centre for Environmental Law, Advocacy, and Research commenced with the welcome of the chief guest by the Vice Chancellors of both the organizing universities. The Chief Guest for the Valedictory Session was Prof. Bharat H. Desai, Professor of International Law, Jawaharlal Nehru Chair in International Environmental Law, Centre for International Legal Studies, School of International Studies, Jawaharlal Nehru University. With the welcome address by Prof. (Dr.) V.K. Ahuja, Vice Chancellor, National Law University and Judicial Academy, Assam, followed by Prof. (Dr.) N.K. Chakravarty, Vice Chancellor, West Bengal National University of Juridical Studies, the Chief Guest began with the address.

Prof. Desai started his address by extending his gratitude towards all the people behind the success of the two-day international e-conference. He was privileged and pleased to join an e-conference on something this pertinent. He highlighted how the coming together of two law schools, which are although not too far away situated from each other is an important starting point towards looking and working more closely towards environmental related issues. He also talked about how Stockholm Conference was a very different form of development back then. The genesis of the conference is to be understood very vividly in order to understand the intricacies of the problem. For a country like India, where the positions of power and knowledge are given utmost importance, having sheer knowledge about an issue, as important as this is highly essential. During the course of his address, the main focus was on the idea that environment in short means being sensitive, humble, and it is something that cannot be treated with arrogance. He also made the listeners question and ponder over the fact that went wrong with the environmental legislations and principles despite of such a giant regulatory process in place going on for so long. He also put forth the question that why the situation is referred to as an environmental emergency and people's planetary crisis. Nature can't be subjugated and there is something terribly wrong with the actions of the humans, who have raised an alarm for the entire world. He also highlighted and talked about various of his publications, and how in a few of them he has mentioned that much of the developmental process now is not sustainable. For the present situation to improve, he said that mere mundane scratching of the surface won't work now, belts need to be tightened and tools need to be chiseled. Scholarly institutions must rise on the platform to take a lead to make the situation improve, it has gotten out of the hands of the bureaucracy now to improve the situation. With his detailed analysis of the situation and suggestions as to how, a more gender-neutral approach would be beneficial for the environment, he concluded his address. The Vice Chancellor of WBNUJS, then thanked the chief guest and highlighted how enriched he and all the other listeners were from the brainstorming and comprehensive lecture. He also highlighted how the subject earth jurisprudence is newly emerging and developing. The subject is also intriguing the students, and many of them are also opting for it. The journey of the transformation of the phrase from environmental jurisprudence to earth jurisprudence has been a long and a bumpy one. He praised the lecture by the chief guest by saying that he didn't have enough adjectives to state how comprehensively the 50-year journey had been covered by Prof. Desai in such a short period of time. He thanked all the colleagues, research persons, students, listeners, for a great learning experience over the two days.



Moving forward with the course of the valedictory ceremony, the Vice Chancellor of NLUJAA also extended his gratitude towards Prof. Desai and every other working hand behind the conference. He said the presentation by Prof. Desai on the topic was so wonderful, that if it was an offline conference, he definitely deserved a standing ovation. He also talked about the days when Prof. Bharat Desai used to teach him, and how listening to him after so many years in a conference made him nostalgic. He highlighted one segment of Prof. Desai's address that he found extremely interesting, where the need to look at and do some further research was highlighted and a renewed mandate for the trusteeship council, which for now is laying completely dormant. The UN according to him for the environmental issues requires reformation. He said the listeners should pay attention to the point of trusteeship council raised very minutely, which can be given some business where the doors are kept closed for now. He questioned the present generation to focus on what can be the new role and the new mandate for the trusteeship council. He further stated how the will among the people can change something now, as the law already exists and the institutions already exist. He was also quite hopeful that how the deliberations made in the conference would also make the policy framers ponder as well and alter the current policies. The convenors for the Conference, Mr. Jayanta Ghosh, Head and Research Fellow CRSGPP, WBNUJS thanked Honble Vice Chancellors of WBNUJS and NLUJA for their constant support. He further thanked Dr. Debasish Poddar for his advises, the technical staff of WBNUJS and both the organizing teams from CELAR, NLUJA, Assam and CRSGPP, WBNUJS. Mr. Amol Deo Chavhan, Associate Professor of Law, NLUJAA, extended his regards to the Vice Chancellors, Dr. Poddar, Dr. Ghosh and the organizing team of the conference. He concluded by mentioning the pertinence of the conference in the contemporary scenario. With the permission of the Vice Chancellors from WBNUJS and NLUJAA, the conference was closed.



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RIGHT TO HEALTH UNDER INTERNATIONAL ENVIRONMENTAL JURISPRUDENCE

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Introduction

Since the fundamental and dreadful truth of human vulnerability sits at the core of the concept of health, it is a complicated topic that touches on significant and unresolved medical, ethical, and legal issues.¹ However, the concept of the right to health is relatively recent, having been derived from the aspirational language of international human rights agreements and developing distributive justice philosophies. However, the emergence of environment as one of the determinants of human health forces the actors of International arena to consider the impact of environment on human health right by recognising the duties of the States in protecting health rights under various international environmental instruments such as Stockholm Declaration, 1972, UN Convention on the Law of the Sea, 1982, Rio Declaration, 1992, Millennium Development Goal 2000, and Sustainable Development Goal, 2015. This Article will explain how these abovementioned instruments is critical in recognizing right to health under the international environmental jurisprudence. Further, the Article will highlight the emergence and development of the ecological model of defining health by considering the environment at the centre of it. In addition, this article will try to suggest the way forward for realizing right to health by considering the environmental aspect of it.

General Recognition of Right to Health

It's interesting to note that in the proposed preamble of the WHO's Constitution, the word "right to health" appeared for the first time. Nevertheless, the phrase "right to health" was referenced as "the right to the greatest attainable quality of health" in the final draught, which was submitted by the Preparatory Committee to the Economic and Social Council of the UN.² The 1948 UDHR identified health as a component of the right to an adequate

¹ Pavlos Eleftheriadis, *A Right to Health Care*, 40(2) JLME 268 (2012).

² BENJAMIN MASON MEIER, *THE HIGHEST ATTAINABLE STANDARD: THE WORLD HEALTH ORGANIZATION, GLOBAL HEALTH GOVERNANCE, AND THE CONTENTIOUS POLITICS OF HUMAN RIGHTS* (Columbia University, 2009).

standard of living in Article 25.³ As a result, it guarantees the right to a level of living that is appropriate for one's health and well-being, including housing and access to healthcare, as well as the right to security in the event of illness, disability, etc.⁴ When this provision is carefully reviewed, it becomes evident that it applies to both governmental health systems and private health services, the latter of which includes social interventions for public health.⁵

The International Covenant on Economic, Social, and Cultural Rights (ICESCR) was also adopted by the United Nations General Assembly to address economic, social, and cultural rights under international human rights law. All people have the right to the best possible quality of physical and mental health, according to Article 12 of the ICESCR. It states:

The States Parties to the present Covenant recognize the right of everyone to the enjoyment of the highest attainable standard of physical and mental health.

The term “highest attainable standard” of health is first used in the WHO Constitution, which ensures the reasonability of the required level. The State must contribute to levelling the social playing field in health, but some factors are beyond its control, necessitating international cooperation and support for the right to health. The greatest feasible norm will certainly increase over time in response to developments in medical as well as demographic, epidemiological, and economic changes. According to Article 12(2), States Parties are obligated to take particular steps to improve the health of their citizens, including putting in place systems that ensure everyone has access to healthcare equally and quickly. According to Article 12(2)(c), the actions that the States parties to the present Covenant must take in order to fully realise this right include those necessary for the prevention, treatment, and control of epidemic, endemic, occupational, and other diseases. Further Article 12(2)(d) provides that the steps that must be taken by the States parties to the current Covenant in order for this right to be fully realised include those required for the establishment of circumstances that would guarantee access to all medical services and medical attention in the case of illness. The ICESCR is therefore of a constructive nature and places obligations on the State parties. In order to fully realise the aforementioned right,

³Hurst Hannum, *The Status of the Universal Declaration of Human Rights in National and International Law*, 25 GA. J. INT'L & COMP. L. 287 (1995).

⁴Court on its Own Motion v. Union of India, 2012 (12) SCALE 307.

⁵Lawrence O. Gostin, et. al., *70 Years of Human Rights in Global Health: Drawing on a Contentious Past to Secure a Hopeful Future*, 392 LANCET 2731, 2732 (2018).

the ICESCR requires the States parties to establish the conditions necessary to guarantee that everyone has access to medical care in the event of disease.⁶ The government must provide for fundamental needs including food, nutrition, medical care, hygiene, etc. and work to enhance public health.⁷

Stockholm Declaration, 1972

The Conference on the Human Environment, held from June 5 to 16, 1972, in Stockholm, was the most fruitful international conference in recent memory in many ways.⁸ In addition to approving a fundamental Declaration and a thorough resolution on institutional and financial arrangements over the course of two weeks, it also approved 109 recommendations that make up an extensive action plan.⁹ The Declaration placed particular emphasis on how industrialization and economic progress have increased pollution levels, depleted precious natural resources, and upset the ecological balance.¹⁰ The Declaration contains a set of common principles to inspire and guide the peoples of the world in the preservation and enhancement of the human environment. It offers the first worldwide set of guidelines for upcoming global environmental cooperation. In the past, there was less of a connection between the environmental data collecting and the preservation of the environment as a whole; instead, it was more concerned with development than preservation. Before the Stockholm Conference, the subject did not receive the attention it deserved. Through this Conference, monitoring became one of the focal themes of the Action Plan, and each state is now obligated to assist the creation of global monitoring systems by international organisations. Beyond what is already required by international law, it also acknowledges the need for states to share information on the environmental impacts of their big initiatives.¹¹ With respect to health issues, the Stockholm Conference proclaims that the majority of environmental issues in poor nations are brought on by underdevelopment. Millions of people continue to live in extreme poverty, lacking access to appropriate food, clothing, shelter, education, health care, and sanitary conditions. As a

⁶S. J. Rajalakshmi v. Customer Services, Air India Limited, 2020 (1) AKR 269.

⁷ABC v. Bihar State Aids Control Society, 2020 (3) PLJR 420.

⁸ Louis B. Sohn, *The Stockholm Declaration on the Human Environment*, 14(3) HARV. INT'L L.J. 423, 423 (1973).

⁹ UN Conference on the Human Environment, U.N. Doc. A/CONF.48/4.

¹⁰ Malavika Rao, *ATWAIL Perspective on Loss and Damage from Climate Change: Reflections from Indira Gandhi's Speech at Stockholm*, 12 ASIAN JIL 63, 70 (2022).

¹¹ Ludwik A. Teclaff, *The Impact of Environmental Concern on the Development of International Law*, 13(2) NAT 357, 366 (1973).

result, developing nations must focus on growth while keeping in mind their goals and the need to protect and enhance the environment.¹²

Through this declaration, the environment has been acknowledged for the first time in the global arena as the cause of underdevelopment and the lack of sufficient health and sanitation. This proclamation's analysis in light of Article 25 of the UDHR demonstrates that unless the States take action to address environmental issues, citizens will not be able to exercise their right to a standard of living sufficient for his or her own health and the welfare of his or her family. By stating in Principle 7 of the Stockholm Conference that “States shall take all possible steps to prevent pollution of the seas by substances that are liable to create hazards to human health, to harm living resources and marine life, to damage amenities or to interfere with other legitimate uses of the sea”, the Stockholm Conference sought to achieve this goal. Although this clause focuses primarily on the marine environment and the health risks it poses, it has wider ramifications for the establishment of health rights in subsequent environmental agreements.

The Stockholm Conference recommended that nations work together to advance international law regarding liability and compensation for the victims of pollution and other environmental damage caused by activities under such States' jurisdiction or control to areas beyond their jurisdiction in order to secure these aspects.¹³ The entire Stockholm Conference must also be taken into consideration as a further contribution to ecological consciousness due to its widespread success, as indicated, for example, by the increase in the number of Environment Ministries since 1972. To encourage environmental activities and cooperation within the United Nations Organization, the United Nations Environment Programme (UNEP), which is now well-known and was positioned as the environmental conscience of the United Nations system, was suggested.¹⁴

UN Convention on the Law of the Sea, 1982

All maritime and oceanic operations are governed by the 1982 United Nations Convention on the Law of the Sea. The freedom of high seas fishing is now abolished by this Convention. It covers the rights and duties that various nations have in connection to the use of the seas, the seabed and its riches, and the preservation of the marine environment.

¹² Declaration on the Human Environment, 1972, Proclamation 4.

¹³ Id., Principal 7.

¹⁴ Vol. VIII, Philippe Boudes, *United Nations Conference on the Human Environment* in J. NEWMAN, GREEN ETHICS AND PHILOSOPHY - THE GREEN SERIES : TOWARD A SUSTAINABLE ENVIRONMENT, 410, 413 (Sage, 2011).

It delineates the oceanic areas over which countries with coastlines have sovereignty, rights, or control, including the right to extract and manage resources through commercial fishing and oil exploration. It also describes the rights that nations have in the “zones” of other countries, such as the rights to navigation, research, and cable laying, as well as the rights that all nations have in the parts of the ocean that are not under the exclusive control of any one country. The 1982 Convention on the Law of the Sea primarily establishes 12 nautical miles as the breadth of the territorial sea and grants other states the right of innocent passage through these waters.¹⁵ A significant shift from unilateralism to multilateralism in the development of marine law is the Convention's main idea.¹⁶

Similar to the Stockholm Declaration, this 1982 Convention lists health as one of the major areas that calls for governmental protection. It specifies that the coastal State shall have exclusive jurisdiction over such artificial islands, installations, and structures, including exclusive control over laws and regulations relating to customs, finances, health, safety, and immigration.¹⁷ As a result, this Convention guaranteed the States' sovereign status with regard to the protection of health and turned it into a forum for international cooperation. The Convention clearly states that a State shall give other States a reasonable opportunity to obtain from it, or with its assistance, information required to prevent and control harm to people's health and safety, as well as to the maritime environment, when applying this Part.¹⁸

Rio Declaration, 1992

The Rio de Janeiro Earth Summit, also known as the United Nations Conference on Environment and Development, was a significant international event that took place in Rio de Janeiro from June 3 to June 14, 1992. The World Summit on Sustainable Development in 2002 and the Kyoto Protocol are two long-term reports and implementation plans that came out of the Earth Summit in 1992 and are still followed as standards for international environmental action today. The theme of the 1992 conference, which contrasted ecology with development, prompted the reunification of seemingly contradictory goals. Although it is true that the debate received more attention in Rio than it did in Stockholm, it is perhaps less well known that the debate twenty years earlier was largely influenced by a

¹⁵ United Nations Convention on the Law of the Sea, 1982, Article 3.

¹⁶ Bernard H. Oxman, *The Rule of Law and the United Nations Convention on the Law of the Sea*, 7 EUR. J. INT. LAW 353, 356 (1996).

¹⁷ Convention on the Law of the Sea, 1982, Article 60(2).

¹⁸ Id., Article 242(2).

disagreement between industrialised and developing countries over potential conflicts between development and environmental agendas.¹⁹ According to its definition, "sustainable development" is growth that satisfies present demands without jeopardising the ability of future generations to satiate their own needs. When applying this concept of sustainable development, there is a fundamental problem with the operational reality of determining the "sustainability" of a given plan, whether it be a specific infrastructure project, like a large dam, or a more general development policy or programme.²⁰ Since Stockholm, there hasn't been much development in the domain of international law that governs liability for harm brought on by cross-border contamination, the only topic addressed by Principle 22 as stated.

The Rio Declaration's Principle 1 indirectly refers to a substantive need requiring a least sufficient environment, although that provision falls far short of explicitly enshrining such a right, according to international jurisprudence. Instead, the entire Rio Declaration rejects what may be perceived as a compromise between a developing right to the environment and consideration of development imperatives included in the Stockholm Declaration. As an alternative, Principle 1 states that people have a right to live a healthy, productive life in harmony with the environment. This statement implies that environmental measures for the enjoyment of health as a right are driven by people's needs. In a similar vein, it states that in order to fairly meet the developmental and environmental demands of both present and future generations, the right to development must be realised.²¹ Furthermore, Principle 14 stipulates that States should work together effectively to deter or stop the relocation and transfer of any activities and chemicals that seriously degrade the environment or are found to be detrimental to human health to other States. Thus, this clause makes it abundantly obvious that any activity that harms the environment has an immediate impact on people's health, proving that the environment is one of the factors that determine a person's right to health.

Furthermore, Agenda 21 urges the integration of elements influencing resource management, poverty, and policies promoting development. It is necessary to increase access to education, healthcare, clean water, and sanitation in order to accomplish this

¹⁹ David A. Wirth, *The Rio Declaration on Environment and Development: Two Steps Forward and One Back, or Vice Versa*, 29 GA. L. REV. 599, 607 (1995).

²⁰ Gunther Handle, *Controlling Implementation of and Compliance with International Commitments: The Rocky Road from Rio*, 5 COLO. J. INT'L ENVTL. L. & POL'Y 305, 312 (1994).

²¹ Rio Declaration on Environment and Development, 1992, Principle 3.

goal.²² Para 5 of the Agenda states: Health services should “include women-centred, women-managed, safe and effective reproductive health care and affordable, accessible services, as appropriate, for the responsible planning of family size...” In order to stabilise the global population at a level that can be sustained at the end of the century, health services must place a strong emphasis on reducing infant mortality rates, which converge with low birth rates. According to Agenda 21, all people were to have their basic health needs covered and any necessary specialised environmental health services given. Collaboration between the general public and the health sector was necessary to address health challenges.²³ It states that in order to achieve health service coverage, consideration should be given to the demographic groups with the greatest needs, particularly those living in rural areas. Agenda 21 must incorporate therapeutic and preventive methods to address these problems due to the risks to public health caused by environmental degradation and the dangers to metropolitan areas.²⁴

Millennium Development Goals

The Millennium Development Goals (MDGs)²⁵ arose from the gathering of world leaders in New York in September 2000. These ambitious goals, which include putting an end to extreme poverty, lowering maternal mortality by 75%, providing universal primary education, and halting the spread of HIV/AIDS, are anticipated to be achieved by the end of 2015.²⁶ While outlining potential trade, aid, and debt reduction commitments from wealthy nations, the MDGs also helped poor countries.²⁷ Lowering infant mortality rates is the MDG's Goal 4, enhancing maternal health is the MDG's Goal 5, and eliminating diseases like HIV/AIDS, malaria, and other ailments is the MDG's Goal 6. These goals include sensible targets and indicators when it comes to the health industry. Goal 4 has only one goal: between 1990 and 2015, reduce under-five death rates by two-thirds.²⁸ Specifically, Goal 5 aimed to reduce the maternal mortality ratio by 75 % by 2015²⁹ and to

²² Agenda 21, Paragraph 3.

²³ Sougata Talukdar,

²⁴ *Id.* Paragraph 6.

²⁵ United Nations Millennium Declaration was adopted by the General Assembly on September 8, 2000.

²⁶ Mickey Chopra & Elizabeth Mason, *Millennium Development Goals: Background*, 100(Suppl 1) ARCH. DIS. CHILDH. s2 (2015).

²⁷ Donatus E. Okon & Joseph Kinuabeye Ukwai, *Challenges and Prospects of the Millennium Development Goals (MDGS) in Nigeria*, 11(2) GLOB. J. SOC. SCI. 119, 120 (2012).

²⁸ United Nations Millennium Declaration 2000, Goal 4, Target 4A.

²⁹ *Id.*, Goal 5, Target 5A.

achieve universal access to reproductive health³⁰. Further, Goal 6 has three targets: (i) to halt by 2015 and have started to reverse the spread of HIV/AIDS,³¹ (ii) to achieve global access to treatment for HIV/AIDS for those who need it by 2010,³² and (iii) to have ceased and started a reversal of the incidence of malaria and other major diseases by 2015³³.

The truth about MGDs is that it took years to reach an international agreement on a common development agenda, and then additional years to put the concepts into practise and achieve political traction.³⁴ Since the bulk of health initiatives, in the opinion of many academicians, would first largely benefit the wealthier parts of society, leading to a tendency to overlook the health of the rural populations. Many academicians saw this purpose as a drive towards non-egalitarian results. Numerous academicians have also argued that the MDGs are insufficient due to their limited focus on just three aspects of health and the absence of an overarching goal of "freedom from illness."³⁵ Others emphasise how important it is to include developing effective healthcare systems and incorporating qualified healthcare staff into its list of objectives.³⁶ It has been discovered that a number of health conditions, including non-communicable diseases, mental health, and difficulties faced by persons with disabilities, are under-recognized. Because the majority of health initiatives under the MDGs will first target the more affluent sections of society, they may potentially contribute to unequal outcomes.³⁷ As a result, the situation of the underprivileged is unchanged and unaddressed.

Sustainable Development Goals

The term "sustainable development" started to be used in policy circles after the Brundtland Commission's report on the state of the world's environment and development was published in 1987. The biggest acknowledgement of sustainable development came with the approval of the Sustainable Development Goals in September 2015. It also goes with the name Agenda 2030. The choice of indicators was hotly debated, and it was questioned

³⁰ *Id.*, Target 5B.

³¹ *Id.*, Goal 6, Target 6A.

³² *Id.*, Target 6B.

³³ *Id.*, Target 6C.

³⁴ John W. McArthur, *The Origins of the Millennium Development Goals*, 34(2) SAIS REV. 5, 22 (2014).

³⁵ J. James, *Misguided Investments in Meeting Millennium Development Goals: A Reconsideration Using Ends-based Targets*, 27(3) THIRD WORLD Q. 453, 456 (2006).

³⁶ M. Keyzer & L. Van Wesenbeeck, *The Millennium Development Goals, How Realistic Are They?*, 154 ECONOMIST 443 (2006).

³⁷ D.R. Gwatkin, *How much would Poor People Gain from Faster Progress towards the Millennium Development Goals for Health?*, 365(9461) LANCET 813 (2005).

whether they could be measured accurately. In the end, it evolved into the final 17 Sustainable Development Goals (SDGs). These SDGs aim to protect the environment, eradicate poverty, and achieve socioeconomic inclusion so that people can live in dignity. The third of these 17 aims, which is represented through 9 targets and 4 implementation modalities, is largely concerned with "ensuring healthy lifestyles and fostering well-being for all at all ages."³⁸ Thus, it covers several groups of targets, related to the unfinished MDG agenda (e.g., maternal and child health and communicable diseases); new targets including non-communicable diseases and social determinants, and targets related to health systems and universal health coverage.

Thus, it combines two main ideas (i) health is a universal right, but it is also an insurance capital that allows the settlement of the sustainable development of nations; and (ii) welfare is a state-related to different physical or psychological factors considered separately or jointly. In addition to these, ten of the other sixteen goals also include health-related indicators, such as those that directly link to health services, health outcomes, and environmental, occupational, behavioural, or metabolic risks with known causal connections to health.³⁹ In contrast to the MDGs, whose approach was sectorial in nature, the advanced SDGs strive to incorporate the economic, social, and environmental challenges faced by the people and take these into consideration in an integrative context. As a result, the SDGs are more aspirational than the MDGs. The SDGs also sought to reduce inequality within and between countries.⁴⁰ Thus, international initiatives, state implementation mechanisms, and civil society monitoring are required to secure a better future for the world's population, including the full realisation of their right to health.

Ecological Model of Health: An Influence of Environmental Jurisprudence

The modern environmental movement in western countries at the beginning of the 1970s gave rise to the ecological or relative conceptions of health.⁴¹ The ecological model has a

³⁸ Kent Buse & Sarah Hawkes, *Health in the Sustainable Development Goals: Ready for a Paradigm Shift?*, 11(1) GLOB. HEALTH 13, 14 (2013).

³⁹ M. Nilsson, et. al., *Policy: Map the Interactions between Sustainable Development Goals*, 534 NATURE 320 (2016).

⁴⁰ Sustainable Development Goals, 2015, Goal 10.

⁴¹ Ben Purvis, et.al., *Three Pillars of Sustainability: In Search of Conceptual Origins*, 14(3) SUSTAIN SCI. 681, 683 (2019).

long history and was developed as a result of the development of many studies and fields, including public health, social science, biology, and psychology, which in turn generated the ecological and behavioural foundations for the conceptualization of health. The ecological or related conceptions of health were inspired by the modern environmental movement in western countries.⁴² The ecological model's foundation is, according to its source, psychologist Urie Bronfenbrenner's "Ecological Systems Theory," which explains how several environmental systems have an effect on human development.⁴³ He thought that different degrees of influence both affected and were affected by "behaviour". Notably, the term "ecological" has also been used in epidemiology to refer to a community health strategy that focuses on links between the causes and consequences of health problems. The ecological model of health is still built on the foundation of all these systems.⁴⁴ In order to address issues with health promotion, Professor Jackson has also developed a behavioral-environmental health model.⁴⁵ A healthy organism, according to Wylie, is one that properly and continuously adapts to its environment.⁴⁶ Similar to this, Purola described health as being in a condition of balance and harmony with one's ecological and social environment.⁴⁷

As a result, according to this concept, health can be described in two different ways: (i) as an adequate functional capacity that enables people to carry out their duties and responsibilities; and (ii) as a certain quality of life that enables people to live happily, successfully, fruitfully, and creatively.⁴⁸ Under the framework of the Ecological Model, the definition of mental health is based on a person's ability to carry out institutionalised social functions, whereas the assessment of somatic health centres on a person's proficiency in accomplishing valued tasks. This concept assumes that people will alter as a result of appropriate social environment changes, which will also aid in removing the interpersonal, organisational, communal, and governmental factors that support and encourage unhealthy behaviour. This ecological point of view on health also has some drawbacks and

⁴² L. W. Green, *et.al.*, *Ecological Foundation of Health Promotion*, 10(4) AM J HEALTH PROMOT 270 (1996).

⁴³ Andrea Vest Ettekal & Joseph L. Mahoney, *Ecological Systems Theory*, in KYLIE PEPPLER (ed.), *THE SAGE ENCYCLOPEDIA OF OUT-OF-SCHOOL LEARNING* 239, 239 (SAGE Publications, 2017).

⁴⁴ L.A. Pervin, *Performance and Satisfaction as a Function of Individual-Environment Fit*, 69(1) PSYCHOL. BULL. 56 (1968).

⁴⁵ Terri Jackson, *On the Limitations of Health Promotion*, 9(1) COMMUNITY HEALTH STUD. 1 (1985).

⁴⁶ C.M. Wylie, *The Definition and Measurement of Health and Disease*, 85(2) PUBLIC HEALTH REP 100 (1971).

⁴⁷ T. Purola, *A Systems Approach to Health and Health Policy*, 10(5) MEDICAL CARE 373 (1972).

⁴⁸ H. Hoyman, *Our Modern Concept of Health*, 32(7) J SCH HEALTH. 253 (1962).

difficulties. In general, the ecological principles don't give enough information to assist conceptualise a specific problem or suggest workable remedies.⁴⁹

Conclusion and Observations

In response to the burgeoning environmental movement of the 1960s, numerous nations began taking measures to safeguard the environment within their own boundaries. Governments began to realise, however, that pollution did not stop at their borders in the early 1970s. To solve environmental issues that affected everyone on Earth, international cooperation and consensus were required. A Declaration on the Human Environment was consequently accepted at the Stockholm Conference in 1972. The Stockholm Conference outlined nations' duties to work together to protect the environment.⁵⁰ Moreover, because of its global success, as evidenced by the rise in the number of Environment Ministries since 1972, the entire Stockholm Conference must also be considered as a contribution to ecological consciousness. Under the structural setup, the Stockholm Conference suggested for the creation of the United Nations Environment Programme, or UNEP, which is now widely recognised and is positioned as the environmental conscience of the United Nations system, to promote environmental activity and collaboration inside the United Nations Organization. To fully appreciate why the declaration is justly seen today as a historical marker, it is essential to recall the fact that the Stockholm Conference and its outcomes were moulded by the drastically divergent perspectives of industrialised and developing countries on issues of environment and development.⁵¹ Thus, it provides aspiration goals for both of these sections. The Human Environment Conference recognised that, rather than distributing the benefits of development to all people, man has instead caused environmental deficits that are detrimental to his physical and mental well-being. In addition, according to environmental law, the 1982 Convention on the Law of the Sea was crucial in establishing global cooperation for environmental protection. The International Sea-Bed Authority, the International Tribunal for the Law of the Sea, and other international organisations were also acknowledged for their significance under the 1982

⁴⁹ Kenneth R. McLeroy, *et.al.*, *An Ecological Perspective on Health Promotion Programs*, 15(4) HEALTH EDUC. Q. 351, 355 (1988).

⁵⁰ Karin Mickelson, *The Stockholm Conference and the Creation of the South-North Divide in International Environmental Law and Policy*, in SHAWKAT ALAM, ET. AL., (eds.), *INTERNATIONAL ENVIRONMENTAL LAW AND THE GLOBAL SOUTH* 109, 115 (Cambridge University Press, 2015).

⁵¹ Jutta Brunnee, *The Stockholm Declaration and the Structure and Processes of International Environmental Law*, in ALDO CHIRCOP & TED MCDORMAN, (EDS.), *THE FUTURE OF OCEAN REGIME BUILDING: ESSAYS IN TRIBUTE TO DOUGLAS M. JOHNSTON*, 41, 41 (Kluwer Law, 2008).

Convention. States are required by this Convention to cooperate with these bodies and to respect the outcomes of their work.

Although the MDGs set a particular target, many countries did not fulfil their obligations within the allotted period.⁵² Even though there have been modest global gains in maternal health due to availability to MGDs, the pace of change is inconsistent.⁵³ Despite all these flaws, since the MDGs were formed, health and well-being have significantly improved in many parts of the world and the broad consensus through international cooperation suggests that the MDGs have played a helpful role in this success. It follows that in order to be accomplished, the health-related MDGs must be seen holistically and across generations.⁵⁴ Additionally, this global to-do list for sustainable development has come under critique for being extremely inclusive, universal, and ambitious as well as having potential contradictions, particularly between the socio-economic development and the environmental sustainability goals.⁵⁵ Gerardo Suzan and his colleague correctly noted that there had been extraordinary progress toward Goal 3, particularly in the areas of poverty reduction, providing the least developed countries with access to clean water, and combating the HIV/AIDS pandemic, tuberculosis, and malaria. Nevertheless, Accelerating realisation is still essential for a better result in health orientation. As a result, the environmental movement - possibly more so than any other global movement - has firmly built ties between a sizable number of regular people from varied backgrounds and cultures and the growth of international institutions.

Furthermore, it is widely acknowledged that the surrounding environment and its elements, such as pollution, hazardous substances, and the production of excessive green gases, have a direct bearing on health issues. In light of the foregoing, it can be argued that the State parties should take into account the current environmental issues when formulating health policies and alter their policy as necessary. Additionally, there should be no exceptions made when it comes to international cooperation in resolving environmental problems. The developed world has a crucial role to play in this issue, and they should be prepared to adjust their policies accordingly. People should also take the required actions to maintain a

⁵² Minerva Kyei-Nimakoh, et. al., *Millennium Development Goal 5: Progress and Challenges in Reducing Maternal Deaths in Ghana*, 16 BMC PREGNANCY AND CHILDBIRTH 51, 52 (2016).

⁵³ Rebekah Gaensbauer, et. al., *Saving Mothers' Lives: Progress in Achieving Millennium Development Goal 5*, 13(4) OBSTET. GYNECOL. 259 (2011).

⁵⁴ S. V. Subramanian & Emre Ozaltin, *Progress towards Millennium Development Goal 4*, 379(9822) LANCET 1193, 1194 (2012).

⁵⁵ David Stern, et. al., *Economic Growth and environmental Degradation: The Environmental Kuznets Curve and Sustainable Development*, 24(7) WORLD DEVELOPMENT 1151 (1996).

clean environment and raise awareness among others. Hence, a small step towards environmental protection will ease our path to enjoying the highest possible standard of health.

BIODIVERSITY CONSERVATION AND ITS BENEFITS SHARING: AN ANALYSIS FROM THE TRIBAL PERSPECTIVE

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Introduction

As a result of World War II, the United Nations Organization known as UNO was established in 1945 to maintain international peace and security. At the time of the founding of the United Nations, environmental issues were not a major concern at the global level. But as early as the 18th and 19th centuries, the world was suffering from environmental pollution. In 1949, the United Nations convened its first Conference on the Environment to protect and use natural resources.¹ The continuing and accelerating degradation of the quality of the human environment prompted the United Nations to convene the United Nations Conference on the Human Environment. Accordingly, a global conference called Stockholm Conference was convened in 1972 and the Stockholm Declaration, known as the Magna Carta of Environment, was passed. The United Nations Environment Conference in Stockholm was the first world conference to make the environment a major global issue. The main objective of the Stockholm Conference was to provide guidelines and encourage governments and international organizations to formulate policies to protect and improve the human environment and to address and prevent its degradation through international cooperation.² Following the conference, various environmental actions were taken at the global and national levels. In India, through the 42nd amendment³, our Constitution was amended in the year 1976 to include articles 48-A⁴ and 51-A (g),⁵ based on which various environmental laws were enacted to conserve the environment. In 1992, the 'Earth Summit, was held in Rio de Janeiro⁶, this global conference was held to mark the

¹ . Proceedings of the United Nations Scientific Conference on the Conservation and Utilization of Resources, 17 August - 6 September 1949, Lake Success, New York, Vol. III, Fuel and energy resources <https://digitallibrary.un.org/record/1485027?ln=en>

² . United Nations Conference on the Human Environment, 5-16 June 1972, Stockholm, <https://www.un.org/en/conferences/environment/stockholm1972#:~:text=The%20Stockholm%20Declaration%2C%20which%20contained,and%20the%20well%2Dbeing%20of>

³ . <https://www.india.gov.in/my-government/constitution-india/amendments/constitution-india-forty-second-amendment-act-1976#:~:text=Protection%20and%20improvement%20of%20environment,life%20of%20the%20country.%22>

⁴ . <https://indiankanoon.org/doc/871328/>

⁵ . <https://indiankanoon.org/doc/1644544/>

⁶ . United Nations Conference on Environment and Development, Rio de Janeiro, Brazil, 3-14 June 1992, <https://www.un.org/en/conferences/environment/rio1992>

20th anniversary of the first Human Environment Conference in Stockholm. In 1992, world leaders adopted a path to "sustainable development" at the Earth Summit. The Convention on Biological Diversity⁷, adopted in Rio, is an agreement between most of the world's governments that, as the world continues to grow, the world is developing the diverse biological resources needed to sustain life on Earth. Articles 8(j) and 10(c) of the convention are considered two of the most important provisions governing international environmental law for indigenous peoples and local communities. They are particularly applicable to communities that contribute to the conservation and sustainable use of biodiversity through traditional knowledge and cultural practices.⁸ Based on that, the Conservation of Biodiversity Act was enacted in India in 2002. The Nagoya Protocol on Access to Genetic Resources and the Convention on Biological Diversity on the Fair and Equitable Sharing of Benefits Arising from Their Use is an international agreement that aims to share the benefits arising from the use of genetic resources in a fair and equitable manner. The Nagoya Protocol on ABS was adopted in Nagoya, Japan on 29 October 2010 and entered into force on 12 October 2014.

In this article, we will learn about the methods of conserving biodiversity with the traditional knowledge of Toda, Kota, Irula, Kurumba, Katunayaka, and Paniya tribal people living in Western Ghats, Nilgiri Biosphere Reserve, and about the ways, they can access the bioresource and share its benefits. An attempt has also been made to analyse the measures taken in India.

Aim and object

The aim and object of this paper is to collect and provide details about the benefits to tribal people who share their knowledge about bio-resources.

Scope

The scope of this study is to know about the biodiversity conservation method of the tribal people belonging to the particularly vulnerable tribal group of Tamil Nādu, which has the Nilgiris biosphere as its base, and the benefits of providing knowledge about that bioresource.

Research Methodology

⁷. <https://www.cbd.int/youth/0003.shtml>

⁸. <https://naturaljustice.org/wp-content/uploads/2015/09/Traditional-Knowledge.pdf>

The doctrinal research methodology for this article was followed by the researcher. Since it is a library-based study, books and research articles on plants used and protected by Nilgiris tribal people for food and medicinal use were studied, legal books, Statute, Legislation, Treaties, Protocol, Conventions, and research articles related to bio resource benefit sharing were taken for review.

Global Environmental Initiatives

The environment is the surroundings or conditions in which a person, animal or plant lives or works. Natural environment includes all living and non-living things. The Industrial Revolution of the 19th century mechanized the production and manufacture of goods and introduced the use of machinery and other heavy equipment, thereby using fossil fuels as a source of energy, and consequently began to degrade the environment.⁹ Environmental degradation is caused by various causes that include pollution, biodiversity loss, animal extinction, deforestation and desertification, global warming, and more.¹⁰ After realizing the degradation of the environment, the need to protect it was felt globally in the 1970s. The Convention on Wetlands also known as the Ramsar Convention was signed in the year 1971 in the Iranian city of Ramsar, which is one of the oldest inter-governmental accords for preserving the ecological character of wetlands.¹¹ United Nations Conference on Human environment was held in Stockholm, Sweden in the year 1972, the first declaration of international protection of the environment was also proclaimed which contained 26 principles. India was represented by our former Prime Minister Mrs. Indira Gandhi and she made a very famous speech at that conference. The United Nations Environment Program (UNEP) was the outcome of this conference.¹² The convention on the conservation of Migratory species of wild animals also known as the Bonn Convention was made in the year 1979 to conserve terrestrial, marine, and avian migratory species throughout their range.¹³ In the year 1985, the Vienna Convention for the protection of the Ozone Layer was adopted, it was the starting point of global cooperation for the protection of the Ozone layer. The Montreal protocol on substances that deplete the ozone layer was in 1987 and the

⁹ Dr. Mahendra Pratap Choudhary, Environment Degradation: Causes, Impact and Mitigation <https://researchgate.net/publication/279201881>

¹⁰ .ibid.

¹¹ . Daniel O.Suman, "Mangrove Management" Coastal Wetlands (2nd ed), 2019 <https://www.sciencedirect.com/topics/earth-and-planetary-sciences/ramsar-convention>

¹² . <http://www.un.org/en/conferences/environment/stocholm1972>

¹³ . <https://www.bmu.de/en/themen/natur-biologische-vielfalt-arten/artenschutz/internationaler-artenschutz/bonn-convention>

amendment was made in the year 1989 in Montreal protocol.¹⁴ The World Commission on Environment and Development (WCED) also known as Brundtland Commission had been set up in 1983 it published a report entitled “Our Common Future” in 1987¹⁵ and it developed the theme of “sustainable development”.¹⁶

Ecosystem Management

An ecosystem is a geographic area where biotic factors such as animals, plants, fungi, and bacteria interact with abiotic factors such as soil, air, water, and temperature in the environment. Man can excel in life only if the ecosystem is in good condition. Ecosystem management is very important for that. Management is to maintain the same condition without destruction as well as to improve the condition and continue in the same position. At this point, it is also important to clarify what conservative and preservative mean. Conservation refers to efforts to make the human relationship with the environment sustainable while extracting natural resources.¹⁷ Preservation refers to demarcating uninhabited areas of land that have no visible signs of human influence.¹⁸ Therefore, in the conservation method of management, humans can sustainably extract natural resources, while in the preservation method of management, humans are prohibited from entering.

World’s perspective on Tribalism:

Indigenous peoples are inheritors and practitioners of unique cultures and ways of interacting with people and the environment. They have retained social, cultural, economic, and political characteristics distinct from the dominant societies in which they live. The ILO has been involved in tribal and indigenous peoples' issues since the 1920s. It is responsible for the Tribal and Indigenous Peoples Convention, 1989 (No. 169), which is the only international treaty open for ratification dealing exclusively with the rights of these peoples.¹⁹ The UN Permanent Forum on Internal Affairs was established in July 2000 as an advisory body to the Economic and Social Council, with a mandate to discuss internal issues related to economic and social development, culture, environment, education, health,

¹⁴ . <https://ozone.unep.org/treaties/vienna-convention>

¹⁵ . <https://www.are.admin.ch/are/en/home/media/publications/sustainable-development/Brundtland-report.html>

¹⁶ . Julie Drolet, “Disaster in Social, Cultural and Political Context” International Encyclopaedia of the Social & Behavioural Sciences (2nd ed), 2015 <https://www.sciencedirect.com/topics/social-sciences/brundtland-report>

¹⁷ . <https://www.peanc.org/whhats-difference-between-conservation-and-preservation>

¹⁸ . Ibid.

¹⁹ . <https://www.un.org/development/desa/indigenouspeoples/about-us.html>

and human rights.²⁰ On September 13, 2007, the UN General Assembly issued the Declaration on the Rights of Indigenous Peoples.²¹ The Declaration is the most comprehensive statement on the rights of indigenous peoples ever produced, with an emphasis on collective rights unprecedented in international human rights. The first World Conference on Indigenous Peoples was held on 22-23 September 2014.²² The meeting was an opportunity to share perspectives and best practices for the realization of the rights of indigenous peoples, including adherence to the objectives of the United Nations Declaration of the Rights of Indigenous people. Resolutions adopted at the 1992 United Nations Convention on Environmental Development include provisions for indigenous peoples and their communities.²³ A more comprehensive environmental program and policy statement, known as the Rio Declaration and Agenda 21, reiterates the precepts of indigenous peoples' rights and seeks to integrate them into the larger agenda of global environmental and sustainable development.²⁴

Understanding of Biodiversity and its importance

Biodiversity is biological diversity, which consists of two terms, bio and diversity. bio means life and diversity means the variety of life, so the term biodiversity refers to the variety of life. Sociobiologist Edward Wilson popularized the term biodiversity.²⁵ Biodiversity refers to the variety of living things on Earth, including plants, animals, bacteria, and fungi. There are three types of biodiversity, genetic biodiversity, species biodiversity, and ecosystem or ecological biodiversity. Biodiversity is considered important for several reasons. As certain plants are considered sacred by certain people, it becomes a cultural identity. Some types of plants are used in the preparation of medicines like vitamins, painkillers, and various types of diseases for medical purposes. Also, many plants and tubers are used as food for humans, as well as raw materials like rubber, cotton, and timber oil are essential for industries. Biodiversity conservation is currently felt to be

²⁰ . <https://www.un.org/development/desa/indigenouspeoples/unpfii-sessions-2.html>

²¹ . <https://www.un.org/development/desa/indigenouspeoples/declaration-on-the-rights-of-indigenous-peoples.html> / <https://answershark.net/2021/02/17/the-declaration-on-the-rights-of-indigenous-peoples-was-adopted-by-the-un-general-assembly-on/>

²² . <https://www.un.org/development/desa/indigenouspeoples/about-us/world-conference.html>

²³ . S. James Anaya, *Indigenous Peoples and International Law Issues*, 92 AM. SOC'Y INT'L L. PROC. 96 (1998), available at <https://scholar.law.colorado.edu/faculty-articles/1541>.

²⁴ . Ibid.

²⁵ . <https://eowilsonfoundation.org/>

essential globally as economic benefits are available through bioresources, preventing environmental degradation and creating a healthy ecosystem.

Conservation of Biodiversity

Various studies say that biodiversity loss is also one of the reasons for environmental degradation. The biological wealth of our planet is rapidly decreasing due to human activities. According to the IUCN Red list of threatened species, 27 species have disappeared in the last twenty years alone, and now 13% of all Birds, 41% of all Amphibians, 27% of all Mammal species, and 21% of all Reptiles species in the world are threatened with extinction.^{26 27} Some plants like Malabar Mahagani, Musli, and Red sandalwood are listed as endangered plants in India.²⁸ John P. Rafferty in his article “Biodiversity loss, Causes, effects, and Facts” states that biodiversity loss is generally associated with permanent ecological changes in ecosystems and that biodiversity losses caused by human disturbances are more severe and long-lasting.²⁹ Realizing that biodiversity conservation is a necessary thing, various methods are being taken to conserve it at the global level. Biodiversity conservation is done in two ways, in-situ and ex-situ. The in-situ method of conservation is called on-site conservation by creating and protecting biodiversity in its places, such as Biosphere reserves, Wildlife Sanctuaries, National parks, Hot spots, Wetlands, and Sacred Groves. Similarly, creating Zoos, Aquariums, Botanical gardens, etc., and thereby conserving biodiversity is an off-site method of conservation called Ex-situ. On-site arrangements including Biosphere Reserves and off-site arrangements including Zoos are established by the governments of respective countries and recognized by UNESCO. India has 18 biosphere reserves out of about 700 in the world. The Nilgiris Biosphere Reserve was the first biosphere in India established in the year 1986, covering the borders of the three states of Tamil Nadu, Kerala, and Karnataka.

Nilgiris Biosphere Reserve

The Nilgiris Biosphere Reserve has a total area of 5,520 sq. km in the Western Ghats with 2537.6 sq. km in Tamil Nadu, 1455.4 sq. km in Kerala, 1527.4sq.km in Karnataka, and a wide range of ecosystems and species diversity are found in the region. It is located in the Western Ghats between 76°- 77°15'E and 11°15' - 12°15'N. The Nilgiri Biosphere Reserve

²⁶ . <https://www.iucnredlist.org/>

²⁷ . <https://www.lifegate.com/extinct-species-list-decade-2010-2019#plants>

²⁸ . <https://www.floweraura.com/blog/endangered-species-of-plants-in-india>

²⁹ <https://www.britanica.com/science/biodiversity-loss#ref342678>

falls under the Malabar Rainforest biogeographic region. Mudumalai Wildlife Sanctuary, Wayanad Wildlife Sanctuary Bandipur National Park, Nagarhole National Park, Mukurthy National Park, and Silent Valley are the protected areas in this reserve.³⁰ The Nilgiris Biosphere Reserve has significant intact areas of natural vegetation ranging from dry scrub to evergreen forests and swamps, thus contributing to high biodiversity. The Nilgiris Biosphere Reserve is very rich in plant diversity.

The flora found in the Nilgiri biosphere includes 3238 species of angiosperms, 71 species of gymnosperms, and 134 species of pteridophytes. About 3,300 species of flowering plants can be found here. Of the 3,300 species, 132 belong to the Nilgiris Biosphere Reserve. The genus *Bacolepis* is confined to the Nilgiris. Some of the plants that are completely restricted to the Nilgiris Biosphere Reserve include *Adenun*, *Galacanthus*, *Paeolepis*, *Freeria*, *Jarotina*, *Vagatea*, *Pocilonuron*, etc. Of the 175 species of orchids found in the Nilgiris Biosphere Reserve, 8 belong to the Nilgiris Biosphere Reserve. The Sholas of the Nilgiris Biosphere Reserve are a treasure house of rare species of flora.³¹

The fauna of the Nilgiris Biosphere Reserve includes more than 100 mammals, 350 species of birds, 80 species of reptiles and amphibians, 300 species of butterflies, and countless invertebrates. Nilgiris Biosphere Reserve has 39 species of fish, 31 species of amphibians, and 60 species of reptiles found in the Western Ghats. Freshwater fishes such as *Danio neilgherensis*, *Hypselobarbusdubuis*, and *Puntius bovanicus* are restricted to the Nilgiris Biosphere Reserve. Nilgiri tahr, Nilgiri langur, slender loris, blackbuck, tiger, cow, Indian elephant and marten are some of the animals found here.³²

Conservation and management of Nilgiri Biosphere Reserve depend on coordination between government agencies and local people. For efficient management, the Nilgiri Biosphere Reserve has been zoned into (i) a core zone (1240 sq. km) (ii) a buffer zone (4280 sq km). The buffer zone is further divided into management zones such as forestry, tourism, and recreation zones. Being one of the hotspots of biodiversity, the Nilgiri Biosphere Reserve has a few national parks and wildlife sanctuaries within its boundaries. The main objective of these national parks and wildlife sanctuaries is to protect wildlife.

³⁰ . <https://vikaspedia.in/energy/environment/biodiversity-1/the-nilgiri-biosphere-reserve>

³¹ . Ibid.

³² . Ibid.

Some of these areas have been designated as Tiger and Project Elephant Areas by the government.³³

A wide variety of human cultural diversity can be found in the Nilgiris Biosphere Reserve. Tribes such as Thodas, Kotas, Irulas, Kurumbas, Baniyas, Adians, Edanadan Chettis, Cholanayakans, Allars, and Malayans are indigenous to the reserve. Except the Cholanayaks who live exclusively on food gathering, hunting, and fishing, all other tribes are engaged in their traditional occupation of agriculture. 75 types of Particularly Vulnerable Tribal groups have been identified in India, of which 6 types identified in Tamil Nadu are Thodar, Kothar, Irulrar, Kurumbar, and Paniyar, all of whom live in the Nilgiris.³⁴

Recognition of Traditional knowledge:

Traditional knowledge is also called Indigenous knowledge. Indigenous knowledge describes the knowledge and information followed by the tribal local community to ensure conservation and sustainable use of biodiversity. That knowledge is passed on from generation to generation through story, song, cultural value, local language, healing art, agricultural practice, etc. It is manifested by living in the environment for generations and observing the environment continuously.³⁵ There is a growing appreciation of the value of traditional knowledge now more than in the past. Traditional knowledge is valuable not only to those who depend on it in daily life but also to modern industry and agriculture. Traditional knowledge of land and species conservation and management and revitalization of biological resources is based on an intimate understanding of the daily lives and practices of indigenous peoples and their environment cultivated over thousands of years.³⁶

Article 48 (A) of the Constitution of India³⁷ imposes a constitutional duty on the state to protect and improve the environment and protect the forests and wildlife of the country. Article 51 (A) (g)³⁸ imposes a constitutional duty on the citizens of India. To preserve and enhance the natural environment including forests, lakes, rivers, and wildlife, and to be

³³ . Ibid.

³⁴ . Ganesh B, Rajakumar T, Acharya SK, Vasumathy S, Sowmya S, Kaur H. Particularly Vulnerable Tribal Groups of TamilNadu, India: A Sociocultural anthropological review. India J Public Health (serial online) 2021 <https://www.ijph.in/text.asp?2021/65/4/403/333976>

³⁵ . Biba Jasmine, Yashaswi Singh, Malvika Onial and V.B. Mathur, "Traditional Knowledge Systems in India for Biodiversity Conservation" Indian Journal of Traditional Knowledge, Vol. 15 (2), April 2016. PP. 304-312

³⁶ . Traditional-Knowledge-backgrounder-FINAL.pdf

³⁷ . <https://indiankanoon.org/doc/871328/>

³⁸ . <https://indiankanoon.org/doc/1644544/>

kind to all living beings. The UN Declaration on the Rights of Indigenous Peoples, endorsed by the UN Human Rights Council in June 2006, recognizes that respect for indigenous knowledge, cultures and traditional practices contributes to sustainable and equitable development and sound management of the environment. The theme of the 2019 session of the United Nations Permanent Forum on Indigenous Issues is the creation, transfer, and protection of traditional knowledge. The forum will be an opportunity to identify and share good practices and lessons learned to advance the rights of indigenous peoples, formulate policy and program recommendations to promote and protect the rights of indigenous peoples and ensure generation, transmission, protection, maintenance, and strengthening of traditional knowledge.³⁹ Recognizing the importance of traditional knowledge, the right of indigenous peoples to develop, maintain and protect traditional knowledge is enshrined in many international protocols and policy instruments. The UN Declaration on the Rights of Indigenous Peoples (UNDRIP) emphasizes the protection of indigenous peoples' rights to traditional knowledge under Article 31.⁴⁰ Article 8(j) of the Convention on Biological Diversity (CBD) ⁴¹ recognizes the close relationships of indigenous peoples and local communities with biological resources and the traditional knowledge Convention and the contributions they can make to sustainable biological diversity. For this purpose, the CBD has established a Task Force on the Implementation and Protection of Traditional Knowledge.

Plants used and conserved by Nilgiris Tribals

The Forest Rights Act, 2006⁴² brought by the Government of India to redress the long-standing injustice done to tribals by British-era laws, empowers tribal communities and other traditional forest dwellers and recognizes the contribution of tribal communities in the protection and conservation of wildlife, biodiversity, ecosystems, and forest resources. This Act gives the right to access biodiversity and gives the right to sell minor forest produce. The Biodiversity Act 2002,⁴³ recognizes the role of indigenous communities in conserving and protecting biodiversity, traditional knowledge, and sustainable use of biodiversity.

³⁹. Ibid.

⁴⁰ . [https://biocultural.iied.org/un-declaration-rights-indigenous-peoples#:~:text=%E2%80%9CIndigenous%20peoples%20have%20the%20right,%E2%80%A6%E2%80%9D%20\(Article%2031\).](https://biocultural.iied.org/un-declaration-rights-indigenous-peoples#:~:text=%E2%80%9CIndigenous%20peoples%20have%20the%20right,%E2%80%A6%E2%80%9D%20(Article%2031).)

⁴¹. <https://www.cbd.int/traditional/>

⁴² . <https://www.indiacode.nic.in/bitstream/123456789/8311/1/a2007-02.pdf>

⁴³ . <https://www.indiacode.nic.in/bitstream/123456789/2046/1/200318.pdf>

Tribal communities live close to forests and have managed and conserved the biodiversity of their areas since time immemorial. India is a prosperous country with large ethnic communities and Biodiversity. There are 45,000 species of ethnobotanical importance. 7500 of these species are in medicinal use for indigenous health practices. About 3900 plant species are used as food by the tribals including 145 species of roots and tubers, 521 species of leafy vegetables, 101 species of bulbs and flowers, 647 species of fruits, 525 species used for fiber, 400 species used as fodder, 300 species used in the manufacture and extraction of chemicals, which are used as naturally occurring pesticides and extraction of gum, resins, dyes, and perfumes.⁴⁴ Besides these many plants are used as timber and building material and 700 species are culturally important from the moral, religious, and social point of view.

The tribal people living in the Nilgiris depend on natural resources for their livelihood. Different ethnobotanical studies say that they use different types of plants for food and medicine. As early as the year 1990 S. Rajan and M. Sethuraman (1990) reported in their research paper⁴⁵ that 34 plants were used as food and medicine by the Kotas of Nilgiri District. Pradeeps. M. and G. Poyyamoli (2012)⁴⁶ through their field study found that the Irulas use 74 species of plants including 28 trees, 5 lianas, 17 shrubs, and 24 herbs for medicinal purposes. V. Ramachandran and C. Udayavani (2013)⁴⁷ found that out of 123 species of plants used by the Baniya and Kurumba tribes, 72 were edible plants, including 56 wild and 16 semi-wild species, 24 tree species, 22 herbs, 14 shrubs, and 11 climbers. Deepak. P and Gopal GV (2014)⁴⁸ in their research paper stated that among the Nilgiri tribes, Kurumbar use 51 species of plants for medicinal purposes, Katunayaks 40, Irulas 40, Kothas 28, Paniyas 49 and Todars 32 species. In a study conducted by S.M. Dhivya and K. Kalaichelvi, (2016)⁴⁹ it has been mentioned that the Irulas use 40 types of plants to cure

⁴⁴. Arora, Ranjit K. 1997. Ethnobotany and its role in the conservation and use of Plant Genetic Resources in India, *Ethnobotany* 9: 6-1

⁴⁵. S. Rajan and M. Sethuraman, "Plants used in folk medicine by the Kotas of Nilgiris District, Tamilnadu" *Ancient Science of life*, Vol. X No4, April 1991, Page 223-230.

⁴⁶. Pradeep. M, and G. Poyyamoli, "Ethnobotany and Utilization of plant resources in Irula Villages (Sigur Plateau, Nilgiri Biosphere Reserve, India)" *Journal of Medicinal Plants Research*, Vol. 7(6). P.P.267-276, 10 February 2013.

⁴⁷. V.S. Ramachandran and C. Udayavani, "Knowledge and uses of wild edible plants by Paniyas and Kurumbas of Western Nilgiris, TamilNadu" *Indian Journal of Natural Products and Resources*, Vol. 4(4), December 2013, PP. 412-418.

⁴⁸. Deepak P. and Gopal GV, "Nilgiris: A Medicinal Reservoir" *The Pharma Innovation Journal* 2014: 3(8):73-79.

⁴⁹. S.M.Dhivya, K.Kalaichelvi, "Ethno Medicinal Knowledge of Plants used by Irula tribes, Nellithurai beat, the Nilgiris, TamilNadu, India" *Asian Journal of Medical Sciences/ SEP-Oct 2016/Vol 7/Issue 5*.

various ailments like Ashtuma, Jaundice, TB, Leprosy, Cough, Fever, Skin disease, Hypertension, wound healing, and diabetes. Lokesh R and 5 other researchers (2017)⁵⁰ found that 6 tribes belonging to Nilgiri's Particularly Vulnerable Tribal Group (PVTGs) use 40 species of plants for medicinal use.

It is clear from various studies that the tribal people have been accustomed to protecting the plants used for their food and medicine from perishing and consuming them only as needed. Apart from that culturally and based on the belief some types of trees have been protected by Nilgiri tribal people.

Concept of Access and Benefits Sharing: Indian scenario

Biodiversity leads to sustainable development in all sectors of people's livelihoods and activities. Yet growing anthropogenic pressures lead to rapid urbanization and industrialization, which are contributing to global biodiversity loss. An important convention on biodiversity conservation was adopted at the Rio conference held in 1992. India is a party to the said United Nations Convention on Biological Diversity (CBD), the Biological Diversity Act was adopted in 2002 to achieve the objectives of the CBD in India. To effectively implement the Biodiversity Act 2002, India promulgated the Biodiversity Rules in 2004⁵¹ and framed the Guidelines for Access to Biological Resources and associated Knowledge and Benefit Sharing Regulations in 2014.⁵² These laws are aimed at ensuring the objectives of the CBD i/e (i) conservation of our biological resources (ii) sustainable use of its components and (iii) fair and equitable sharing of benefits arising from the use of biological resources. The concept of access and benefit sharing encourages indigenous peoples and conservationists to provide biological resources and traditional knowledge for commercial use and research. This concept was further reinforced in the Nagoya Protocol on the CBD to provide legal certainty, transparency, and clarity to the ABS mechanism. Commercial users of biological resources are legally bound to share a portion of their benefit with such conservators in monetary and non-monetary forms. India

⁵⁰ . Logesh R, Dhanabal SP, Duraisamy.B, Chaitanya mvnl Dhamodaran P, and Rajan S, "Medicinal plants Diversity and their Folklore uses by the Tribes of Nilgiri Hills, TamilNadu, India" International journal of Pharmacognosy and Chinese Medicine, 2017, 1(3) 000114.

⁵¹. https://www.forests.tn.gov.in/tnforest/app/webroot/img/document/legislations/01_Biological%20Diversity%20Rules%202004.pdf

⁵². [https://kbb.karnataka.gov.in/storage/pdf-files/notification%20Eng/ABS-Regulations-2014-Notification\(1\).pdf](https://kbb.karnataka.gov.in/storage/pdf-files/notification%20Eng/ABS-Regulations-2014-Notification(1).pdf)

has recognized the rights and privileges of tribal and rural communities by enacting various laws.

The tribal population in India is estimated at 104 million or 8.6% of the national population and 705 ethnic groups are officially recognized as Scheduled Tribes.⁵³ Every tribal ethnic group in India preserves some type of plant for food and medicine. The government of India established the Ministry of AYUSH in 2014 to bring alternative medicine especially tribal medicine into the healthcare sector. Also, developing education, research, and propagation of traditional medicine is the main task of the Ayush Ministry. Ayurveda, Yoga, and naturopathy, Unani, Siddha, and Homeopathy are alternative health systems covered by the Ministry.⁵⁴

Biodiversity Act, 2002 provides for the constitution of the Biodiversity Management Committee under Section 41 of the Act. So far 276895 Biodiversity Management Committees (BMC) have been established in 28 States and 7 Union territories.⁵⁵ The functions of BMC include the preparation, maintenance, and verification of the People Biodiversity Register (PBR) in consultation with local people. This PBR helps in promoting sustainable resource management and ensures equitable distribution of monetary benefits to local communities for the use of their living resources. The Biodiversity Act 2002 governs ABS through a three-tier system comprising (i) National Biodiversity Authority (NBA) (ii) State Biodiversity Board (SBB) and (iii) Biodiversity Management Committee (BMC).

The Ministry of AYUSH in association with the Council of Scientific and Industrial Research (CISR) and the Ministry of Science and Technology set up Traditional Knowledge Digital Library (TKDL). TKDL database is a value-added digital database created by the Government of India to (i) protect TK (ii) prevent misuse of TK (iii) generate active research using modern science.

Discussion & Analysis

This paper presents the tribal knowledge about biodiversity conservation and biodiversity resource from the tribal perspective and highlights the steps taken by the government to make the benefits available to the tribal people. Tamil Nadu Biodiversity

⁵³. <https://www.iwgia.org/en/india.html>

⁵⁴. <http://nbaindia.org/content/20/35/1/bmc.html>

⁵⁵. <http://nbaindia.org/content/20/35/1/bmc.html>

Board (TNBB) has been established and is doing its work. The Tamil Nadu Biological Diversity Rules, 2017 has been made on 9th November 2017. Tamil Nadu Biodiversity Board (TNBB) completed 385 Blocks in Tamil Nadu State, block level Biodiversity Management Committee (BMC) in May 2018. Even though the Biodiversity Act was enacted long back, and the central government rules the Biological Diversity Rules framed in the year 2004 some of the states still do not make rules to implement the Act, which will cause a huge setback in the tribal people getting benefits. Although State Biodiversity Board (SBB) has been set up in many states, Biodiversity Management Committees functioning at the grassroots level have been set up by 2,76,895 BMCs across India, but many more have not been set up. People's Biodiversity Registers were prepared by consulting the tribal people, and only 1,96,015 out of 2,75,286 PBRs.⁵⁶

The information collected by various researchers during the field study of different tribes in different areas in Nilgiri tribes, it is known that different tribes use the same type of medicinal plants, in such situations no clear explanation is given as to who should be given benefit. Is an agreement with one village enough? when several others also access the same resources. In the absence of any clarity as to the answer to this question, there are great difficulties in obtaining benefits. There are still fundamental problems in establishing ownership of biodiversity resources as traditional knowledge is recorded according to self-evident information. Benefit sharing is still resource-focused and lacks clarity on how to regulate benefit sharing in people's access to knowledge.

Conclusion

In general, tribal people are backward in terms of education and economic comfort. International agreements to protect and recognize the traditional knowledge of tribal people at the international level and domestic laws have been established to implement it locally. Accordingly, the Convention on Biodiversity was established in 1992, and to implement it, the Indian Biodiversity Act 2002 was the first law in the world, rules were introduced in 2004, and regulations were introduced in 2014. However, it takes a long time to establish the structures as per the provisions of the Act, thus reducing the strength of the Act. It will be useful if the necessary infrastructure is established so that the essence of the law does not diminish quickly, taking into consideration that the benefits of the law will be available to the right people, necessary steps will be taken to raise the livelihood of the tribal people

⁵⁶ <https://www.nbaindia.org/>

by establishing the necessary BMCs in all the states. There is no doubt that the implementation of laws will require clarifications, but when those problems are identified through research and mistakes are rectified, the benefits will reach the people who need them.

CHALLENGES OF REGULATORY FRAMEWORK ON INTERNATIONAL TRADE IN ENDANGERED SPECIES

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Abstract

Illegal trade of endangered species is a transnational crime that largely contributes to the over-exploitation of certain species. The capitalist view of wildlife as mere articles of profit has encouraged trade in endangered species, with little regard to environmental consequences. To address this and prevent further escalation of the gravity of the issue, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) was drafted in 1963. CITES is an international framework that seeks to regulate and provide a sustainable system for international trade in more than 36,000 species of flora and fauna. One of its main objectives is to control the import, export and introduction of species, within this convention, to other countries, through the administration of a licensing system. This paper will delve into the history of the formulation and implementation of CITES. It will further discuss certain Articles of the convention. These Articles will be critically analysed in terms of application and effectiveness. This paper aims to establish the various challenges that are faced in implementation of what the convention seeks to rectify. The paper will further establish how the provisions of the convention are incapable of dealing with contemporary issues and how the document is prone to ambiguous interpretation owing to ill-defined phrases.. Some of the main problems are the high costs involved, rigid mechanism present, and obsolete in certain areas. The paper will outline possible solutions to strengthen the existing legal framework in a way that is more relevant to the present times, so as to reach the goals that the CITES set out to achieve.

Keywords: CITES; endangered species; flora; fauna; illegal trade; regulatory framework; wildlife; signatory States; binding; National Legislation

Introduction

Evolution is a process that is inevitable. With evolution, the famous theory of ‘Survival of the Fittest’ as propounded by Darwin has proven to be accurate time and again. Over the decades, humans have risen to be the top predator in the food chain due to ever improving

technology and development. The flora and fauna that prove useful to humans, in any form, are at a risk of endangerment and eventually extinction. This brought upon the need for a uniform international regulation that dealt with all the problems associated with endangered species of flora and fauna. Therefore, this led to the 'Convention on International Trade in Endangered Species of Wild Fauna and Flora' (CITES) being formed.

History of the formulation and implementation of cites

Trade in wildlife became a major exploitative mechanism due to international trade being unregulated and uncontrolled up until 1963¹. Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is one of the oldest multilateral environmental agreements². It was due to the unrestricted levels of trade that provide impetus to the General Assembly of the International Union for Conservation of Nature and Natural Resources (IUCN) to initiate the making of an international convention to regulate export, transit, and import of threatened wildlife species³. 21 countries convened to sign CITES and the number increased to 152 states as of 2001⁴.

The regulation of the trade in CITES is not restricted to whole animals and plants but also includes readily recognizable parts or derivatives. Member states are obligated to adopt CITES within their territory through domestic legislation. This is the key factor that gives CITES the 'teeth' which makes CITES one of the few conventions that is capable of enforcing its provisions through both policy guidelines and directions. This gives it a bit more binding power compared to other conventions which make it a mixture of both soft and hard law⁵.

CITES' basic objective is to protect the wildlife species and extend regulations where application is necessary. It does this by ensuring that trade in 'species threatened with extinction' (Enumerated in Appendix I species)⁶ and is permitted only in 'exceptional circumstances'. It provides enough flexibility to the member states to discuss and decide

¹ Philip, H.R.H.P. and Lyster, S. (no date) *International Wildlife Law*.

² Rosalind Reeves, "CITES regulatory framework", Center for International Forestry Research (2015).

³ Id.

⁴ Michael J. Hickey, Note, Acceptance of Sustainable Use Within the CITES Community, 23 VT. L. REV. 861 (1999).

⁵ AYNE, CYMIE. "INTRODUCTORY NOTE TO CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES OF WILD FAUNA AND FLORA (CITES) COMPLIANCE PROCEDURES." *International Legal Materials*, vol. 46, no. 6, American Society of International Law, 2007, pp. 1174–77, <http://www.jstor.org/stable/20695775>.

⁶ Art. II (1), CITES.

on the most desirable to achieve the goal of wildlife protection⁷. On an analysis of the provisions regarding the mechanisms for entering species into categories of endangerment through a voting mechanism, it is clear that there is sufficient flexibility accorded in the Convention⁸.

Based on the preamble of the Convention, the main observation that can be made is that there has to be a form of recognition present about the flora and fauna and that it must be protected for generations to come. Another important point, which acts as the foundation for CITES, states that ‘international cooperation’ is required as well as ‘States and People having the responsibility to protect the environment’. This is clearly heavily anthropocentric in nature and there is no form of ecocentrism or the promotion of Earth Jurisprudence, however the same shall not be discussed in this paper.

The significance of worldwide participation is clear, as natural life abuse is dependent on business sectors somewhere else. Poaching and carrying of flora and fauna is majority of the time determined by demand and supply in the international market. A major problem that is present is the fact that there is no actual benefit for any country to stop illegal trade and business of flora and fauna in its own nation if no other nation is willing to follow the same. Therefore, the need for international cooperation is critical, with respect to control and regulation by both customer and producer nations. The all-out anticipation of poaching and sneaking is inconceivable and measures are ill-fated to bomb except if customer nations supplement the endeavours of producer nations by likewise authorizing severe controls⁹.

Important articles under the convention

Article I¹⁰ of the Convention provides the definitions of terms such as ‘species’, ‘specimens’, ‘trade’, ‘re- export’, among others. Article II¹¹ provides the distinction to be made between Appendixes I, II and III, and lays out the different species that are to be present in each Appendix. The question as to why this is important is because of the simple

⁷ Saskia Young, Contemporary Issues of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and the Debate over Sustainable Use, 14 COLO. J. INT'L ENVTL. L. & POL'y 167 (2003).

⁸ Supra 5

⁹ Willem Wijnstekers, “The Evolution of CITES”, International Council for Game and Wildlife Conservation, 2011.

¹⁰ Convention on International Trade in Endangered Species of Wild Flora and Fauna, Article I, March 3, 1973, 27 U.S.T. 1087; 993 U.N.T.S. 243

¹¹ *Id.* At Article II

fact that, when there is a differentiation and fragmentation made, it will allow for easier tracking, resource management and most importantly care taking and non-overlapping. This ensures that species in a particular category receive the appropriate treatment required and there is no room for ambiguity, thereby preventing States from renouncing any form of liability.

Appendix I contains the list of all the species that are under a threat of extinction (or endangered species) and trade in these species affects their survival. It provides that trade in these species must be strictly regulated and authorisation should be provided only in exceptional situations. Appendix II consists of species that currently do not fall in the 'endangered species' category but if there is no strict regulation and measures taken then it is highly likely that they will fall into that category. It also includes the regulation of species that could cause another species to fall into the endangered category, i.e. predatory in nature. A common theme to be noted from the first two appendixes is that the trade in the species should not be pernicious to their survival in any way. Lastly, Appendix III¹² includes species that the party or contracting State identifies within its jurisdiction as being subject to regulation, necessitating cooperation of other States in the regulation of trade to prevent exploitation of that particular species. Article II (4) says that trade in specimens of any species mentioned in the three Appendixes shall only be according to the provisions of the Convention.

Article III¹³ elaborates all the conditions and requirements for trade in species contained in Appendix I; the endangered species. Articles III (2)(a) to (d) provide for all the conditions for granting the export permit for exporting species under Appendix I. Articles III (3)(a) to (c) provide for all the conditions for grant of import permits for importing species under Appendix I. The other provisions in Article III mainly deal with re-export of species in Appendix I and introduction from the sea.

Articles IV¹⁴ and V¹⁵ lay down the procedure to be followed and the conditions for trade in species under Appendix II and III respectively. All the three Articles enumerate the conditions for trade, there is common usage of the terms such as "Scientific Authority" and

¹² *Id.* At Article III

¹³ *Id.* At Article III

¹⁴ *Id.* At Article V

¹⁵ *Id.* At Article IX

“Management Authority”. These terms are defined under Article I(f)¹⁶ and (g), they are further elaborated upon under Article IX¹⁷. Scientific Authority is one or more national scientific authorities designated by the contracting State. A Management Authority is a national management authority that is competent to issue and grant permits or certificates on behalf of the State designating it. The Management Authority is authorized to communicate with other parties and the Secretary. The importance of Article III, IV, and V is that there is a form of procedure which is given for countries to follow. Therefore while there is flexibility provided to States’, for the purpose of Sovereignty, there is a standard that must be followed to ensure that there is no abuse, exploitation or loophole in the system.

Article X¹⁸ talks about trade with States that are not a party to the Convention. Documents issued by competent authorities of non-party States which are relatively in line with the regulations that are present in the Convention may be acceptable. This plays a significant role in ensuring that there is some form of similarity that is present and agreements entered into are not on a completely different tangent. Article XII¹⁹ is another important provision which deals with the functions of the Secretariat. A Secretariat is appointed or provided by the Executive Director of the United Nations Environment Programme and he may be assisted by various non-governmental, national or international agencies and bodies in protecting and conserving wild flora and fauna. Article XII(2)(a) to (i) mention the extensive functions of the Secretariat; from arranging meetings between parties to preparing annual reports on the work undertaken, the implementation of the Convention and making recommendations for the implementation of the Convention.

Article VIII²⁰ deals with the duties and measures party States should undertake to further the goals of the Convention and prevent illegal trade in species. Some of these measures include penalizing the trade in or possession of species, confiscation of such species (live or otherwise), returning them back to the country of export, reimbursement, handling of such confiscated live species and rehabilitation and protection in rescue centers designated by the Management Authority, among others. The significance of this is that it provides some form of action to be taken, and therefore there is a form of check and control present

¹⁶ *Id.* At Article X

¹⁷ *Id.* At Article XI

¹⁸ *Id.* At Article VIII

¹⁹ *Id.* At Article VI

²⁰ *Id.* At Article VI

in case of any default. Article VI²¹ provides for the general rules related to permits and certificates to be issued under other Articles and provisions of the Convention. Article VII²² contains special provisions and different situations wherein there are exceptions provided with relation to trade of certain species.

Article XV²³ contains detailed provisions for the procedure to be followed to make amendments to Appendixes I and II during meetings of the Conference of Parties. Article XVI²⁴ deals with amendments to Appendix III. The benefit of these two articles is that it provides modifications which is essential if we need the Convention to have adaptability and to change with the time and not become obsolete. Article XVIII²⁵ provides for resolution of disputes between parties through negotiation, on the failure of which, the parties can mutually consent to arbitration proceedings at the Permanent Court of Arbitration at The Hague.

Critical analysis of cites

CITES is one of the most successful International Conventions in terms of the number of signatory states. There are 183 countries that recognised the need for the safeguard and conservation of endangered and exotic species of flora and fauna that became signatories to the convention. CITES is a binding document on its signatory countries, insofar as mandating them to enact domestic legislations that are in compliance with the framework provided by it on a national level. Although CITES was successful in gaining many signatory states that promised to comply with the framework, it was unsuccessful on the implementation front. There are multiple contribution factors to the failure in implementation of CITES, few of which have been discussed in the following paragraphs.

A. General Non-binding Nature of International Laws:

The level of enforceability of the laws or provisions established in an International convention or treaty is not directly enforceable on any individual signatory Party. An international law attains the status of enforceability only upon ratification by the signatory

²¹ Convention on International Trade in Endangered Species of Wild Flora and Fauna, Article VII, March 3, 1973, 27 U.S.T. 1087; 993 U.N.T.S. 243

²² *Id.* At Article XV

²³ *Id.* At Article XVI

²⁴ *Id.* At Article XVII

²⁵ Knut Traisbach, *International Law*, E-International Relations (November, 15, 2021, 15:15) <https://www.e-ir.info/2017/01/01/international-law/>

state²⁶. Therefore, unless the signatory state so wishes, a convention can be said to have no binding value..

B. Insufficient Enforcement in Signatory States:

This can be read in conjunction with Point A. The lack of success of CITES can be mainly attributed to the insufficient enforcement by signatory states, while developing domestic legislations in compliance with the framework established by the Convention. The Parties to this Convention are bound to enact domestic legislations that penalize trade in, or possession of, specimens that are in violation of the provisions of CITES. They are also bound to confiscate and/or return such specimens to the States from which they were illegally exported. From the time of its inception, CITES did not mandate a specific period of time within which the signatory states had to enact domestic legislations that enforced the provisions of CITES in their respective territories. This led to a continued delay on the part of the States when it came to the implementation of important laws for the prevention of illegal trade on endangered and exotic flora and fauna.

C. The National Legislation Project²⁷:

As a result of the unreasonable delay in implementation of the provisions of CITES in signatory countries through their respective domestic legislations, the National Legislation Project was initiated in 1992²⁸. According to this, the Secretariat was directed to identify based on 4 main requirements, the level of compliance by signatory states. Based on this, the Secretariat had to further classify signatory parties into 3 categories:

- (i) Signatories that enacted domestic legislations that sufficiently addressed the four main requirements enlisted under the National Legislation Project,

²⁶ National Legislation Project, Convention on International Trade in Endangered Species of Wild Flora and Fauna, 27 U.S.T. 1087; 993 U.N.T.S. 243 https://cites.org/eng/legislation/National_Legislation_Project (November, 15, 2021, 15:30)

²⁷ National Legislation Project, Convention on International Trade in Endangered Species of Wild Flora and Fauna, 27 U.S.T. 1087; 993 U.N.T.S. 243 https://cites.org/eng/legislation/National_Legislation_Project (November, 15, 2021, 15:30)

²⁸ Rosalind Reeves, *supra* note 2, at 12 *Also see:* <https://www.encyclopedia.com/environment/energy-government-and-defense-magazines/cites-convention-international-trade-endangered-species-wild-fauna-and-flora>

- (ii) Signatories that enacted domestic legislations that sufficiently addressed one to three of the four main requirements enlisted under the National Legislation Project;
- (iii) Signatories that enacted no domestic legislations that sufficiently address any of the four main requirements enlisted under the National Legislation Project.

The four main requirements that are enlisted under the National Legislation Project, as mentioned above, are:

- (i) There must be at least one designated Management Authority and one Scientific Authority as provided under the text of the Convention;
- (ii) The Signatory States must prohibit trade in Specimens that amount to a violation under the provisions of the Convention;
- (iii) The Signatory States must penalise such trade, as explained under the (ii) requirement; and
- (iv) The Signatory States must establish a procedure to confiscate the Specimen that was in illegal possession or was illegally traded.

If all of these requirements are met, the Secretariat has to categorise the State under Category 1. If any of the 4 requirements are met, then the Secretariat has to categorise the State under Category 2. And if none of the above 4 requirements are met, then the Secretariat must categorise the Signatory State under Category 3. Based on such categorisation, the standing committee established under the Convention can identify Parties as priority, and the effort to uplift the conditions in such a priority State shall be made diligently.

Even with such efforts being made, there are still 28 Signatory States that are under category 3, 40 States under Category 2 and 6 States that are categorised as Priority by the Standing Committee. This is about 40% of the total number of Signatory Countries that have failed to meet the 4 basic requirements that facilitate enforcement of CITES in their countries. After over half a century of this convention coming into force, the present scenario is not a picture of success.

D. Complex and Controversial Species and Specimens to Monitor:

One of the major drawbacks of having a diverse landscape around the globe is the various different kinds of geographical, biological and ecological bio-diversity. Each signatory state has a certain kind of ecosystem and biodiversity²⁹. CITES in a nutshell, provided flexible provisions keeping in mind all such provisions, now, the signatory states took advantage of this flexibility provided under the convention to list the endangered species and specimens up to their whims and fancies along with deciding on which illegal practices are allowed under the law of the state and which aren't. The tribes who had made the Forests and Jungles their habitat, establishing a sustainable system of living in cognizance of the natural history, was shattered by corrupt political practices and individual interest taking over collective good.

E. Low penalties for violation:

One of the main requirements for a Signatory State to be considered compliant under CITES is that they need to have a system the punished violation of the other conditions laid down by the Convention. Having said that, CITES fails to establish even a vague standard of punishment to be followed by Signatories, let alone a specific or comprehensive blueprint. Therefore, each Signatory State assigns only such a punishment as it sees fit. This clearly makes room for lack of fear of sanction on one hand and the overutilization of available power on the other. It provides an unnecessary amount of discretion to the Signatories, making the process more haphazard and which ultimately defeats the purpose of the Convention.

F. Use of Reservations:

In the context of CITES, the concept of reservation can be understood as an exemption from the provisions of CITES, to some extent. Upon ratification, acceptance, approval or accession, a signatory can request reservation with respect to any species listed under Appendices I, II and III or any parts or derivative thereof, related to a species specified under Appendix III. This implies that the trade of such species to and from the State that took reservation of the said species, is unrestricted by CITES. They are allowed to do so, provided that they surrender all the rights and protections they received under CITES, insofar as the species that was reserved. This concept is dealt with under

²⁹ Status of Legislative Progress for Implementing CITES, Convention on International Trade in Endangered Species of Wild Flora and Fauna, 27 U.S.T. 1087; 993 U.N.T.S. 243 <https://cites.org/eng/legislation/parties> (November, 15, 2021, 15:34)

Articles 15, 16 and 23 of the CITES. The problem with such a provision is that the Signatory Parties can partake in unrestricted trade with respect to the reserved species or exotic animal product with other non-signatory countries³⁰. This can have but one result: the continued depletion of an already endangered or endangering species. This provision holds back the progress made by CITES, even though it is completely avoidable.

G. Persistence of global Illegal trade in Exotic or Endangered species or Animal Products:

Wildlife protection under CITES is far from perfect, since its inception in 1963, the attendees realized that unregulated trade directly threatened certain species, yet the world had no way to control that. CITES now includes 183 governments and its listings has grown to some 35,000 species. The signatory states register about a million transactions per year, ranging from a single specimen to hundreds or thousands in legal trade³¹.

To ensure that these trades are sustainable, the convention categorizes Species under appendixes, decisions to uplist or downlist species or remove an existing listing are made at the CITES Conference of Parties. Proposals such as listing require a 2/3rd majority vote to pass and are supposed to have scientific data backing the proposal³². This process has too much of bureaucracy as for many species, experts lack even the most basic data including the population ratio, which makes it absolutely impossible to evidence what levels of trade is actually sustainable.

Legally binding rules are broken with no regard to the objectives of the convention, the rules broken include those that govern the harvesting quotas and capture methods and the rules that dictate who can sell what and where. The rules governing and regulating transport and stipulate licensing are gone around with or enforcement authorities are bought off in order to turn the other way in such matters of violations.

³⁰ Velázquez Gomar, J.O. and Stringer, L.C. (2011), J. O. Velázquez Gomar and L. C. Stringer. *Env. Pol. Gov.*, 21: 240-258. <https://doi.org/10.1002/eet.577>

³¹ Wijnstekers, W. (2018): *The Evolution of CITES* - 11th edition. International Council for Game and Wildlife Conservation

³² Pervaze A. Sheikh, M. Lynne Corn, *The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)*, Congressional Research Service, 1, 15-16 (2016) (Also see <https://core.ac.uk/download/pdf/228605061.pdf>)

CITES' power lies in the fact that it is a binding international law, even though the non-compliance is rampant. For starters, countries regularly fail to turn in data on the number of seizures or trades they undertake per year. For example, China had reported importing 130 ivory "carvings," 40 elephant feet, 99 pounds of tusks, and zero trophies from Zimbabwe, all under the supposed label of legal "personal" items. Zimbabwe's records of exports to China over the same period, however, told a completely different story: 2,512 ivory carvings, eight elephant feet, four trophies, and 41 tusks. When trade data are even entered into the database at all, such glaring inconsistencies are often the norm.

Thus, there is a requirement for an organization such as the SEBI in India that looks into the financial transactions of the share market and regulates it to be established on a Global scale with a similar role and structure to regulate and hold people accountable for their actions and mishaps done on the part of the governments who turn the blind eye towards situations like the legal-yet- not-so-legal trade in exotic, endangered species of flora and fauna.³³

Conclusion

After the thorough analysis and discussion, it is the opinion of the authors that CITES was a very important law and its presence made a considerable impact when it comes to curbing illegal international trade in specimens of endangered and exotic species of flora and fauna. However, the latest amendment to the CITES was in 1983³⁴. And in over 3 decades since then, a lot of technological development has taken place and illegal trade in prohibited specimens is becoming less difficult with every passing year. The CITES is not up to date when it comes to tackling the new and emerging way of facilitating illegal trade with rapid growing technological advancements. The core intention behind the law is honourable and well-thought through, but due to lack of effective implementation, the goals laid down by it are far from achieved. Though the paper does not deal directly with suggestions for the improvement of CITES and its implementations, some of the additional readings mentioned under the Literature review provide a perspective of the same.

³³ Daniel W. S. Challender & Douglas C. MacMillan (2019) Investigating the Influence of Non-state Actors on Amendments to the CITES Appendices, *Journal of International Wildlife Law & Policy*, 22:2, 90-114, DOI: 10.1080/13880292.2019.1638549

³⁴ Rachel Nuwer, *Poached: Inside the Dark World of Wildlife Trafficking*, (DA CAPO PRESS) ISBN-13: 9780306825507, 2018.

FRATERNIZING THE ASPECTS OF ENVIRONMENT AND LAW OF SEA- AN INTERNATIONAL REGIME

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Abstract

A customary standard is a pre-requisite in any field of international law similarly the law of sea has also been established by consonant, continuous and recurrent practice by the comity of nations. Under the auspices of UNCLOS III, 1982 which resolved the seabed mining issue, the situation of technological advancement, exploration and exploitation and other developmental regimes were gradually growing. The International Sea-Bed Authority was established to govern the Area which was beyond the national jurisdiction keeping in mind that the resources are common heritage of mankind. Several treaties on different topics contribute to the development of an integrated legal regime, such is the regime of seas under the Constitution of the Oceans. Ocean fertilization to combat climate change, ocean governance, exploration in order to find new pharmaceutical products and mining are few areas which challenges the regime of UNCLOS III. Environment remains to be vulnerable, instances of rise in sea-level, melting of polar ice-caps causing open water across Arctic, re-distribution of the sea stocks due to habitat change, coastal erosion, ocean acidification, changes in sea-surface temperatures are major challenges which the world community has to face in the contemporary times. Marine environment has been a concern since 1994 Agreement which provides for procedures and mechanism to ensure the protection of marine environment along with assessment of the probable environmental impacts from the exploration and exploitation activities. The evolutionary and dynamic nature of the activities in sea-bed area have high impact of creating disturbances in the marine life-cycle. The principle of conservation within the international legal framework that governs the domains of exploration and exploitation in the continental shelves is also creating an increasing insufficient twin goal of environment protection and sustainability and its ultimate focus on conservation in conjunction with economic trends on the metal-oriented economy, the concepts of 'development' and 'sustainable human development are arching issues.

Keywords: International soft law, UNCLOS, norms, marine pollution, biodiversity

Introduction

Historically, the seas were just a way for merchant and transit routes, with the gradual development and industrialization, the oceans became subject of national jurisdictions. The law of sea regime dwells in various aspects governing the subject in creating different zones, territorial waters, contiguous zones, exclusive economic zones and High seas. High seas are those areas which are beyond national jurisdictions and in this regard the Area is a common heritage of mankind. New technological advancements paved a corporate way of extracting resources from the bottom of the sea which is abundant in natural resources. The sedimentary rocks contain minerals which are main attractions for metal-oriented activities. UNCLOS III, 1982 is considered as a the constitution of the oceans but this constitution also has some gaps, these gaps are complimented by various other international instruments and Treaties in order to reflect on the principles which are of priority in understanding the law of sea regime as a whole. UNCLOS III led to the establishment of International Seabed Authority, Commission on the Limits of the Continental Shelf and the International Tribunal for the Law of Sea. Numerous roles were conferred on the existing institutions for instance International Maritime Organization, Food and Agriculture Organization; new obligations and dynamic parameters were undertaken. International law and environment law are constantly emerging with various new challenges with the change in times and conditions, moreover such challenges are towards traditional attitudes in terms of substantive legal obligations and the methods of law-making which have been characterized and settled as per international norms. Likewise the concept of Sustainable development which was proposed in the Brundtland Report of 1987 is of importance when it comes to law of sea in regards with exploitation and regulation of resources ,the laws regulating the environment and sea merge again since they integrate to obtain economic developments. Modalities for implementing this concept has developed legal significance in their own right, such as the use of the precautionary principle, or approach, the ecosystem approach and inter-generational equity¹.

The current state of law is cumulatively looking forward for managing environmental impact, oceans occupy unprecedented spaces and the regulation is dynamic in conjecture with multiple perspectives in order to come to an understanding. Uncalled and unanticipated political circumstances are also massive hurdles in reaching to effective as

¹ E G D Freestone and E Hey, *The Precautionary Principle and International Law: The Challenges of Implementation*, Kluwer Law International, The Hague (1996).

well as affective conclusions. Law of the sea has to be dynamic and calculative in order to responsive to such new challenges so that it remains relevant and flexible while managing the ocean spaces.

International law is of an evolutionary nature; consequently, the treaties and principles upon which it is based are based on interpretation techniques; these techniques are of utmost importance when dealing with conflicting situations; and when it comes to settled norms, conflicts between states are avoided to the greatest extent possible so that they do not lapse due to premature obsolescence or additional amendments and modifications. Article 31(3)c of the Vienna Convention on the Law of Treaties provides for "any relevant standards of international law applicable to the relations between the parties," which is also a general legal principle, as evidenced by *Golder v. United Kingdom*, 1975. The International Court of Justice in the case of *Namibia Advisory Opinion* based its approach on the fact that the terminology and concepts in dispute "were by definition evolving," and not on a larger conception applicable to all treaties. In the *Aegean Sea Continental Shelf Case*, the World Court reaffirmed that treaties must be "interpreted and used within the framework of the complete legal system in effect at the time of interpretation" (1978). The Shrimp Turtle decision of the WTO Appellate Body referred to the Rio Declaration on Environment and Development, 1992, the Convention on Conservation of Migratory Species, 1979, the CITES Convention of 1973, the Law of the Sea Convention, 1982, and the Convention on Biological Diversity, 1992, all of which created the current definition of "exhaustible natural resources."

In the recent times, international law is more about accommodating and avoiding conflicts between existing regimes so that they yield amicable and harmonious results. New Agreements, such as the 1993 FAO Compliance Agreement, the 1994 Agreement to Implement Part XI of the law of the sea Convention and the 1995 United Nations Fish Stocks Agreement reflect the changing priorities of the States in the wake of the seminal 1992 UN Conference on Environment and Development in Rio De Janerio. They have a major impact on the LOSC regime².

UNCLOS as soft law

² Richard Barnes, David Freestone and David M Ong, *The Law of The Sea: Progress and Prospects*, 3 Oxford University Press.

Conventionally the UNCLOS was a soft law based on unilateral declarations, bilateral agreements and state practices but overtime, it has become a part of hard law, in terms of practices and its establishment of various institutions that co-ordinate and cooperate in ocean related activities.

- Agenda 21 of 1992 with specific emphasis on chapter 17 is towards the protection of the waters of the oceans.
- FAO Code of Conduct for Responsible Fisheries, 1995
- FAO International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing, 2001.
- IMO Code of Conduct Concerning the repression of Piracy and Armed Robbery against Ships in western Indian Ocean and the Gulf of Aden, 2009.

Soft law attracts because of its capacity that determines on consequentially quicker basis without the rigid formalities that are associated with treaty negotiations and formal procedures, soft law has a distinct approach towards facing the challenges of contemporary issues that require rapid actions and consideration. Resolutions of the United Nations General Assembly are manifestly evident on the same inferences, for instance that of 1969³ and 1970⁴. The influence of UNGA Resolution of 1991⁵ on Drift-Net Fishing was assumed as non-binding but it is the same base on which the foundation was formulated upon a moratorium on such practices.

The International Seabed Authority (ISA) under (UNCLOS), ISA is tasked with organising, regulating, and controlling all mineral-related operations in "the Area" for the benefit of humanity as a whole. It is obligated to ensure the proper preservation of the maritime environment from negative impacts that may result from activities involving the deep seabed. ISA is also solely responsible for promoting and encouraging maritime scientific research in the Area and coordinating the dissemination of its findings. Typically, parties to a convention or accord agree on a certain interpretation method or technique; similarly, parties to the Law of the Sea Convention practise and agree on consensus. LOSC is not an exception to the pattern of soft law conventions promoting the implementation of treaties; this is also true of LOSC. The FAO Code of Conduct on Responsible Fishing, 1995, and the FAO Plan of Action on Illegal, Unreported, and Unregulated Fishing, 2001,

³ UNGA Resolution 2574 D (XXIV), *Basic Documents* No 16.

⁴ UNGA Resolution 2749 (XXV), *Basic Documents* No 17.

⁵ UNGA Resolution 46/215 (1991), *Basic Documents* No 47.

are famous examples of this pattern being implemented inside the realms of productive regimes operating in parallel with LOSC. Even the International Court of Justice has voluntarily considered sustainable development as a "interstitial norm" drawn from the Rio Declaration. It is reasonable to establish that the general rules of soft law governing the interpretation and application of treaties are manifest and effective.

Soft law general principles while interpreting the LOSC are highly demonstrated and adopted by consensus in 1992 Rio Declaration under Principle 15 which is infamously known as the precautionary principles. In the Southern Blue-fin Tuna case, the fisheries conservations under LOSC had a modified approach as per the precautionary principle. Similarly Article 1 which defines Pollution, the obligation to carry an environment impact assessment under the provision of Article 206, there is a general obligation as per which the measures are to be taken in order to reduce, prevent and control the pollution under Article 194. The States are under an obligation to protect and preserve the marine environment under Article 235, these mentioned Article undertake a more liberal approach to proof of environment risk as is envisaged under the auspices of precautionary principles. In the case of 1995 Fish Stock Agreement, under Article 6, it clearly suggests that if State Parties intend to prefer an inclined LOSC emphasized approach regarding the precautionary principle; or perhaps in regards with the conservation and preservation of the biological diversity, the parties may do so. In such a scenario the interpretation is agreed by consensus. The Report of the ILC(2000) concluded that precautionary principle is already incorporated in the provisions of prevention and prior authorization including environment impact assessment, and that 'it could not be divorced'⁶. It has been observed 'The point which stands out is that some applications of the principle, which is based on the concept of foreseeable risk to other States, are encompassed within existing concepts of State Responsibility'⁷.

With the technological advancement and growth of economies on the lines of development, serious concerns are associated towards sustainable development, biological diversity, international watercourses, natural heritage, cultural property in the depths of the oceans and environment damages. The examples above mentioned are to reflect in the dimension that soft law need not be imbedded in the treaties and conventions and converted into 'rule'

⁶ Rao, Report of the ILC(2000) GAOR A/55/10, para 716.

⁷ 5th Edn., BROWNIE, PRINCIPLES OF PUBLIC INTERNATIONAL LAW 285-286 (Oxford University Press, Oxford 1998).

of international law, therefore interpreting the soft laws is a better alternative in effecting the changes rather than procedurally bringing an amendment or additional modification in already established and settled regimes, specifically; the Constitution of the Oceans.

Jurisprudence in regional and global agreements in implementing LOSC

The International Law Commission undertook codification during 1950s and LOSC offered a substantial approach towards a comprehensive and uniform global order, in doing so sustained an articulate regime. Regional cooperation in the LOSC is provided for enclosed and semi-enclosed seas under Article 122 and Article 123. The provisions of 1982 LOSC and 1995 UNFSA were pondered and implemented accordingly in the fisheries management case. Article 237 entails preservation related obligations which are already under existing agreements specifically on marine environment and simultaneously it needs them to be 'carried out in a manner which is consistent with the general principles and objectives of Law of Sea Conventions.

Regionalism might lead to fragmentation of a regime which is frequently associated with the immanent risk in any established institution by law which is based on consensus amongst States parties but interestingly dealing with the case of LOSC, it carries a significant source for further development in its universal medium with a parallel risk all together.

Even before coming into force, the general principles derived from constant State practices in form of regional agreement is evident on how Part XII rapidly assumed its structure as a part of codification process within the auspices of customary law on protection of marine environment⁸. LOSC has been implemented via various other agreements like UNEP regional sea agreement and FAO regional fisheries agreements.

Observing from the Rio Agenda 21 and the integrated ecosystem management along with Johannesburg Declaration, also to mention, the Plan of Implementation, it can be the ambition for adoption of new treaties under the regional sea programs of the North East Atlantic, Baltic, Mediterranean, and Caribbean. The significant agreements in this regard are-

- OSPAR Agreement, 1992

⁸ P W BIRNIE and A BOYLE, INTERNATIONAL LAW AND ENVIRONMENT 349 (Oxford University Press, Oxford 2002).

- The Helsinki Agreement, 1992
- Barcelona Convention (1996 Protocol)
- The Kingston Protocol of 1999

From pollution prevention, the paradigm has shifted to a sophisticated protection of the marine biodiversity resources and life. Judge Yankov remarked ‘It is hard to conceive of the development of the modern law of the sea and the emerging international law of the environment in ocean-related matters outside the close association and interplay between UNCLOS and Agenda 21’⁹. Several new instances have been entailed under Agenda 21 which are not found in the LOSC but they modernize the current practice and implementation mechanism-

-It is apparent that an integrated precautionary approach should be taken for protecting the marine and coastal environment. The State Parties must engage themselves while initiating account of scientific uncertainty while regulating and administering the risks on environment.

- Concentrating over marine degradation and taking measures for marine ecosystem must not be limited within just controlling the source of pollution.

-Protecting the Exclusive Economic Zones is coupled with sustainable development of coastal regions and the sustainable utilization of marine living resources.

Regional agreements have a limitation which is imposed by Article 237. With respect to regional, national or international for other kinds of agreements, the constraints are quite extensive as is mentioned under Article 311(3). Article 311(3) is structured over Article 41 and 58 of the 1969 Vienna Convention on the Law of treaties¹⁰. It especially focuses on ‘basic principles’. The framers of the LOSC kept the integrity of an interdependent treaty regime which is reflective of a general treaty law ; of the Convention in mind, the residual rules of priority are found in Article 30(4) of the VCLT, same is displaced in favor of Article 41 which stands for *lex posteriori* rule .

⁹ Alexander Yankov, *The law of the sea convention and Agenda 21: Marine Environment Implications* in BOYLE and FREESTONE, *INTERNATIONAL LAW AND SUSTAINABLE DEVELOPMENT: PAST ACHIEVEMENTS AND FUTURE CHALLENGES* 270-295 (Oxford University Press, Oxford 1999).

¹⁰ 5, M NORDQUIST and SATYA N NANDAN, *UNCLOS 1982: A COMMENTARY* 238-240 (Nijhoff, The Hague 1995).

The presumption is, in a situation of conflict envisaged under Article 311; LOSC will prevail over a later treaty dealing with the same matter, notwithstanding the *lex posteriori* rule. The commentary of ILC observed that ‘the primary legal significance of a clause asserting the priority of a treaty over subsequent treaties in conflict with it appears to be in making explicit the intention of the parties to create a single ‘integral’ or ‘independent’ treaty regime that is not subject to contracting out; in other words, by expressly prohibiting contracting out, the clause predicates in unambiguous terms the incompatibility with the treaty of any subsequent agreement concluded by a party which derogate from the treaty’¹¹.

LOSC and the Convention on Biological Diversity

The evolution of a comprehensive legal regime may be attributable to consecutive treaties on distinct subjects. Law of Sea Convention makes no reference towards biological diversity and perhaps, after almost a decade, in the year 1992 during the Rio Conference, the Convention on Biological Diversity was adopted and its provisions are applicable on terrestrial as well as marine biodiversity. In these circumstances, the interpretation techniques are of utmost importance. Fishing activities directly affect the marine biological diversity which equally affects the regimes under Law of Sea Convention. In regards with the marine environmental matters Article 22 has a pre-requisite where parties are specifically required to implement the CBD ‘consistently with the rights and obligations of the State party under LOSC’. This is crystal clear that they cannot neglect the rights of ship from their navigational freedom under Exclusive Economic Zone and the High Seas neither within the LOSC regime or already established customary law, in this context Article 22 of the CBD fortifies the terms which are prescribed under Article 311(3) of the LOSC. Parties to the CBD have wider freedom to deviate from Part XII than from other sections of the Convention because, as a *lex specialis*, Article 237 transcends Article 311¹².

In general understanding the effect of Article 22 of the CBD corroborate that the LOSC should triumphs, State parties to CBD cannot anticipate on the LOSC for justification or in order to tolerate fishing activities and fishing related practices that causes or threatens to cause harm to the biological diversity. Keeping in mind such a scenario, the CBD has

¹¹ ILC, ‘Law of Treaties’, Commentary to Draft Article 26, in 2 A D Watts (ed), The international law commission 1949-1998, 678 (Oxford University Press, Oxford 1999).

¹² 4, M NORDQUIST and SATYA N NANDAN, UNCLOS 1982: A COMMENTARY 423-426 (Nijhoff, The Hague 1995).

modified Part V and Part VII of the LOSC, now whether this is permissible within the scope of Article 311(3) is a question to ponder upon.

LOSC has been affecting on the institutional levels which is visible in the contemporary issues like the protection of cultural heritage, the ongoing impact on the major-law making treaty is thought-provoking.

There is no provision governing the interface between the WTO Agreement and the General Agreement on Tariffs and Trade and other existing treaties in the WTO Agreement and the General Agreement on Tariffs and Trade. Article 3(2) of the WTO agreement on the Standards and Procedures Governing the Settlement of Disputes contains provisions with "covered agreements" that really should be interpreted in accordance with the customary rules of public international law. This also hints that while interpreting the WTO Agreements the Article 31 and Article 33 of the VCLT shall be taken into account, and not specifically in accordance with the GATT principles of interpretation¹³.

At the time of its conclusion, the 1982 LOSC was recognized as making a significant contribution to the protection and preservation of the marine environment¹⁴.

- (I) Certain Article are devoted to the protection of the marine environment have paved the way for jurisprudential studies in the field. Four features are notable to mention-
- (II) The introduction for the first time in a treaty instrument of the general obligation to protect and preserve the marine environment¹⁵
- (III) The elaboration, or incorporation by reference, of international minimum standards for the prevention, reduction and control of pollution of the marine environment from all the sources¹⁶
- (IV) The inclusion of enforcement provision with respect to marine pollution in particular, with the innovation of Port State enforcement¹⁷

¹³ WTO Appellate Body, Import Prohibition of Certain Shrimp and Shrimp Products (1998) WT/DS58/AB/R.

¹⁴ 2 Eds., R R CHURCHILL and A V LOWE, THE LAW OF THE SEA, Chapter 15 (Manchester University Press, Manchester 1999).

¹⁵ Article 192 of UNCLOS 1982.

¹⁶ Article 194 of UNCLOS 1982.

¹⁷ Article 218 of UNCLOS 1982.

The application of the dispute settlement provisions of Part XV to the Convention of specified international rules and standards for the protection and preservation of the marine environment established by the LOSC¹⁸.

CITES and LOSC

The wild fauna and flora is aimed to be protected under the international trade by the regulation of the CITES. The import, export and re-export of the live or dead animals is regulated under the auspices of CITES. Some species are threatened and some are not, there is a differentiation which is made between three categories: those species which are threatened with extinction, the trade must be strictly regulated, which means that trade shall be authorized in only exceptional circumstances. The ones that are not necessarily threatened at the moment with extinction and thirdly, the ones that are, in the eye of the State which has the jurisdiction over their exploitation. The approach of CITES in controlling the import and export was not new during 1973 but the fact that the mentioned Convention applied it on a global scale was innovatory¹⁹. The conflict easily evident in a number of global and regional fisheries management organizations can be resolved with proper cooperation, a fine example is the establishment of the International Whaling Commission.

The surplus jurisprudence flowing from World Court in consideration with the law of sea issues has been complimented by the work and progress of other international courts and tribunals, sustainable development of the oceans has been a major part that culminates environment with law of sea regime. The Court has contributed in parallel and complementary developments of International-Environmental law, linking the LOSC regime to the concept of sustainable development articulated in the instruments which emanated from the 1992 United Nations Conference on Environment and Development in Rio²⁰. The 1997 Gabcikovo-Nagymaros Project judgment and the Codification and progressive development of the *Sic utere tuo ut alienum non laedas*, precautionary action and other fundamental principles of modern environment law were elucidated in this

¹⁸ Article 297(1)(c) of UNCLOS 1982 and special arbitration under Annex VIII.

¹⁹ 2nd Edn., P W BIRNIE and A E BOYLE, *INTERNATIONAL LAW AND ENVIRONMENT*, 626 (Oxford University Press, Oxford 2002).

²⁰ UNGA Res 55/2, Millennium Declaration, 8 September 2000.

judicial pronouncement and still, continue in the facilitate in the application of the 1982 LOSC within the framework of the UN Charter in the post-Rio/Johannesburg era²¹.

Conclusion

Further evolution of the LOSC is possible and this has been taking place since decades via a wide variety of mechanism, including legally binding agreements and non-binding principles which are closely inter-linked as soft law principles. The corpus of the LOSC law is itself an example that the Convention will not wither away with time, chances of it being obsolete are rare since various other treaties and international instruments compliment the provisions of the regime giving it a catalytic effect. Since 1982, the development has taken place and is increasing in its momentum, marine biodiversity, cultural heritage, sea-bed exploitation are certain arenas which the Convention is facing challenges with, but as clear as a crystal, the LOSC still prevails and dominates the regulations in consideration with ocean related activities, be it fishing, international trade or navigation. It is an affirmative outlook that the Parties to the convention will continue to promote necessary developments within the framework of the Convention. LOSC allows for the international organizations to develop the Convention on basis of generally accepted principles and norms of the international law. Marine based initiatives such as the establishment and development of large marine ecosystem projects, meeting up with the international environmental treaties such as the Climate Change and the Biological Diversity Convention, the World Bank has also adopted for sustainable development agenda. Broader institutional and substantive developments by progressive methods and techniques of interpretation are employed to have a harmonious construction.

The development of law of the sea has become a question of governance of larger substantive rights and obligations. As De La Fayette notes, ‘the subject of the ocean governance is extremely broad, potentially involving an analysis of the interaction among a large number of legal and policy instruments, as well as global and regional organizations and other bodies’, the complexity of oceans and its governance is inevitable but by the collective conscience of the State Parties, it can be achieved. The regime is to be looked from an optimistic lens.

²¹ B Kwiatkowska, *The contribution of the ICJ to the development of law of sea and the environmental law*, 8 Review of European Community and International Environmental Law 10-15 (1999).

STOCKHOLM DECLARATION 1972: A CRITICAL ANALYSIS ON THE TRIBAL SUSTAINABILITY IN THE FACE OF TRANSBOUNDARY HARM

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Abstract

The exploitation of nature is at its height in the contemporary age, having a severe influence on their environment and other states. Whether the state in question shares a border with the state of origin or not, harm caused in the territory or other places under its power or control is referred to as “transboundary harm”. In order to prevent catastrophic effects of transboundary harms on the country’s geopolitics and the sustenance of its people who are directly dependent on environmental resources, such as the people belonging to the tribal community, numerous multilateral agreements and treaties have been signed among the nations. According to the Stockholm Declaration of 1972, it was decided that to address the persistent problems people confront due to transboundary damage, new laws and regulations needed to be evaluated. The current situation is demonstrated by the declaration of these tribes’ and communities’ sustenance and livelihood as being adversely impacted by environmental problems. Even in the modern world, when a sizable portion of the population is still tribal and thus largely dependent on natural resources. One has to pursue sustainable development to adapt traditional/customary practices to safeguard the natural habitat. The denotified groups is affected by the present global innovations in a variety of ways to combat with such issues, It is critical to offer the notion of a sustainable future that is green. The authors in the current research paper will attempt to relate the problem of extra territorial environmental damages with the people who are closest to nature and whose lives are solely dependent on the natural environment, the paper will also analyze the laws related to environment as per international conventions. The second part of the paper will discuss the cooperation of the world’s most advanced countries to come out as one, against the environmental injustice towards the people belonging to remote areas, in the concluding part authors will try to analyse the environmental discrepancy with the contemporary tribal communities ending up with a conclusion.

Keywords: International Conventions, Denotified Groups, Stockholm Declaration, Transboundary Harm, Tribal Communities

Introduction

Growing industrialization and urbanization have given rise to escalator economic growth, but its shortcomings are evident in the quality of natural resources. To overcome these struggles and save the world against climate-changing factors, many efforts have been made since the past till today. One such effort was the Stockholm declaration of 1972, which was intended to establish a link between environmental issues and economic growth in developing and industrialized countries.¹ The ongoing establishment of various industries in the name of development within one's political limits has caused transboundary harm to other regions. The problem of transboundary harm is the cause of the destruction of the source of livelihood for many denotified people who depend solely on natural resources for their sustenance. The current situation is alarming as there has been an abrupt emission of greenhouse gases which has led to an imbalance in the ecosystem and which is quite evident in the indigenous communities—referring to somewhat 20 indigenous groups from different parts of the world whose livelihood is being disturbed abruptly due to unpredictable weather in their regions which is a result of climate change which is the effect of transboundary harm. These communities are compelled to relocate from their homes as their traditional lands are not cultivable². Industrialists and blue-collar workers frequently exploit people from indigenous communities. As a result, they must have their rights protected by international law to live the life they desire. The management of the world's oceans and fisheries, the polar ice caps, and the regulation of carbon and other particulate emissions into the atmosphere are all critical domains for international regulation. The idea of a green environment should not compromise the importance of development. For that very reason, the concept of sustainable development was first proposed in the United Nations on the concern related to human rights in the Stockholm declaration of 1972 was so concerned with environmental issues.³ The motive of the meeting was to emphasize that the many elements, such as overpopulation, economic development, and industrialization, all contribute to environmental degradation. It was mainly focused on safeguarding the right to live in a clean and healthy environment. The

¹ About, Stockholm declaration, available at <https://www.stockholmdeclaration.org/about/> last visited October 27, 2022

² Five ways climate change harms indigenous people at <https://www.climatechangenews.com/2014/07/28/five-ways-climate-change-harms-indigenous-people/> last visited at October 27, 2022

³ International environmental law- LAW TIMES JOURNAL at <https://lawtimesjournal.com/international-environmental-law/> last visited at October 27, 2022

need of the current era is deviant from past times. The needs of today cannot be compromised, but with some collective and adjustable measures, the problem can be resolved to some extent. Adapting to simple habits can bring impactful changes in the climate and could advance the growth towards healthy nature.

Environmental Issues

Many anti-environmental behaviors have resulted in mother earth's degradation due to the world's progressive advances through industrialization and economic growth. In contrast to the flourishing of enterprises, there has been a precipitous rise in global warming, a source of concern. Climate change refers to long-term changes in temperatures and weather patterns. These shifts could be natural, such as oscillations in the solar cycle. However, human activities have been the dominant source of climate change since the 1800s, primarily due to fossil fuels such as coal, oil, and gas.⁴ Climate change is causing unpredictable weather conditions, which are disrupting our environment. To grasp the concept of climate change, one must first understand how it is the cause of many current problems in agricultural, livestock, and marine life mutation, as well as how it pollutes nature as a whole, such as air, water, and land, which are needed for life. According to current United Nations climate change assessments, global warming is anticipated to reach roughly 3.2 degrees Celsius by the end of the twenty-first century.⁵

Transboundary Harm

Transboundary harm defines an act of a state by which any other state or territory outside of its political domain or jurisdiction suffers any environmental harm. In actuality, the much-publicized Trail Smelter example exemplifies this harm. Almost all international environmental law and accountability debates begin with the Trail Smelter arbitration, one of the oldest manifestations of the notion that a state bears responsibility for environmental damage that extends beyond its borders.⁶ According to the trial smelter arbitral tribunal, when the case is of serious consequence, and the injury is established by clear and convincing evidence, no State has the right to use or permit the use of its territory in such a way as to cause injury by fumes in or to the territory of another, or the properties or

⁴ What is climate change? United nations available at <https://www.un.org/en/climatechange/what-is-climate-change> last visited on october 27,2022.

⁵ What is climate change? United nations available at <https://www.un.org/en/climatechange/what-is-climate-change> last visited on october 27,2022.

⁶ Transboundary harm in international law available at <https://blog.ipleaders.in/transboundary-harm/> last visited on october 27, 2022

persons therein.” but the several countries have violated this in the name of development which is not only a violation of the right to clean and healthy environment of its neighbouring countries or any state that may get affected due to its anti environmental activities. Apart from the accumulation of the unearthly materials on the planet which has led to pollution and its effects are creating a problem of sustenance to the people who are not in the mainstream of the society like the tribes who are dependent on forest and natural resources to lead their lives.

Stockholm Declaration 1972

The first ever effort made in order to discuss the issues related to environment which was held to discuss the issues such as global warming and the conditions in the world due to heavy industrialization by the many countries . in this conference there was the involvement of almost 114 countries worldwode with the goal of coming up something as effective that could make the world free from any sort of pollutants. It was united nations conference on the human environment. Its been 50 years since the first ever international conference on environment was held but still the question is still how and to what extent laws can be made in order to save the environment as the compromise with the growth and development is not the solution, but one of the main thing that came out of the stockholm declaration was the concept of transboundary which was stated as a violation of right of other countries to lead a healthy and clean environment.

The conference proposed four main ideas, the first of which was to implement the right to a healthy environment, because living a life free of pollutants is everyone’s right. The second goal was to recognize, restore, and protect the global commons. The third goal was to create a regenerative economy. Fourth, governance and institutional solutions were prioritized.⁷

With regard to the provisions of the declaration 26 principles were taken into consideration out of which the management of natural resources is something that could help in achieving the idea of sustainable development as in the various drawbacks that are caused due to uneven usage of the resources from nature and the management of these resources could be helpful in forming the ideal environment and living conditions for the tribal people who are closest to the gifts of nature and whose lives are predominantly affected by the

⁷ Stockholm declaration 1972 available at <https://www.stockholmdeclaration.org/about/> last visited on october 27, 2022

mismanagement of these resources. The goal to brought a positive change in the lives of the idegenous people from all over the world the world has to come together the cooperation of every country on a equal level towards the law for protecting our environment and to safeguard the rights of people to life of a healthy and clean environment.⁸

Environmental Concerns

The phrase “environmental injustice” describes a series of deeds that endanger the environment while also alienating certain populations and groups. A frequent illustration of this situation is a business that contaminates nearby water supplies, which leads to tainted drinking water and public health issues.

The isolation and segregation of particular groups within communities is a root cause of environmental injustice. These groupings often correspond to socioeconomic, racial, and other distinctions. Even though there are ongoing initiatives to address it, environmental injustice still exists.⁹

Many people believe that one of the biggest issues of our day is the environment. Environmental change brought on by humans is severe and pervasive on a national, regional, and international scale. Border-crossing air and water pollution, the effects of resource extraction, decreased freshwater quality and quantity, nuclear accidents, and international commerce in hazardous waste and toxic chemicals are only a few examples of regional environmental concerns, or issues affecting many nations. Environmental issues include ozone depletion, species extinction, ocean pollution, loss of biodiversity, diminishing food supply and reduced fish stocks, deforestation, and anthropogenic climate change are all issues that affect us on a global scale.¹⁰

Environmental hazards and pollution sometimes have a transboundary component, posing challenges for and causing harm to nations other than the source state as well as to

⁸ Major provisions in the stockholm declaration- ipleaders available at <https://blog.ipleaders.in/major-provisions-in-the-stockholm-declaration/#:~:text=The%20main%20purpose%20of%20the%20Stockholm%20Declaration%20was,and%20to%20protect%20from%20several%20other%20environmental%20issues>. Last visited on october 27,2022.

⁹ *What causes environmental injustice?: Ben Crump Law, PLLC* (2022) *Ben Crump*. Available at: <https://bencrump.com/environmental-justice-lawyer/what-causes-environmental-injustice/> (Accessed: October 22, 2022).

¹⁰ *The prohibition of transboundary environmental harm - duo* (no date). Available at: <https://www.duo.uio.no/bitstream/handle/10852/41416/213.pdf> (Accessed: October 22, 2022).

international commons. A well-known illustration is when an upstream state pollutes a river, resulting in harm to a downstream state.

Only by cooperation and collaboration between nations can issues of border-crossing injury and pollution be effectively handled, and in this regard, international law and institutions are crucial in creating a framework within which the members of the international community may interact. The conventional reaction of international law to transboundary issues has been to hold the responsible state accountable and thus demand that the state desist from the activity that is causing damage, as well as to provide proper recompense to the wounded state.

States are becoming more aware of the need to find global solutions to environmental problems and the need for rules for the protection of natural resources and the environment as a shared resource for all states as instances of cross-border environmental damage have significantly increased as a result of industrial development, new technology, and population growth. International environmental law is a result of this insight. International environmental law is the area of international law that deals with the rights and responsibilities associated with the management of the environment and natural resources. It encompasses both a body of evolving environmental-specific norms and general international law norms that are applied to environmental issues.

Environmental injustice and violations of human rights are intricately linked. For instance, research has found a substantial correlation between environmental degradation and human rights abuses, indicating that many instances of environmental degradation also involve human rights abuse (Dias 1999; Johnston 1994). Environmental injustice and violations of human rights are implied by the seizure of community lands, the eviction of indigenous populations, the exploitation of natural resources, and the disposal of hazardous waste.¹¹

Negotiation of an international convention has been sparked by the rising concerns over the transboundary shipments of hazardous waste and the worldwide knowledge of the real and prospective consequences of hazardous waste on the environment and public health in importing nations. Although thoughtful initiatives have been made to address environmental justice concerns in the United States, comparable initiatives to stop the

¹¹ Adeola, F.O. (2017) "Environmental injustice and human rights abuse: The States, mnacs, and repression of minority groups in the world system," *Environmental Rights*, Vol. 8, pp. 3–23. Available at: <https://doi.org/10.4324/9781315094427-1>.

export of hazardous materials from core countries to peripheral countries are woefully insufficient

The Basel Convention, which controls the transboundary transport and disposal of hazardous wastes, was created in response to poor nations' requests that the international community limit or restrict the trade in hazardous wastes. There have been a number of agreements to limit the transboundary flow of garbage at the regional and international levels. Examples include the Lome Convention, which the European Union (EU) and 69 African, Caribbean, and Pacific countries signed, and the Bamako Convention, which was ratified by the Organization of African Unity (OAU) members.

In comparison to earlier times, when the idea of state sovereignty was used as a veto power to remove all international commitments, it may be said that the international community has advanced significantly. Today, international standards and concerns take precedence over national interests. In actuality, environmental issues are not limited to a single state or set of states. Due to its natural and physical characteristics, every incident, experiment, or event occurring within a national jurisdiction will inevitably influence, disrupt, or produce a worldwide environmental situation. As a result, the issue is valid and well-founded.¹²

Three types of transboundary environmental harm are most frequently present: air pollution, contamination of a transboundary watercourse, and transboundary waste shipping or dumping. The regulation pertaining to the contamination of transboundary watercourses is likely the most established of these and offers the most beneficial examples. A state could also affect the global commons or the environment on a larger scale.

The fact that nations around the world have prioritised their sovereign and economic interests over their obligation to uphold environmental standards and, as a result, have not strictly complied with international law is one of the main reasons why there are no standardised rules regarding environmental harm. As a result, efforts to establish a rigorous liability system and the conventional notion of a norm of due diligence have not succeeded as international customary law.¹³

Tribal Concerns

¹² Tarun, J. (2008) "Trans-Boundary Harm: An Environmental Principle in International Context," *The Icfai University Journal of Environmental Law*, Vol. 7(No. 4), pp. 10–22. Available at: https://doi.org/https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1087596.

¹³ Rishabh, R. (2021) "Responsibility V. Sovereignty: Transboundary Environmental Harm," *IJLMH*, pp. 598–606. Available at: <https://doi.org/http://doi.one/10.1732/IJLMH.26106>.

The Stockholm Conference and the Declaration on the Human Environment, which took place in 1972, officially acknowledged environmental concerns as a distinct class of global challenges and ushered in the modern age of international environmental law. Since then, the transboundary aspect of pollution has become more light due to the global nature of trade and consumption. However, like other types of pollution, transboundary contamination is frequently incidental or locality-specific and does not necessarily call for the international community's continued attention. In the context of tribes that cross international borders, the truth of the isolation and remoteness of the environmental concerns rings true. For instance, major issues like pollution that affect vast swaths of land and are transboundary in nature receive a lot of attention. The United Nations Conference on Environment and Development, often known as the Rio Conference, was where the worldwide community gathered in 1992 to renew its commitment to environmental issues that were of considerable international importance.

With the US, Canada, or Mexico, more than 40 indigenous groups share a border. Threats to the ecological integrity of many tribal communities near international borders have recently been of little concern. However, ecological issues brought on by pollution and other contaminants undermine tribal health and cultural integrity as part of the overall problems that tribes confront.¹⁴

Through the signing of several bilateral and multilateral agreements, the resultant document strengthened the international community's ongoing commitment to the global nature of protecting and conserving the Earth's environment. For the first time, provisions addressed the increasing concern over transboundary contamination. Native populations downstream and upwind have limited ability to defend their members from transboundary contamination outside of persuasion, persistent application of the theory of comity, or the pendulum-like goodness of their respective spatially coextensive sovereign.

Given this backdrop, it stands to reason that upwind and upstream international nations have little motivation to utilise their political clout to impose regulations on polluters that are located close to their borders and whose waste streams have little to no discernible impact on their own population. Therefore, individuals and nongovernmental groups must

¹⁴ Lepsch, P.D. (2003) "Ecological Effects Know No Boundaries: Little Remedy for Native American Tribes Pursuing Transboundary Pollution under International Law," *Buffalo Environmental Law Journal*, Vol. 11(1). Available at: <https://doi.org/https://digitalcommons.law.buffalo.edu/belj/vol11/iss1/3>.

exert consistent and growing pressure to encourage national governments to regulate and intervene more in border regions.

Tribes living on the frontiers must not only devise inventive ways to get through the minefield of domestic and international legislation, but also put in place structures to maintain or maybe achieve levels of self-determination not seen in many generations. Tribes that live on both sides of international borders must consider a variety of domestic and legal remedies to address challenges to their culture and ecology.

Indigenous peoples are especially susceptible to having their rights violated by environmental degradation because of their intimate connection to the environment. “The implementation of natural resource extraction and other development projects on or near indigenous territories has become one of the foremost concerns of indigenous peoples worldwide, and possibly also the most pervasive source of the challenges to the full exercise of their rights,” the Special Rapporteur on the rights of indigenous peoples has stated (A/HRC/18/35, para. 57).

The rights of indigenous peoples are intended to be protected by the International Labour Organization convention 169 and the United Nations Declaration on the Rights of Indigenous Peoples, but human rights organisations have also interpreted other human rights conventions to safeguard those rights. The interpretations have come to largely agreeable findings about the responsibilities of States to defend indigenous peoples’ rights against environmental harm. The Special Rapporteur on the rights of indigenous peoples has provided detailed explanations of the obligations on States to uphold such rights in his reports. Therefore, just a few key elements are covered in this section.¹⁵

First and foremost, States must acknowledge the rights of indigenous peoples with regard to the land they have long occupied and the natural resources they rely on. Second, States must make it easier for indigenous peoples to participate in choices that affect them. According to the Special Rapporteur, there are only a few clearly defined exceptions to the general rule that “extractive operations should not take place inside the territory of indigenous peoples without their free, prior, and informed agreement” (A/HRC/24/41, para. 27). Thirdly, States must provide for an evaluation of the effects of development operations

¹⁵ Knox, J.H. (2013) A/HRC/25/53, Report of the Independent Expert on the Issue of Human Rights Obligations Relating to the Enjoyment of a Safe, Clean, Healthy and Sustainable Environment, John H. Knox. A/HRC/25/53. rep.

on indigenous lands before allowing them to proceed. Fourth, States are required to ensure that any impacted indigenous population receives a fair benefit from any such development. Finally, States are required to make remedies, such as compensation, available to anyone harmed by the actions.

Fundamentally speaking, environmental contamination poses major risks to the cultural and political existence of border tribes. States must do more than simply acknowledge the hazardous situation in which tribes find themselves. Additionally, the international community must establish legal frameworks that will enable native people to seek adjudicatory relief in addition to non-binding international instruments that designate the universal rights possessed by indigenous peoples.

Sustainable Development in tribal areas

In 2015, the United Nations introduced the Sustainable Development Goals¹⁶, also known as the Worldwide Goals, as a global call to action to end poverty, safeguard the environment, and promote peace and prosperity by 2030.

The 17 SDGs¹⁷ are interrelated, recognising that actions in one area have an impact on outcomes in others, and that progress should balance social, economic, and environmental sustainability.

Thus, despite constitutional safeguards and specific welfare programmes, schemes, dedicated economic measures, and institutions, indigenous persons remain substantially behind the mainstream populace in the Human Development Index¹⁸ (HDI). The herbal resource base of the panorama acts as a source of inspiration for tribal subsistence as well as a tool for increasing their HDI. Each rural tribal institution's crucial requirement for life and prolonged human development demands the safety and enhanced control of herbal supplies and the forest, water, livestock, and soil as integrated ecosystem components. This demands the use of built-in panorama control. In contrast to the topic-based approach to

¹⁶ Sustainable development goals: United Nations Development Programme (no date) UNDP. Available at: <https://www.undp.org/sustainable-development-goals> (Accessed: October 30, 2022)

¹⁷ *ibid*

¹⁸ Nations, U. (2022) *Human development index, Human Development Reports*. Available at: https://hdr.undp.org/data-center/human-development-index?utm_source=EN&utm_medium=GSR&utm_content=US_UNDP_PaidSearch_Brand_English&utm_campaign=CENTRAL&c_src=CENTRAL&c_src2=GSR&gclid=Cj0KCQjwnvOaBhDTARIsAJf8eVMbWvde1W_YMi9swtSDrhODBuJ8z-8qHnQWDWWo6ouahYZ3pG6eBZgaAiucEALw_wcB#/indicies/HDI (Accessed: October 30, 2022).

tribal development, IBRAD¹⁹ is developing a strategy for sustainable tribal development within the context of the SDGs²⁰ (Sustainable Development Goals). IBRAD's²¹ approach to sustainable tribal development focuses on strengthening tribal communities ability, with a special emphasis on women and youth, natural resource conservation, community empowerment, and conservation-based community development. Develop sustainable living development by establishing adequate social norms and structures for community-led social conduct.

Facilitating tribal peoples' development closer to the SDGs presents specific challenges exacerbated by climate change, increasing the tribal community's vulnerability. The Sustainable Tribal Development strategy makes it possible to achieve the goals of "No Poverty (SDG 1) and Zero Hunger (SDG 2)." In a constructive sense, it needs activity to alleviate poverty, improve fitness and livelihoods, and strengthen the resilience of vulnerable groups. We feel it is more than just a loss of money or wealth; poverty is regarded as multi-dimensional. Poverty can also include a lack of access to basic essentials such as health, well-being (SDG-3), nutrition, and food safety.

IBRAD has launched various programmes to expand nutrition natural kitchen gardens, establish fruit trees to end hunger (SDG-2) and ensure tribal people, particularly the poor and those in vulnerable situations, including newborns, have access to safe, nutritious, and sufficient meals all year round. Health awareness camps will assist in connecting the network with the Public Health Centre (PHC) or the sub-middle to manipulate unnecessary deaths of newborns and children under the age of five, to lower neonatal mortality and improve network well-being (SDG-3).

Long-term livelihoods benefit from conservation of biodiversity, soil, and water. Furthermore, biodiversity and fruit trees are seen to be especially significant for the impoverished because they provide low-cost insurance against food insecurity hazards for tribes who lack alternative risk management measures (SDG-4). IBRAD built 'Prashikshan Shivir'²² and created a harvest calendar-based course structured after 'Farmers Field School'²³ to promote inclusive and equitable education. Capacity development, transfer of

¹⁹ Admin, I.B.R.A.D. (2022) *Sustainable tribal development, Indian Institute of Bio - Social Research And Development*. Available at: <https://www.ibradindia.org/sustainable-tribal-development/> (Accessed: October 30, 2022).

²⁰ Supra note 1

²¹ Supra note 4

²² ibid

²³ ibid

appropriate technologies, promotion and implementation of possibilities for lifelong learning (SDG-4). The Women Empowerment Project, in accordance with the Joint Forest Administration Policy, has assisted the family in understanding proper gender roles and providing women (SDG-5) with economic resources and access to ownership and administration of natural resources and financial services.

Organic farming has improved water quality by reducing pollution and minimising the release of hazardous chemicals and materials. Drip irrigation and rainwater collecting boost water-use efficiency and enable sustainable freshwater consumption in village-like Jhargram (SDG-6). Sustainable forest resource harvesting to make certain sustainable consumption and production patterns (SDG -12) has been implemented in partnership with the state Forest Department through the Joint Forest Management Program. A strategy plan has been prepared as part of the battle against climate change and its repercussions to promote education, raise awareness, and build institutional capacity on climate change early warning, adaptation, impact reduction, and mitigation for sustainable agriculture (SDG-13).

The link between agrobiodiversity and agricultural productivity, variability, and yield shocks has received much attention in ecology and agronomy literature. Diverse crop species, for example, have been shown to adapt better to environmental changes due to their bigger pool of diverse metabolic characteristics and metabolic pathways, which allows them to use resources like water and soil nutrients more effectively over a wide range of climatic situations. The preservation of agro-biodiversity as a seed bank can safeguard tribal populations from negative environmental consequences and strengthen the system's resilience in the face of unfavourable weather patterns caused by climate change. Consideringly, there is an urgent need to maintain, restore, and promote the long-term use of terrestrial ecosystems and long-term forest management to reverse land degradation and prevent biodiversity loss 15.

On September 25, 2015, the United Nations Department of Economic and Social Affairs²⁴ adopted the 2030 Agenda for Sustainable Development, titled "Transforming Our World: the 2030 Agenda for Sustainable Development." The Agenda went into effect on January 1, 2016 and will last for the next 15 years. It is a broad and universal policy objective

²⁴ UNDP (no date) *Indigenous peoples and the 2030 Agenda for Indigenous Peoples, United Nations*. United Nations. Available at: <https://www.un.org/development/desa/indigenouspeoples/focus-areas/post-2015-agenda/the-sustainable-development-goals-sdgs-and-indigenous.html> (Accessed: October 30, 2022).

comprised of 17 SDGs and 169 related targets that are considered interconnected and indivisible. The agenda word of honor to leave no one behind and to arrive first in the most isolated locations.

Conservation, as imposed through the establishment of protected areas and enforced by anti-poaching squads, is causing eviction and abuse of large numbers of people, particularly indigenous peoples, while failing to halt the escalating environmental crisis. For thousands of years, tribal peoples in South Asia have coexisted with tigers, but they are now facing eviction in order to protect the species. According to evidence from Nepal's Chitwan national park, tiger populations may be higher in areas where humans live than in areas where they have been expelled²⁵. People provide a variety of habitats, as well as eyes and ears, to identify and prevent poachers. Instead of recognising indigenous peoples' rights to their land, the Indian government has created additional parks, increased evictions, and pushed to attract more visitors. "There is a simple reason for this: for millennia, indigenous peoples have managed, preserved, nourished, and transformed their land, and they have more knowledge and motivation to defend their area than anybody else."

Some of the important provisions in the perspective of India

The United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP)²⁶, sanctioned by India in 2007, recognises indigenous peoples' rights to self-determination, autonomy, or self-governance, as well as their right to free, prior, and informed consent before being forcibly relocated or relocated from their lands or territories. Aside from the UNDRIP, the 1989 International Labour Organization (ILO) Convention Concerning Indigenous and Tribal Peoples acknowledge indigenous peoples' "right to land and natural resources"²⁷, as well as the ability to set their own development goals." India is not a signatory to this, although it is a signatory to the International Labour Organization's 1957

²⁵ Guardian, T. (2015) *Conservation and the rights of tribal people must go hand in hand* | Jo Woodman, *The Guardian*. Guardian News and Media. Available at: <https://www.theguardian.com/environment/2015/apr/23/conservation-and-the-rights-of-tribal-people-must-go-hand-in-hand> (Accessed: October 30, 2022).

²⁶ UNDP *Observations on the State of Indigenous Human Rights in India* Available at <https://www.culturalsurvival.org/sites/default/files/INDIAUPR2016final.pdf> (Accessed: October 30, 2022)

²⁷ *C169 - indigenous and tribal peoples convention, 1989 (no. 169)* (no date) *Convention C169 - Indigenous and Tribal Peoples Convention, 1989 (No. 169)*. Available at: https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB%3A12100%3A0%3A%3ANO%3A%3AP12100_ILO_CODE%3AC169#:~:text=Indigenous%20and%20tribal%20peoples%20shall,female%20members%20of%20these%20peoples. (Accessed: October 30, 2022).

Convention on the Protection and Integration of Indigenous and Other Tribal and Semi-Tribal Populations in Independent Countries, which is no longer in force and cannot be ratified.

Domestically, the Fifth Schedule²⁸ and Sixth Schedules²⁹ of the Constitution grant tribal areas autonomy in governance, which is reinforced by the *Samatha V. State of Andhra Pradesh & Ors*³⁰ decision, in which the Supreme Court stated that the shift of tribal land to private parties for mining was null and void under the Fifth Schedule. The Recognized Forest Rights Act reinforces the framework for protecting tribal and indigenous peoples' protections in forest areas by protecting tribal peoples' individual and community rights, as well as their right to free and prior affirmative decision in the event of displacement and resettlement.

Conclusion

The world's collaborative attempts to safeguard Mother Earth from various environmental damages have been going on for decades. The first ever concern conference that was raised on an international level was the Stockholm Declaration in 1972. This has awoken every person on the planet to the dire situation and that quick action is required if we are to conserve the priceless gifts of nature that are being depleted due to expanding industrialization. The consequences of such conduct not only harm one location, but can be seen worldwide, constituting a violation of people's rights to a healthy and clean environment. The meeting held over 50 years ago was a spectacular act, and the reason for this is that we have an entire international law on environmental protection, violations of which can result in terrible consequences. People from all over the world who belong to an indigeneous group are mostly affected by the actions of industries because they pollute the environment so badly that it affects the lives of these people, whose lives are solely dependent on nature, or we can say that they are basically interconnected. The devastation done to environment has a direct impact on the tribal people. The concept of sustainable development does not compromise development to conserve the environment, but rather maintains a healthy balance between industrial needs and environmental safety. The

²⁸ *Constitution of India* (no date) CAD. Available at: https://www.constitutionofindia.net/constitution_of_india/article_244_1_/articles (Accessed: October 30, 2022).

²⁹ *Constitution of India* (no date) CAD. Available at: <https://www.mea.gov.in/Images/pdf1/S6.pdf> (Accessed: October 30, 2022).

³⁰ MANU/SC/1325/1997

objective of having a pollutant-free environment can only be achieved with the participation of each and every human on this planet, and little and wise changes/adaptation can bring about a huge improvement in the planet's condition.

RESPONSIBILITY AND LIABILITY OF UPSTREAM CITIES FOR THE PUBLIC NUISANCE TO THE DOWNSTREAM CITIES ALONG THE RIVER GANGA

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Abstract

Along its 2,525 km path from Gaumukh to the Bay of Bengal, along the Indo-Gangetic Plains of northern India, the Ganga acts as a lifeline for approximately 400 million people, primarily in the states of Uttarakhand, Uttar Pradesh, Bihar, and West Bengal. The river is conducive for agriculture, industrial activities, fisheries, etcetera, wherein these activities are particularly concentrated, between Haridwar and Varanasi. The Ganga gets heavily polluted in the Middle Zone. The said pollution, which amounts to a Biological Oxygen Demand Load of 55.59 tonnes per day in Uttar Pradesh, affects the personal health and comfort of the people in the downstream communities of Bihar. The lower number of untapped drains and a lesser number of industries allow the Ganga to self-purify itself within Bihar, where the average Biological Oxygen Demand reduces significantly. Heavy metals like cadmium, cobalt, chromium, copper, iron, selenium, lead and zinc enter the Ganga from the Kanpur-Unnao industrial area, which is laden with approximately 1,635 functional units of tanneries. The ongoing and non-emergent pollution in the Ganga disallow the downstream communities to approach the court under Section 133 of the Code of Criminal Procedure, 1973; however, the said communities can take the recourse of Section 268 of the Indian Penal Code, 1860 (for public nuisance), and Sections 2 and 24 of the Water (Prevention and Control of Pollution) Act, 1974. A civil court is approachable for the tort of public nuisance, wherein the industries, municipal bodies and civic authorities in the polluting areas of Uttar Pradesh must not only pay damages to the said communities for their respective share in the pollution of the Ganga but also pay the cost of restoring the environmental degradation of the Ganga in their respective polluted areas.

Keywords: River Ganga, Heavy Metal Pollution, Public Nuisance, Polluter Pays Principle, Tortuous Liability.

Introduction

The River Ganga (hereinafter referred to as the “**Ganga**”) starts as the assemblage of the River Bhagirathi and the River Alaknanda at Devprayag, wherein the former is nursed directly by the Gangotri and Khatilang glaciers, at Gaumukh, in the narrow gorges of the Himalaya Mountains whilst the latter is fed directly by the Satopanth and Bhagirathi Kharak glaciers at Badrinath.^{1,2} The Ganga flows south and east from the Himalayas, wherein it flows for a distance of approximately 2,525 km through the Indo-Gangetic Plains of northern India before emptying itself into the Bay of Bengal. The river acts as a lifeline for approximately 400 million people.³ From a socio-economical standpoint, the average discharge of 1,000-60,000 cubic metres per second from glacial melt, snow-melt, monsoon runoff and groundwater resources, and an average Total Annual Sediment Flux of 262-680 MT,⁴ makes the river conducive for agriculture (90 per cent of the withdrawn water), hydroelectric power generation, fishery, transportation, etcetera.⁵ The Ganga also serves a religious purpose for Hindus. Hindus believe that the sight and the touch of the river (*Gangaajal*) cleanses one of their sins, pain and suffering, wherein a dip in the water supposedly bestows one with heavenly blessings and prosperity.⁶ Many people approach the river with the confident belief that a ritualistic dip or a wash would grant them their prayers from Goddess Ganga.⁷ Hindus believe that the ashes of a dead Hindu, when bought and immersed in the Ganga would result in their soul reaching salvation whilst liberating them of their earthly sins.⁸

The Ganga can be distinctly divided into three zones: **Upper Zone** (from Gaumukh to Haridwar), **Middle Zone** (from Haridwar to Varanasi), and **Lower Zone** (from Varanasi to Ganga Sagar). Most of the human interventions and anthropogenic activities are within the Middle Zone, whereby widespread dumping of untreated pollutants from agricultural,

¹ Shikha Goyal, *What is the origin of holy river Ganga?*, JAGRAN JOSH (Mar. 20, 2020, 3:59 PM), <https://www.jagranjosh.com/general-knowledge/what-is-the-origin-of-holy-river-ganga-1536924684-1>.

² Brijmohan Bisht, *Alaknanda River*, eUTTARANCHAL (Dec. 01, 2020), <https://www.euttaranchal.com/uttarakhand/alaknanda-river.php>.

³ Amanda Briney, *Geography of the Ganges River*, THOUGHT CO. (May. 24, 2019), <https://www.thoughtco.com/ganges-river-and-geography-1434474>.

⁴ Munsur Rahman et al., *Recent sediment flux to the Ganges-Brahmaputra-Meghna delta system*, 643 SCI. TOTAL ENVIRON. 1054, 1058-1062 (2018).

⁵ Golam Rasul, *Water for growth and development in the Ganges, Brahmaputra, and Meghna basins: an economic perspective*, 13(3) INTL. J. RIVER BASIN MANAGEMENT 387, 387-388 (2015).

⁶ Subhamoy Das, *The Ganges: Hinduism's Holy River*, LEARN RELIGIONS (Apr. 12, 2019), <https://www.learnreligions.com/ganga-goddess-of-the-holy-river-1770295>.

⁷ Rachel Cohen, *Holy Ground: Hindus and the Ganges River*, IMB (Jan. 04, 2019), <https://www.imb.org/2019/01/04/holy-ground-hindus-and-the-ganges-river>.

⁸ Jayaram V., *Symbolic Significance of the Descent of Ganga*, HINDU WEBSITE (n.d.), <https://www.hinduwebsite.com/ganges.asp> (last visited Oct. 10, 2022).

industrial and domestic sources are seen in this zone.⁹ According to Toxic Link, a Delhi-based organisation, Haridwar, Kanpur, and Varanasi have recorded microplastic pollution from industrial discharge and the packaging of religious items and offerings, wherein microplastics like Polyacetylene, Polypropylene, Polyamide, etcetera, were found in abundance at the Assi Ghat in Varanasi and Dohri Ghat in Kanpur.¹⁰ Common pollutants are animal/ human carcasses, heavy metals, suspended solids, phenols, dyes, pesticides, fertilizers, acids, cyanides, etcetera.¹¹

In 1992, world leaders and delegates from 178 nations attended the ‘Earth Summit’ or the United Nations Conference on Environment and Development in Rio de Janeiro.¹² The Rio Declaration requires every human being to meet the needs of the present without comprising the ability of future generations to meet their own needs, i.e. the declaration acknowledges the limited carrying capacity of Earth in the context of the use of natural resources for the benefit of present and future generations, wherein socio-economic development and environmental protection are the “interdependent and mutually reinforcing pillars” of sustainable development.¹³

Current Scenario

The Ganga is subjected to approximately 3,000 MLD of industrial effluents per day, wherein effluents originate from the Pulp & Paper Industries (Uttarakhand), Metal-Works Factories, Distilleries, Tanneries and Sugar Industries (Uttar Pradesh), and Jute & Textile Factories and Tanneries (West Bengal); additionally, the river receives approximately ten million tonnes of chemical fertilizers per year and approximately 21,000 tonnes of chemical pesticides per year.¹⁴

⁹ VINOD TARE ET AL., RIVER GANGA AT A GLANCE: IDENTIFICATION OF ISSUES AND PRIORITY ACTIONS FOR RESTORATION 6 (IIT Kanpur ed., 2010), https://nmcg.nic.in/writereaddata/fileupload/33_43_001_GEN_DAT_01.pdf.

¹⁰ *Microplastics concentration in Ganga more than any other major world river, finds new study*, DOWN TO EARTH (Jul. 22, 2021), <https://www.downtoearth.org.in/news/water/microplastics-concentration-in-ganga-more-than-any-other-major-world-river-finds-new-study-78069>.

¹¹ Jitendra Kumar et al., *Man-Made Impact on Ganga River and Fisheries*, AQUAFIND (n.d.), http://aquafind.com/articles/Man_Made_Impact_On_Ganga_River.php (last visited Oct. 10, 2022).

¹² United Nations, “*The Rio Declaration on Environment and Development*” and *Introduction to Chapter 7 from Agenda 21 (United Nations Conference on Environment and Development) (1992)*, “*Millennium Development Goals*” and “*Millennium Declaration*” (2002), in THE SUSTAINABLE DEVELOPMENT READER 79, 80 (Stephen M. Wheeler & Timothy Beatley eds., 2014).

¹³ GÜNTHER HANDL, DECLARATION OF THE UNITED NATIONS CONFERENCE ON THE HUMAN ENVIRONMENT (STOCKHOLM DECLARATION), 1972 AND THE RIO DECLARATION ON ENVIRONMENT AND DEVELOPMENT, 1992 3-4 (United Nations Audiovisual Library of International Law ed., 2012).

¹⁴ S. K. Tandon & R. Sinha, *The Ganga River: A Summary View of a Large River System of the Indian Sub-Continent*, in THE INDIAN RIVERS: SCIENTIFIC AND SOCIO-ECONOMIC ASPECTS 61, 71 (Dhruv S. Singh ed., 2018).

The river, in Uttar Pradesh, gets plagued with varying concentrations of cadmium, cobalt, chromium, copper, iron, manganese, nickel, lead and zinc, wherein the portion of the river in the Kanpur-Unnao industrial area is subjected to very high levels of cadmium, chromium and selenium from anthropogenic inputs (~90 per cent of the pollutants have an anthropogenic source in relation to the natural background concentrations), high levels of organic carbon, zinc and copper (~50 to 75 per cent), and moderate levels of cobalt, nickel and lead (~25 per cent).¹⁵ Industrial effluents from tanneries in Kanpur alleviate the chromium concentration in the river by 30-fold.¹⁶ In Varanasi, heavy metals like zinc, nickel, chromium, lead and copper are reported in very high concentrations in discharges from sewage treatment plants; additionally, manganese and iron are detectable in the industrial effluents near Varanasi.¹⁷ Researchers suggest that the water contamination is highest at Narora Barrage and Jajmau, Kanpur due to point source discharges from tanneries, wherein Narora Barrage is heavily contaminated with cadmium and copper while Jajmau, Kanpur is heavily contaminated with lead and zinc.¹⁸

India accounts for approximately 13 per cent of global leather production, wherein India produces about three billion sq. ft. of leather per year from its access to about 20 per cent of the world's cattle; consequently, the labour-intensive industry of 4.42 million people produces 9 per cent of the world's footwear (the second largest producer of leather footwear and garments in the world).¹⁹ According to the Council for Leather Exports, Uttar Pradesh accounts for approximately 31.35 per cent of total exports of leather, leather-based products and leather footwear from India.²⁰ Some estimates peg the number of tanneries in India to about 1,600, wherein 18 per cent of them are located in Uttar Pradesh (~378 tanneries).²¹ Kanpur is the centre for buffalo-based leather in India, whereby the tanneries in the Jajmau area and the town of Unnao house nearly 1,635 functional units, which specialize in sole leather, finished

¹⁵ Dipak Paul, *Research on heavy metal pollution of river Ganga: A review*, 15 ANN. AGRAR. SCI. 278, 280 (2017).

¹⁶ K. R. Beg & S. Ali, *Chemical contaminants and toxicity of Ganga river sediment from up and down stream area at Kanpur*, 4 AM. J. ENVIRON. SCI. 362, 362-366 (2008).

¹⁷ Paul, *supra* note 20, at 281.

¹⁸ Durgesh N. Goswami & Sharda S. Sanjay, *Determination of heavy metals, viz. cadmium, copper, lead and zinc in the different matrices of the Ganges river from Rishikesh to Allahabad through differential pulse anodic stripping voltammetry*, 1(5) INT. J. ADV. RES. CHEM. SCI. 7, 9 (2014).

¹⁹ Seerat Kohli, *Sector: Leather*, INVEST INDIA (Oct. 17, 2022), <https://www.investindia.gov.in/sector/leather#:~:text=The%20Leather%20industry%20in%20India,exchange%20earnings%20for%20the%20country>.

²⁰ C. R. Chaudhary, *Growth of Leather Industry*, PRESS INFORMATION BUREAU (Dec. 27, 2018, 11:44 AM), <https://pib.gov.in/Pressreleaseshare.aspx?PRID=1557419>.

²¹ Sandeep K. Gupta & Sanjeev Gupta, *Kanpur (India) Leather Cluster - A SWOT analysis*, RESEARCH GATE (Feb. 1, 2014), https://www.researchgate.net/publication/321475030_Kanpur_India_Leather_Cluster-A_SWOT_analysis.

leather, industrial shoes, saddle-based products and leather garments.²² About 2,500 MLD²³ industrial waste and effluents are dumped directly into the Middle Zone, particularly between Kannauj and Varanasi, such that 58 per cent of the grossly polluting industries in the said section are tanneries.²⁴

According to the Centre of Science and Environment, 60 per cent of the population residing in the 21 cities along the Ganga dump their untreated sewage and sludge directly into the river, especially near Kanpur, Prayagraj, Varanasi and Patna, where the faecal sludge gets dumped into the waters.²⁵ An independent survey by the Ministry of Urban Development reveals that approximately 242 drains discharge sewage directly into the Ganga without being treated, wherein 205 of the said drains do not have any screen to prevent the solid waste from flowing freely into the river.²⁶

In the Upper Zone city of Haridwar, the Total Coliform (hereinafter referred to as the “TC”) ranges from 50 to 1,600 (VIP Ghat and Vishnu Ghat), while the Faecal Coliform (hereinafter referred to as the “FC”) ranges from 2 to 33 (Har Ki Pauri); however, bathing rituals during isolated incidents like the Ardhkumbh pushes the TC to 1,475 (average value, in MPN/100ml, along the river in Haridwar) and the FC to 352.30 (average value in MPN/100ml).²⁷ It is worth noting that the safe limit for FC is 2,500, wherein the average value of FC (MPN/100ml), in 2021 (January to May), for Uttarakhand, Uttar Pradesh, Bihar and West Bengal is approximately 23.81, 3,823.66, 41,999.69, and 36,960 respectively.²⁸

At the heart of Ganga’s pollution, there are overburdened and inadequate sewage treatment plants along the river. For example, the capacity of Kanpur’s main sewage treatment facility caps at less than three-fourths of the total toxic waste produced in the tanneries; additionally, frequent power outages in the city prevent the treatment plant from working at a desirable

²² *Id.*

²³ Million of Litres per Day/ MegaLitres per Day.

²⁴ Ekabal Siddiqui & Jitendra Pandey, *Assessment of heavy metal pollution in water and surface sediment and evaluation of ecological risks associated with sediment contamination in the Ganga River: a basin-scale study*, ENVIRONMENTAL SCIENCE AND POLLUTION RESEARCH, Feb. 2019, at 2.

²⁵ Shobita Dhar, *21 cities in Ganga basin dump 60% of excreta into river: CSE report*, THE TIMES OF INDIA (Nov. 13, 2020), <https://timesofindia.indiatimes.com/home/environment/21-cities-in-ganga-basin-dump-60-of-excreta-into-river-cse-report/articleshow/79211328.cms>.

²⁶ Priscilla Jebaraj, *70% towns along Ganga let out garbage directly into the river: study*, THE HINDU (Jan. 12, 2019), <https://www.thehindu.com/sci-tech/energy-and-environment/70-towns-along-ganga-let-out-garbage-directly-into-the-river/article25981284.ece>.

²⁷ H. Kulshrestha & S. Sharma, *Impact of mass bathing during Ardhkumbh on water quality status of river Ganga*, 27(2) J. ENVIRON. BIOL. 437, 438 (2006).

²⁸ Bishweswar Tudu, *Data on Pollution Levels of Ganga and Yamuna Rivers*, PRESS INFORMATION BUREAU (Nov. 25, 2021, 5:47 PM), <https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1776180>.

capacity.²⁹ The multicoloured streams of toxic waste, from blue to black, enter into the river without most of it being properly treated,³⁰ wherein a significant quantity of the polluted water is taken into the agricultural fields around Kanpur since the farmers have no choice due to the scarcity of irrigation water for agriculture; consequently, the foam-laced water causes stunted growth of the crops.³¹ Farming with contaminated water acts as a vector for toxins to enter the food chain. The polluted water has become unfit for the survival and proliferation of fish; consequently, fishing communities are forced into looking at other forms of livelihood due to a staggering decline in fish in the Ganga, wherein some communities in the downstream areas have changed their diet in entirety because the “limited” fishes are laden with toxic metals and tanning oils.³²

Pollution also comes from non-point sources like religious ceremonies and rituals in Varanasi. The 88 ghats in the city allow people to release the ashes of their dead relative(s) into the Ganga. At Manikarnika Ghat, cremation takes place on grand cremation pyres by members from the lower castes, wherein 100 bodies get cremated at the ghat per day over a 10-hour window.³³ Poor Hindus that cannot afford the cremation charges choose to put the body of their dead relative into the river without being cremated.³⁴

The extensive practice of departing the dead in Varanasi has led to an exponential rise in the number of dead bodies in the Ganga. In 2015, 100 terribly decomposed bodies surfaced in the district of Unnao, wherein the bodies were supposedly part of the last rites performed in

²⁹ Pete McBride, *Industry on the Banks: Deep Inside Kanpur's Tanneries*, NATIONAL GEOGRAPHIC (Aug. 6, 2014), <https://www.nationalgeographic.com/photography/article/industry-on-the-banks-deep-inside-kanpurs-tanneries>.

³⁰ Owing to less than 20% of the total toxic waste being adequately treated by the Central Processing Unit of Kanpur.

³¹ Sean Gallagher, *India: The Toxic Price of Leather*, PULITZER CENTER (Feb. 4, 2014), <https://www.bloomberqquint.com/business/why-kanpurs-tanneries-are-at-the-centre-of-a-fight-to-save-the-ganga>.

³² Naizam Jaffer, *Tanneries, the Ganges and how WWF is driving change*, MISSION GANGA (n.d.), <https://mission-ganga.thewaternetwork.com/article-FfV/tanneries-the-ganges-and-how-wwf-is-driving-change-B4D-9ZIVrQWMDkNQHN-JPQ> (last visited Oct. 15, 2022).

³³ Shantanu G. Ray, *In Varanasi, a Lifetime Spent in a World of Death*, THE NEW YORK TIMES (Mar. 16, 2014), <https://india.blogs.nytimes.com/2014/03/16/in-varanasi-a-lifetime-spent-in-a-world-of-death/?mcubz=0>.

³⁴ Geeta Pandey, *More than 100 bodies recovered from India's Ganges*, BBC NEWS (Jan. 14, 2015), <https://www.bbc.com/news/world-asia-india-30808745>.

Varanasi.³⁵ The dead bodies add to the microplastics in the Ganga due to the non-degradable plastics used to wrap the religious offerings and dead bodies.³⁶

Research Objective

For this paper, we are only concerned with the main stem of the Ganga. It is evident from the discussion above that the human settlements, municipal bodies, and industrial establishments located along the Ganga in the Middle Zone contribute significantly to the pollution of the Ganga by way of untreated effluents and domestic sewage. We will focus on the public nuisance and tortuous pollution purported by the Middle Zone (Uttar Pradesh) onto the communities residing in the downstream areas of the Lower Zone (Bihar). The responsibility and liability of the Middle Zone shall be gauged in the light of the Code of Criminal Procedure, 1973 (hereinafter referred to as the “**Code**”), and the principles of the Rio Declaration.

The question about responsibility shall be further treated with the Doctrinal Legal Research Method and the Applied Method so as to rigorously analyse existing legislative statutes in India by way of the Code and the Water (Prevention and Control of Pollution) Act, 1974 (hereinafter referred to as the “**Water Act**”).

Analysis

An analysis by CPCB into the status of drains discharging into the Ganga in the post-monsoon period of 2020 yields the results as noted in Table 1. Herein, “**BOD**” stands for Biological Oxygen Demand in the water. The average BOD (mg/L) in discharges from untapped drains³⁷ in Uttarakhand, Uttar Pradesh, Bihar and West Bengal is approximately 45.76 (entirely domestic sewage), 49.42 (mixed effluents from domestic and industrial sources), 37.90 (mostly domestic sewage) and 56.88 (mixed effluents) respectively.³⁸ The Water Quality Analysis of River Ganga by the CPCB in 2020 yields the following results, as noted in Table 2.

³⁵ Mayank Jain, *Why did 100 decomposed bodies float back up in Ganga?* SCROLL (Jan. 15, 2015), <https://scroll.in/article/700489/why-did-100-decomposed-bodies-float-back-up-in-ganga>.

³⁶ Unnati Sharma, *High presence of microplastics in Ganga, level of pollution maximum in Varanasi, study says*, THE PRINT (Jul. 22, 2021), <https://theprint.in/india/high-presence-of-microplastics-in-ganga-level-of-pollution-maximum-in-varanasi-study-says/700876>.

³⁷ The measurable values are derived from untapped drains discharging directly into the Ganga. This excludes outlets from Sewage Treatment Plants (hereinafter referred to as the “**STP**”). Average BOD is calculated on the basis of individual values of BOD measured from each untapped drain.

³⁸ CENTRAL POLLUTION CONTROL BOARD, STATUS OF POST-MONSOON 2020 MONITORED DRAINS DISCHARGING INTO RIVER GANGA AND ITS TRIBUTARIES (BANGANGA, RAMGANGA, KALI-EAST, PANDU, ETC.) 1 (2021) https://cpcb.nic.in/ngrba/Identified_drains_postmonsoon-2020.pdf.

| Sr. No | State | No. Of Drains | Total Flow (MLD) | No. Of Tapped Drains | Average BOD (mg/L): B ₁ | No. Of Outlets from STP |
|--------|---------------|---------------|------------------|----------------------|------------------------------------|-------------------------|
| 1. | Uttarakhand | 25 | 141.13 | 9 | 45.76 | 3 |
| 2. | Uttar Pradesh | 154 | 2185.04 | 47 | 49.42 | 2 |
| 3. | Bihar | 19 | 609.48 | 0 | 37.90 | 0 |
| 4. | West Bengal | 56 | 6627.45 | 3 | 56.88 | 0 |

Table 1: Status of Drains Discharging into the Ganga³⁹

| Sr. No | State | No. Of Monitoring Stations | Average BOD (mg/L): B ₂ | Maximum BOD Recorded/ Monitoring Station(s) |
|--------|---------------|----------------------------|------------------------------------|---|
| 1. | Uttarakhand | 13 | 1.25 | 4/ Rishikesh |
| 2. | Uttar Pradesh | 30 | 2.99 | 6.5/ Assi Ghat (Varanasi) |
| 3. | Bihar | 34 | 2.41 | 6.7/ Bhagalpur |
| 4. | West Bengal | 14 | 3.21 | 7.75/ Tribeni, Near Burning Ghat |

Table 2: Water Quality Analysis of River Ganga⁴⁰

Researchers suggest that in the absence of any sources of industrial pollution, the Ganga can self-purify itself, whereby an analysis between 2007 and 2016 shows that the heightened BOD (5.5-9.2 ppm⁴¹) in Uttar Pradesh reduced to 2.0-2.8 ppm in Bihar.⁴² Tables 1 and 2 reveal that Bihar has the lowest number of drains discharging directly into the river; additionally, Bihar has the lowest value of B₁. The untreated effluents from tanneries and other industries cause a sharp increase in BOD in Uttar Pradesh because of the presence of heavy metals, salts, etcetera, in the said effluents. The BOD decreases in Bihar because of a lower pollution load (609.48

³⁹ *Id.*, 2-17.

⁴⁰ CENTRAL POLLUTION CONTROL BOARD, WATER QUALITY DATA OF RIVERS UNDER NATIONAL WATER QUALITY MONITORING PROGRAMME (NWMP) 11-15 (2020) https://cpcb.nic.in/wqm/2020/WQuality_River-Data-2020.pdf.

⁴¹ Parts Per Million.

⁴² Ayesha Mariya et al., *The pristine nature of river Ganges: its qualitative deterioration and suggestive restoration strategies*, 191 ENVIRON. MONIT. ASSESS 542, 552-553 (2019).

MLD) than that of Uttar Pradesh (2185.04 MLD), whereby the self-purifying capacity of the Ganga gets rid of the pollutants from Uttar Pradesh whilst decreasing the BOD, as seen in Table 2. The self-purifying property of the Ganga might be attributable to a higher resident population of rich biodiversity (ex: diatoms, bacteriophages, etcetera) and Transparent Exopolymeric Particles in the Ganga, wherein the unique biochemistry is said to promote the removal of nutrients and heavy metals from the river water via sedimentation.⁴³

One can conjecture that the said capacity of the Ganga is at play in Bihar. One can ideate that the pollution in Uttar Pradesh is carried forward to Bihar. Although Bihar has no tapped drains, interim measures are already underway on seven of the said drains, including the Rajapur Drain, which had been the most polluting in Bihar, with a discharge of 173.11 MLD, as of 2020.⁴⁴ The widespread ‘untapped’ drains in Uttar Pradesh result in a collective discharge, with a BOD Load (Tonnes Per Day) of 55.59 into the Ganga, as against the BOD Load of 9.09 released by the drains in Bihar.⁴⁵

Between December 2017 and March 2018, the Saprobic Score of the Ganga varied between 3.60 to 5.55 in Uttar Pradesh and 4.64 to 5.25 in Bihar, wherein ‘Severe Pollution’ was detected at Bridge 2 at Kanpur (0.0), Between Road Rail Bridge Bhruti Near Panki (0.0), and the Bathing Ghat at Varanasi (1.67) in May 2017.⁴⁶

A nuisance becomes an actionable tort if and only if it is associated with a wrongful act that causes loss, damage, annoyance or inconvenience to another individual, whereby nuisance is the unlawful interference with a person’s enjoyment of some right(s); consequently, if a particular nuisance affects the reasonable convenience of the public at large (or a class of people), then the nuisance becomes a public nuisance.⁴⁷ Section 268 of the Indian Penal Code, 1860 (hereinafter referred to as the “IPC”) would allow the communities in the Lower Zone, particularly in Bihar, to bring action against municipal authorities and polluting industries (like tanneries) in cities like Kanpur and Varanasi. The municipal authorities in such cities may be primarily guilty of the following actions/ omissions:

⁴³ *Id.*, 565-566.

⁴⁴ CENTRAL POLLUTION CONTROL BOARD, *supra* note 45, at 15.

⁴⁵ *Id.*, 14-15.

⁴⁶ CENTRAL POLLUTION CONTROL BOARD, BIOLOGICAL WATER QUALITY ASSESSMENT OF THE RIVER GANGA (2017-18) 13-16 (2018) <https://cpcb.nic.in/uploads/healthreports/Biological-Water-Quality-Assessment-2018.pdf>.

⁴⁷ S. K. KAPOOR, LAW OF TORTS & CONSUMER PROTECTION ACT 250-251 (Central Law Agency ed., 8th ed. 2010).

- a. Not setting up adequate and functional STPs to treat domestic discharges and toxic effluents from industrial establishments.
- b. Not checking, supervising and vigilantly auditing the operations of the said industries in light of norms and directions prescribed by the Central Government.
- c. Not supervising and construing the activities at the ghats in Varanasi in light of legislative statutes and directions prescribed by the Central Government and the CPCB.

The communities in Bihar suffer from a common injury/ annoyance, which is an outcome of the dumping of wastes (with levels of pollutants above the permissible limit) into the Ganga. It is worth noting that the said dumping of wastes amounts to public nuisance due to the following reasons:⁴⁸

- i. The unreasonable act of dumping unchecked and untreated sewage and effluents causes injury and annoyance to, and interference with the physical comfort and personal health of every person alike, whether sick or healthy, wherein the communities in Bihar do not suffer because of some particular sensitivity to the said act(s). Any reasonably ordinary person living along the Ganga in Bihar suffers equally because of the heavy metals in the river. The degree, proximity (neighbouring state) and intensity (heavy pollution) of discomfort and inconvenience to an ordinary and reasonable person are such that the interference is substantial.
- ii. The dumping of untreated wastes is a continuing wrong and ongoing state of affairs over a time period of many years and not a temporary or isolated act.⁴⁹
- iii. It does not matter whether the wastes had been dumped in good faith or bad faith because the act itself causes a legal injury⁵⁰ to the said communities towards their fundamental right to the enjoyment of pollution-free water, which is enshrined within their Right of Life under Article 21 of the Constitution of India, 1950.⁵¹
- iv. The pollutants may cause some physical harm to the people and their livelihood (ex: agriculture, etcetera) in Bihar. It is a known fact that the negative externalities imposed by an upstream industry (by way of heavy metal pollution) increase the downstream industries' cost of production (negatively affecting its production).⁵²

⁴⁸ J. N. PANDEY, *LAW OF TORTS WITH CONSUMER PROTECTION ACT AND MOTOR VEHICLES ACT* 396-409 (Central Law Publications ed., 8th ed. 2011).

⁴⁹ *Stone v. Bolton*, All ER 237 (1949).

⁵⁰ *Brandford Corporation v. Pickals*, AC 587 (1895).

⁵¹ *Subhash Kumar v. State of Bihar & Ors.*, 1 SCR 5 (1991).

⁵² Amitrajeet A. Batabyal & Seung J. Yoo, *A Theoretical Analysis of Costs, Waste Treatment, Pollution in the Ganges, and Leather Production by Tanneries in Kanpur, India* 4-7 (Rochester Institute of Technology, Working Paper No. 114284, 2022).

The tortuous nature of pollution was upheld by Hon'ble Justice S. S. Ahmad, whereby he submitted that pollution is 'a tort committed against the community' as a whole; additionally, the court opined that the powers of the judiciary can be invoked under a writ petition in order to make the polluter not only pay compensation for the restoration of the damaged environment but also pay damages to the victims for the polluting actions of the polluter.⁵³ The court can ask the polluter to pay exemplary damages so as to act as a deterrent for others.⁵⁴ Section 133 of the Code can be invoked to remove any public nuisance at the behest of a conditional order in a summary case by a District Magistrate, Sub-Divisional Magistrate, or any other Executive Magistrate, wherein the said nuisance can get removed from any 'public' place. Under Section 133, the court can desist someone from carrying on the conduct of their trade or occupation, or can remove or regulate the same in such manner as may be directed if the trade or occupation is injurious to the health of the community. The pollution of the Ganga in Uttar Pradesh has been in existence for a long time, wherein the pollution is not emergent, and the non-intervention of the court shall not cause any irreparable and immediate injury to the communities in Bihar. Section 133 cannot be invoked if the nuisance has been in existence for a long time without any change in circumstances.⁵⁵ The non-urgency of the issue compels the downstream communities to approach the civil court for an effective remedy.

Section 2, Clause E of the Water Act upholds the pollution of the Ganga by means of sewage effluents (Clause G) discharged from domestic sewerage systems/ open drains, and trade effluents (Clause K) from industries and tanneries of Kanpur. Mass bathing and other religious rituals are associated with careless use of shampoos, soaps, and detergents; additionally, polythene, clothes, food, flowers, leaves, milk, ghee, curd, coins, etcetera, are discarded into the river along with other religious offerings like *diyas*.⁵⁶ The solid and liquid substances pollute the Ganga by altering its physical and biochemical properties (ex: BOD, TC, FC, etcetera), which renders the water harmful to public health and safety in the downstream communities. If an industry or STP permits the drainage of any polluting, poisonous or noxious matter into the Ganga, then the same is prohibited in law if the pollutants in the discharge in question do not adhere to standards laid down by the authorities (Section 24).⁵⁷

⁵³ M. C. Mehta v. Kamal Nath & Ors., W.P.(C) No. 000182/1996 (2000).

⁵⁴ *Id.*

⁵⁵ Asharfi Lal v. The State, AIR All 215 (1965).

⁵⁶ Sanjay Dwivedi et al., *Self-cleansing properties of Ganga during mass ritualistic bathing on Maha-Kumbh*, 192 ENVIRON. MONIT. ASSESS. 221, 222 (2020).

⁵⁷ The Water (Prevention and Control of Pollution) Act, 1974, No. 6, Acts of Parliament, 1974, India.

Principle 16 of the Rio Declaration requires the polluter to bear the cost of pollution by internalising the environmental costs, with due regard to the public interest at hand. The 'Polluter Pays' Principle requires the polluter to compensate the victims and individual sufferers of pollution while bearing the cost of restoring and reversing the environmental degradation, wherein the Supreme Court of India held that the 'Polluter Pays Principle' of sustainable development is part of the environmental law of India.⁵⁸ It is worth noting that the said principle places an absolute liability on the polluter to pay till the ecological damage caused by them is restored, wherein a 'one time payment/ compensation' by the polluter may not be enough.⁵⁹

Pollution in the form of heavy metals, inorganic salts, oils, etcetera, from Uttar Pradesh can be the basis for a criminal approach or/ and civil approach by the downstream communities in Bihar owing to the public nuisance suffered by them:

1. Criminal Approach under Section 268 of the IPC.
2. Civil Approach for the tortuous wrong of public nuisance, whereby the polluters in Uttar Pradesh (industries, municipal bodies and civic authorities) are to pay damages to the victims of the pollution for their actions/ omissions regarding pollution.

Conclusion

The decrease in the Average BOD (mg/L) from 2.99 in Uttar Pradesh to 2.41 in Bihar reveals that the self-purifying capacity of the Ganga removes the heavy metals from the water via sedimentation in Bihar (in the absence of any major industrial and domestic sources of pollution). The untreated effluents from tanneries in Kanpur and other industries, along with the widespread religious activities in Varanasi, cause a sharp increase in BOD in Uttar Pradesh. The widespread untapped drains in Uttar Pradesh result in the discharge of a BOD Load (Tonnes Per Day) of 55.59 into the Ganga, as against the BOD Load of 9.09 released by the drains in Bihar. It can be hypothesized that the heavy metals, salts, etcetera, are carried into Bihar from Uttar Pradesh.

The unreasonably high presence of heavy metals and other pollutants due to unchecked dumping of untreated sewage and industrial effluents causes injury and annoyance to and interference with the physical comfort and personal health of the people in the downstream communities. Although the said people cannot invoke Section 133 of the Code due to the non-

⁵⁸ Vellore Citizens Welfare Forum v. Union of India & Ors., SC 2715 (1996).

⁵⁹ The All India Skin and Hide Tanners & Merchants Association v. The Loss of Ecology (Prevention and Payment of Compensation) Authority & Ors., Writ L.R. 183 (D.B.) (2010).

emergent existence of the pollutants in the Ganga for a long-time, the same people can approach a civil court to seek damages for the tortuous act of public nuisance at the hands of the industries, municipal bodies and civic authorities in the polluting areas of Uttar Pradesh like Kanpur and Varanasi. The 'Polluter Pays Principle' shall be absolutely applied to the wrongdoers for their actions/ omissions, wherein the respective wrongdoer will not only pay damages to the victims in the downstream communities for their respective share in the pollution of the Ganga but also pay the cost of restoring and reversing the environmental degradation of the Ganga in their respective polluted areas.

ACCESS TO GREEN JUSTICE: NEEDS OF THE HOUR

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Abstract

A healthy environment is necessary for the full enjoyment of human life. Access to green justice is need for every one's for good health, development, hygienic environment and sustainability of natural resource which are highly essential for present as well as future generations. This mother earth fulfils our basic needs, where we care for our intellectual, physical, social and economic establishment. Nobody from the outer space will to solve our problem and provide us green justice i.e. Protection, preservation and fulfil the basic needs. It is the duty of every human being to take care of our mother earth and think about the safety and progress of the present and future generations. In the national and international level every state holders makes such legislation for protection and preservation of environment. The nature of law is enforceable, which regulates the human acts, who have taken core responsible to protect the environment Human beings are the main resources of every state who utilized other Natural resources for his welfare and progress of the society without following precautionary measures and exploit the natural resources. These types of attitudes reflected on Environment which creates a major global problem. Public welfare Institutions takes such steps towards the protection of human health, welfare and social interest, which can be possible by a well surrounding. Time to time the judiciary gives such direction to the state to protect the plants, animals, birds and other elements of the environment which are highly essential for human existence. The Researchers try to approach in this article how the protection of environment is every one's primary duty of this earth and also it is primary duty of the national and International state holders to takes such welfare majors prepare and planning to provide a hygienic and progressive environment for present and future Generation.

Keywords: Healthy Environment, Human Health, Human Welfare, Indian Judiciary, Indian Laws

“Wealth is not the money we make; rather it is the health of environment around us.”

Introduction:

A healthy environment is necessary for the full enjoyment of human life. The protection and improvement of human environment is a global issue which affects the well-being of people and economic development throughout the world. The interdependence between human life and environment has become an unavoidable truth. The theme for 2018 was “Beat plastic pollution which was a call to action for all of us to come together to combat one of the greatest environmental challenges of the 21st Century. Changes in natural resources base due to human activities has taken place more rapidly in past 50 years causing continuous deterioration of Environment.”¹

From Stone Age to modern era man has come a long way. In this per-suit for comforts of life he ignores the threat of green violation and environmental degradation. Human activities are causing Green House gases to accumulate in the atmosphere. Global warming, Ozone Depletion and Acid rain etc are the main concern of the Hours. The ecosystem is under a Threat that is never faced before. This article approaches the Journey to judgement in the administration of access to Green Justice. Nature and mankind are an in separable part of life. There are unlimited forms of life on Earths. Man is one among the many species competing with all other for survivals. The Earth started to undergo deadly climate change. The world’s climate is changing and will continued change into the coming century. Based on a large body of scientific peer review research “Global annually averaged surface air temperature has increased about 1.8 Fahrenheit over the last 115 Years.”²

From time immemorial nature has bestowed living beings with well-balanced natural ecosystem on this green living planet. But at the same time our planet is facing changes vis-à-vis imbalances in its ecological components owing to the mismanaged exploitation of natural resources by the mankind itself. Hence it is the need of the hour that we strike a balance between them as because humanity needs both.

Scientific innovations and industrial advancements have taken the human civilization to such a level that not only has adverse imbalances vis-à-vis threatening the natural and ecological equilibrium but at the same time poses the risks of the planet earth like Climate change, Acid rains, Global warming, Ozone depletion and Greenhouse effect etc.³

¹ The Hindu, Jan26, 2022, P-7

² Anbhumani Ramadoss “A Climate Emergency”, The Hindu, 27.9.2019, P-9

³ Easwaran Narassimhan “Towards Low Emissions Growth”, The Hindu 26.1.2022, P-7

The present paper attempts to analyze the issues of Climate Hazards and for improvement of global based greening solution to provide Climate Justice by setting up a strong Climate Law.

A few generations from now, our descendants may not see the animals and plants which we now regard as common place. Nearly 500 species have become extinct in just the last century. We are depleting 25% more natural resources than the planet can sustain right now. Mankind is teetering dangerously to the principle of extinction. Industries, Vehicles, burning of fossil fuels, thermo power plants and large scale rearing of cattle are emitting heat-trapping the sun's heat and increasing the earth's temperature. The Climate Crisis is code red for humanity. As because temperature everywhere is reaching new highs, biodiversity is reaching new lows, oceans are warming and the earth is acidifying and choking with plastic waste. Increasing temperatures will make vast stretches of our planet dead zones for humanity by this century's end. The Lancet Journal just described climate change as the "defining narrative of human health" in the years to come – a crisis defined by widespread hunger, respiratory illness, and deadly disasters and infectious disease outbreaks.

Despite these alarm bells, we only see nothing new acts by different countries for climate change. No doubt the recent new announcement COP26 for climate action is welcome. That is our world is on track for calamities global temperature rises well above 2°C. This is a far cry from 1.5°C target to which the world agreed under the Paris Agreement – a target that science tells us is the only sustainable pathway for our world. This target is achievable if we can reduce global emissions by 45% compared to 2010 levels this decade Human health and Environment Safety, both are important and therefore there is an imperative need for Promoting Scientific use of Environment Policy to access to Green justice.

Journey to Justice:

In society in which we live today is a global risk society. As we know that more than 500 International and National environmental agreements have been developed conference on the human environment in Stockholm in 1972 to improve the greening concept in the greening concept in the global arena. Similarly climate change was placed at the Centre of Global Diplomacy in the 23rd Annual UN Climate Conference (COP 23) Meeting held in Bonn, Germany in 2017. The overall outcome of the COP23 Conference was however a balanced one for developed and developing countries including India. Climate change is the defining human development challenge for the 21st Century. As we know that World Climate is changing and will continue to change into the coming century. The risks associated with the changes are real

but highly uncertain, which affects mainly the livelihood of rural population in developing countries.

United Nations Framework Convention on Climate Change (UNFCCC) is one of the basic legal documents for adaption of climate change. The UNFCCC is one of the three Conventions adapted at the “Rio Earth Summit” in 1992. Its Sister Rio Conventions are the UN Convention on Biological Diversity (CBD) and the Convention to Combat Desertification (CCD). Beside these there is Kyoto Protocol, which exclusively deals with Climate Change issues. The Kyoto Protocol was adapted in Kyoto, Japan on 11th December 1997. But due to a complex ratification process, it came into force on 16th February 2005. Its main objective is to design and strengthen the Protocol environmental integrity, support the carbon market credibility and ensuring a strong Green Justice.

Recently there are efforts taken through Conference of Parties (COP). As we know COP is the Supreme decision making body of the UNFCCC. A key task for the COP is review the national communications and emission inventories submitted by the parties. The first COP meeting was held in Berlin, Germany in 1995. Only question surviving before us at present is how to deal with it before it sets catastrophic by the end of this Century? Because according to the research of the Intergovernmental Panel on Climate Change (IPCC) a temperature increase over 2 C would lead a serious consequence, such as a greater frequency of extreme climate change. In fact we are living as if we had 1.5 planets or double planets. As a whole climate change hurts innocent people and their livelihood. The climate change conference in Warsaw, Poland in 2013 and Lima, Peru in 2014 enabled essential progress towards COP21 in Paris 2015 to reducing greenhouse gas emissions. Similarly the Intended Nationally Determined Contributions (INDCs) was introduced at COP19, in Warsaw, Poland in 2013 to agree for a new International agreement to outline the post 2020 climate action. This was an agreement to communicate internationally that what are steps they will take to address climate change in their own countries by taking into their domestic circumstances capabilities.

Similarly Common but Differtiantial Responsibility (CBDR) was formalized in International Law at the 1992 UN Conference on Environmental and Development (UNCED) in Rio de Janeiro. That means the developed countries, which had been able to develop for longer times unlimited for longer times unimpeded by environmental restrictions now need to take a greater share of responsibility.

Indian Contribution to the Climate Change Negotiations

From the era of ancient India has a long history and tradition of harmonious co-existence between man and nature. India initially develops a strict “Polluter Pays” concept without a willingness to accommodate bracket principles. India’s commitment is to:

- i. Restriction in emission intensity
- ii. Emission per unit at GDP
- iii. An increase in forest cover
- iv. A greater role for renewable energy in Power generation.

Current Laws in India

Our existing laws are not adequate to deal with climate change. India has the Environmental Protection Act-1986, the Air Prevention and Control of pollution Act-1981, the Water Prevention and Control of pollution Act-1974. But now Climate Change is not exactly within air and water that means what are the laws which would cover the impact of a cyclone to reduce future climate impact? There is also no strong laws ready to tackle environmental violations that is Green Crime which is now a global issues. The Environmental Protection Act, 1986 is grossly inadequate to deal with violations of Climates as because Clause 24 of the Act, effect of other laws like, CrPC 1973. This makes the EPA subordinates to every other laws.

Further, there is a need to integrate Climate action-adoption and mitigation and monitor process. In addition to comprehensive climate action technological i.e. changing energy sources or carbon intensity we have to also adopt nature based i.e. emphasizing restoration of ecosystem, reducing natural hazards and increasing carbon sinks.

In this context India has also planning to adopt in future the “Panchamrit solution” has announced at UN Climate Change Conference (COP26, from Oct 31st to Nov 12th, 2021) at Glasgow, Scotland. This solution’s main aim is to

- i. Reducing fossil fuel dependence and carbon intensity (i.e. to reduce one billion tonnes of projected carbon emissions by 2030).
- ii. To ramping up the renewable energy share to 50% by 2030.

Hence, Glasgow Conference (COP26) is important as it will call for practical implementation of the 2015 Paris agreement by setting rules. This is why it is right for India to mull setting up

a Climate Law to provide true sense climate Justice, new carbon space and environmental protection.⁴

It is also right time for India to create an ‘Environmental Commission’ having quasi-judicial powers of civil courts to ensure lower energy pathways that addressed to minimize climate change⁵. India has taken number of efforts to retain its position in the top 10 best performing countries for the third year in a row in the largest global climate change performance index (CCPI) released by Germanwatch on the guidelines of the COP26 despite of pandemic difficulties. It has also stated that India will achieve net zero emission latest by 2070 and by 2030 India will ensure 50% of its energy will be sourced from renewable energy sources. Similarly India has also reduce its carbon emission until 2030 by a billion tonnes. India has also reduce its emission intensity per unit of GDP by less than 45% to provide Climate Justice to the people of India. The concerns of climate change have been taken as one of the most pressing environmental concerns by the Supreme Court of India and various High Courts. In fact Supreme Court of India declared clean water, air and soil a fundamental right of the people of India. It shaped environmental justice when the industrialization process resulted in poisoning the ground water of village. In Narmada Bachao Andolan,⁶ the Supreme Court dealt with the development versus environmental problem in the context of sustainable development. The Supreme Court in Karnataka Industrial Areas Development Board vs. Sri C. Kenchappa and Others⁷ while ordering authorities to properly consider the adverse environmental impact of development before acquisition of lands for development and the impacts of climate change and Ozone Layer depletion. In Reliance Natural Resources Limited vs. Reliance Industries Limited, the court observed that the low carbon content in natural gas, relative to other fossil fuels implies that its use may help in combating global warming problems.⁸

Task before us

⁴ D. Raghunandan, “The lowdown on India’s Glasgow announcement”, The Hindu 12.11.2021, P-6.

⁵ Why the Underdogs Came Out Ahead: An Analysis of the Supreme Court’s Environmental Judgments, 1980-2010, Economic and Political Weekly, January, 25, 2014, Vol.XLIXNo.4.

⁶ Narmada Bachao Andolan, October 18, 2000

⁷ Karnataka Industrial Areas Development Board vs. Sri C. Kenchappa and Others, (2006) 6 SCC 371

⁸ Indian Council for Environmental Legal Action vs. Union of India (1996) 3 SCC 212

Recent decarbonisation modelling studies point to a significant role for battery, green hydrogen, carbon capture and storage technologies to decarbonise India's transport and industry sectors. However India's R&D investments in these emerging green technologies are not existent the introduction linked incentives under "Aatmanirbhar Bharat" are a step in the right direction for localising clean energy manufacturing activities.

Of course India's new target to develop a new climate oriented policies are as follows:

- i. Reducing Emissions per unit of GDP by 45% in 2030 relative to 2005 levels.
 - ii. By letting absolute emissions by one billion tonnes by 2030 levels.
 - iii. 500(GW) (1Giga Watt=1000 Mega Watts) of non-fossil fuel installed power generation capacity by 2030.
 - iv. 50% electricity generation from renewable sources by 2030.
 - v. Net Zero emission by 2070.
1. A Commission on green law could be set up with the power and authority to issue directions and oversee implementation of plans and programmes of Green Justice. The Commission could have quasi-judicial powers with powers of a Civil Court to ensure that directions are followed in letter and spirit.
 2. A system which is need for Accountability at short term, medium term, long term, levels as we face hazards for implementation of green justice.
 3. In spite of the role of Judiciary an interplay initiatives among public spirited citizens, environmental groups and lawyers are necessary to the evolution of environmental jurisprudence principle in India to access to Green Justice.
 4. A green Industrialization strategy is necessary that combines laws, policy instruments and implementing institutions to steer its decentralised economic activities to become environmental friendly and resilient.
 5. A market steering approach rather than hands off approach would encourage private sector investments in Green technologies which needed to industrialise under climate constraints.

Initiations to Combat to Green Violation

- Several initiations have been implementing to create awareness about climate change.
i.e. how to mitigate and adopt to it.

- In 1991 S.C. directed the Central Government and all State Government to provide compulsory Environmental Education to all Schools and Colleges in the Case of M.C. Mehta vs. UOI.
- Climate Change has the potential to disrupt and reshape lives.
- There are several alarming predictions about its impact and one of them is the UN Sustainable Goals Report-2018 that is Climate Change is among the key factors in rising hunger and human displacement.
- The WHO estimates that Climate Change will cause an additional 2,50,000 deaths per year between 2030-2050, due to malnutrition, malaria, diarrhoea & heat stress.
- These Scenarios raise Questions that mainly to Vulnerable groups that where they know the manifestation of climate change and whether they aware that it could potentially affect the health and livelihood of present and future generations?

Challenges Ahead

- One of the major challenges that the inconsistency of the Judiciary in dealing with environmental cases.
- Environmental groups and NGOs find it difficult to get involved in environmental cases in a consistent manner for various Practical reasons.
- Enactment of a Law, but tolerating its infringement is worse than not enacting a law at all. Continued of tolerance of such violations of law not only renders legal provisions nugatory but such tolerance by the enforcement authorities encourages lawlessness and adoption which cannot tolerated in any civilised society.

Measures Needed

To stopped Municipal Social Waste burning and to the waste Measurement System to improve air quality in a particular town or city.

- To ensure groundwater Conservation.
- There must be a strong coordination in between Judiciary and elected represented to create an awareness among the people
- Increased taxation on sale of private vehicles.
- To ensure a law this could cover and reduce future climate valuation and Cyclone impact.
- The Natural resources management must be inaccessibility among rural communities.

- When free access to information on an issue is not made available to the committees, they begin to rely on external agencies for solving their local problems.
- One stop centre must be launched for natural resources management to build close cooperation among departmental democratise access to knowledge and continue with research and development on every aspect of natural resource management.

One must be looked out that the air pollution reduction and steep climate change mitigation are not complementary goals but require independent efforts over the short and medium term. One upon a time the American Philosopher Henry David Thoreau rightly Stated that “The tree has also it’s own heart”. It has also its own life. But unfortunate that slowly but surely some of the rare trees are disappearing from our Earth. Hence it is a right time for us to think over it, elsewhere we the worst sufferer in the future. Access to Green justice is an inevitable requirement but it need not be at the cost of public awareness. Hence strict enforcement of Pollution Control policies, eco-friendly inputs and increase in ecosystem resilience through the conservation of biodiversity are necessary to shape a clean and Green Earth.



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THE 7S THEORY OF SUSTAINABLE CONSUMERISM IN FOOD SECTOR

Niraj Kumar Seth

Indian Academy of International Law and Diplomacy

Abstract

Sustainability in resource consumption has become integral to business responsibility in our age. Minimum wastage, optimum utilisation, and economy in usage of resources through techniques such as recycling are some of the features of sustainable consumption. However, the concern towards sustainability in resource use has hitherto been only limited to business enterprises. Sustainability in consumerism is a novel concept that has many dimensions. Sustainability in consumerism entails economy in consumption, wastage minimisation, recycling, reuse, and responsible consumer behaviour. It has financial, social, health, economic and philosophical dimensions. Unsustainable consumerism in food sector can lead to widespread lifestyle diseases, inequity in food availability and nutrition, and environmental degradation. Defining sustainable consumerism and its components could be the first step towards inculcating a culture of sustainability among consumers at the global level. This paper is aimed at expounding a theory on sustainable consumerism in food sector known as 'The 7S Theory on Sustainable Consumerism in food sector'. The theory explains the concept in terms of its seven basic components, namely, Sensible, Sensitive, Shared, Sufficiency, Spirituality, Salvage, and Savings. All these components of sustainable consumerism have been discussed in details with appropriate analogies, illustrations, and examples. An attempt has also been made to relate these components with the consumer rights regime and enforcement mechanism under the Consumer Protection Act, 2020. For instance, consumers in food sector have a right to be informed about the nutritional content or ingredients of food they consume. This comes under 'Sensible' dimension, which deals with the qualitative aspects of consumption. 'Sensitive' entails concern for animals and their habitats. 'Shared' deals with equity in food availability and distribution. 'Sufficiency' involves the quantitative aspects of food consumption. 'Spirituality' takes consumerism beyond strictly material calculus. 'Salvage' involves minimising food wastage. 'Savings' involve economy in consumption. Recommendations have been made to further deepen consumer rights regime and strengthen consumer protection laws in India, consistent with the essence of the theory. Suggestions have been made to popularise the idea of sustainable consumerism among the general public.

Keywords: Sustainability, Consumerism, Law, Rights, Food

Introduction to Sustainable Consumerism

Sustainable consumerism is the application of the principles of sustainability and sustainable development in resource consumption. The United Nations Brundtland Commission held in 1987 issued a Report of the World Commission on Environment and Development: Our Common Future. The report defined sustainability as meeting the needs of the present generations without compromising the ability of future generations to meet their own needs.¹ Since then sustainability has become a running theme in all discussions and debates on issues related to environment and nature conservation. In simple terms, sustainability means an inherent ability of the nature or environment to sustain itself, when left undisturbed. For instance, forests when left undisturbed regenerate eventually. However, human intervention and unsustainable use of resources disrupts that inherent regenerative capacity of nature. This happens when the pace of resource exploitation exceeds the carrying capacity or regenerative rate of the nature. Resources are not infinite. Nature needs time to regenerate its resources and recoup its losses. Sustainability erodes when resources start depleting due to excessively high rates of consumption of resources by the present generation that leaves comparatively lesser amounts of resources for the use of future generations. Sustainability is thus closely connected with inter-generational equity. Even within the same generation, unequal capacities, capabilities, affordability, and accessibility to resources cause intra-generational inequity.

Sustainable consumerism is a pattern of consumption or consumer behaviour that has sustainability as its central concern. Its about doing more and better with less.² It includes efficiency and economy in use of resources. Efficiency means maximising consumer satisfaction at the same level of resources consumption or minimising resources consumption for the same level of consumer satisfaction. This could be possible by adopting methods, practices and technologies that result in better resource efficiency per unit of resources consumed. Economy means reduction or minimisation of resource consumption, regardless of levels of consumer satisfaction. Sustainable consumerism is a culture that emanates from awareness about environmental issues and sustainability concerns. It covers all the stages of consumption from planning to buy or consume resources to their safe and sustainable disposal

¹ REPORT OF THE WORLD COMMISSION ON ENVIRONMENT AND DEVELOPMENT: OUR COMMON FUTURE, <http://www.un-documents.net/our-common-future.pdf> (last visited Oct. 23, 2022).

² SUSTAINABLE DEVELOPMENT GOALS, <https://www.un.org/sustainabledevelopment/sustainable-consumption-production/> (last visited Oct. 23, 2022).

and includes all intermediate stages such as buying, consumption, reuse, recycling, and recovering. Sustainable consumerism may apply to all kinds of resources that we consume that are subject to sustainability concerns due to their scarcity or constrained regenerative capacity, such as water, energy, and food.

Sustainability Issues Specific to Food Sector

Some of the issues related to sustainable consumerism in food sector that need resolution by global and coordinated efforts are listed as below –

a) Food wastage

13.3% of the world's food is lost after harvesting and before reaching retail markets while 17% is wasted at the consumer level.³ Each year one-third of all food produced ends up as waste, costing the world around \$1 trillion and measuring equivalent to \$1.3 billion tonnes. Most of this wastage is owed to poor transportation from the sources of supply to market places and faulty harvesting practices.⁴ India has its own food wastage conundrum. The per capita food wastage of Indian households amounts to 50 Kg per annum. In financial terms the total cost of food wastage in India is estimated at a monumental INR 92,651 Crores annually.⁵ This is approximately 26.5% of annual food subsidy allocation to Food Corporate of India in the financial year 2020-21.⁶ This huge scale and volume of food wastage exists in spite of the fact that India ranked 107th out of 121 countries with a 'serious' level score of 29.1 in the 2022 edition of the Global Hunger Index.⁷ India is a land of stark inequalities and contrasts. Starvation sleeps next to abundance and even obesity in this country.

b) Health Epidemic

According to the National Family Health Survey (NFHS-5), obesity level in India was estimated to be around 24% in case of women and 23% in case of men.⁸ Lifestyle

³ UNITED NATIONS, <https://sdgs.un.org/goals/goal12> (last visited Oct. 22, 2022).

⁴ *Supra* note 2.

⁵ Vishwa Mohan, *Why it's Time to put Farm and Food Waste to Use*, TIMES OF INDIA (Jul. 16, 2022, 10:54 AM), <https://timesofindia.indiatimes.com/india/why-its-time-to-put-farm-and-food-waste-to-use/articleshow/92910335.cms#:~:text=NEW%20DELHI%3A%20Every%20year%20India,to%20Rs%2092%2C651%20crore%20yearly>.

⁶ PRS LEGISLATIVE RESEARCH, <https://prsindia.org/budgets/parliament/demand-for-grants-2021-22-analysis-food-and-public-distribution> (last visited Oct. 22, 2022).

⁷ GLOBAL HUNGER INDEX, <https://www.globalhungerindex.org/india.html> (last visited Oct. 22, 2022).

⁸ Sohini Das, *Nearly One-fourth of all Men and Women in India are Now Obese*, BUSINESS STANDARD (May 6, 2022, 22:33PM), https://www.business-standard.com/article/current-affairs/nearly-one-fourth-of-all-men-and-women-in-india-are-now-obese-nfhs-122050600458_1.html.

diseases have become the leading causes of deaths all over the world. Around 16% of world's total deaths are caused by ischaemic heart disease.⁹ This dismal state is mainly due to unhealthy diet and sedentary lifestyle. Unsustainable food consumption has taken an epidemic proportion world over. Lifestyle diseases such as strokes, heart attacks, lung diseases, diabetes, cancer, etc. have become the leading causes of deaths globally. Fast food chains, applying the assembly line approach of production to food sector and using economies of scale, have become convenient alternatives to healthy home-made food. Despite all persuasions and market compulsion driven by health concerns, these giant corporations do not transparently disclose the calorific content and nutritional breakup, albeit a few exceptions. Trans-fat or partially hydrogenated fat is used profusely by these fast-food ventures that have a global appeal to local market due to innovative marketing strategies and pricing policies. Excessive consumption of food, far more than dietary needs, may not only result in diseases at an epidemic scale but also cause rapid exploitation of scarce resources, that are used as inputs in food production such as water, land, chemical fertilisers, power, etc. Ranches and farmland cost trees, forests, and habitats of wild animals. Consumerism fuelled by debt is the worst form of unsustainable consumerism as it postpones and transmits the financial burden of unsustainable levels of consumption by present generations to future generations.

c) Inequity

Food availability and accessibility is not universal and equal globally. A vast section of population cannot afford nutrient rich food while a \$ trillion worth of food gets wasted every year. Poor food management, distribution and transportation is the main reason behind the situation. Public distribution system is not efficient in targeting beneficiaries accurately while leakages from the system add to the financial and operational woes. This results in a peculiarly familiar situation of abundance co-existing with starvation and hunger in countries like India. Affordability, capability, and accessibility gaps need to be filled to achieve the objective of equitability as a goal with our broader goal of sustainability.

d) Waste Disposal

⁹ WORLD HEALTH ORGANISATION, <https://www.who.int/news-room/fact-sheets/detail/the-top-10-causes-of-death> (last visited Oct. 21, 2022).

The volume of food waste is huge, mainly fuelled by unsustainably high levels of consumption. However, the methods and techniques of disposal of these wastes raises serious concerns. Segregation of biodegradable or food wastes and non-biodegradable wastes such as plastics or e-wastes at source is not widespread due to lack of environmental education and awareness among communities. This makes composting difficult as plastics get mixed with food wastes. If managed efficiently, food wastes may become critical resources in restoring fertility of soil in the form of organic manures. Vermicomposting is a more efficient way of composting by the aid of earthworms. Anaerobic composting is another form of composting in absence of oxygen. Municipal procedures and practices involved in handling food wastes are highly unstructured, disjointed, unplanned and inefficient in urban localities. Waste handling and disposal is an important aspect of sustainability, as SDG 11 aims at sustainable cities and communities.

e) Animal Cruelty & Environmental Degradation

Poultry farms with shanty sheds, improper ventilation, overcrowding with little physical space for movement, and unhygienic conditions are some of the images we deliberately choose to ignore as consumers. Industrial level slaughtering using painful and brutal procedures and tools treat animals as objects. The emphasis is entirely on volume and speed of production and not on care, living conditions, and compassionate treatment of animals. The meat that comes out from such meat processing units poses risks to human health. Animals in the wild are not safe either as demand for farmland for food production causes human encroachment into forests. Higher quantities of food for a rapidly rising population requires more land under cultivation and as ranches for animal rearing. This leads to deforestation at rates exceeding the regenerative capacity of nature. As per the Indian State of Forest Report 2021, only a fourth of India's total land area was under forest and tree cover. Only 17 states and Union Territories had the figure of 33% or more of forest and tree cover.¹⁰ Repeated and excessive use of chemical fertilisers and pesticides have degraded the fertility of soil in land under cultivation. This not only lowers productivity of cultivated land but also adds pressure on forested land of conversion for agricultural purposes.

¹⁰ PRESS INFORMATION BUREAU, <https://pib.gov.in/PressReleasePage.aspx?PRID=1789635> (last visited Oct.20, 2022).

The 7S Theory of Sustainable Consumerism

The 7S Theory of Sustainable Consumerism explains the concept of sustainable consumerism in term of its 7 basic elements, each of which are listed and explained below. The theory is aligned with the most contemporary concerns on the issue of sustainability in consumerism. It covers issues of animal cruelty, consumer rights, lifestyle diseases, food safety, food wastage and management, waste disposal, waste recovery, food distribution and donation, and economy in food expenditure. The theory is multi-dimensional and holistic in the sense that it has economic, social, environmental, philosophical, and scientific aspects. Each component requires consumers to ask certain questions about their food consumption pattern as a form of self-introspection. The theory places consumers at the centre of sustainability concerns as their decisions and choices are the ultimate factors to achieve the goal of sustainable consumerism. The 7S of sustainable consumerism in food sector are explained below.

1S.Sensible

Sensible relates to the quality of food consumed. It concerns with being sensible and mindful about the nutritional content and hygiene of food being consumed. Consumer protection laws in most countries today entitle them to know the nutritional content in terms of ingredients or calorific content of the food they buy. For instance, The Food Safety and Standards (Packaging and Labelling) Regulations, 2011 requires all pre-packaged food products sold in India to comply with the food labelling norms. Consumers must use such remedies to inform themselves about the qualitative content of the food they eat. Knowing the nature of food one consumes is nothing but sensible consumption. Such enlightened consumer behaviour is rewarding in the long run as it brings down the risk of diseases due to unhealthy diet, leads to better nutritional intake, and thus may result in a longer and healthier life. It requires consumers to ask questions to themselves such as –

- What am I eating?
- What is the nutritional content of my food?
- Does my food provide me the needed nutrition?
- Does the consumption of the food make sense to me?

Being sensible about the food is eating nutritive food of hygienic quality. It also entails refraining from food that are deficient in nutrition, harmful to health, or unhygienic. Sensitive

choice in consumption also supports Sustainable Development Goal ('SDG') 3 that aims at good health and well-being.

Section 2(9) of the Consumer Protection Act, 2019¹¹ provides for a bundle of consumer rights. Consumer has been defined under Section 2(7) as the buyer of goods for consideration and for own non-commercial consumption and includes a user of such goods where such use has been approved by the buyer. Goods under section 2(21) specifically includes food as defined under section 3(1)(j) of the Food Safety and Standards Act, 2006.¹² The definition of food in the said act is exhaustive enough to include both, processed and unprocessed substances intended for human consumption. Even processed meat (but not live animals) is included in the definition. Consumers have a right to be informed about the quality, quantity, potency, purity, standard and price of food products they consumer to protect themselves against unfair trade practices or defective food products. Further, they have a right to be protected against marketing of food products hazardous to life and property, in addition to right to consumer awareness. Section 90 and Section 91 make manufacture, sale, storage, distribution or import of adulterated or spurious (falsely claimed to be genuine) food products punishable. A sensible consumer may bring a product liability action for compensation for any harm caused by any defective food products against the manufacturer or service providers. Thus, the Consumer Protection Act, 2019 lays down an exhaustive consumer rights and remedy regime that promotes sensibility in food consumption.

2S. Sensitive

It means being sensitive to the needs of other creatures and consuming in a manner that does not threaten the habitats of other animals. Animals should be treated with care and kept hygienically by those engaged in animal husbandry or associated with meat industry. The manner and means adopted in slaughtering of animals should cause least pain. Rare and exotic species of animals should not be consumed, as it risks their extinction. Wild animals should also be left undisturbed in their habitats as consuming them may give rise to COVID 19 like pandemics. The food that we grow requires cultivable land, ranches, fodder, water, power, and other renewable and non-renewable resources. The population pressure on land is high in our times and any addition to farmland will only come at the cost of forested land. Such diversion of land resource usage threatens wildlife and their habitats. The same is true about meat industry and animal husbandry. Therefore, being rational about the quantity of food consumed

¹¹ Consumer Protection Act, 2019, No. 35, Acts of Parliament, 2019 (India).

¹² Food Safety and Standards Act, 2006, No. 34, Acts of Parliament, 2006 (India).

and minimising the wastage is being sensitive as it minimises diversion of land usage pattern, deforestation, and loss of habitat of wild beings. Sensitivity about habitats and needs of other creatures and concern for environment and forests is thus an important component of sustainable consumerism. Sensitive consumption of food supports SDG 15 that aims at sustainability in the use of terrestrial ecosystems and forest management, and prevention of loss of biodiversity and land degradation and desertification. The questions that consumers may ask themselves at this stage includes –

- Am I being insensitive to other animals and their habitats?
- Is my consumption pattern insensitive to environment in any manner?
- Are the animals that I consume reared in a sensitive manner? Are they kept at hygienic places and treated with care and compassion?

The Prevention of Cruelty to Animals Act, 1960¹³ is the law that prevents infliction of unnecessary pain or suffering on animals and encapsulates the idea of ‘Sensitive’ as explained above. Section 2(a) defines animals as any living creatures other than human being. Section 11 prohibits and penalises cruel treatment of animals. Cruelty to animals could include treatments such as confining any animal in cage or receptacle of insufficient measure without permitting reasonable opportunity for movement. Similarly, keeping any animal chained by an unreasonably short or heavy cord for an unreasonable time; failure to provide sufficient food, drink, or shelter to any owned animals; offering for sale or possessing any animals suffering pain by reason of mutilation, starvation, thirst, or overcrowding; or ill-treatment, killing or mutilating of animals in any unnecessarily cruel manner also amounts to cruel treatment of animals.

Sensitive aspect of sustainability has been championed by the Indian judiciary time and again. In *G. R. Simon and Others etc. v. Union of India*, the Delhi High Court held that wildlife is our cultural heritage and an asset to be persevered for the future generations. It rejected the contention of the petitioner that certain animals (in this case Jackal and Snakes) are detrimental to human life. Every animal has a role to play in retaining the ecological balance.¹⁴

3S. Shared

¹³ The Prevention of Cruelty to Animals Act, 1960, No. 59, Acts of Parliament, 1960 (India).

¹⁴ *G.R. Simon vs Union of India*, AIR 1997 Delhi 301.

‘Vasudhaiva Kutumbakam’ is the ancient Indian belief that has its origin in Maha Upanishad and it means that the world is one family. Equity in consumption and distribution of food is a critical aspect of sustainable consumerism. ‘Shared’ means consumption that takes care of the needs of the hungry and the starved in the vicinity. A situation where one household consumes many times more than the recommended calorific requirement and another in the neighbourhood struggling to touch that threshold is not sustainable at all. This is because the former household would suffer from lifestyle diseases such as diabetes, obesity, strokes, etc. if such consumption pattern is prolonged, while the later one would struggle against malnutrition and starvation perpetually. Inequity perpetuates poverty, malnutrition, inequality, crimes, misery, etc. A win-win situation would be sharing of surplus by those having excess food with those who are deficient in food. A rational consumption that is mindful about the quantity and wastage also indirectly contributes to equity. Food more than the nutritional requirement may cause diseases or obesity. Such surplus food may either get spoilt, if not consumed. The best alternative is sharing it with others in need of it, as it saves our costs in health remediation against lifestyle diseases in future and prevents food from getting spoilt. Public Distribution System (‘PDS’) should also make sure that no one is left out of the subsidy net while the food is rotting in the silos. Prudent management of food resources and distribution of surplus food at affordable cost by governments is also an aspect of ‘Shared’. Sharing food also supports SDG 10, and 1 that aim at reducing inequalities and eliminating poverty, respectively. SDG 2 which aims at ending hunger, achieving food security, and improved nutrition, also gets realised if sharing food becomes part of our consumption culture. Consumers need to ask the following questions to themselves at this stage –

- Is anyone hungry, starving or suffering from malnutrition in my neighbourhood?
- Do I’ve surplus food with me that may get spoilt if not consumed?
- Am I sharing my food with those in need in my vicinity?
- How and with whom can I share my surplus food with?

Section 2(9) of the Consumer Protection Act, 2019 provides consumers the right to assured access to a variety of food products and services at competitive prices. Assured access and competitive prices are the keywords. Thus, accessibility and affordability are two most important goals of securing consumer rights and welfare and the idea is central to the concept of ‘Shared’ in food distribution.

4S. Sufficiency

‘Sufficiency’ emphasises on quantity of food being consumed. Sufficient quantity and composition of food may differ for different individuals, depending upon factors such as height, weight, age, gender, and occupation. For instance, those involved in physical labour may require a heavier and a different kind of diet than those involved in mental labour. Physical labour may require energy giving and muscle building nutrients such as protein, carbohydrates, and fat in larger proportions of the diet while mental labour may require food rich in vitamins and minerals. Food in excess of the nutritional requirements of body or with disproportionate composition of nutrients may cause diseases and obesity. Storing food in excess of needs may result in wastage. Unsustainably high levels of consumption add to out-of-pocket expenses on health in future. Spoilt food results in lost resources such as water, fertilisers, fodder feeds, etc. tied to the wasted food. A balanced diet is the key. A balanced diet leads to optimum Body Mass Index (‘BMI’) due to optimum quantity and composition of nutrients. Optimum BMI leads to a healthy life, savings on health, and minimises diversion of forest and wildlife habitats. Consumers may ask the following relevant questions to themselves at this level –

- What quantity and composition of food is sufficient for my needs, having regards to my physique, age, gender, and occupation?
- Am I eating food in quantity more than sufficient for my sustenance?

5S. Spirituality

Spirituality means consumption of food that nourishes the soul and not just the body. The food which is guilt-free, hygienic, and that goes beyond just material considerations, such as taste, is spiritual. The Bhagwat Gita, the ancient Indian ocean of wisdom, classifies food in three categories, namely, Sattvik, Tamasik, and Rajasik. Rajasik food is energy rich diet and primarily nourishes the body rather than the mind or soul. Tamasik food is the one that is harmful to the body in long-run and causes lethargy and indolence. Sattvik is the kind of diet that feeds the spirit or soul primarily while sustaining the body. Its neither too hot nor too cold and respects seasonality. Its not too spicy or oily nor too heavy and is ideal diet for those engaged in mental labour or intellectual pursuits that requires least energy. Bhagwat Gita’s Sattvik food could be traced to a diet consisting of fruits, vegetables, staple crops, and seeds. We refer to such natural diet today as ‘falahaar’ or a fruit diet. ‘Spirituality’ as a concept includes Bhagwat Gita’s Sattvik diet but is not limited to it. Spirituality also means eating in quantities that are adequate to support the body and not excessively. Taste or sense gratification should not be the only factor for choice of a diet. It requires control over senses or taste buds

to choose nutritive food, wisely and rationally. Emphasis is on nutritional content and enrichment of the soul and mind. Any food that harms the body or is in excess of the requirements of body, or that causes guilt, or which is stale or unhygienic, is not spiritual. At this stage, consumers may ask themselves the following questions –

- Does my food enrich my soul or mind?
- Does my food cause anger, indolence, lethargy, restlessness or harms my body in any manner?
- Do I choose my food purely based on taste, regardless of nutritional content or requirements of my body?

6S. Salvage

‘Salvage’ relates to waste handling in food sector. It’s the equivalent of the 3Rs (Reduce, recycle, and reuse) in food sector. Food wastage should be reduced and minimised as resources have been spent on their production. Edible food should be recovered or salvaged out of wasted food to the extent possible. Food cannot be reused once spoilt as it may lead to serious health issues. However, efforts should be made to reduce wastage and maximise edibility. Food saved is food produced. Salvage may involve refrigeration, cold storage, heating, pasteurisation, sorting, and other such techniques and treatments that help preserve and prolong edibility of food. Judicious use of food is the key, as food is also a vital resource of the nation. Salvage also deals with the manner in which food waste is disposed off. Waste disposal must make sure that non-biodegradable wastes such as plastics be segregated from the bio-degradable ones such as food. This allows for recycling of the waste in the form of manures to provide fertility and nutrition to the soil. Consumers may ask the following key questions at this level –

- How can I reduce food wastage?
- How to preserve and prolongate the edibility of my food?
- Can I salvage any amount of edible food from the food not consumed or wasted?
- Do I segregate non-biodegradable wastes from my food waste before disposal?

7S. Savings

Savings relate to economy in food consumption. Cost of food consumption should not be unreasonably high. Food is just one of the several components of our consumption basket and

thus expenses on food should not be disproportionate relative to other important elements of consumption such as health, education, leisure, housing, clothing, etc. Excessive spending on food relative to the biological needs may lead to high rates of indebtedness or financial ruin in addition to lifestyle diseases. Prudence and economy in food spending brings multiple benefits such as financial savings, better health, environmental sustainability. Reasonable spending on food consumption results in a more equitable availability of food and lesser exclusion. At this stage, consumers may ask the following questions to themselves –

- What proportion of my disposable income is spent on food?
- Do I spend excessively on food?
- How can I bring down my food expenditure to a rational level, keeping in mind my nutritional needs?

Recommendations

Following are some recommendations that could be made to promote sustainable consumerism in food sector based on the 7S Theory of Sustainable Consumerism –

- Labelling regulations currently cover only pre-packaged food products. Laws need to be enacted/amended to make it mandatory for restaurants and food chains to transparently and proactively disclose the nutritional content of different items of food displayed in their menu. Periodical inspection and testing of the disclosed nutritional information should be provisioned in such legislation. The objective is to uphold the right of consumers to be informed about the food they consume.
- Awareness should be created at mass scale on the optimum Body Mass Index ('BMI') and its interpretation relative to body measures. Health stalls could be installed at public places with appropriate machinery tools to measure BMI, visceral fat, muscle mass, and other indicators of fitness level and health risks. Health counsellors and dieticians could be attached to such stalls to provide personalised dietary or nutritional information for a balanced diet that upholds sufficiency and sensibility in food consumption.
- Decentralised food stalls should be installed at equidistant locations across cities and towns to cater to the nutritional needs of those facing affordability, accessibility, and capability gaps in food consumption. Such stalls may source their material requirements from those willing to share their surplus food stocks. Weddings and banquet halls,

religious and philanthropic organisations, NGOs, universities, etc. too could contribute to the running of such stalls by contributing materials, men, and money.

- Animal cruelty must stop. Those engaged in meat processing and slaughtering should be mandated to devise an Standard Operating Procedure ('SOP') for every stage of their processes such as rearing, breeding, sheltering, vaccination, sanitization, feeding, veterinary support, slaughtering procedures and mechanism, and hygiene practices. Regular inspection after initial approval of the SOP should be carried out to make sure that actual practices comply with the proposed ones.
- Education and awareness should be created in students of schools, universities and among adults about the significance of sustainable consumerism and the harmful effects of unsustainable consumption of food. Risk of obesity, cardio-vascular diseases, cancer, respiratory diseases, etc. should be highlighted through such campaigns while projecting 7S of sustainable consumerism as the ideal solution.

Conclusion

The 7S Theory on Sustainable Consumption on Food Sector is aimed at fostering a culture of sustainability in our consumption pattern and behaviour, consistent with the aims of SDG 12 on responsible and sustainable consumption. The idea may seem like a utopia or too idealistic. But that does not make it less worthy of adoption and execution. Every idea in the beginning seems to be utopian. For instance, Ozone layer depletion was a serious threat to environment in 1980s. The ideals proposed in the Montreal Protocol of 1987 on protection of Ozone layer seemed utopian and impossible to execute at the time. National Oceanic and Atmospheric Administration (NOAA) in august 2022 announced that the levels of Ozone Depleting Substances (ODS) in 2022 are back to those observed in 1980. It took us nearly 40 years to achieve that milestone but we eventually did it. Our resolve and commitment to environmental remediation prevailed over our fears, doubts, and pessimism. Today, resource consumption sustainability is one of the most pressing environmental issues. And we need the same level of resolve, enthusiasm, and sincerity, as witnessed in Montreal Protocol, to resolve it. The 7S Theory of Sustainable Consumerism in Food Sector is a small but significant step towards inculcating environmental sensitivity and sustainability in food consumption, as part of the global sustainability movement. The road of sustainable consumption is long and tough and the theory only lays down a roadmap. Ultimately, it is for consumers themselves to walk the talk.

MARINE SPATIAL PLANNING: A PLAUSIBLE AND SUSTAINABLE LEGAL SOLUTION TO INTERNATIONAL TERRITORIAL DISPUTES AND FISH WARS

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Abstract

The contemporary relevancy of Hugo Grotius' Paradigm routed in the foundational principles of the law of the sea has resulted in escalating ecological degradation demanding a conversation on the status quo of the United Nations Convention on the Law of the Sea in regards with its applicability and jurisdictional framework. China's incursions on the territorial limits of its South- East Asian counterparts catapulting into so called fish-wars highlights the chasm that international law of sea has failed to abridge even after infamous 'cod wars'. The intersection of economic pursuits of Natural resources coupled with fish harvesting motivated by unsettled political disputes over ambiguous territories pose a serious limitation on UNCLOS and other relevant law pertaining to the governance of sea. With China's domestic waters exhausted due to unbridled exploitation and lapse of legal framework to regulate the same; it has now taken to explore and claim sovereignty over undefined maritime territories (Diaoyu islands) contested by Japan, Vietnam and South Korea. The said circumstances are insinuating of danger to the "concept of the Common heritage of Mankind"; as china is not isolated in its attempts. One has to carefully tread and craft a line of distinction between sustainable development and exclusive exploitation which can be made possible by Global Ocean Governance facilitated by 'Marine Spatial Planning' based on principle of equity; a well formulated, flexible and transparent legal tool to adjudicate legal dilemmas with primary focus on Marine conservation. MSP can be catalyst in mitigating if not eliminating the chasm in law of the sea establishing an interaction link between ocean users in pursuance of environmental preservation and sustainable development policies. The law of the sea affirms formulation of a global legal framework; with the Spirit of MSP routed in the UNCLOS defined directives of marine environment and aquaculture preservation can bolster international law.

Keywords: Maritime Territories, Marine Spatial Planning, Hugo Grotius, Unclos, Cod Wars

Introduction

Southeast Asia is home to some of the most diverse and productive coastal waters in the world. As a result, they are sites of huge importance from economic and environmental security

perspective and should be a conservation priority at international stage. Population explosion, increase in food demand, varied levels of economic growth, overuse of resources and technological change is placing undue burden on these marine resources. These waters are now in turmoil due to conflict and social unrest, posing danger to both security as well as marine sustainability.

Fish constitutes primary source of income generation and dietary protein for many Southeast Asians; more than any other region in the world. It is now universally acclaimed that South Asian coastal fisheries are overused; one of the primary reason being excess capacity. This has resulted into depletion in fish stocks and other resources at varied levels. With increase in Population adding pressure to already over fished fisheries events will turn for worse unless an effective remedial plan is undertaken. Sugiyama states that “Based on current trends, production from capture fisheries in the Asia-Pacific region will decline over the next 10–20 years unless excess capacity and fishing effort is greatly reduced.” Increase in conflict, impoverishment of fisheries, economic losses, lower productivity and loss of food security in communities primarily dependant on fish stocks for wages, protein and livelihood are some of the repercussion plaguing international stage due to overfishing.

Formulation of a policy for marine conversation and effective governance routed in ground reality is one of the contemporary challenges facing the decision makers. However, The identification of such policy which can stand test of both; long- term environment sustainability and economic feasibility is yet to be elucidated. Devising a solution to this conundrum forms the central goal of the paper. This paper aims to elaborate on the solutions put forward in this regard and how marine spatial planning can provide a way out this conundrum.

Fish Wars

Conflict over the access to resources has been documented many times over the course of history. Although wars routed in religious, political and territorial disputes are more well known; conflicts over fishing rights and resources aren’t scarce in World History. Ever since the formulation of Exclusive Economic Zones in the 1970s, there is an increase in the frequency of such wars. As establishment of EEZ led to demarcation of access to ocean resources; restricting the areas earlier treaded by foreign fishing vessel resulting in conflict of interest. Maritime treaties, diplomatic negotiations (such as between African and European countries) and redressal by international courts have often came as relief amidst rising tensions.

This has not prevented fights from breaking out (such as between Cambodia and Vietnam and China and Philippines) over access to Territorial waters. This has led to boats from other countries and migrant fisherman being Imprisoned or expelled out by taking resort to force. Indonesian fishers are taken into prison as consequence of illegal fishing in Australian waters; with numbers ramping up-to thousands. While sovereignty issues over undefined maritime boundaries are at the roots of such conflicts, access to fish stocks and other resources also constitutes leading cause. Such conflicts are not circumscribed within the boundaries of high sea but also occur in the regions coastal waters. For example, conflicts due to difference in technologies such as between those who use passive fishing equipment like long lines, hand and gill nets (used by small farmers) and those who use “trawls and purse seine nets” (used by comparatively well off farmers). This is partly due to the fact that equipment used by small farmers often get caught and carried off by trawlers used by industrial farmers.

Modern fishing vessels employing high technology for commercial fish processing, vacuum and monopolize resources taking hold of all marine life rendering small scale local farmers vulnerable. Moreover; it is not hidden that more often than not “industrial fishing operations” operate unlawfully within a country’s maritime boundary and soon the differences ultimately culminates into conflict with small scale farmers on one side and industrial on another. Such competition has been reported to be turned violent in areas of Philippines and Thailand.

Overfishing leads to vociferous repercussions with increased pressure on south Asian waters resulting in collapse of fisheries and Increase in conflicts.

The toxic cycle

A cycle is formulated in the above-mentioned circumstances where sudden increase in population coupled with few economic opportunities increases the dependency on fishing as the primary source of livelihood. Such increase puts pressure on the available stock and leads to decline in fish population and increase in competition on both front inside the local community as well as the global one. The effects spiral down to low food and income security, decline in living standard and overall national welfare. These factors only aggravate already over-crowded competition and thus higher chances of conflict concerning the fish stock. This complex and negative feedback cycle follows a design of “self-reinforcing fish-wars” embedded with sociocultural and environmental perils.

Due to this even the most diverse and biologically productive ecosystems are being dragged into the never ending conflict and have to face serious consequences of ever increasing social

tensions. Unrestrained use of modern state of art equipment serves only to further aggravate the situation and widens the gap between economically disadvantaged and well-off in regards of their access to stock. Such conflicts are being increasingly reported to turn violent with increased global competition and demand. The need to align the demands of improving the ecological sustainability of fisheries consumption with the need to maintain and improve food security has been acknowledged by the global community. Same was one of the priority outcomes of 2002 World summit on sustainable development¹.

Devising solutions in a pragmatic institutional arrangements

While devising a solution to bring this cycle to an end; sustainability should be the primary idea if the conflicts are to be reduced. The idea of a novel public policy or better governance to counter this menace of conflict over fish resources by making pragmatic institutional arrangements for access, use, and ownership of the same is at the heart of many solutions advanced. Law and policymakers thus need to look for effective strategies if the conflict is to be contained. One such was the institution of national fisheries management plans by a centralized management agency and seeking scientific advice over the judicious utilization of stock.

Some of the management experience about the effect of implementation of the above said idea has been mostly negative² while an another approach focused on collaborative effort of the community shows some potential for limiting conflicts³ and hope for sustainability and food security. Such collaboration on the part of the global world can be fundamental in achieving the desired outcome of sustainability and preservation of fisheries.

For instance in San Salvador island in the Philippines, Conflict between local fishing community and new migrant one using traditional and modern fishing gear respectively was resolved under co-management arrangement⁴. Co-management is becoming an instrumental tool in effective governance and policy implementation. It is being successfully being accommodated in alternative fisheries management policy in countries such as Indonesia,

¹ United Nations. Report of the World Summit on Sustainable Development, Resolution II, § 30, 2002.

² Pomeroy RS, Viswanathan K. Fisheries co-management developments in Southeast Asia and Bangladesh. In: Wilson DG, RaakjaerNielsen J, Degnbol P, editors. The fisheries co-management experience: accomplishments, challenges and prospects. Dordrecht, The Netherlands: Kluwer Academic Publishers; 2003.

³ Tawake A, Parks JE, Radikedike P, Aalbersberg W, Vuki V, Salafsky N. Harvesting clams and data: involving local communities in implementing and monitoring a marine protected area. *Conservation Biology in Practice* 2001;2(4):32–5.

⁴ Berkes F, Mahon R, Pollnac R, Pomeroy R. Managing small-scale fisheries: alternative directions and methods. Ottawa: International Development Research Center; 2001.

Thailand, Philippines and Vietnam. A pre-requisite to such policy is a close collaboration between Government and local stakeholders. As Bennett et al. States “In so far as such an arrangement can strengthen the links between those that use the resource and those that manage or control the resource, comanagement of some form may be the best long-term solution to conflict management. Where co-management is able to redistribute power and responsibility in the fishery, potential conflicts related to power relations and allocation of resources might be mitigated.”⁵ If instituted effectively it can prove to be pivotal in resolving marine resource conflict. It can serve as a pragmatic and effective management tool for coastal nations dealing with conflicts regarding marine resource.

Marine Spatial Planning: An effective way out

Resolving the issues of ocean, its preservation and judicious use of the marine resources needs collaboration and cooperation at regional, national and global level. Marine spatial planning is an pivotal tool for sustainable marine governance; transparent, well-formulated and flexible instruments of marine sustainable governance are important in reaching holistic development goals aiming at better regulation and preservation of the global ocean.

“Global ocean governance” is a multidimensional and dynamic concept taking in to account management on economic, social and legal fronts⁶. Ocean governance is a concept focused on addressing pertinent issues concerning world ocean. MSP is a pragmatic way to formulate and enforce rational framework in the use of marine space. It is pivotal to bolster the link between ocean users to establish a firm reach to the goals of environmental preservation and sustainable development along with socioeconomic factors as well. The law of the sea affirms formulation of an International legal regime best suited to address the issues of international cognizance; although at the same time it will be challenging to institute the same due to decentralized nature of the public law system.

In the study of international public law the law of the sea is one of its earliest areas that governs the use of World ocean and its resources. Hugo Grotius - “the father of the Law of Nations”- has significantly influenced the principles of the the law of sea. Hugo Grotius’ paradigm (as

⁵ Bennett E, Neiland A, Anamg A, Bannerman P, Rahman AA, Huq S, et al. “Towards a better understanding of conflict management in tropical fisheries: evidence from Ghana, Bangladesh and the Caribbean”. ;25:365–76.

⁶ Friedheim, R. “ Designing the Ocean Policy Future: An Essay on How I Am Going To Do That”, “Ocean Development & International Law”, pp. 183–195.

mentioned in his work *mare liberum*) is still relevant today and confirms the fundamental foundations of the law of the sea-

(1) Coastal states have jurisdiction over their marine spaces and (2) the resources beyond that aren't limited to any particular state but open to all.

UNCLOS are rules and norms governing the use of ocean including marine resources and overseeing the fulfillment of duties and rights of states with maritime boundaries. The preamble to UNCLOS which stipulates that "the problems of ocean space are closely interrelated and need to be considered as a whole" implies the idea of ecological unity of world ocean. This acknowledgement is pivotal for MSP specifically in joint and interacting areas of Areas Beyond National Jurisdiction and Exclusive Economic Zones. The organization of marine space is a plausible and pragmatic advancement of the formulation of duties and use of rights granted under UNCLOS as well as an effective tool in helping the nation parties with their international obligations concerning use of marine space.

MSP was the main focus of international meeting held in 2007 organized by IOC (of UNESCO). Inclusion of MSP in policy formulation adds an holistic, future oriented and consistent decision-making touch to the process concerning the use of sea by humans. There are two doubts to be addressed concerning the issue of integrated management, First, selection of elements to be integrated and second, International law's framework and expanse to which this process can be supported by it. Though there is no clearly stipulated definition of integrated management in the main goal of the said approach is to devise effective solutions to pertinent problems of the sea and its resources. Axiological, normative and functional are the three level at which integration is an essential deciding criterion to address the issues concerning world ocean. The need at first stage is clearly visible through moral obligation and the growth of "preventive responsibility for marine and normative protection"⁷. IOC (of UNESCO) defines MSP as "a public process of analyzing and allocating the spatial and temporal distribution of human activities in marine areas to achieve ecological, economic, and social objectives that are usually specified through a political process"⁸. MSP aims to align the diverse groups of entities and their interest with the common goal of sustainability. The difficult legal framework of marine areas, the varieties of and consequences of human activities in the ocean space such as

⁷ Harrison, J. (2011). "Making the Law of the Sea, A Study in the Development of International Law" (pp. 238, 257-258). Cambridge.

⁸ Ehler, C., & Douvère, F. (2009). *Marine Spatial Planning: A Step-by Step Approach Towards Ecosystem-based Management*. Manual and Guides No 153 ICAM Dossier No 6. Paris: Intergovernmental Oceanographic Commission UNESCO IOC, 99 pp.

overfishing, measure of protection and other factors constitute a complex web which can be solved by effective planning.

Many states across the globe has already started process to equip their domestic law with instruments that are used to govern maritime space, to achieve the international obligation of environmental conservation stipulated in Article 192 of UNCLOS. MSP as a tool of maritime policy can do wonders for the problems of fish wars and others issues affecting the sustainability of marine life. In Baltic sea region, the common norms of MSP are developed as such that they include holistic, ecological and sustainable management⁹. Maritime management is primarily focuses on two areas legal and institutional one. The legal aspect focuses on normative and substantial dimensions of law while institutional is primarily concerned with executive level covering governmental and non-governmental organizations carrying out activities directed at environmental management. It is an multidimensional process ranging from planning to executive management practices. The ecosystem approach and precautionary principle seems to determine the present framework for MSP.

Coastal areas have critical role to play to achieve desired result of lowering the conflict and increasing the sustainability. All International law entities should cooperate in the pursuance of common goal of environmental protection. Building awareness in the local community by explaining the importance of ocean on people's life and the ravages of over exploitation of marine resources would could prove to bring change from ground level. The designed MSP framework should include surveillance instruments to maintain scrutiny on the practice of overfishing which are the leading cause of Fish wars. To attain these objectives data and statistics on the use of sea is required. MSP process should meet international norms; while international laws should also be accommodating to new specialized solutions to modern problems.

The problem of fishwars can be solved by MSP by incorporating within three main ideas of first; an effective global management system to determine sovereignty claims and to designate an critical area of common heritage to mankind as of critical importance to avoid conflicts and preserve marine life and resources. Second, global management system should be followed through by a regional one to maintain transparency in administration and effectiveness in execution of the policy and lastly third, active actions should be taken by the nations themselves to formulate policies in consonance with international law to reduce conflict. MSP

⁹ Zaucha, J. (2014). "Sea Basin Maritime Spatial Planning: A Case Study of the Baltic Sea Region and Poland". *Marine Policy*, 50, 34–45.

can also stipulation the possible use of marine resources and their rational distribution to keep check on over-exploitation and maintain principle of equity.

Conclusion

An integrated approach focused on maritime affairs of global and regional level seems to be the necessity of time as China along with other nations engages in fishwars. Moreover; the issue of sustainability and preservation of marine life and resources are plaguing concerns ever since. Marine Spatial planning shows potential which focusing on collaborative effort on global and regional level with effective institutional and legal measures shows hope for an effective solution in the long- run. The introduction of such instruments for the management of the marine space has shed light on new arena in international law. The issues such as fishwars and over exploitation of resources are constantly plaguing the ocean space which calls for better formulated and contemporary relevant policies in order to devise a long term, rational administration of marine resources in a sustainable manner and avoid conflicts on these resources.

MSP is a dynamic process aiming to reduce ever increasing conflict over marine resources threatening environment sustainability and economic feasibility. It should be based on multidimensionality and inter dependencies of interactions in the marine environment and the focus should be on to devising a successful regulatory framework focused on navigating the conflict by establishing checkpoints at various levels. Fish wars are majorly centered around ambitious maritime boundaries and thirst for more resources; both can be successfully tackled with collaborative effort and well framed policies; MSP is one such steps towards achieving that.

UNTYING A GORDIAN KNOT: PARADOX OF BIO-MEDICAL WASTE MANAGEMENT AND LEGAL COMPLIANCE IN INDIA

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Abstract

Every healthcare institution produces biomedical waste material while diagnosing and treating patients who are either humans or animals. This waste might be in a solid or liquid form such as microbiological and biological waste, abandoned medications and cytotoxic pharmaceuticals, soiled trash, solid waste, liquid waste produced from any infected regions, animal waste, human anatomical waste, incinerator ash, chemical waste, waste sharp etc. All such waste products are inherently harmful and needs proper management and disposal. Accordingly, the management of biomedical waste involves the four fundamental phases: i) generation of waste; ii) segregation; iii) collection & storage of waste; and iv) treatment & disposal. It has been the recommended practice that before disposing of the biomedical waste, the healthcare institutions must disinfect all the effluent as needed. The mismanagement of such waste has an immediate negative impact on the environment, humans & other species. On recurring basis, the medical clinics and healthcare facilities all across the world create a reasonably large amount of potentially toxic and enticing garbage. In this regard, majority of the developed nations have lately adopted the technologically advanced practice to neutralize the toxicity & dumping the waste in designated areas. Whereas, in underdeveloped nations such as India, bio-medical waste (BMW) is usually thrown in open areas, largely due to the lack of awareness, suitable infrastructure, funds and execution of national standards for waste disposal. This paper attempts to ponder on the nuances of biomedical waste management, its effects on an environment and legal infrastructure dealing with the concerns pertaining to disposal of biomedical waste, status of compliance of these provisions in some states and eventually recommending the innovative techniques and best practices which can be uniformly adopted by every state for increasing the efficacy of waste management.

Keywords: Biomedical Waste, Environmental Protection, Healthcare Management, Healthcare institutions

Introduction

Medical treatment is essential for sustaining life, but it also leads to production of lot of waste that is perilous to both the environment and living beings. Clinics and hospitals produce a variety of trash, including cotton, syringes, needles, gloves, liquid waste, expired medications, etc. Accordingly, bio-medical waste, often known as hospital waste, is the waste generated throughout the process of conducting tests; treating humans and animals; also, in research activities related to it. For the reason that it is contagious, biomedical waste seemingly is harmful to the people, other species and the environment. When compared to any other garbage, bio-medical waste is particularly more harmful in nature and differs from household or industrial waste. Hospitals, laboratories, clinics, dental clinics, laboratories, veterinary clinics, medical and bio research centres, etc. are the common producers of biological waste.¹ The "Bio-medical Waste (Management and Handling) Rules, 1998"—which were first declared on July 20, 1998—have been created by the federal government of India and have been revised in 2016 to reflect all the most recent modifications. This Rule establishes universal standards and a code of conduct for the whole country. It enlisted various kinds of bio-medical wastes² including human and animal anatomical waste, biotechnology and microbiology waste, waste sharps, including shattered glass, scalpels, syringes, and hypodermic needles, discarded medicines and Cyto-Toxic Drugs, solid waste, such as disposable goods like tubes, catheters, etc., excluding sharps, soiled waste, such as dressing, bandages, plaster casts, and material tainted with blood, etc.³ In reference to this, various scientists, researchers, NGOs, and environmental protection activists has pressed upon the legislators to implement adequate regulations for the treatment of bio-medical waste since they acknowledged through data & research that human actions and behaviours were seriously harming the environment and our sustainable development goals.⁴ While, the environmental concerns have existed for a very long time, but historical legal systems mandated that the environment be protected from danger wherever it was required. Earlier, there was no clear legislative directive to regulate bio-medical wastes. Whereas, in this technology advanced era, we have reached to the point where we cannot discard the implication of the hazardous waste generated by the healthcare

¹ Capoor, M., & Bhowmik, K. (2017). Implementation challenges in bio-medical waste management rules, 2016. *Indian Journal of Medical Microbiology*, 35(4).

² See The Bio-Medical Waste Management Rules, 2016, schedule I.

³ See, World Health Organization (WHO). (2013). Wastes from health-care activities. Factsheet No. 253, November 2011.

⁴ Parida, A., Capoor, M. R., & Bhowmik, K. T. (2019). Knowledge, attitude, and practices of Bio-medical Waste Management rules, 2016; Bio-medical Waste Management (amendment) rules, 2018; and Solid Waste Rules, 2016, among health-care workers in a tertiary care setup. *Journal of laboratory physicians*, 11(04), 292-296.

institutions. Scientists and researchers are now attempting to find safe disposal and management solutions for the numerous issues related to bio-medical waste that have repeatedly arisen. It is evident that the relationship between the environment and people varies across time and geographically. This conjecture is justified & applicable to the guiding philosophy of environmental conservation India as well, the Indian Constitution was not ecologically conscious until 1976, and environmental protection in India did not begin until 1972, the year following the Stockholm Conference.

Historical References on Environmental Protection in India

India's ancient history has a tight and immediate connection to the environment. Gautam Buddha, an environmentalist, and humanitarian attained enlightenment by squatting down beneath a Bodhi tree & pronounced the core tenets of human values are nonviolence and simplicity. Thereby, the principles of simplicity teach us that we shouldn't trample on the environment which in essence solidifies the doctrine for encouraging the respect for the environment. The inferences of Buddhism consider people, trees, and forests to be inextricably linked while only the tree may be used to obtain food and shelter. In addition to this, Jainism forbids the animal sacrifice during festivals. It precludes confinement, abuse, overcrowding, and denying animals sufficient access to food and water. Jainism also promotes environmental harmony and aids in protecting and maintaining nature from harm. The person tends to neglect their own unique presence, according to Lord Mahavira Swami, if they dismiss or deny the existence and presence of the earth, fire, air, water, and plants.⁵

Whereas the Kautilya's Arthashastra also stipulated the below-mentioned penalties for citizens who disregarded hygienic standards: 1/8th of a pana (the silver punch-marked currency introduced by the Mauryan Dynasty, which included the pana) will be fined for dumping dirt on the pavement, and one quarter of a pana will be fined for obstruction with mud or water. (2.36.26). If dirt is dumped on a royal highway street, the fee is doubled. (2.36.27). If someone is caught exploiting a reservoir as a urinal, they will be fined 1 pana, as a latrine, 2 panas; if they are caught urinating at a temple, they will be fined one and one half pana, as a latrine, 3 panas; and if they are caught urinating at a royal building, they will be fined 2 pana, as a latrine, 4 panas. (2.36.28). The fine for throwing dead animals inside the city limits, such as cows, dogs, and cats, is 3 panas; for other animals, such as donkeys, camels, mules, horses, or cattle,

⁵ Francis, E. (2012). *King, Governance, and Law in Ancient India: Kautilya's Arthashastra*, A New Annotated Translation.

the fine is 6 panas; and for human corpses, the fine is 50 panas. (2.36.30) It was declared a crime since it unquestionably harms society's ecosystems and habitats.⁶

Inferences from Modern History

During the colonisation period, Britishers left their mark on the legal and administrative system of India. While, during their power stint in India, numerous destructions of natural resources were initiated as they had little sympathy for the need to preserve the forests. However, to control pollution of the water, air, and wildlife in India, the British government passed a number of different legislations. One of the earliest laws pertaining to water pollution was the *Shore Nuisance (Bombay & Kolaba) Act, 1853 (Act No. 11 of 1853)* among them. Act 5 of 1857, the *Oriental Gas Company Act*, was passed to control the pollution emitted by Oriental Gas Company. The Indian Penal Code, 1860 was the second law to be passed (Act No. 45 of 1860). As stated in *Section 268 of the Indian Penal Code, 1860*, "if any act which causes any common injury, danger, or annoyance to the public or to the people in general then the act may be treated as public nuisance then the offender shall be punishable under Secs. 290 or 291 of the Indian Penal Code," there shall be punishment for environmental polluters. Similarly, "if a person conducts any work unlawfully or carelessly that he knows or has cause to think would likely spread infection of any disease harmful to life, may be penalised under Sec. 269 of the Indian Penal Code."

Additionally, there are also criminal penalties under circumstances that result in the loss of value or usability of any property, as stated in several Sections of the Indian Penal Code, 1860, such as Sections 426, 430, 431, and 432.⁷ This suggests that anybody in violation of the

⁶ Kangle, R. P. (1986). *The kautiliya arthasastra* (No. 1-3). Motilal Banarsidass Publ..

⁷ Indian Penal Code, 1860 (Act 45 of 1860) ss. 426, 430, 431, 432

"Section 426. Punishment for mischief.—Whoever commits mischief shall be punished with imprisonment of either description for a term which may extend to three months, or with fine, or with both.

Section 430. Mischief by injury to works of irrigation or by wrongfully diverting water.—Whoever commits mischief by doing any act which causes, or which he knows to be likely to cause, a diminution of the supply of water for agricultural purposes, or for food or drink for human beings or for animals which are property, or for cleanliness or for carrying on any manufacture, shall be punished with imprisonment of either description for a term which may extend to five years, or with fine, or with both.

Section 431. Mischief by injury to public road, bridge, river or channel.—Whoever commits mischief by doing any act which renders or which he knows to be likely to render any public road, bridge, navigable river or navigable channel, natural or artificial, impassable or less safe for travelling or conveying property, shall be punished with imprisonment of either description for a term which may extend to five years, or with fine, or with both.

Section 432. Mischief by causing inundation or obstruction to public drainage attended with damage.—Whoever commits mischief by doing any act which causes or which he knows to be likely to cause an inundation or an obstruction to any public drainage attended with injury or damage,

aforementioned requirements if they produce, collect, receive, store, transport, treat, dispose of, or handle bio-medical waste in any way. Additionally, this Penal Code lays out penalties for certain forms of pollution that do not already have a deterrent impact on society. Whereas the Police Act of 1861 (Act 05 of 1861) also prohibits and regulates the slaughter of animals, the washing of carcasses, and the dumping of filth in public places and it also specifies penalties as the form of retribution for violators. Further, the Indian Easement Act of 1882 provided protection for riparian landowners from undue upstream user pollution. The Indian Fisheries Act of 1897 also lists the penalties for violators who pollute the water to kill fish. Besides this, the Bengal Smoke Nuisance Act of 1905 and the Bombay Smoke Nuisance Act of 1912 were two highly dated laws passed during the British era to prevent air pollution.

While taking cognizance of provisions under aforementioned legislations, it was pellucid that there were no explicit environmental restrictions when the British ruled India. Thenceforward, environmental protection was embraced under Article 21 of the Indian Constitution & it was impacted when the Constitution entered into force in 1950 and the judiciary developed the idea of Fundamental Rights. Following that, the Government of India created legislation to safeguard the environment in accordance with societal demands. The Factories Act of 1948 (Act No. 63 of 1948) also outlines the best practises for waste disposal and enlists the State to develop regulations to carry out these directives. The state is also responsible for preventing water contamination under the River Boards Act, 1956 (Act No. 49 of 1956) for the maintenance and management of Inter-State Rivers and waterway valleys.⁸ A few important rights, relevant for our subject, are mandated by the Indian Constitution, and they are stated in Part III. Among these rights, Art. 21 gives everyone the right to life. The right to life finds its place in ecological justice's expansion and accessibility. M C Mehta, a dissident lawyer played a major role in expanding the skyline of Art. 21's soul. According to Article 47, of the constitution, improvement of the infrastructure encompassing public health is one of the State's primary duties. Moreover, Article 48A illustrates that the State shall make an effort to protect and develop the environment, and Article 51A (g) makes it a fundamental duty of every citizen of India to protect and enhance the environment.

shall be punished with imprisonment of either description for a term which may extend to five years, or with fine, or with both."

⁸ Divan, S., & Rosencranz, A. (2022). *Environmental Law and Policy in India: Cases and Materials*. Oxford University Press. 579-601

International Conventions

There are three international accords i.e., *The Basel Convention on Hazardous Waste*, the *Stockholm Convention on Persistent Organic Pollutants* (POPs), and the *Minamata Convention on Mercury* are particularly relevant in setting up the guidelines for the management of bio-medical wastes, environment protection, and sustainable development. are examples of these conventions.⁹ The most comprehensive environmental convention on hazardous and other wastes is the Basel Convention on Hazardous Waste. It aims to protect human health and the environment from the harmful effects of hazardous waste development, management, and disposal, including clinical wastes produced by healthcare facilities, and has 170 member states. Additionally, the *Stockholm Convention on Persistent Organic Pollutants* (also known as the Stockholm Convention) is also a treaty which was designed to safeguard health of the humans and the adjoining environment against persistently released organic pollutants (POPs)¹⁰. POPs are considered as the dangerous compounds that if present in the bodies of living creatures' and can cause immense harm. The mechanism of medical waste disposal including incinerators and few other such processes which produce these compounds.¹¹ In the year 2006, preliminary recommendations on best environmental practises (BEF) were issued. ¹²It provides best guidelines to be followed for waste reduction, segregation, recycling, recovery, education, and appropriate collection and transportation.¹³ In 2013, an agreement called the Minamata Convention on Mercury was made to safeguard both environment and human life & health against the harmful effects of mercury. This Convention calls attention to a material that is used widely in daily items, is naturally occurring, and is emitted into the atmosphere, land, and water from a number of sources.¹⁴

⁹ Technical Guidelines on Environmentally Sound Management of Wastes Consisting of Elemental Mercury and Wastes Containing or Contaminated with Mercury 31 October 2011. Geneva: Basel Convention and United Nations Environment Programme; 2011.

¹⁰ Revised Draft Guidelines on Best Available Techniques and Provisional Guidance on Best Environmental Practices of the Stockholm Convention on Persistent Organic Pollutants. Geneva: Secretariat of the Stockholm Convention; 2006.

¹¹ Also see, Fiedler, H. (2007). National PCDD/PCDF release inventories under the Stockholm convention on persistent organic pollutants. *Chemosphere*, 67(9), S96-S108.

¹² World Health Organization, & WHO. (2004). *Review of Health Impacts from Microbiological Hazards in Health-Care Wastes*. world health organization.

¹³ See, World Health Organization, & WHO. (2004). *Guidelines for drinking-water quality* (Vol. 1). world health organization.

¹⁴ United Nations Environment Program. (2013). *Minamata Convention on Mercury*. united nations environment program. see also, Kessler, R. (2013). The Minamata Convention on Mercury: a first step toward protecting future generations.

Judicial Response towards Bio-Medical Waste Management

There are numerous judgements pronounced by the Apex Court of the country and various High Courts of states which apparently emphasized on the aspects of Bio-Medical Waste Management and largely emphasised on the protection of environment. In the year 1990-91, a Public Interest Litigation was instituted in *Subhash Kumar v. State of Bihar* asking the Supreme Court to direct the Director of Collieries to prevent the river Bokaro from receiving sludge from its washeries. Slurry storage on agricultural land is rumoured to have an impact on its fruitfulness. Furthermore, the flowing slurry pollutes the river, rendering it unsuitable for use in the water supply. The arena of discussion pertaining to this case was to determine whether the right to have a healthy environment was included in the broader aspect of right to life. In final judgement pronounced by Justice Singh, “*the right to life is a basic right protected by Article 21 of the Constitution and it includes the freedom to enjoy clean water and air*”.¹⁵ Prior to this, in mid-1980’s, a writ was filed in *Kinkri Devi v. State of Himachal Pradesh* under Art. 226, 51A (g), and 48A at the Himachal Pradesh High Court with the intention of securing and protecting the Shivalik Hills. As a consequence of this petition, a rent for the exhumation of limestone had to be wiped off. Thereafter, the Court kept an eye on concerns related to the environment and how things naturally change. Further, In the year 1993, in the case of *K.C. Malhotra v. State of Madhya Pradesh*, an expert filed a PIL in relation to the pandemic cholera outbreak (which resulted in the deaths of 12 children) as a result of open waste, soiled water, dirt storage, defiled water, and garbage. This situation was clearly brought about by the negligence of many State entities and professionals.¹⁶ According to the court, the right to life also included the fundamental necessities of life, such as the access to adequate nutrition, clothing, protection, and facilities for reading and writing. Upon the further interpretation, the citizens of that state have a direct responsibility under Art. 21 to ensure that the government works to improve general wellbeing as this is one of its fundamental duties. Finally, the Court gave an order to preserve the vigour of the local tenants and their general health. In the case of *Vellore Citizens Welfare Forum vs. Union of India*¹⁷, the Supreme Court declared, the principle of ‘Sustainable Development’ and ‘Polluter Pays Principle’ to be integral part of environment protection law of the country.

¹⁵ *Subhash Kumar v. State of Bihar*. AIR 1991 SC 420

¹⁶ *K.C. Malhotra v. State of M.P.* AIR 1994 MP 48

¹⁷ 1996 (5) SCC 647

The supreme court's real intervention for hazardous waste disposal came in *Research Foundation For Science, Technology National Resource Policy v. Union Of India*¹⁸ wherein a Committee on Management of Hazardous Wastes was constituted and directed to recommend measures for hazardous waste material disposal. Whereas, In the case of *Environment Monitoring Forum and Anr. Vs. Union of India (UOI) and Ors*¹⁹, court held that all such institutions which are generating bio-medical waste have to handle such waste in a prescribed manner which do not cause environmental damage. Further, Odisha High Court in *Maitree Sansad vs. The state of Orissa and Ors* case passed observations on inappropriate measures of dumping biomedical waste in municipal dustbins and open spaces and held that it leads to spreading of diseases. Also, *National Green Tribunal, in Haat Supreme Wastech Pvt. Ltd. Ors vs State Of Haryana Ors*²⁰ held that any plant involved in bio-medical waste disposal will require Environmental Clearance (EC). It also said that environmental damage may be prevented by enforcing such rules. However, Supreme Court, in *D Swamy vs. Karnataka State Pollution Control Board*²¹, decided on 22nd September 2022, held that if the unit has other requisite consent to operate and confirms required pollution norms, ex post facto EC can be granted in exceptional circumstances and wouldn't be closed only because it does not have the environmental clearance papers. The court decided it in the interest of preventing environmental pollution.

Contemporary Legal Provisions

Biomedical waste is defined as "any solid, fluid, or liquid waste, including container and any intermediate product, which is generated during diagnosis, treatment, or immunisation of humans or animals, in research activities, or in the production or testing of biological products" under the *Biomedical Waste (Management and Handling) Rules 1998*, which were enacted by the Indian parliament. Infectious, chemical, heavy metal, ordinary municipal garbage, and a variety of other unclean goods are all included in the hospital waste. Needles, scalpels, anatomical human organs, blood samples, microbiological cultures, and other biomedical wastes are also included, as are infectious wastes like clothing and other things contaminated with bodily fluids and discharges. Biomedical waste released by hospitals might be dangerous since it could include infectious disease. Some pathogenic organisms pose a threat due to their high pathogenicity and potential drug resistance. Poor waste management will lead to natural

¹⁸ (2005) 10 SCC 510

¹⁹ MANU/KE/0894/2003

²⁰ MANU/GT/0089/2015

²¹ 2022 SCC OnLine SC 1278

contamination, offensive odours, the development and spread of insects, rats, and worms, as well as the possibility for the transmission of illnesses including typhoid, cholera, hepatitis, and AIDS through wounds from syringes and needles tainted with human blood.

The new *Biomedical Waste Management Rules 2016* were announced by the MoEFCC, Government of India, in early 2016, while exercising of the powers conferred by sections 6, 8 and 25 of the *Environment (Protection) Act, 1986 (29 of 1986)*. These rules shall be utilized to regulate the management of biomedical waste and have a significant impact on the clean-India initiative.²² Accordingly, all the authorized health care institutions in the country are required to separate bio-medical waste and classify it into yellow, red, blue/white, and dark coloured bags or dustbins.²³ These wastes can be kept for up to 48 hours before being safely disposed of or collected by a professional from a common bio medical waste treatment facility (CBMWF). The CMBWF then handles the trash in accordance with the bag's colour. The varied colours necessitate distinct methods of disposal, including cremation, deep entombment, autoclaving, destruction, concoction treatment, transfer to a landfill, etc. Health Care Facilities are currently responsible for pre-treating research facility and micro biological waste, blood tests, and blood sacks through local sanitization and cleaning in the manner advised by the World Health Organization (WHO) or National Aids Control Organization, regardless of whether final treatment and transfer take place nearby or at a typical biomedical waste treatment facility (NACO).²⁴ To stop the release of dioxins and furans from burning such waste, health care facilities must stop using chlorinated plastic bags, gloves, and blood packs within two years. According to a study by the Government of India, a total of 484 tonnes of biological waste are created daily in India by 1,68,869 healthcare facilities. Only 447 tonnes per day of material are processed before disposal. There are several problems with informal waste disposal. 15% of the trash from health care facilities is dangerous or toxic, whereas 85% is not. Risky consequences are mixed with sullyng, which makes the entire waste harmful.²⁵ As a result, it is necessary to isolate and treat. Inadequate disposal increases the risk of contamination,

²² Bio-Medical Waste Management Rules. 2016 Published in the Gazette of India, Extraordinary, Part II, Section 3, Sub-Section (i), Government of India Ministry of Environment, Forest and Climate Change.

²³ See also, Pandey, A., Ahuja, S., Madan, M., & Asthana, A. K. (2016). Bio-medical waste management in a tertiary care hospital: an overview. *Journal of clinical and diagnostic research: JCDR*, 10(11), DC01.

²⁴ Sheikh N. A. (2012). Hospital Waste Management: Indian Perspective. *Indian Journal of Forensic Medicine & Toxicology*. 6(2):127-9. See also, Nanda, H., & Pati, J. (2017). Legal Regime of Bio Medical Waste and Environmental Protection. *EXECUTIVE EDITOR*, 8(2), 167.

²⁵ Sarkodie, S. A., & Owusu, P. A. (2021). Impact of COVID-19 pandemic on waste management. *Environment, development and sustainability*, 23(5), 7951-7960.

encourages the reuse of organised drugs and prohibited disposables, and produces safe microorganisms.

Status of Compliance by States

Pursuant to the Rule 13 of *Bio-Medical Waste Management Rule of 2016*, the State's Pollution Control Board are required to submit an annual report before July 31st of every year. The report shall embrace the data and nuances such as collection, treatment and disposal of biomedical waste in their respective state to Ministry of Environment Forests & Climate Change. In theyear 2021, the SPCB of all the states have submitted their annual report barring Nagaland. Thereafter, the concerned Ministry has inspected few discrepancies and non-compliances such as absence of liquid waste pre-treatment facilities, non-disclosures related to availability of deep-burial pits and lastly,²⁶ With reference to the unauthorized healthcare facilities, it was discovered that out of 3,25,014 operational HCFs in India, 14% of the HCFs are unauthorised and thereby, the states were recommended to serve the show-cause notice to these HCFs.²⁷

The collective reports revealed that the cumulative amount of biological waste produced in the country per day was estimated to be 774 tonnes, of which 656 tonnes per day were non-COVID biomedical waste and 118 tonnes per day were COVID biomedical waste. Further, as reflected in Fig #1, it was revealed that out of 3,52,014 healthcare facilities in the country only 4% of the have their own facilities for managing the disposal of biomedical waste.²⁸

²⁶ Central Pollution Control Board (MoEF&CC). (2020). *Annual Report on Biomedical Waste Generation*. central pollution control board.

²⁷ See, Ramteke, S., & Sahu, B. L. (2020). Novel coronavirus disease 2019 (COVID-19) pandemic: considerations for the biomedical waste sector in India. *Case Studies in Chemical and Environmental Engineering*, 2, 100029.

²⁸ Central Pollution Control Board (MoEF&CC). (2020). *Annual Report on Biomedical Waste Generation*. central pollution control board.

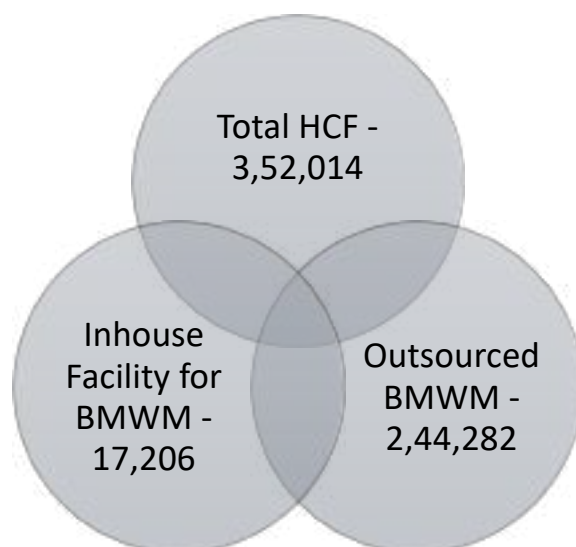


Figure 1

Further, it has been noted that there is a lag among the production of biomedical waste and its effective treatment. The CPCB has detected this oversight and informed the appropriate State Board to close the gap and guarantee that biomedical waste is disposed of in accordance with the 2016 BMWM Rules.

Report of Compliance by the States²⁹

| S.No. | Name (State/Union Territory) | Cumulated Quantity of BMW generated | Cumulated Quantity of BMW Treated and Disposed | Gaps in treatment and disposal of bio- medical waste (kilogram per day) |
|-------|------------------------------------|---|---|--|
| 1 | Andaman Nicobar | 536.36 | 536.36 | 0 |
| 2 | Andhra Pradesh | 25029.3 | 25029.3 | 0 |
| 3 | Arunachal Pradesh | 353.63 | 353.63 | 0 |
| 4 | Assam | 8235.97 | 5314.22 | 2921.75 |

²⁹ Central Pollution Control Board (MoEF&CC). (2020). *Annual Report on Biomedical Waste Generation*. central pollution control board.

| | | | | |
|----|---|-----------|-----------|----------|
| 5 | Bihar | 27846.15 | 10201.3 | 17644.85 |
| 6 | Chandigarh | 5729 | 5729 | 0 |
| 7 | Chhattisgarh | 7234.31 | 7234.31 | 0 |
| 8 | Daman &Diu and Dadra & Nagar Haveli | 450 | 450 | 0 |
| 9 | Delhi | 23200.09 | 23200.09 | 0 |
| 10 | Goa | 1272.68 | 1272.68 | 0 |
| 11 | Gujarat | 49492 | 49492 | 0 |
| 12 | Haryana | 19217 | 19217 | 0 |
| 13 | Himachal Pradesh | 3545.78 | 3545.78 | 0 |
| 14 | Jharkhand | 8406.7317 | 8406.7317 | 0 |
| 15 | J & K | 5941.81 | 5941.81 | 0 |
| 16 | Karnataka | 82604 | 38951 | 43653 |
| 17 | Kerala | 40408 | 40207 | 201 |
| 18 | Ladakh | 43.35 | 43.35 | 0 |
| 19 | Lakshadweep | 1137 | 1137 | 0 |
| 20 | Madhya Pradesh | 20008.91 | 19003.55 | 1005.36 |
| 21 | Maharashtra | 82146.35 | 82111.82 | 34.53 |
| 22 | Manipur | 921.9 | 888.5 | 33.4 |
| 23 | Meghalaya | 1556.95 | 1556.95 | 0 |
| 24 | Mizoram | 863.13 | 863.13 | 0 |
| 25 | Nagaland | 891.8 | 652.5 | 239.3 |
| 26 | Odisha | 15303.76 | 15303.76 | 0 |
| 27 | Puducherry | 4360 | 4360 | 0 |
| 28 | Punjab | 16998.16 | 16998.16 | 0 |

| | | | | |
|-------|---------------|-------------|------------|----------|
| 29 | Rajasthan | 18911.56 | 18911.56 | 0 |
| 30 | Sikkim | 477.56 | 477.56 | 0 |
| 31 | Tamil Nadu | 35269.74 | 35269.74 | 0 |
| 32 | Telengana | 23810 | 23810 | 0 |
| 33 | Tripura | 3852.58 | 3852.58 | 0 |
| 34 | Uttarakhand | 7616.57 | 7616.57 | 0 |
| 35 | Uttar Pradesh | 64038 | 64038 | 0 |
| 36 | West Bengal | 43513.39 | 43513.39 | 0 |
| 37 | DGAFMs | 5450.99 | 5450.99 | 0 |
| Total | | 656674.5117 | 590941.327 | 65733.19 |

In order to address such gaps in earlier years and to lessen negative effects on human life and environment, a Common Bio-medical Waste Treatment and Disposal Facility (CBWTF) is established. Here, the member healthcare facilities treat the biological waste they produce properly. Recyclable materials can either be recycled or disposed of in a secure landfill after treatment. Occupiers are prohibited by BMW Rules from establishing an on-site or captive bio-medical waste treatment and disposal facility if a public facility is reachable within a 75-kilometer radius. According to SPCBs/PCCs' 2020's annual report, apparently there are presently 208 CBWTFs operating in the nation, and 33 more are being built. There are no CBWTFs for the treatment and disposal of biomedical waste in the following states: Andaman & Nicobar, Arunachal Pradesh, Goa, Ladakh, Mizoram, Nagaland, Sikkim, and Tripura. Additionally, In accordance with the 2016 BMW Rules, each owner or operator of a facility for the treatment of common biomedical waste is required to install an Online Continuous Emission Monitoring System (OCEMS) for the parameters authorised by the State Pollution Control Board or Pollution Control Committees and to transmit the real-time data to the servers at the State Pollution Control Board or Pollution Control Committees and Central Pollution Control Board. The numbers given indicate that 195 out of 208 CBWTFs have OCEMS installed in their incineration stacks.

In addition to this, according to the report of the Oversight Committee instituted by National Green Tribunal, Lucknow, there were total 23,882 health care facilities (including Government & Private) in the state out of which only 20,927 health care facilities were authorised. Whereas the remaining 2955 were still in the process of obtaining the authorization from State. Out of these only 5239 healthcare facilities have actually submitted the annual report on BMW Management in the year 2019 and out of these, only 1048 facilities have registered on the real-time interface established by the state titled *BMWIS*.³⁰ Accordingly, it is estimated that all the healthcare facilities in the state generate almost 52.5 Mega Tonnes of Bio-Medical Waste per day (including incinerable & non-incinerable waste). While only 3620 healthcare facilities have initiated the deep-burial facility out of which only 21% is operation & remaining is in the process of construction. Furthermore, as per this report, few surveys reflect the veracious status of awareness regarding disposal of BMW among the direct stakeholders such as healthcare workers in various districts. The lack of awareness pertaining to segregation and hazards related to BMW among varied classes i.e., Nurses, Pharmacists, Technicians, Dental Practitioners & Paramedics ranges from 50% to 75%.³¹ As a consequence of this report, the State Government has imposed a cumulative penalty of INR. 8.0 Crores as 'Environment Compensation' on almost 140 defaulters. Besides, the notices related to incomplete authorization were issued to 5806 healthcare facilities excluding few show cause notices issued for contravening the provision of BMW Rules 2016.³²

Interpretation of gaps through Sustainable Development Goals

Sustainable Development Goals (SDG) have been adopted by United Nations in the year 2015 as an action plan for development and better standard of living of humanity. Appropriate healthcare waste management will ensure realising some of the SDG goals including a) good health and well-being (SDG 3); and b) clean water and sanitation (SDG 6)

Good health and well-being are fundamental aspect of right to life. As mentioned earlier, even the Apex Court has ruled in a number of cases that the right to health is a component of Article 21 of the Indian Constitution, which also protects the right to life. The gap between the biomedical waste generated and disposed of, as noted in the previous section, will endanger the health and well-being of the people. As noted by World Health Organisation, at least fifteen

³⁰BMWIS available at <http://BMWis.uphsspmis.org> (accessed on Oct 10, 2022)

³¹ NGT Lucknow, Uttar Pradesh. (2019). *Report of the Oversight Committee 2019*. ngt lucknow, uttar Pradesh.

³² Central Pollution Control Board (MoEF&CC). (2020). *Annual Report on Biomedical Waste Generation*. central pollution control board.

percent of bio medical waste is dangerous and expose citizens to health and environment related risks³³, safe handling of bio medical waste fundamental to ensuring healthy life of people. If this hazardous waste is not insulated and treated properly and thrown in open areas, it poses a severe risk to sanitation of health care workers and people handling waste materials. If such wastes can find its way in water bodies, it will contaminate the water bodies and also be threat marine species and access to clean water of people.³⁴

Limitations of Legal Regulations

It's quite apparent that there is a certain level of improvement & enhancements in our procedures for managing biomedical waste in India, there are still a number of issues that prevent us from declaring a complete success. The regulation has granted the local self-government, the state, and the national pollution control board full authority. A harsh action should be taken against any hospital found to be in violation of the bio-medical regulations in their hospital, which may result in the facility's immediate closure. It is the obligation and authority of the states PCBs (Pollution Control Boards) to periodically check the hospitals without prior warning. Even if the regulations include a variety of treatments for bio-medical waste, it can be challenging to adhere to disposal procedures in city hospitals, which may have an impact on the nearby residential areas and residents. The cost for tiny clinics increases as a result of the hospital's dependence on a private contractor to transport and dispose of the biomedical waste produced at the facility. In many countries, the unlawful dumping of biomedical waste has grown extremely prevalent. The law might not have total control on the rule-follower. Because they mix biomedical waste with regular trash and dump it in the neighbourhood dustbins, unauthorised disposers are difficult to spot. One of the key problems that the government cannot readily resolve is this one. In addition, influence and bribery lead to the protection of defaulters.³⁵

³³ World Health Organization. (2017). *Safe management of wastes from health-care activities: a summary* (No. WHO/FWC/WSH/17.05). World Health Organization. available at: <https://apps.who.int/iris/bitstream/handle/10665/259491/WHO-FWC-WSH-17.05-eng.pdf> (accessed on 26th Oct. 2022)

³⁴ Nalini Ravichandran, Used plastic masks and gloves are making their way into water bodies across India. *Scroll.in* Nov 02, 2020. Available at: <https://scroll.in/article/977217/used-plastic-masks-and-gloves-are-making-their-way-into-water-bodies-across-india> see also, Kothari, R., Sahab, S., Singh, H. M., Singh, R. P., Singh, B., Pathania, D., ... & Tyagi, V. V. (2021). COVID-19 and waste management in Indian scenario: Challenges and possible solutions. *Environmental Science and Pollution Research*, 28(38), 52702-52723.

³⁵ World Health Organization. (2011). *Aide-mémoire: developing a national blood system* (No. WHO/EHT/11.01). World Health Organization.

Conclusion

Stringent laws, committed assistance of government and authorities and effective BMW practises followed by both healthcare professionals and HCFs, and regular monitoring of BMW practises should all go into the management of biomedical waste. There is no doubt that the lawmakers have created tough regulations for the safe and effective management of biomedical waste for healthcare facilities, yet they should be closely followed by the various state agencies to prevent biohazards from entering the environment. The new BMW 2016 recommendations, which aim to reduce environmental pollution and ensure the safety of staff, patients, and the general public, are an improvement over prior norms in terms of better segregation, transportation, and disposal processes. In light of this, it is advised that medical wastes be grouped in a similar manner according to their origin, typology, and risk considerations related to their management, capacity, and extreme disposal. The main step is isolating waste at the source, and reduction, reuse, and repurposing should be taken into account from genuine viewpoints. We must think of radical and innovative solutions to address the troubling situation of municipal disregard for healthcare facilities and lax government adherence to the bare minimal of regulations as generation of waste, particularly biomedical waste, places increasing immediate and abnormal costs on society. In this way, our ability to logically monitor growing quantities of biological waste that exceed practises will be put to the test. If all the direct and indirect stakeholders aim to protect our precious environment and the wholesome wellness of our community, then they should focus on this crucial problem out of both a reasonable concern for healthcare providers and a legitimate concern for the fellow citizens.

HUMAN DEVELOPMENT AND ENVIRONMENT- ARE WE COMPROMISING ENVIRONMENTAL PROTECTION OVER THE ECONOMIC BENEFIT

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Abstract

Marking 50 years of the landmark Stockholm Declaration, numerous changes and developments took place in the environment. The conference marked a new era in global cooperation for the environment. The Stockholm Declaration established effective environmental strategies for sustainable development and gained recognition for the evolution of domestic environmental policy toward an eco-centric approach to environmental protection. Predominantly, all the conferences have prioritized sustainable development, envisaging the need for the future. Human development has gained enormous benefits through large-scale industrial-driven economic processes but imminently resulted in environmental depletion. To strike a balance between an understanding of the necessity of development without compromising environmental depletion underlies the principle of environmental protection. The Rio Declaration was introduced in 1992 to commemorate the 20th anniversary of the Stockholm Declaration, which strengthens the idea of how various socio-economic and environmental developments are inextricably linked. The precautionary principle approach which is principle 15 of the Rio Declaration of 1992 prominently highlights the importance of exercising caution, pausing, and reviewing potentially disastrous innovations. To harmonize economic development vis-a-vis environmental protection, “Environmental Impact Assessment” was brought into the picture. India in this reference brought in the EIA notification of 2020 which sought to replace the EIA 2006. The author critically analyses the EIA on whether EIA rules have compromised environmental harm over economic benefits. EIA notification of 2006 had to go through various revisions spite of this fact the deficiencies in the EIA 2006 were unresolved and were incorporated in the EIA notification of 2020. In this article, researchers will focus on the effectiveness of good environmental governance and transparency in decisions affecting the environment. This paper will also discuss the importance of various conventions in the recent past that evolved over the primary principles of the Rio and Stockholm declaration in the modern globalized world.

Keywords: Stockholm declaration, Rio Declaration, EIA, precautionary principle, good governance, Environmental Protection, sustainable development.

Introduction

The importance of protecting the environment and how people treat natural resources as the gift of God can be traced in various religious scriptures. The Bhagavad Gita says: Let the human community protect the environment for their survival and the biodiversity around¹. This verse of the Bhagavad Gita expresses the notion that every human being is duty-bound to protect the environment. Islam forbids resource waste and environmental destruction. During the conflict, the Prophet (peace be upon him) commanded the Muslims not to cut down any trees. He placed a strong emphasis on protecting the environment and preventing its degradation. Therefore, every Muslim has a religious obligation to protect the environment. In Christianity, the environment is considered god's glory, and to maintain its glory one should protect the environment not only for their interest. The environment is considered a sacred thing by every religion. All these teachings in every religion emphasized one thing the environment is a sacred thing and therefore one must protect the environment. With these beliefs, environmental protection gained its importance and made its place. Gradually protection of the environment shifted from a national concern to an international concern, which was brought into effect in Stockholm in 1972. This conference came with 26 principles. The Stockholm Conference marked the beginning of the discussion on human development vis-a-vis environmental protection. It emphasized economic growth when it leads to environmental contamination. This conference through its 26 principles tried to have the well-being of people around the globe. One of the major results which were brought about by the Stockholm conference was the creation of the United Nations Environment Programme (UNEP)². The need for environmental protection gained more importance and then in 1992 came up the Rio Declaration. Some various legal instruments and policies evolved with these conferences where the 1992 Stockholm conference, Action Plan Human Environment emerged and in Rio Declaration Agenda 21 came into existence. Sustainable development became one of the core principles of the Rio Declaration in 1992. This conference marked a stepping stone that can be adopted worldwide by stating that long-term economic progress can be only achieved by keeping a balance with environmental principles. These conferences have

¹ Sachidananda Padhy, An Ethno-ecological Introspection of the Bhagavad Gita: 6. The Present Distorted Environment Compared to Five Thousand Years Ago, 51 Journal on Human Ecology 227, 227 (2015)

² United Nations, <https://www.un.org/en/conferences/environment/stockholm1972> (last visited Oct. 6, 2022)

immense importance in environmental protection. There came the need of the hour to create a balance between development and environmental protection. It is seen mostly that in the name of development a huge amount of environmental degradation takes place which becomes a never-ending process.

To protect the environment from any further environmental pollution in developed and developing countries came in existence Environmental Impact Assessment in 1978. In India, EIA was first formulated in the year 1994. EIA was an attempt to make it mandatory for getting clearance for setting up any new project. With time EIA notification has gone through various kinds of amendments. The most important amendments lie in the year 2006 and the amendments took place in the year 2020. These two amendments have made the EIA change drastically. With time it is seen that the essence of having an EIA has loosened up. These amendments were made to protect the environment from the harmful effects of the newly established industries or projects but this main objective can be seen as lacking in the EIA notification of 2020 as it contains various loopholes, these loopholes need to be assessed on a priority basis so that the main motive behind the EIA formulation can be achieved. These conferences had the main agenda of protecting the environment by having a sustainable approach to it and keeping a balance between the development and environment was always one of the prime objectives of every conference that has ever taken place in the history of the environment.

Overview of the Impact of Treaties and Conventions on the Environment

In the context of celebrating 50 years of the Stockholm conference and 30 years of the Rio Declaration which were the two primary outputs that raised global concern towards environmental protection. There comes the need to analyze the impact of these treaties and conventions on the environment. Undoubtedly these conventions and treaties that were brought into effect nevertheless brought significant changes in the development of environmental jurisprudence around the globe. But there is always the other side, as to whether the environmental principles that were adopted in these treaties or the conventions are relevant or effective enough today to protect the environment from further degradation. And if yes, then how far are they being effective in changing the surrounding where one is surviving? These are the question that must be looked upon when one refers to these international conventions on the environment.

Stockholm declaration- then vs now

50 years have passed since the first United Nations Conference on the Human Environment. The year 1972 in Stockholm lightened the minds of the various stakeholders of this conference with an idea to come together in one place and promise together to adapt the various principles for the sound management of the environment. This very idea brought in effective legal instruments to restore the environment and provide various measures in case of any damage to the environment. An action plan for the human environment was brought into effect with various other resolutions. The broad types of activities that make up the Plan are:

- ❖ The global environmental assessment program (Earth Watch)
- ❖ Environmental management activities.
- ❖ International measures to support the national and international actions of assessment and management³.

In a brief reading of the various principles that were adopted in the Stockholm Conference, it can be very well understood that Principle 1 of the Stockholm conference outshines Article 21 of the Indian Constitution. Article 21 of the Indian constitution talks about the Right to life⁴. Where it has been expanded to the "Right to live in a healthy environment". This addition has not come just by one night. It took years for the legislature to understand that the Right to live in a healthy environment is an inherent right under Article 21 of the Indian Constitution. The right to live in a healthy environment as part of Article 21 of the Constitution was first recognized in the case of *Rural Litigation and Entitlement Kendra vs. State* ⁵(Popularly known as *Dehradun Quarrying Case*)⁶. In *M.C. Mehta vs. Union of India*⁷, the Supreme Court treated the right to live in a pollution-free environment as a part of the fundamental right to life under Article 21 of the Constitution⁸. Through these pronouncements of various cases, it can be very well proven that the principles were taken into consideration by the judiciary while formulating the judgment.

³*Action Plan for the Human Environment. A. Framework for environmental action* A/CONF.48/14/Rev.1 (1972), <https://documents-dds-ny.un.org/doc/UNDOC/GEN/NL7/300/05/IMG/NL730005.pdf?OpenElement>(last visited Oct. 6, 2022)

⁴ INDIA CONST. art. 21.

⁵ *Rural Litigation and Entitlement Kendra vs. State*, AIR 1988 SC 2187.

⁶Pooja P. Vardhan, *Environment Protection under Constitutional Framework of India*, PRESS INFORMATION BUREAU GOVERNMENT OF INDIA (Jun.4,2014, 12:25 IST), <https://pib.gov.in/newsite/printrelease.aspx?relid=105411#:~:text=Article%2021%20guarantees%20fundamenta%20right,to%20live%20with%20human%20dignity.>

⁷ *M.C. Mehta vs. Union of India*, AIR 1987 SC 1086.

⁸ *ibid.*

Another important principle that cannot be over looked, is Principle 24 which relates to International Cooperation among the people to contribute towards international law for protecting the environment. This principle focuses on the very important aspect which is needed at a prime outset, to have international cooperation in other words to have a cooperative spirit to adopt the various measures which are needed to protect the environment. This principle stands as a very important goal to be achieved by every country to work towards the common objective of protecting the environment. These principles and the measures that were very well incorporated in the Stockholm Conference enlightened the major environmental issues globally. But are these principles relevant till now?

Over the last 50 years of the Stockholm conference, we still lack the institutional and legal mechanisms to deal with the various emerging environmental issues. Now whether this is because these principles are way too old to be still considered? or whether the concerned authorities have stopped paying attention to these principles now? These unanswered questions are never looked upon. According to the EPI(Environment Performance Index) 2022

India has been ranked at the bottom in a list of 180 countries that were judged for their environmental performances in the 2022 Environmental Performance Index (EPI)⁹. The list is headed by Denmark, which is seen as the world's most sustainable country¹⁰. The EPI 2022 report says: "Based on the latest scientific insights and environmental data, India ranks at the bottom of all countries in the 2022 EPI, with low scores across a range of critical issues."¹¹ The EPI is considered more accurate than other reports because it uses outcome-oriented indicators as compared to the ESI. Some of these indicators are environmental risk exposure; air quality; average exposure to PM2.5, or the infallibility of the air; air pollution; water and sanitation parameters; drinking water quality; the vitality of the ecosystem; health and management of water resources; wastewater treatment; Green investment; Green innovations; and national leadership around climate change¹². This shows how well environmental protection awareness is still a concern for people or the authorities. The lack of concern towards the poor environmental condition is leading to a very dangerous situation where it will become difficult to even breathe properly.

⁹ Lyla Bavadam, *India ranks at the bottom in a list of 180 countries in the 2022 Environmental Performance Index*, FRONTLINE (Aug.25,2022), <https://frontline.thehindu.com/dispatches/india-ranks-at-the-bottom-in-a-list-180-countries-in-the-2022-environmental-performance-index/article65497256.ece>.

¹⁰ id

¹¹ ibid..

¹² supra note 9.

Rio declaration – two steps back or one step forward

Two events and various effective measures have been brought. Rio Declaration in 1992 was a blueprint for bringing an effect to international cooperation and action which would benefit environmental protection in the twenty-first century. The conclusion drawn by the Rio declaration was that achieving the sustainable development goal should be the unattainable goal for every country which should not be limited to regional, national or international levels. The Rio Declaration also known as the "Earth Summit" led to the creation of the Commission on Sustainable Development, the holding of the first world conference on the sustainable development of small island developing States in 1994, and negotiations for the establishment of the agreement on straddling stocks and highly migratory fish stocks¹³. The importance of balancing economic growth with the environment should be the priority globally for every nation. This declaration marked the very important fact that long-term economic development can be only achieved by balancing the environmental impact. Like every other principle of Rio one of its principle which stands very important is the "Precautionary Principle" under Principle 15 of the declaration. Also known as the Precautionary Approach or Precautionary Action, the Precautionary Principle is a concept best summed up by the proverb "better safe than sorry" or the medical maxim "first do no harm"¹⁴. This principle expresses a notion to adopt precautionary measures in case the causes of harm to the environment are uncertain therefore reducing any uncertainty which might affect the environment to a greater range should be avoided. These principles provide a moral justification for acting even though causation is unclear. This condition forces decision-makers inevitably to confront a variety of difficulties.

In the fast-moving world, it becomes difficult to keep up with the old techniques along with the innovation in hand.

Harmonizing Development and Environment- Challenges Faced By the Society

Environmental concerns have become more prominent in policy creation in recent years, notably in development and growth strategies. Environmental quality is regarded as a welfare determinant and natural resources are considered necessary production inputs. The integration of environmental concerns into theories and empirical research on economic growth and

¹³ United Nations Organization, <https://www.un.org/en/conferences/environment/rio1992> (last visited Oct.30,2022).

¹⁴ Farnam Street, *The Precautionary Principle: Better Safe than Sorry?*, FARNAM STREET (Oct.30,2022, 9:29 PM), <https://fs.blog/precautionary-principle-2/>.

development is currently the subject of much analysis¹⁵. The protection of biodiversity is crucial for ensuring human life since it has fundamental social, economic, cultural, spiritual, and scientific values. The provision of ecosystem services that support human well-being is in jeopardy due to the fast loss of biodiversity, which is unprecedented in the last 65 million years. According to the Millennium Ecosystem Assessment, of the 24 ecosystem services examined, 15 were in decline, 4 were improving, and 5 were both improving and declining in different parts of the world. There is a need to significantly improve and integrate social, political, and economic issues with efforts to protect biodiversity and create a sustainable society. Biodiversity and ecosystem services must be valued, and markets must be established that can use the value of these services as a foundation for a green economy¹⁶. When done properly, industrial development and environmental protection can coexist. Both industrial development and environmental preservation are crucial since one is necessary for lowering poverty while the other is necessary for the long term. We must industrialize if we want to keep a nation operating. Communication of environmental concerns in emerging nations with big populations is incredibly challenging. Industrial expansion costs money and damages the environment. Looking at China as an example demonstrates that unrestrained industrialization will not only have a negative long-term effect on the environment and economy. China's unchecked expansion led to a significant increase in air and water pollution, resulting in health problems, illnesses, and billions of dollars in crop losses for farmers.

We should use renewable energy sources to achieve long-term growth. If we use the sustainable development approach, our nation might experience both industrial progress and environmental preservation. Additionally, all aspects such as environmental preservation, social justice, and economic development must be taken into account to achieve sustainable development. We can have rapid industrialization with the help of scientific discoveries without doing too much environmental harm¹⁷.

The challenges of Sustainable development can be categorized as follows:-

¹⁵ Valeria Costantini & Salvatore Monni, *Environment, human development and economic growth*, 64, Ecological Economics, 867, 867, (2008) <https://www.sciencedirect.com/science/article/abs/pii/S092180090700328X>.

¹⁶ Gro Harlem Brundtland et al, *Environment and Development Challenges: The Imperative to Act*, Barefoot College, Conservation International, International institute for Environment and Development, and International Union for the Conservation of Nature, 1, (2012) https://www.conservation.org/docs/default-source/publication-pdfs/ci_rioplus20_blue-planet-prize_environment-and-development-challenges.pdf

¹⁷ Saishree Rath, *Industrialization and Conservation cannot go hand in hand*, Pixstory Global Holding Inc, (Oct.30,2022, 9:29 PM), <https://www.pixstory.com/story/industrialization-and-conservation-cannot-go-hand-in-hand/47709>

Ø The dichotomy between government spending on sustainable technologies and short-term profit. (In Poland, where coal accounts for 80% of all energy generation, the government has even increased funding to the mining industry rather than pushing ahead with the adoption of sustainable energy sources.)

Ø Corruption. (Funding for developing nations is typically delivered in the form of foreign grants; in the case of Nepal, the UK provides the majority of these grants.) However, due to bureaucracy and corruption in Nepal, certain development initiatives need the payment of service fees to the Nepali government as well as stipends to ministers, which greatly slows down NGO processes¹⁸.)

Sustainable development becoming an unattainable goal- a critical study on various industrial projects

Deeper epistemological - and political - issues with the labels "environmental sciences" and "sustainable development" complicate efforts to encourage the effective fusion of disciplines. The issue with "sustainable development" is extremely severe. Fossil fuels and limited material resources, such as metals, phosphate fertilisers, rare gases, etc., are the current foundation of our growth and prosperity. We will undoubtedly pursue the methods to locate and extract ever-rarer and costlier resources with ever-increasing zeal and intelligence. It is possible to interpret sustainable development as having an integrated growth notion that is difficult to reconcile with a near-stop to growth based on stopping the consumption of finite resources like fossil fuels. Fossil fuels and virgin mineral resources will never be renewable resources. Conceptually, sustainable development is framed by two questions. What should we maintain first? This necessitates consideration of both the nature of our bequest and the distribution of resources among generations. Some contend that consumption or welfare Others argue that a specific stock of environmental assets has to be conserved. Robert, a Nobel laureate Solow suggests that humans maintain a broad ability to create economic prosperity (Solow, 1993). The viability of sustainable development is the subject of the second question, which is closely related to the first. Dependence on the feasibility of the interchangeability of human-made and natural capital (such as equipment or knowledge) in the production process. Sustainability can be robust or

¹⁸ Olga Adhikari, *Sustainable Development and its Challenges in Developing Countries*, International Young Naturefriends, (Oct.30,2022, 9:29 PM), <https://www.iynf.org/2018/08/a-guide-to-sustainable-development-and-its-challenges-in-developing-countries/>

weak depending on the degree of substitutability. Strong sustainability makes the case for the preservation of a particular pool of natural assets by implying that environmental assets and man-made capital work in tandem to produce goods and services. Renewable resources should be seen as "money in the bank," as Andersen (Andersen, 2007) recommends, as this secures their inheritance by future generations: capital is kept and only the revenue created is utilised. However, when all generations are given the same weight, robust sustainability for resources that deplete quickly is impossible. This is because resource consumption cannot be sustained at a positive level forever. This economy practises "cake eating"¹⁹.

The perceived failure of "sustainable development," as well as some of the term's misuses, inherent ambivalence, and various interpretations (Mebratu, 1998; Mitcham, 1995), may have contributed to the community of environmental sciences experts' cynicism and resentment that their work is lumped together under this heading. Anecdotally, we notice a prejudice against "sustainable development" due to the term's overuse in circumstances where environmental benefits are negligible or nonexistent and because it has been linked to corporate and/or governmental actions being "greenwashed." As a result, a lot of people genuinely disagree with the phrase and the frame of reference (Lakoff, 2010). We argue that it is not viable to use the phrase "sustainable development" as a unifying concept that encompasses all areas of environmental sciences for these epistemological and political grounds.

Environmental Decision-Making- Who's Agenda?

Role of Environmental clearance:

Degradation of the environment can be seen in the past 50 years which can be related to various factors like depletion of forest reserves, vehicular emissions, and various other undesirable human activities. The impact of the Bhopal gas tragedy and the LG Polymers gas leak created seriousness to look for the proper regulation and introspection of these industries dealing in various hazardous chemical substances. To do so, Environment Impact Assessment plays a

¹⁹ In 2021, Delhi most polluted capital in world, no Indian city met WHO air quality standard: Report, Economic Times, (last visited Oct. 6, 2022) https://m.economictimes.com/news/india/in-2021-delhi-most-polluted-capital-in-world-no-indian-city-met-who-air-quality-standard-report/amp_articles/90374053.cms

greater role. It determines the impacts of various industrial units and other polluting entities. Therefore to curb any further degradation of the environment from such polluting units EIA mandates various safety norms that need to be taken into consideration before the establishment of these industries. The most crucial element of EIA notification is Environmental Clearance. The Environmental Clearance (EC) process, which requires all major capital investment projects by the private sector or government to seek regulatory approval before beginning construction, is the centrepiece of environmental regulation of development in India²⁰. The clearance is mandatory for the ecologically fragile areas, regardless of the type of the project²¹. Through Environmental clearance it tries to assess the impact on the environment and industry might cause and therefore applying various safety measures to curb such degradation.

Evolution and development of EIA law

With time in place, various laws on the environment strive to maintain a balance between the economy and ecology. Nevertheless, such a balance is very necessary to attain long-term economic growth in a country. To ensure such a fruitful balance there was a need for the introspection and rectification of various units which contribute to environmental pollution. EIA is one such regulatory framework which strives to bring balance between these two very important aspects. In India, there has been a concatenation of the EIA. It was first brought in the year 1994. This first EIA notification covered only a few industries. There were various shortcomings in the EIA, 1994. To solve the various conflicts in th00.3

e EIA 2006, the EIA notification of 2006 came in. Nevertheless, this was brought in to bring a perfect regulation that was missed in the EIA 1994 but gradually it was brought to notice that EIA 2006 was very far from reaching a perfect regulation for environmental impact. In the ongoing years, it went through various amendments and

²⁰ Rohini Pande & Anant Sudarshan, *Harnessing transparency initiatives to improve India's environmental clearance process for the mineral mining sector*, 3ie Impact Evaluation Report 92. New Delhi: International Initiative for Impact Evaluation (3ie) (2019) <https://www.3ieimpact.org/sites/default/files/2019-03/IE92-India-Environmental-clearance.pdf>

²¹ Aruna Singh, *The draft EIA notification, 2020: what went wrong?*, Lexology <https://www.lexology.com/library/detail.aspx?g=2761b4ea-af66-4c10-9056-61cd9d66036f> (last visited Oct. 6, 2022)

as a result, the EIA draft of 2020 was passed. Since the day the EIA draft of 2020 has been passed it has been subjected to various criticism all around the country.

Hindrance to Precautionary Principle – The untouched post-facto clearance procedure of EIA 2020.

The EIA 2020, predominantly strived a hindrance to the precautionary principle through its various features as adopted. But this shortcoming in the EIA, 2020 remains an untouched area or has been neglected by the authorities. The post-facto clearance procedure of EIA 2020, has given liberty and time to the various project holders of the industrial units or various other polluting units. In a very brief understanding of this procedure, it relates to allowing any industry to function even if it has not obtained the “green clearance”. This itself is a violation of the very objective of EIA for which it was formulated. This is disastrous because we already have several projects that are running without EIA clearances. An example is the LG Polymer Plant in Vishakhapatnam, where the styrene gas leak happened on May 7. It was revealed that the plant had been running for over two decades without clearances. A similar incident was reported on May 27, where due to poor adherence to environmental norms, the natural gas of Oil India Limited in eastern Assam’s Tinsukia district had a blowout and caught fire. This caused severe damage to the livelihoods in the region rich with biodiversity²². The State Pollution Board, Assam, had reported that the oil plant had been operating for over 15 years without obtaining prior consent from the board²³. This EIA approach was made to ensure that there is no further degradation of Environment but through various examples referred it can be understood that it has to lead to a hindrance to reaching to the precautionary approach developed through various international conventions. Such an industry dealing with hazardous substances without any environmental clearance proves that they must have not adopted any precaution before functioning and therefore resulted in such a disastrous happening.

Minimizing the role of Public Participation- Is this opening the new floodgates to violations

Environmentalists around the globe have argued on the very notion of the EIA notification of 2020 that it has opened new gates for violations to take place concerning

²² Archita Kashyap, *Burnt homes, illnesses, damage to ecology — what Baghjan is left with months after OIL fire*, The Print, (last visited Oct. 6, 2022) <https://theprint.in/environment/burnt-homes-illnesses-damage-to-ecology-what-baghjan-is-left-with-months-after-oil-fire/536957/>

²³ Abhijit Mohanty, *Why draft EIA 2020 needs a revaluation*, Down To Earth, (last visited Oct. 6, 2022) <https://www.downtoearth.org.in/blog/environment/why-draft-eia-2020-needs-a-revaluation-72148>

environmental harm. The new features of the EIA 2020 are floodgates to the violation. The post-facto clearance, reduction in the number of compliance reports, lack of public participation, excluding various projects. One of the primary contentious issues in the EIA notification along with post-facto clearance is “minimizing the role of public participation”. This has resulted in various conflicts which predominantly brings on the very fact that EIA 2020 has given huge liberty to polluting units while keeping the public uninvolved. Mostly, the people concerned relation to environmental harm is given 30 days time period to raise any issues related to the preliminary report of the EIA. The EIA 2020, has reduced the time to just 20 days. In a country like India, where there is a huge rural population and the majority of the stakeholders belong to poor communities. The less technology outreach the less information on the reports in such places most often reaches late and due to such time constraints, it leads to granting environmental clearance without public consultation. In such a lesser time of 20 days, it is practically impossible to transfer the reports in a country like India, where the percentage of poor is 21.2 % in rural areas compared with 5.5 % in urban areas. Rural areas account for nearly 90 % of poor people, accounting for 205 million of the nearly 229 million poor in India²⁴.

This feature of EIA, 2020 is a clear violation of principle 10 of the Rio declaration which proposes that “Environmental issues are best handled with the participation of the concerned citizens”²⁵.

Conclusion & Suggestions

Development and Environment balance remain a burning issues of all time. It's difficult to weigh the balance of both and even more difficult to practically analyze as to which one is heavier than the other. Though India has signed various conventions for environmental protection. yet the reality towards environmental protection is far from perfect. Practically it is impossible to reach a perfect level for any country, especially regarding environmental protection where there is net zero pollution. But there can be a minimal level where the environmental harm can be reduced. To curb environmental degradation various

²⁴ 41.5 crore people emerged out of poverty in India since 2005, but country still has largest poor population globally: *UN Report*, The Times of India, (last visited Oct. 6, 2022) <https://timesofindia.indiatimes.com/india/41-5-crore-people-emerged-out-of-poverty-in-india-since-2005-but-country-still-has-largest-poor-population-globally-un-report/articleshow/94921655.cms>

²⁵ *UNEP - Principle 10 and the Bali Guideline*, United Nations Environment Program, (last visited Oct. 6, 2022) <https://www.unep.org/civil-society-engagement/partnerships/principle-10>

Environmental principles were adopted in the Stockholm conference and the Rio declaration of which India has been one of the signatories.

Over time, it has been reflected through various environmental hazards that there has been non-conformity to these various environmental principles. There has gradually caused erosion to environmental protection. In recent times, Delhi was found to be the most polluted capital in the world for the fourth consecutive year in 2021 and 35 of the 50 cities with the worst air quality were in India, according to a new report²⁶. These alarming data represent the condition of the country which should be an eye-opening to the concerned authorities. The silence on this very part will lead to a catastrophic result and then it will be difficult to restore the situation. The deeper holes which are present in various regulation which was enacted for a piece of effective machinery to introspect and rectify any environmental hazard that takes place are being neglected now and then. For instance, the EIA 2020 is one such regulation which is consisting of various lacunas, these loopholes need attention on a priority basis and need to be rectified with time in force.

There is a need to strengthen the EIA process and bring certain changes to it. Human development is important for economic growth but it should never be at the cost of environmental harm. There is a very thin line between human development and the environment but this thin line encompasses a very important notion that should not be neglected at any instance. The proposed notification appears to have completely disregarded the precautionary principle, which is a crucial component of both Indian environmental law and the idea of sustainable development. Sustainable development should be an attainable goal for every nation. For this very concern, it should be suggested that there is a need of having wide public participation and transparency in decision-making in matters related to environmental hazards which adheres to principle 10 of the Rio declaration. In the EIA draft, there are various new concepts dealing with environment permissions, Resource augmentation plans etc. Therefore it formulates a need that the ministry should clarify these new concepts.

Lastly, the principles of good governance are much needed in environmental protection which should take into account all the stakeholders related to the environment. This will help in achieving Sustainable development and help in minimizing environmental harm.

²⁶In 2021, Delhi most polluted capital in world, no Indian city met WHO air quality standard: Report, Economic Times, (last visited Oct. 6, 2022) https://m.economictimes.com/news/india/in-2021-delhi-most-polluted-capital-in-world-no-indian-city-met-who-air-quality-standard-report/amp_articleshow/90374053.cms

THE CRIMINALISATION OF ECOCIDE - AN INDIAN PERSPECTIVE

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Introduction

In light of cases such as the Bhopal Gas Tragedy and the Oleum Gas Leak, wherein there were several injured parties, those who lost their lives, and countless victims of those who were not directly affected by the cases but were born with deformities and disabilities, the criminalisation of ecocide, a grave international crime that is gaining momentum on the international scale is something to be reckoned with. India already has criminal provisions in order to penalise the offenders. However, the current Indian government under the Modi administration plans to decriminalise environmental violations and replace them with higher penalties, according to a consultation paper that was published in July, 2022, by the Indian Government¹. In addition to this, in light of the Conference of Parties 27 (COP27), wherein the main theme has centred on climate finance and green bonds. India, as a rapidly developing nation, actively pushed for climate funds in addition to holding on to their fossil fuel “phase down” policy, as the current Indian fossil fuel market is the second-largest in Asia². This goes to show how the curbing of climate change through policies and legislations has become a lesser priority as compared to the acquisition of climate finance and funding for India - both in the domestic scenario as well as in the international forum. This paper illustrates how and why this is not a fair exchange, as this alteration would largely cater to business interests and corporations motivated by profit-making incentives, and delves into the importance of criminal liability of corporations for environmental pollution and damage in today’s world.

What is ecocide?

The term “ecocide” is relatively new, and has gained momentum in its use since the late 2010s due to an exponential increase in climate awareness and the public call for climate action. “Eco” generally refers to the abbreviation of “ecology” or “environment”, whereas “-cide” is a Latin suffix meaning “killer” or “the act of killing”³. Thus, the literal meaning of the

¹ ENVIRONMENT (PROTECTION) AMENDMENT RULES, 2022 INDIA ENVIRONMENT PORTAL, <http://www.indiaenvironmentportal.org.in/content/472602/environment-protection-amendment-rules-2022/> (last visited Oct 30, 2022).

² OIL & GAS INDUSTRY IN INDIA INDIA BRAND EQUITY FOUNDATION, <https://www.ibef.org/industry/oil-gas-india> (last visited Oct 30, 2022).

³ -CIDE DEFINITION & MEANING DICTIONARY.COM, <https://www.dictionary.com/browse/-cide> (last visited Oct 30, 2022).

term “ecocide” is the “act of killing the environment”, and the word has substantially gained substance and expanded its meaning since the spread of environmental awareness and education, as a result of the public pushing for legislative and policy changes towards climate action and curbing global warming. The roots of the word are the Greek *oikos* (home) and the Latin *cadere* (to kill)⁴.

Ecocide can be described as an act of “substantially damaging or destroying ecosystems, or harming the health and well-being of a species, including humans,” and, in other words, means “destruction of the natural environment by deliberate or negligent human action”. Examples of ecocide range from: ocean damage; deforestation; land and water contamination; and air pollution. Such large scale, harmful industrial activities have ultimately been the cause of the climate emergency, which calls for the necessary action to be taken in order to abide by the objective of sustainable development and steady growth that will not harm the natural environment.

In both the domestic and international contexts, environmental experts have demonstrated the need for the criminalisation of ecocide. Under international law and the Rome Statute, making ecocide a crime, especially in times of war, has been globally encouraged. This has also been codified by ten countries⁵. It has been proposed that ecocide should be a crime punishable by the International Criminal Court⁶. In addition to this, American environmental theorist Patrick Hossay has stated that the “human species” is causing an “ongoing extinction and ecocide”⁷. This has often been associated with the rapid and ever-growing increase of consumer demands being met with the supply of unsustainable practices by corporations, fuelled by a capitalistic environment. In the domestic opinion, critics have indicated there is a strong need for the usage of criminal punishments for violations of environmental law⁸. India’s rapidly developing economy, the vast infrastructural changes that have been taking place, and primal focus on poverty eradication have led to unsustainable practices and an unprecedented rate of

⁴ TO STOP CLIMATE DISASTER, MAKE ECOCIDE AN INTERNATIONAL CRIME. IT'S THE ONLY WAY THE GUARDIAN, <https://www.theguardian.com/commentisfree/2021/feb/24/climate-crisis-ecocide-international-crime> (last visited Oct 30, 2022).

⁵ R. D. WHITE & DIANE HECKENBERG, GREEN CRIMINOLOGY: AN INTRODUCTION TO THE STUDY OF ENVIRONMENTAL HARM (Routledge) (2014).

⁶ R. D. WHITE & DIANE HECKENBERG, GREEN CRIMINOLOGY: AN INTRODUCTION TO THE STUDY OF ENVIRONMENTAL HARM, pp. 45-59 (Routledge) (2014).

⁷ PATRICK HOSSAY, UNSUSTAINABLE: A PRIMER FOR GLOBAL ENVIRONMENTAL AND SOCIAL JUSTICE (Zed Books) (2006).

⁸ COMMENTS ON THE PROPOSED DECRIMINALISATION OF FOUR KEY ENVIRONMENTAL LEGISLATION VIDHI CENTRE FOR LEGAL POLICY, <https://vidhilegalpolicy.in/research/comments-on-the-proposed-decriminalisation-of-four-key-environmental-legislation/> (last visited Oct 30, 2022).

industrialisation that have had adverse effects on the environment, and thus stronger laws coupled with the threat of imprisonment would therefore deter such behaviour.

Thus, ecocide is largely regarded as the intentional causation of large-scale environmental damage during times of war⁹ – and the call to action for its criminalisation is seen as a means for the Rome Statute to eventually make it a crime punishable by the International Criminal Court. On the other hand, domestic laws regard ecocide on a relatively smaller scale, and use the term to coin the general damage to the environment caused by various entities ranging from individuals to large enterprises within a country.

While the definitions above largely pertain to international law and order, this paper aims to apply the object of “ecocide” as a criminal act within the country to a national level. It is important to note that there is a marked distinction between minor offences (such as smoking in prohibited zones, etc., that are on a much smaller scale) and large-scale violations of environmental law (for example: wildlife crime; illegal mining; dumping illicit trade and hazardous waste, etc.). Keeping this distinction in mind, the paper funnels into the criminal liability of corporations that are motivated by their profit-making motive in order to act in their self-interest and thereby cause major damage and pollution to the larger environment. The actions of criminal liability and current governmental plans on decriminalisation that largely cater to corporate interests, are analysed from a criminal jurisprudential point of view.

Current Environmental Legislations in India

The current legislations that govern Indian environmental jurisprudence are: the Air (Prevention and Control of Pollution) Act; the Water (Prevention and Control of Pollution) Act, the Environment (Protection) Act and the Public Liability Insurance Act. These four laws, as their names suggest, govern the quality of air and water resources, regulate the methods of protection of the environment, and put forward the penalisation of violators through the satisfaction of legal principles and doctrines such as public liability. The current laws have paved paths for ground-breaking judgements made by the legal authorities, such as *M.C Mehta v. Kamalnath* (1996)¹⁰ and *Union Carbide Corporation v. Union of India* (1989)¹¹. Environmentalists and policy experts claim that, though there is a need for reform for the current laws, the overall decriminalisation of environmental laws would not be helpful. All of

⁹ Prisca Merz, *Ecocide: Prisca merz argues it is now time to act against the large-scale damage or destruction of ecosystems*, SOCIALIST LAWYER, 16–19 (2014).

¹⁰ M.C. MEHTA VS KAMAL NATH & ORS (1997) 1 SCC 388.

¹¹ UNION CARBIDE CORPORATION VS UNION OF INDIA, 1990 AIR 273, 1989 SCC (2) 540.

these laws have provisions for fine and/or imprisonment, which is a method used to deter behaviour that could violate the laws set in the Act. However, it is pertinent to note that these laws have not been updated, reviewed or reformed in many years, which is why policy experts believe that the new intention of the Indian government would be counterproductive to their desired goal. Although the word “ecocide” is not mentioned in any of the Acts, the objectives of the Acts pan out to the ultimate goal of the protection of the environment and to take the necessary steps towards climate action and India’s pledges in the international forum, for example the Paris Agreement in 2015, etc. So, the term “ecocide” can be understood implicitly through the objectives of the various Acts.

The current environmental legislations have only just begun taking steps towards producing tangible results in holding corporations and companies criminally liable for their actions in causing damage to the environment. For example, in the case of *Union Carbide Corporation v. Union of India (1984)*,¹² wherein there were several victims of the Bhopal Gas Tragedy, the aggrieved were barely compensated, and the Indian Government had largely taken responsibility for the victims by providing specialised hospitals for them and attempting to treat the contaminated groundwater as an aftermath of the leakage, while the criminals had fled the jurisdiction. The criminals who were liable for the disaster, mainly the owner of the foreign company who refused to pay for maintenance of the pipes from which the methyl isocyanate had leaked from, were never punished. This has led to widespread grief as they were never brought to justice and the victims and their families who would suffer for generations after the disaster will never get the closure that they are entitled to. The corporation as a whole was held criminally liable, and it was later known as the worst gas accident in history. Similarly, in cases such as *Rural Litigation and Entitlement Kendra v. State of Uttar Pradesh* and *M.C. Mehta v. Union of India*, the corporations were subject to orders from the Court, and these types of corporations are graded as the fourth-highest group of organised criminal activities that occur across the globe¹².

¹². SHOULD COMPANIES HELD LIABLE FOR THE ENVIRONMENTAL DAMAGE THEY CAUSE, INDIAN JOURNAL OF CORPORATE LAW AND POLICY, <https://ijclp.com/should-companies-be-held-liable-for-the-environmental-damage-they-cause/> (last visited Oct 30, 2022).

What does the Indian government aim to do?

In July, 2022, the Indian government had released the amendments that it plans to make based on a consultation paper¹³. This consultation paper had later manifested itself into a proposal for amending the four environmental legislations, seeking to decriminalise offences under the same, meaning that; although there will still be provisions on the payment of fines, there will be no threat of imprisonment or jail time. The proposed amendments, therefore, seek to make three major changes:

1. The First change that they plan to take is to *replace imprisonment with higher penalties* for majority of the violations presently considered as offences under these laws¹⁴.
2. In addition to this, the proposed amendments also intend to appoint “*Adjudicating Officers*” under each of the Acts to allow the quantum of penalties to be determined.
3. Lastly, the amendments also aim to empower the Central Government to establish three new funds, namely: the Environmental (Protection) Fund, the Water Pollution Remediation Fund and the Air Pollution Remediation Fund, under their respective Acts; where penalties imposed in case of contraventions shall be credited under the EPA, Water Act and Air Act respectively¹⁵.

Thus, the Indian government plans on lifting the threat of criminal liability given for the commitment of “ecocide” in these environmental laws altogether, due to their concern with the consequences of the actions of one set of actors only¹⁶. This is because of the fast-paced industrialisation coupled with the desire to have a boosting economy, that many of the pollution-related activities are outsourced from companies in countries that have much stricter legal standards when it comes to environmental pollution. Therefore, the government felt the need to intervene and “insulate” these economic entities from disruptions¹⁷.

¹³ CONSULTATION PAPER ON PROPOSED AMENDMENTS IN THE FOREST (CONSERVATION) ACT, 1980 MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE , http://environmentclearance.nic.in/writereaddata/OMs-2004-2021/263_OM_02_10_2021.pdf (last visited Oct 30, 2022).

¹⁴ COMMENTS ON THE PROPOSED DECRIMINALISATION OF FOUR KEY ENVIRONMENTAL LEGISLATION VIDHI CENTRE FOR LEGAL POLICY, <https://vidhilegalpolicy.in/research/comments-on-the-proposed-decriminalisation-of-four-key-environmental-legislation/> (last visited Oct 30, 2022).

¹⁵ *Supra*.

¹⁶ NEW RULES OFFER COMPENSATION, NOT FREEDOM FROM POLLUTION HINDUSTAN TIMES, <https://www.hindustantimes.com/india-news/new-rules-offer-compensation-not-freedom-from-pollution-manju-m-and-kanchi-k-101657287924441.html> (last visited Oct 30, 2022).

¹⁷ *Supra*.

Issues

There are various issues with the steps that the Government under the administration of Modi plans to take, that encompass matters on compensations, funding, and remaking the entire mechanism. By making it a green finance issue and completely exempting big corporations from any criminal liability, the government is lifting the burden of dealing with legal action from them. To begin with, removing the provisions of imprisonment from environmental laws in its entirety will defeat the original intent for the protection and improvement of the environment as mentioned in the preamble of the EPA. To deter people from committing grave violations, the criminal provisions must be retained. In addition to this, the quantum of penalty being proposed in each of the Acts is too low to effectively deter violations, especially where the profit from violations outweighs the amount of the penalty¹⁸. Therefore, to sum up, the issues are:

1. Removing the provisions of imprisonment from environmental laws in its entirety will defeat the original intent for the protection and improvement of the environment as given in the EPA.
2. The quantum of penalty being proposed in each of the Acts is ineffective.

The entire purpose of criminal law, as we have learnt in class, are:

1. Punishing criminals;
2. Deterring individuals from committing a crime;
3. Reforming society through methods such as admonishing and probation;
4. And most importantly, compensating the aggrieved party fairly.

It is important to note in this case that the “other party” are not just the environmental authorities or the Indian government. The “other party”, in matters such as the well-being of the environment that are inherently intrinsic to the land, are the generations to come. In environmental law, the factor of “intergenerational equity” is stressed upon, as it is largely believed and agreed upon that the current generation should use the resources that have been given to them without compromising the future generations’ ability to utilise these resources as well. It is also widely believed that we have not inherited the Earth from our ancestors, but have borrowed it from our children. While a representative of the “future generation” cannot

¹⁸ *Supra*.

stand before the Court, organisations and authorities can definitely represent their interests. Therefore, the criminal liability of corporations turning deviant should not be taken away and been rid of by the Indian government. It is important to make provisions and legal mechanisms wherein the strength of criminal law and procedure as well as the object of environmental legislations are utilised to the greatest extent of their abilities, powers and functions.

The future of Indian Environmental Jurisprudence

There have been conflicting opinions on the proposed amendments – ranging from making a different guidance model and retaining the criminal liability provisions in the Acts to bringing in civil liability in order to make court procedures more convenient. However, the government must take a stance with regards to the situation with the environmental laws in order to further the principle of intergenerational equity and for the larger public interest.

According to some policy experts, the proposed amendments of having higher penalties and being rid of criminal liabilities is a model that will not work because these economic entities still need to be held liable in the eyes of the law. However, this set of experts believe that using a legal model based on civil liability would be more effective. As the government may not want to criminally prosecute economic entities that are important to Indian society, and are generally law-abiding actors, the procedure of a criminal case would be too much to bear for both parties involved, ranging from the greater burden of proof, so the limited resources to generate evidence and the long-drawn prosecution procedures¹⁹.

In addition to this, it has been argued that there should be a layered guidance model to assess the penalty amount, as well as a set of guidelines for the adjudication process to be fair and streamlined. This should also be in coherence with the strengthening of “special violations”, that take place often with companies and corporate entities that conduct large-scale operations and therefore have more disastrous consequences on the environment than those causing minor violations of the law and thereby not having as adverse effects. Lastly, to make an effective contribution towards monetary relief, there have been proposals made to have an amalgamation of funds in the existing Environmental Relief Fund (ERF)²⁰.

¹⁹ NEW RULES OFFER COMPENSATION, NOT FREEDOM FROM POLLUTION HINDUSTAN TIMES, <https://www.hindustantimes.com/india-news/new-rules-offer-compensation-not-freedom-from-pollution-manju-m-and-kanchi-k-101657287924441.html> (last visited Oct 30, 2022).

²⁰ COMMENTS ON THE PROPOSED AMENDMENTS TO ENVIRONMENTAL LAWS VIDHI CENTRE FOR LEGAL POLICY, https://vidhilegalpolicy.in/wp-content/uploads/2022/07/Comments_Decriminalization_Environmental_Laws_VCLP_21072022.pdf (last visited Oct 30, 2022)

Conclusion

As the Indian government is often found in a special spot due to international pressure for sustainable development as opposed to its need for economic prosperity, it has been contended that the decriminalisation of the provisions given in the environmental provisions would defeat the original intent for the protection and improvement of the environment as given in the preamble of the Environment Protection Act. This would also feed and cater to one section of society, as corporations and companies are those that contribute the most out of all individuals to environmental damage and pollution, but could easily cater to and budget for the higher environmental penalties if the laws are changed. In addition to this, while decriminalisation does not give these economic entities the “freedom to pollute” it does rid them of the threat of criminal liability and imprisonment, and the proposed civil liability and payment of fines and damages is precisely what these economic entities budget for²¹. In conclusion, the Indian perspective of criminalising or decriminalising ecocide is still a topic of heavy debate, though the objectives of intergenerational equity as well as the Right to Environment must be protected at all costs.

²¹ *Supra*.



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NATIONAL EDUCATION POLICY, 2020 AND ENVIRONMENT EDUCATION: CHALLENGES AND OPPORTUNITIES

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Abstract

One of the most glaring problems which the world faces today is environmental pollution. Man has exploited nature excessively at the cost of the environment. There is an immediate need to make people aware of environmental degradation. UNESCO claims “Environmental education is a method of putting the objectives of environmental conservation into practise”. It is a lifelong multidisciplinary subject of study, not a distinct branch of science. It refers to education for environmental preservation and improvement, as well as education as a tool for growth to raise human societies' standards of living. India has started several initiatives, one of which is making environmental education mandatory at all educational levels. There is a need to reorient the environmental education curriculum to make it more appealing and responsive to the local environmental issues in today's world where environmental conditions are changing negatively, and all living things are suffering because of environmental pollution and climate change. The environment must prepare Students with the necessary Life Skills besides academic skills. India's National Education Policy 2020 takes great care to address the common issues related to the learning Environment and proposes measures to keep it in top shape & form. The new Education System takes over a kid when she or he is just three years old, and that certainly puts enormous responsibility on the System. This paper will cover important points of NEP 2020 regarding Environment Education and its evaluation and challenges in the near future.

Keywords: environment education, challenges, opportunities, curriculum, and National Education Policy 2020.

Introduction

The first colour image of the Earth was captured in 1972 by Apollo 17.¹ Our planet was shown as a blue marble set against a pitch-black void. We all agreed that Earth is a closed, finite system and is the only place we must call home. Our blue marble, also known as One Earth,

¹Blue Marble - Image of the Earth from Apollo 17, <https://www.nasa.gov/content/blue-marble-image-of-the-earth-from-apollo-17> (last visited Nov. 1, 2022)

needed to be taken care of "as a complete and complicated mechanism supporting an extraordinary complex network of interacting and interrelated life," according to this statement.

Environmental catastrophes have occurred during the preceding decades have raised public concern and knowledge about the environment. It was obvious that a coordinated reaction was required throughout the Cold War and the numerous nations that were battling colonialism. Some nations advocated for the United Nation to take on more environmental initiatives.

The United Nations Charter, the founding document of the UN, aims to enhance everyone's quality of life by fostering peace, stability, economic growth, and human rights. On environmental concerns, though, it was mute. The basis for worldwide collaboration on environmental issues was ultimately created by "the initiative of a little country in Scandinavia."

There has always been disagreement and conflict surrounding environmental concerns. The 1972 United Nations Conference on the Human Environment, which in turn influenced environmental management for the following 50 years, was formed by these discussions. Because of the debates inspired by the conference, important concepts like sustainable development and organisations like the United Nations Environment Programme (UNEP) exist today.² The Stockholm Conference showed that collaboration on environmental and sustainable development challenges is feasible when leaders take the initiative and pay attention to everyone's concerns.³

Governments gathered in Stockholm, Sweden, fifty years ago, and formally recognised the relationship between the environment and development, putting it at the forefront of the global agenda. The work initiated by the UN Conference on the Human Environment in 1972 has led to the formation of important concepts and organisations, including "sustainable development" and the United Nations Environment Programme (UNEP). It was made clear that intergovernmental collaboration is conceivable during the Stockholm Conference.

The Stockholm Declaration and Action Plan addressed several concerns related to the environment and sustainable development. The Stockholm Conference was essential in identifying these issues, bringing attention to the difficulties that needed to be solved, and putting the world on the path to a more ecologically sustainable way of life. Governments negotiated treaties, enacted plans of action and programmes, gathered environmental data,

² Engel, R. and Engel, J. (1990) *Ethics of Environment and Development*, Belhaven Press

³ Dewey, J. (1934) *Art As Experience*, New York, Minton, Balch

founded scientific organisations, hosted international conferences, and built environment ministries along the way.⁴

The Stockholm Declaration, 1972 comprises the proclamation of 26 principles and several other submissions of recommendations. Every principle which is laid down in the Stockholm declaration is an important provision of the declaration. However, Principle relating to Environment Protection Education is envisaged under Principle number 12.

Principle 12: Environment Protection Education

Humans need to be educated about environmental protection to make them much aware about the issue. It is essential and it should be communicated to humans by conducting skits or through media or any other medium to make people aware of the environmental crisis so that people would work effectively to control the pollution by putting their efforts.

Thus, Education relating to Environment protection is itself the major principle under Stockholm declaration 1972.⁵ Environmental education focuses on the facets of human behaviour that are more closely connected to how a person interacts with and comprehends their biophysical environment. Through the process of environmental education, people may learn about environmental problems, solve them, and take steps to protect the environment.⁶ People have a greater grasp of environmental concerns as a result, and they are more equipped to make wise choices.

A complete, ever-evolving education that is responsive to changes in a world that is changing quickly is environmental education. Understanding the key issues of the modern, complex world—problems brought on by the interaction of the biological, physical, social, economic, and cultural components of the person and the community—helps to prepare the individual and the community for life. Environmental education restores a broader perspective that recognises the fundamental interdependence between the natural and built environments, as well as the connection between current actions and future effects.

Need of Environmental Education

⁴ SEEC (Scottish Environmental Education Council) (1987) Curriculum Guidelines for Environmental Education, Paisley, SSEC

⁵ Stodolsky, S.S. (ed.) (1988) The Subject Matters, Chicago, The University of Chicago Press.

⁶ *ibid.*

Environmental damage has been proven by Global Environment Outlook's several reports. The environment is under more and more stress because of population expansion, economic activity, and consumption habits. It implies that many forms of pollution have continued to be caused by the quick increase in demand for energy, transportation, and other forms of consumption.⁷

Unsustainable land use has resulted in soil erosion, nutrient depletion, water shortages, salinity, and disturbance of biological cycles, which are all examples of land degradation. Degradation affects other ecosystems, productivity, biodiversity, and climate change. Water scarcity is worsening, which threatens environmental services, food security, public health, and development.⁸ The consequences of population expansion, rural-urban movement, growing income, resource exploitation, and climate change pose a danger to the quantity and quality of water and land resources as well as environmental support services. Future development is still gravely threatened by the loss of ecosystem services and the reduction in biodiversity on a global scale.⁹ Therefore, environmental deterioration impedes progress, endangers future development, and is unmistakably connected to issues with human health.

India is currently dealing with comparable issues. According to the most recent official assessment by the Centre for Science and Environment¹⁰ (CSE) on the condition of India's environment, Such as: -

- The report also dissected 2011 census data on migrant populations and found that more than 50 lakh people were evacuated within India last year, which is the highest number in the world.
- Flooding brought on by the south-west monsoon caused 26 lakh displacements, while Cyclone Fani alone caused 18 lakh displacements, followed by Cyclones Vayu and Bulbul.
- At the time of the tragedies, there were more than 45 crore migrants in the nation, the most of them were moving inside their own State.

⁷ Cooper, G. and Sterling, S. (1992) *In Touch: Environmental Education for Europe*, Godalming, World Wide Fund for Nature

⁸ Bennett, S.N. (1976) *Teaching Styles and Pupil Progress*, Wells Open Books

⁹ CEE (Council for Environmental Education) (1987) *Introducing Environmental Education. Book 2, Schools: Educating for Life, Reading, CEE*

¹⁰ CSE criticises environment ministry's new notification on emission norms for coal-based power plants, <https://www.cseindia.org/cse-criticises-environment-ministry-s-new-notification-on-emission-norms-for-coal-based-power-plants-11409> (last visited Oct. 25, 2022).

- In 2011, more than 1.7 new migrants, mostly from rural to urban regions, moved for work objectives.
- Forest covering has reduced by 38% in the areas, and five of the 21 river springs are currently experiencing total water shortages.
- 1,357 people died last year because of 19 significant weather disasters.
- The Corona shutdown experiences have ensured that industrial activity and vehicle emissions are the primary contributors to urban air pollution. With a mean annual rainfall of roughly 1200mm, this resource is becoming scarce due to a lack of effective water management techniques.

These are but a few justifications for why we might anticipate improved environmental education. It is crucial to comprehend how we are connected to nature. We depend on our surroundings. To promote a sustainable environment, it is essential to comprehend our relationship with nature and the fact that we are just one species among many on a globe teeming with life.¹¹

Our activities have brought about positive effects, including life expectancy, material wealth, travel, and leisure. But there are other more unfavourable developments. have emerged from land degradation, air and water pollution, and extinction that endangers human well-being. It poses a risk to human health. Most significantly, we must comprehend our relationship to the because understanding the environment is a crucial first step in resolving our most urgent environmental issue that eventually affects the social, economic, or health systems.

Historical perspectives in Environmental Education

The concept of environmental education in India is not unusual nor recent. It has been around since prehistoric times. With a clear warning on the consequences of environmental deterioration and the necessity for conservation for human life, every religion and every culture in India emphasised environmental concerns while representing the traditions and societal viewpoints. Nature is viewed as an all-encompassing force in Indian culture.¹²

The ancient Hindu texts, including the Vedas, Puranas, and Upanishads as well as the legendary Mahabharata and Ramayana, have firmly established the justification for environmental

¹¹ Sharma, R.C. and Merle C. Tan (1990). Source Book in Environmental Education for Secondary School Teachers, UNESCO, Bangkok.

¹² Sharma, P.D. (1999). Ecology and Environment. Rastogi Publications, Meerut.

conservation as well as religious rituals and prohibitions against the excessive exploitation of natural resources. For instance, there are several references to Man-Earth interactions in the Atharva Veda's *Prithvisukta*. However, this tradition is still present in indigenous communities across the nation.

Since 1930, the Indian educational system has included elements of environmental education in its curricula. The Report of the Education Commission (Kothari Commission-1964–1966)¹³ laid the foundation for the current state of informal environmental education. In the initial phase, the Report suggested that *"the primary school science curriculum should focus on helping students gain a thorough grasp of the key facts, ideas, principles, and processes in the physical and biological environment."*¹⁴

There was enough information about the environment in the scientific and social science curricula and teaching materials, as well as to some extent in the language and mathematics curricula, to achieve the required goals. At the senior secondary level, the biology, chemistry, physics, geography, sociology, and mathematics textbooks all included enough information on the environment to advance the knowledge, comprehension, and abilities learned up to that point in the secondary stage.

The 42nd amendment to the Indian Constitution, passed by the government in response to the UN conference in 1972, encouraged environmental awareness by requiring the state to "take measures to protect and improve the environment and to safeguard the forests and wildlife of the country" (Article 48 -A). By inserting the phrase "thereof requires, every citizen to protect and improve the natural environment including forest, lakes, rivers and wildlife and to have compassion for living creatures".¹⁵ "Fundamental Duties" in Article 51 A clause (g), it further made every person accountable. Given this context, the Indian government formed the Department of Environment in 1980, later redesignating it as the Ministry for Environment and Forests in 1985.

The government introduced its national education policy (NEP) in 1986, and one of its main focuses was the importance of giving education at all levels an environmental emphasis.

"There is a crucial need to foster an awareness of the environment," the policy declared. It must start with children and spread to every aspect of society. Schools and universities should be

¹³ National Council Of Educational Research And Training, Report Of The Education Commission, 1964-66 (1970), <http://www.academics-india.com/Kothari%20Commission%20Report.pdf>

¹⁴ Ibid.

¹⁵ Singh, Y.K. (2007). Teaching of Environmental Science, APH Publishing House, New Delhi.

environmentally responsible. This element will be included throughout the entire instructional procedure. The National Council of Education Research and Training (NCERT), which oversaw carrying out the strategy, recognised the need of placing teachers at the core of any reforms in education. The government launched a significant teacher-training programme in the summer of 1986. A revised orientation was given to thousands of instructors.

At the primary school level, Environmental Education (EE) is presented as Environmental Studies (EVS). The physical, biological, and social aspects of our environment are studied in EVS for grades III through V, with a focus on preserving and conserving it (NCF 2005). The National Curriculum Framework (NCF)-2005 states that environmental education is very much integrated into a variety of courses, including physics, mathematics, chemistry, biology, geography, history, political science, health and physical education, art, and music.

The following are some of the goals of teaching EVS, according to the NCF 2005.

- To teach children how to see and understand connections between the natural, social, and cultural setting.
- To create an understanding based on observation and examples taken from real-world experiences. rather than abstract ideas, consider life's physical, biological, social, and cultural components.
- To develop cognitive ability and resourcefulness in order to make the youngster interested in social issues occurrences, beginning with the immediate family and expanding to larger places;
 - to encourage a child's inventiveness and sense of wonder, especially about the natural world (including people and objects); to increase knowledge about environmental concerns.
 - Involve the kid in hands-on, exploratory activities to help them learn fundamental cognitive and psychomotor abilities through observation, categorization, inference, etc.
 - To place an emphasis on design and fabrication, estimation, and measurement as a foundation for the later development of technological and quantitative skills.

- To be able to critically address gender issues and issues of marginalisation and oppression with values of equality and justice, as well as respect for human dignity and rights.

New Education Policy 2020: Opportunities and Challenges

A path for reclaiming, re-articulating, and reconstructing the Bhartiya self is provided by NEP-2020 so that we may become a world leader (Vishwaguru) where equity, equality, and brotherhood would be honoured¹⁶. The current environmental education system is not improved by it. With the way environmental education is now set up, it is happy.

It does give the proper weight to sustainable development goals, which are also concerned with environmental benefits, The strategy also places a strong emphasis on the dissemination of indigenous knowledge, which is excellent for addressing environmental issues.

However, the failure of the Indian educational system to realise the need for greater environmental education is quite regrettable. Environmental concerns are not a priority for the school system in India. Due to this mentality, India is falling behind in environmental research. Therefore, it was essential that we discuss the environmental education curriculum and pedagogy reforms that are much required.¹⁷

We shall encounter the beginning stages of a trend that gravely risks damaging the very fabric of our existence within our generation if the current rate of environmental devastation is allowed to continue. The current degree of environmental damage is unprecedented in the history of humanity. The environmental issue is mostly caused by overconsumption, which is why environmental education must emphasise consumption restraint. In the end, modifying our consumption habits will help protect biodiversity and our own environmental welfare.¹⁸

These challenges to environmental education force us to reconsider how we do research, educate and train environmental specialists and educators, formulate legislation, and disseminate environmental knowledge to the public.

From now on, Environment Education (EE) will be included as a subject in the form of only a few chapters of the textbook. It limits the scope of discussion of Environmental Issues because it is integrated into Core Issues. Centralized textbooks do not address specific regional

¹⁶ Sathyabhushan, Govinda R. And Anjana Mangalagiri, Environmental Education Hand book for Educational Planners. (1990) NIEPA, New Delhi.

¹⁷ Joseph Catherine (2011) Environmental Education, Neelkamal Publications PVT LTD, Hyderabad.

¹⁸ Prashanth, M.S. and Hosetti, B.B. (2010). Elements of Environmental Science. Prateeksha Publications, Jaipur.

contextual issues.¹⁹ The limited availability of EE in teacher training may be the reason for the limited nature and motivation of teachers for teaching methods.

It is difficult for instructors to include EE into their lessons due to a lack of reference resources on the environmental issues and difficulties unique to each state and poor school infrastructure. Here are some suggestions for overcoming the problems mentioned:

- The school libraries might receive genuine reference resources from different governmental and non-profit organisations. This would help the instructor contextualise the state's environmental issues.
- Giving schools access to information and communications technology (ICT) would provide them quick access to digital materials and contribute to raising awareness of environmental concerns in the nation and throughout the world.
- It is important to urge teachers of core disciplines to pay attention to EE themes that are interwoven with the material of other subjects.
- To assist the instructor in the classroom, it would be necessary to organise modules, seminars, and frequent discussion forums.
- There should be regular textbook revisions to allow for the integration of modern environmental issues.
- In the context of instruction, case studies, field trips, and Nature hikes and project work should be promoted to foster an inquiry- and exploration-based mentality.
- It is possible to build appropriate practises that are child-directed and inquiry-based, based on research, theory, and real-world experiences.
- By encouraging critical thinking, problem-solving, and decision-making in realistic situations, compelling stories and case study evidence would help the comprehension of EE techniques.
- The development of environmental awareness, skills for understanding the environment, curiosity, and inquiry, as well as a personal feeling of duty and care, might all be included in the curricular framework for environmental learning.

¹⁹ Jayant Gangrethwar (2014), Environmental Science, SBW Publishers, Delhi

Conclusion

To make environmental education more pertinent, we must concentrate on global change. The fact that students do not see environmental challenges as personal matters contributes to the lack of change in their attitudes. This shortcoming may be fixed by giving pupils greater justifications for protecting the environment. It's great that so many natural science classes engage students' hearts and brains and promote optimistic thinking. However, research has consistently demonstrated that doing so on your own may not always provide the desired outcomes. To consider any change, one must identify his involvement in the issue at hand. Teachers can encourage this by designing green classrooms that provide pupils a place to organise themselves personally in their surroundings and immerse themselves in the problems that matter to them.

GLOBAL CLIMATE DIPLOMACY-CHALLENGES & OPPORTUNITIES

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Abstract

Global climate change is perceived to be one of biggest challenges that humanity is encountering today. Centrally, the climate system is the result of complex and dynamic interactions between the earth's atmosphere, oceans, and the biosphere. This work seeks to focus on the discordant debates, dialogues and narratives at diplomatic level that is primarily responsible for plaguing the global climate regime. Frankly, climate talk that is supposed to herald a brighter and cleaner planet for us has fast becoming a geopolitical power struggle. It is stressed here that these challenges could be transformed into opportunities to address our common concerns. From Japan to the US and from Iceland to Madagascar, our actions and interactions are all, either polluting the planet or aiding it to cope with the emerging disasters. The moot point is that we are all in the public square. Hence, the author strongly advocates that unless we display our responsibility to commit for a greener and cleaner environment, international actors are bound to fail in all their endeavours. Finally, the paper highlights how the participation of almost all actors starting from the civil society, grassroot governance agencies, national governments, global corporate conglomerates, human rights bodies, international institutions, and individual concerns on the issue of global warming has made it more complex, leading to a multi-layered conflicting debate. By spawning a variety of new elements and spaces to the ongoing climate talk, it has resulted into a proliferation of new perspectives, meanings, and utter confusions. Thus, to bring an end to this conundrum, the author offers a set of suggestions, to save the planet earth and not to mix the fight for global dominance with the concerns of the fast-deteriorating climate.

Keywords: Climate change, diplomacy, power struggle, UN, global governance

Introduction

Climate crisis is more serious than ever before. Time now is to fundamentally reorient our thinking process. Climate transformations are deepening. It is obvious that if it prolongs, the planet will witness massive disasters of man, material, and the environment. The complexity

of the climate crisis is very evident. The increasing levels of Green House Gas (GHG) emissions into the atmosphere is bringing serious impacts on the planet. While exploring plurality, complexity and opportunity in this climate change dilemma, what we observe is that the inequitable nature of the disaster is directly affecting the poorest and the most disadvantaged. Ironically, they all have contributed very little to this crisis. To create a resilient planet, words and pledges are to be transformed into actions. However, at the heart of this debate and emergency, it is clear that an increasingly institutionalised neoliberal consensus has forced the majority of the nations to rethink their strategies to counter the climate emergency.

It is evident that a complex and scientific enquiry has co-emerged with an imposing neo-liberal global governance system in the climate arena. Again, this institutional mechanism entails a multi-layered, networked system starting from the UN, its special agencies to civil society organizations (CSOs). The current climate governance regime consists of system that is guided by the United Nations Framework Conventions on Climate Change (UNFCCC) and the Kyoto Protocol, fully informed by varied scientific discourses through the Intergovernmental Panel on Climate Change (IPCC). And all these are enacted and backed by the various national governments across the world.

From Stockholm (Sweden), Rio de Janeiro (Brazil), Bali (Indonesia), Kyoto (Japan), Durban (South Africa), Katowice (Poland), Paris (France), Glasgow (UK) to now in Sharm El-Sheikh (Egypt) the point made is to bring a fundamentally pragmatic approach to minimise the disastrous effect on the planet. To formulate appropriate policies and strategies to counter the current climate emergency, a thorough grasp and analysis of the key global climate diplomacy initiatives is a must. To delineate political wranglings over the very foundations of the climate talk would enable us to steer clear the road ahead for a better planet. It is certain now that ‘future weather will not be like past weather; future climates will not be like past climates’.¹ Yes, it is true. Climate change is an environmental, political and cultural issue that reorienting our daily lives, whether consciously or unconsciously. Therefore, it’s time now to develop a constructive way to approach the climate change crisis to locate the probable solutions. Though very controversial and highly debateable issue, the former Secretary General of the UN, Ban Ki-moon (2007-16), perhaps rightly said that ‘climate change is the moral challenge of our

¹ M. Hulme. ‘Mapping Climate Change Knowledge: An Editorial Essay’, WIREs Climate Change, Vol 1, No. Jan/Feb, 1-8 (2010).

generation'.² The way the crisis brewed it has brought in front of us sheer ethical contestations. And, by most accounts, this environmental tragedy has not only created contestations between national governments and international organizations, but also between citizens and their respective governments, and finally between the current epoch and a sustainable future of this planet. Thanks to the IPCC, it has presented a powerful scientific consensus about the health of the atmosphere. And other important players in this like national governments, varied scientific agencies, CSOs, INGOs, and individual research have equally evinced similar results about the physical transformations of the climatic conditions. It is expressly envisioned that anthropogenic contribution to climate change is paramount.

Why the Climate Crisis is Alarming?

Throughout its history, the planet earth has warmed and cooled on its own. It's a natural course. What differs from the past warming is that a new element called humanity has added to the warming of the earth's climatic system in the past century. To put it simply, global warming is the unprecedented rise of the earth's surface temperature. It is primarily increasing because of the release of the GHGs by burning of the fossil fuels. It is mainly attributed to the presence of high levels of Carbon dioxide, CFCs and other pollutants in the earth's atmosphere. It is alarming as the climate change is affecting all other aspects of human, animal, and plant life.

'Glaciers are melting, sea levels are rising, cloud forests are dying, and wildlife is scrambling to keep pace. It has become clear that humans have caused most of the past century's warming by releasing heat-trapping gases as we power our modern lives. Called Greenhouse gases, their levels are higher now, than at any time in the past in 800, 000 years'.³

This demonstrates that humanity is experiencing a new threat from which no one can escape. Each part of the world has its own unique environmental issues, but all are undergoing epochal transformations in the last half a century. Each of the last four decades has been successively warmer than any decade that preceded it since 1850. Global surface temperature in the first two decades of the 21st century (2001-20) higher than 1850-1900. The estimated increase in global surface temperature in recent times is due to further warming since 2003-2012. Additionally, scientists confirm that the observed warming is driven by emissions emerging from human

² Ban Ki-moon. 'Forward' in P. McMullen (ed.), *Climate Change Science Compendium*, United Nations Environment Programme (UNEP), ii (www.unep.org/compendium2009/).

³ Christina Nunez. 2019. 'Causes and Effects of Climate Change' (2019). Available at (<http://www.nationalgeographic.com/environment/article/global-warming-overview/>).

actions accompanied by GHG warming partly masked by aerosol cooling. The global temperature and overall weather change is dramatic.

Last year, the UN Secretary General Antonio Guterres sent a warning signal to the world about the current status of the climate change. He said that the IPCC Report was nothing short of a 'code red for humanity'. He cautioned that 'The evidence is irrefutable: greenhouse gas emissions are choking our planet & placing billions of people in danger. Global heating is affecting every region on earth, with many of the changes becoming irreversible. We must act decisively now to avert a climate catastrophe'. The IPCC's latest report highlights that scientists have observed changes in earth's climate in each part of the globe and across the entire climate system. Guterres also noted that internationally agreed thresholds of 1.5°C above preindustrial levels of global heating was perilously close. Indeed, we all are very near to cross the redline. The only way to prevent exceeding this threshold is by urgently stepping up our efforts and pursuing the most ambitious path. Though the climate change is 'widespread, rapid and intensifying' as the IPCC says but still there is time to prevent the calamity. Thus, strong and sustained reductions in emissions of the CO₂ and other GHGs can swiftly make the atmosphere cleaner. And if it really happens, it is predicted that within a span of 20-30 years, the rise of global temperatures could very well be controlled.

Tracing History: Why the Climate Talks Have Failed so far?

Since the inception of the concern of the climate crisis, it has been marked that very few of the global actors and institutions are truly committed to the cause. The big polluters have always remained at the backdrop. Even then pinning down who is exactly responsible for it is trickier than it really seems. The brute reality is that all earlier actions initiated by the COPs and other global movements could have reduced the emission levels, but we did not do it sincerely. As a result, each passing year combined with inaction, the pollution levels have gone up and today global warming has become unmanageable. It is estimated that 70 per cent of the world's GHG emissions over the last two decades are attributable to only 100 fossil fuel companies. Further a top 20 fossil fuel firms are behind a third of the world's emissions. Now the question is that who holds the power to control all of them and the rest which are spoiling the atmosphere? Precisely, we need to acknowledge the fact that allocating the blame to a particular group of companies, countries or individuals do not mean that they are solely responsible for the climate crisis. It is to be accepted that we all are using the products or by-products of these business

houses or things supplied by those polluting countries or individuals. True, no one can be spared for the deteriorating health of the planet.

Looking at the last two COP meetings, we could only sense failures. The COP25 in Madrid was a total disaster. It did not completely collapse, but certainly failed for many who expected that there could be hope for future. It was billed as a final session to offer guidelines for carbon markets to complete the Paris Agreement rulebook. The UN Secretary General Guterres also labelled the COP25 as ‘disappointing’. The COP26 at Glasgow again passed on as another platform for big power clash and wranglings. And now the COP27. We all are sensing a bitter struggle here as well. Frankly, the Paris Agreement that birthed the ‘can do spirit’ and to offer a hope for the world’s most vulnerable and underprivileged now has become a distant memory. These continued failures should have reminded the world leaders, business tycoons, social activists, scientists and the diplomatic community to rework their way to success.

Big Power Rivalry and the Global Climate Governance

The intricate panorama that surrounds the global climate talks is beset with big power rivalry. This work illustrates the key steps initiated by the United Nations Framework Convention on Climate Change (UNFCCC) in the last decade. It is important to see how this platform, the main multilateral institution for debating global action on climate crisis is plagued by big power clashes for long.

The fight to sustain its hegemony in world affairs, particularly in global climate governance system is apparent from the efforts made by Washington over a decade or so. Its all because of the rise of China in the last three decades. Since its joining of the World Trade Organization (WTO) in 2001, its vision and mission for international expansion have been earmarked in almost all sectors. In general, the word hegemony is understood in terms of dominance. However, a Gramscian perspective underlines that hegemony is all but exertion of power by consensus. Drawing on the past experiences in international politics, consensus building is proved to be unimaginable. When both Beijing and Washington are vying for superiority, how can consensus be built by them on major global issues. In reality, its China that is fervently making strides to both counter and equate its position to the US in all major global governance institutions.

Is there a need to de-politicize this institution? Climate concern is common. So, an urgent need for depoliticization of the body is needed. After analysing the existing discursive struggles, it

can be concluded that unless shortcomings are addressed, global actions towards tackling climate change are not going to be realised.

The Washington vs Beijing has become synonymous for global power struggle today. Is it a fight for emission reduction or for achieving a 'Power Cult'. It seems the current contestations in climate governance is leading to re-establish a dominant 'Power Cult' in global politics.

Since the emergence of the WTO, the international stage has been set more for economic dominance than for political power play. The economic globalization accompanied by a huge upsurge in the field of information and communication technology have created a placeless world. This has made business, migration and knowledge flow to all corners of the globe with a much higher speed than ever before.

In this new scenario, China quickly emerged as an alternation source power to the already established western liberal order and also, especially to the Bretton Woods system. When China joined the WTO in 2001, it was regarded as the most pivotal development for the international economic order. Many analysts, mainly from the West, advocated China's decision to join the global trade body as its bold commitment to reform. It was expected that Beijing will abide by the rules of the global trading regime and will adjust its Communist command economy to the existing international system. However, one must be very clear that China is a vast state, and it is completely under the control of the CCP. Many within China preferred to welcome a liberalised free market economy, and some stood for an economic model already prevailing in Japan and South Korea. But the majority i.e. more than half of the 90 million plus members of the CCP wanted China to continue with its command economy. And these members beginning from global financial experts to ordinary people to the dyed-in-the-wool apparatchiks have a mixed opinion about China's entry into the elite club. So, while maintaining its market open to the outsiders, the Beijing Mandarins have kept intact its brand of socialism with Chinese characteristics.

And with this, China has gradually marched into the global stage and challenged the US and western hegemony in international institutions. Especially under the current Chinese President Xi Jinping, who has been ruling the country since 2012, the Middle Kingdom has openly challenged the US on all fronts. and now this October, he has extended his term to another five years, by breaking the very principle of 'Collective Leadership', once devised by legendary Deng Xiaoping. With this, Xi has warned the world leaders, particularly the US that China is

ready to set an alternative to the current global governance system. Washington is seriously under threat from Beijing, and it is continuously focussing on the Asia Pacific now much more than it did a decade before. This 'China challenge' has become a new symptom of geopolitical threat in all fields. This has been a cause of concern for making the climate change targets in the COPs. Unless these big powers are agreeing on a consensus to prevent the climate menace, humanity will soon lose the battle for reviving the green planet.

Role of International Non-Governmental Organizations (INGOs), Civil Society Organizations (CSOs) and the Media

We all live in the public square. There is no place to hide. In an age of internet and communication propelled by globalization, the humanity is under surveillance. Our actions and reactions are being observed, recorded and circulated globally for mass consumption. At this critical juncture, when the environment is facing threats from our actions, the steps initiated by the INGOs and CSOs are noteworthy. The level of awareness and generation of information by them are immensely supporting the global community to fight the challenges brought by climate disasters.

It is once again underlined that governments at all levels—from the national to the grassroots, are responsible for helping communities responding to the emerging climate emergency. But the practice that is prevailing now is that most of these governments and their agencies act only under pressure either from the public or from the concerted efforts of the CSOs and the INGOs. Hence CSOs and INGOs have a social responsibility to raise awareness about climate change at local and regional levels while helping the governments, global governance institutions and numerous donor organizations to curb GHGs in the near future.

Initially, the role played by the CSOs from the advanced nations were very prominent at international climate talks and negotiations. But in 2009 in the run up to the COP15 at Copenhagen, the situation began to change. Many of the CSOs and INGOs in the Global South began to organize around climate change and development issues. And these organizations have started organizing at local and regional levels to articulate their voices around the specific issues that particularly affecting these nations from Asia, Africa, Latin America and the vulnerable island nations from the Pacific. The rapid climate change is impacting the world's poorest and the most vulnerable in the Global South and other parts of the world.

The report released by the Southern Voices on Climate Policy Choices in 2012 clearly highlights that ‘Climate change is happening now and is leading to a variety of impacts, including changing rainfall patterns, increases in number of floods, droughts and storms and slower onset changes such as rises in sea levels. This is affecting food security and water resources and leading to more disasters, especially among the world’s poorest and most vulnerable communities’.⁴ This indicates how increasing emissions are affecting the Global South and CSOs are raising these issues at global platforms like the COPs.

It is to be noted here that print, electronic and social media have also played a remarkable role in raising awareness particularly in regard to weather change and its impact on earth. Thus strong engagement with the media for environmental advocacy can facilitate programmes and policies to outreach the common people who are the worst sufferers of the crisis. More recently social media platforms such as Twitter and Facebook have largely influenced people to fight for their lives, livelihood and rights on the face of fast degradation of the environment. Media coverage including the failures of governments and global institutions, reports released by UN and other key agencies, individual research outcomes on climate change are making people realise the hazardous impact of the emission of the GHGs.

It is immensely reported that our biodiversity is fully under threat. This learning mostly available either on free or on affordable platforms have done a yeoman’s service to humanity indeed. Finally, how young climate activists like Greta Thunberg are campaigning for climate justice is noteworthy and historic. While addressing the European Parliament and the UN, she has warned the global leaders that they have no right to steal the future of the young and also, she emphasised that the young people will not allow them to surrender their future. She clearly told the EU leaders that they should lead the way and have a moral obligation to do so. Its again a climate war declared by the youth leader to prevent the climate apocalypse.

Global Climate Justice Case

Just before embarking on the path to the COP-27, 12 countries (Germany, New Zealand, Singapore, Vietnam, Uganda, Samoa, Antigua and Barbuda, Bangladesh, The Federated States of Micronesia, Costa Rica, and Lichtenstein) are seriously backing an initiative launched by the Vanuatu Government to see the linkage between the violation of human rights and climate

⁴ Reid, H, Ampomah, G, Olazabal Prerah, M.I., Rabbani, G., Zvigadza, S. Southern Voices on Climate Policy Choices, (International Institute for Environment and Development, London, 2012) 38. Available at (<https://www.iied.org/sites/default/files/pdfs/2021-01/10032IIED.pdf>)

change. Here the issue of concern raised by the Vanuatu Government is that sustained climate change and disasters brought by them are leading to the breakdown of universal human rights and values. While demanding an investigation over this issue, the Government has alerted the international community that the issue must be addressed by the International Court of Justice (ICJ) based in The Hague (Netherlands) to get a legal clarity on the same. Hence seeking an advisory opinion from the ICJ over the issue itself highlights the fact that climate emergency is not only an issue of the environmental importance, but also it pertains to numerous democratic credentials like liberty, justice, equality, and most importantly rights. The violation of human rights is an unpardonable crime. Now it is learnt that this issue is going to be raised in the upcoming sessions of the United Nation General Assembly (UNGA), either in the later parts of the year 2022 or in early days of 2023. Once the voting is done on the issue, it would be referred to the ICJ. Ironically, though Australia has endorsed the campaign in principle, it has not so far joined the group. However regional and international pressure is mounting on Canberra to formally join the campaign before it enters the UNGA. This campaign was started in 2019 at a classroom in the University of South Pacific in Vanuatu, a nation that is there at the edge of climate risk. And on record, gross violation of human rights is fast becoming a part of the climate crisis in this island nation. The ‘Vanuatu Example’ as it can be rightly called and many more already on the line, is an alarming indication that it is the ICJ that must make an assessment of the grim situation created by the threat to the environment. The Pacific Vuvale (Vuvale is a word in Fijian language that stands for ‘Family’) is now concerned about the emerging threat to their survival and that is why it is urging Australia to give meaning to this environment pledge. Drawing on this deep-seated feeling of belongingness, it is very essential that Australia, a significant power in the Asia Pacific join the campaign and give the planet Earth, one more weapon to fight for its survival.

In fact, the small Pacific Island nations have been lobbying and speaking straight for quite some time to save their low-lying nations from the climate wrath. Last year, Prime Minister Josaia Voreqe Bainimarama of Fiji took the centre stage at the COP26 and seriously demanded the big emitter nations to accelerate their climate action programmes. He highlighted the idea that these plans must be useful both for the sinking Pacific nations and for the rest of the world. He repeatedly highlighted that the survival of the Pacific community is under threat. What he said rightly echoes a climate emergency: ‘All high-emitting countries must half global emissions by 2030. The G-20 nations who are prepared to make those commitments must demand the same from others. We have moral authority; you have a moral obligation. Together

our coalition of the willing can keep 1.5 alive, keep low-lying island nations above water, keep erratic and severe weather from devastating us all, and keep the trust between nations so that we can keep faith that our children and grandchildren will have a future. That includes making a good on the promise of \$100 billion in climate finance'.⁵ This says all that what the humanity together should do to adopt urgent mitigation measures to fully control global emission levels. Science is right. Climate crisis is on the rise.

Climate Finance: Does It Matter?

It does matter for the survival of the planet. Empty promises are not working anymore. Global finance is required to fight the climate risks. Without investing in the right places, particularly the poorer, vulnerable and developing nations, the global climate targets can't be reached. The climate finance is defined as 'the money which needs to be spent on a whole range of activities that will contribute to slowing down climate change and which will help the world to reach the target of limiting global warming to an increase of 1.5°C above pre-industrial levels'.⁶

With this it is overwhelmingly accepted that climate finance is needed to tackle what has been described by the UN as 'existential threat' of our times. To reach this goal, the world needs to reduce carbon emissions to practically zero by 2050. Indeed, more than a decade ago, the developed nations committed to mobilise \$100 billion per year by 2020 in support of climate action in developing countries. According to the UN, the annual \$100 billion commitment 'is a floor and not a ceiling' to mitigate the climate risks. But the advanced nations so far have failed to deliver on this promise and pushing the developing nations to the brink of danger.

The COP 26, COP-27 and the Road Ahead

The COP26 last year was seemed to be a great beginning. The 'Global Methane Pledge' launched at Glasgow, the UK is a major step forward, but then experts say that only sincere implementation will be the key to its success. Its main aim is to reduce methane emissions. The initiative now has 111 members led by the US and the European Union (EU). In fact, when over 130 heads of government and state gathered at Glasgow, the prime concern was to set new conditions for reducing the greenhouse gas emissions released by the burning of coal, gas and

⁵ PM Bainimaramas Statement at the COP26 Leaders' Summit available at <https://fiji.gov.fj/Media-Centre/Speeches/English/PM-BAINIMARAMA-S-STATEMENT-AT-THE-COP26-LEADERS-SU>.

⁶ The Trillion-dollar Climate Finance Challenge and opportunity available at <https://news.un.org/en/story/2021/06/1094762>

oil. Though the COP conference is an annual affair, the year 2021 was especially significant as it demanded an immediate solution to prevent the worst effects of climate change. All the leaders were urged to make immediate strategic decisions to lessen the effects of warming gases to avoid additional pollutants into the atmosphere. Today, freezing relations between Beijing and Washington may once again threaten the COP27, with a devastating war in Europe, just when the world was coming out of the COVID-19. The climate meet at Sharm El Sheikh will witness how the developing nations are still waiting for the huge climate finance promised by the wealthy nations in 2009 at the COP15 in Copenhagen. They are justifiably angry over this, it is now more than a decade, this finance is falling short to fight the climate disasters. Besides, V20 group of nations is also at the epicentre of this crisis that threaten their capacity to mobilise the urgent resources to build resilient and low-carbon economies moving forward. The debt of the V20 countries is increasing with the global pandemic weakening the financial back of all the nations. In fact, the UN needs to scale up some more trillions in sustainable infrastructure to meet its Sustainable Development Goals (SDGs) in 2030 and to limit global warming to 2°C.

Conclusion

While navigating through the global climate emergencies, it is realised that the following suggestions would extremely be high value in future:

- a. Firstly, it is time to engage multiple target groups to address the prevailing and future emergencies in various climate zones around the world. Sensitization part is already done and now the need of the hour is to facilitate a multifaceted coordinated action to tackle the burgeoning crisis.
- b. Secondly, to pressurize big cuts in carbon emissions, it is very essential to push the technological frontier.
- c. Thirdly, conducting regional dialogues and forging a web of leadership network would certainly be able to reduce major differences among the nations in tackling climate crisis.
- d. Fourthly, limiting further climate change would demand sustained cuts in GHG emissions. It is clear that without net zero CO₂ emissions, and a drop in the non-CO₂ forcing, the Green House will continue to be warmer.
- e. Fifth, the much-awaited climate finance needs to be delivered to the vulnerable nations.

- f. Sixth, the role of the UN, its agencies and other global donor organizations must play a pro-active role as they are doing now.
- g. Finally, more than a scientific issue, climate change has become an economic, political and social one. It is time to fight the climate emergency at all these levels.

When we look ahead of the current and persistent challenges, we see many more opportunities. But the reality is that woefully inadequate climate pledges by competing nations and bringing global power rivalry to the heart of the climate talks would lead us nowhere. Currently, we have difficult choices. So, the demand is for an impactful action at Sharm El-Sheikh on this November. The ultimate purpose is to secure a sustainable future for all.

At the end, it can well be concluded that it is just difficult to ascertain who should bear the entire costs and burdens of this climate disorder. There is no single factor or country that can be blamed for the continued deterioration of the health of the environment. Nevertheless, it is to be agreed here that mere moral prescriptions would be purely inadequate to address the intricacies of the climate dilemma. To find and work for an interpretive approach to climate change governance, we need to implement what Andersen said: ‘Sustainability is not a left or right issue: it is a long-term survival issue, an intergenerational justice and equity issue. We need to get on the right side of history and vote for the leaders who will do the right thing by the planet and so by us’.⁷ The task for now is to work out the solutions to save earth. The UNFCCC explains in simple and succinct terms both the dangers and intergovernmental processes the steps to be taken to arrest the destabilising effects of climate change. Global diplomacy may once again derail the COP27 meet. There are more chances big powers squabbling for spoiling the meet. But especially both Washington and Beijing must realise that the planet’s atmosphere, treasured oceans and the fragile biosphere are already thrown out of balance by human activities.

It is widely believed that the solutions to fix the climate is within our grasp. But we will not achieve it through top-down international treaties and grand bargaining among the nation states unless we cut emission levels at regional and local levels. So far global diplomacy has failed to deliver self-sustaining reductions in emissions. So, no more bickering, whether it is between the US and China or between the global governance systems and the national and locals. The issue here is to realise the heat. Time to sense the imminent danger. Accordingly, to act towards

⁷ Inger Andersen. Sustainability is about Being on the Right Side of History (2021) Available at (<https://www.unep.org/news-and-stories/speech/sustainability-about-being-right-side-history>)

implementing the policy prescriptions and heed carefully to the forewarnings constantly offered by the scientific community. Hope this COP27 does not become another deadlock and a dodge like the previous ones. Global diplomacy alone will not be sufficient to deconstruct the Greenhouse effects, it demands climate advocacy alongside to save the Planet Earth.

RIGHT TO CLEAN WATER: A NATIONAL AND INTERNATIONAL PERSPECTIVES

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Abstract

The survival of any forms of life on earth is possible only because of water. The natural environment of an area depends upon the quality of water available in that place. Once water was considered as an inexhaustible gift of God and Sacred for every religion. Hence the sources of drinking water like rivers, ponds, lakes, tanks and other water bodies were preserved cautiously. Due to increase in population, industrialization and urbanization, there is an increasing demand for water in day-to-day life. Moreover, discharging of large volumes of effluents beyond the assimilating capacity of earth has resulted in polluting or contaminating the sources of water. There is ever increasing menace of water pollution not only in India but every nation in the globe. Therefore, right to clean water is a serious global concern. The world trade organization has stated that inadequate access to clean water for consumption will result in health risk along with a threat of resulting in blindness. Lack of adequate supply to potable water is denial of right to protection to life itself. Access to clean water is a priority issue in United Nations Millennium Development Goals as well as World Summit on Sustainable Development (2002). Therefore, this research paper makes an attempt to analyse international as well as national obligations of sustainable conservation of water sources.

Keywords: Industrialization, Urbanization, Millennium Development Goals, Clean Water, Sustainable Conservation.

Introduction

The presence of water makes earth unique among other planet because without water life is impossible on earth. From cradle to grave the need for wholesome water for life is an undying need¹. The report on Global Risk 2016 issued by the World Economic Forum stated that water has been identified as one of the top three concerns in the context of global risks. The World Resource Institute (2011) states that consumption of water is growing at twice the pace of

¹ COSMAS EMEZIEM, THE HUMAN RIGHT TO CLEAN WATER AND SANITATION- A PERSPECTIVE FROM NIGERIA in Edn JULIEN CHAISSE, CHARTING THE WATER REGULATORY FUTURE: ISSUES, CHALLENGES AND DIRECTIONS 195 (2017)

population growth. Therefore, the 2030 agenda sets out the goal for ensuring availability as well as sustainability in water management and sanitation for everyone.

Concept of water pollution

Water is the oldest form of environmental pollution. Generally, water pollution means departure from a normal state. water pollution is such a change involving destruction in the quality of water by contamination. This affects the aquatic ecosystem adversely in terms of living organisms, oxygen content, the presence of toxins, etc.² Section 2(e) of *Water (Prevention and Control of Pollution) Act*, 1974 defines water pollution as “pollution means any contamination of water or alteration of physical, chemical and biological properties of water or disposing of any sewage waste in water which is likely to cause nuisance or renders such water to be harmful to public health or safety or to domestic, industrial or other legitimate use or harmful to the life and health of the animals and aquatic plants”.

Sources polluting water

There are various sources to pollute water in which the major sources are industrial effluents, agricultural run-off and municipal sewage.

Discharge of Effluents from Industries

Industrial waste or effluents of different industries that come along with waste waters pollute most of the rivers in India and fresh water streams in a serious manner³. The effluents which are in the liquid form are discharged in largest volume from almost all industries at certain stage during the manufacturing process⁴. Further these effluents which contain different pollutants released from various sources get distributed in the aquatic environment through number of ways. The pollutants released from the industrial waste include garbage, sewage sludge, solid refuse of mine, mine tailings on land, chemicals, paints, etc. Industries like Petro-chemical companies, factories manufacturing fertilizers, pulp, oil refineries, paper, textile, sugar and steel mills, tanneries and many other organic and inorganic toxicant, discharges waste these are toxic to living organism⁵.

² KAILASH THAKUR, ENVIRONMENTAL PROTECTION LAW AND POLICY IN INDIA 26 (Deep and Deep Publication 1997).

³ 2 G. R. CHATTWAL, ENCYCLOPEDIA OF ENVIRONMENTAL POLLUTION 298 (Anmol Publications Pvt. Ltd. 1996).

⁴ KAILASH THAKUR, ENVIRONMENTAL PROTECTION LAW AND POLICY IN INDIA 28 (Deep and Deep Publication 1997).

⁵ 2 G. R. CHATTWAL, ENCYCLOPEDIA OF ENVIRONMENTAL POLLUTION 299 (Anmol Publications Pvt. Ltd. 1996).

Agricultural waste

It includes farm animal waste, fertilizers and pesticides, etc. Farm animal waste are organic in nature which contains mainly of excreta, urine, manure and slurry. When those contaminants enter into rivers or streams, they increase the biological oxygen demand of water. Further waste like nitrogen, phosphate add to the eutrophication of lakes and water bodies which produces stench in the water bodies.

Municipal or Domestic pollution

The impurities from domestic as well as municipal waste constitute major cause for water pollution. These pollutants generated from small sources and spread over a fairly wide area. Mostly these wastes were transmitted by sewers to a municipal waste plant. When domestic sewage untreated, it carries water borne waste of the community. The untreated sewage contains the following polluting agents:

- Concentration of bacterial, viral and parasitical contaminants at a higher level makes the water unconsumable.
- Constituents that place a high bio-chemical oxygen demand like dissolved organic and suspended carbohydrates, fats, proteins and oils, etc., on decomposition cause depletion of oxygen from water.
- High concentration of phosphorous and nitrogen compound which enrich the receiving waters with nutrients speed up eutrophication.
- Floating of organic and inorganic constituents creates serious problems and hinders with self-purification process.

Adverse effects of water pollution

Pollution is the effect of an undesirable or deleterious changes in our surroundings. These changes seriously influence the human life by interfering in living conditions and has the ability to create harmful effects on cultural assets, or life cycles of the plant and animals that inhabit in a given system. Bacterial contamination has been the most common water borne disease hazard. This is due to the presence of bacterial and other types of organisms which generate typhoid fever, cholera and gastroenteritis causing wide spread illness and death.

Water crisis

Every country has started realizing that the water available to the living beings is not only limited but is fixed. There is an imperative necessity to identify some appropriate strategy to provide solution to cater for scarcity of water because for the enjoyment of human rights, it is essential to have right to access to potable water. The growing demand for water in various sectors namely industry, agriculture, drinking water and to maintain sustainability of resource base is a major challenge. In addition to that pollution also creates a shortage of drinking water and often people organise processions in protest the industrial units which causes pollution. Further, agitation for water scarcity become a common feature. For example, farmers in may arid and semi-arid areas protest in rural areas against the transportation of ground water to urban areas as they believe that it may result in ground water depletion⁶. Studies such as Report of the High-Level National Commission for Integrated Water Resources Development Plan, Ministry of Water Resources, Indian Water Vision, etc. has emphasized about the water demand⁷.

The problem of scarcity of water is aggravated due to the mismanagement poses serious challenge among the multiple uses in different areas. The World Bank (1992) has defined governance as “the manner in which power is exercised in the management of a Country’s economic and social resources of development”.

Governance, as per United Nations Development Programme (UNDP) means “the exercise of economic, political and administrative authority to manage a Country’s affairs at all levels”. It should be understood that governance of water should start with evaluating the crisis level and water resources development. Then the next step of governance is to water resources management.

To meet the challenges of crisis, the strategies have been devised in the investment in water storage, control and distribution in addition to seasonal rainfall and river flows. Water situation across the globe has become very serious in threatening food security. Further, ability to meet the clean drinking water has become a challenge and an issue related governance of water. Therefore, water has now recognized value as it is commodified which can be bought and sold. (For ex. supply of water and the bottled water trade).

⁶ VISWA BALLABH, GOVERNANCE OF WATER: ISSUES AND CHALLENGES in Ed. VISHWA BALLABH, GOVERNANCE OF WATER: INSTITUTIONAL ALTERNATIVES AND POLITICAL ECONOMY 5 (Sage Publications 2008).

⁷ RAMASAMY R IYER, WATER GOVERNANCE, POLITICS, POLICY in Ed. VISHWA BALLABH, GOVERNANCE OF WATER: INSTITUTIONAL ALTERNATIVES AND POLITICAL ECONOMY 23-24 (Sage Publications 2008).

Water governance: issues and concerns

The growing scarcity as well as the failure of the institutional arrangements in capturing, allocating and distributions generate to produce the desire result combine to generate water crises. Equitable water distribution is a herculean task due to scarce water where in which requirements exceed supply, the excess supply is directed to the people who can afford. In case of poorest section of the society including marginal farmers and users of water for domestic purposes whether in rural or in urban areas, there is a struggle to acquire water and fulfill the requirements. But they are left out with no option to control over scarce water.

International agenda for water conservation

Access to quality water for drinking is being provided generally in different stages in various national systems. Public health hazards and costs to the economy are due to inadequate access to clean drinking water. Sustaining safe sources of clean drinking water is a major challenge to meet the demand for expansion of water services in the midst of growing urbanization and industrialization and intensification of agriculture. The debate of whether water constitutes human rights has been responded by United Nations Assembly through resolution 64/292 that “the right to safe and clean drinking water and sanitation as a human right which is essential for the full enjoyment of life and all human rights”. The Water Report of UNESCO in the executive summary it was stated as follows:

“Water and energy supply and provision are interdependent choices made in one domain impact the other, for better or for verse. The steps to be taken by the policy makers, planners and practitioners is to overcome the obstacles which exist between their respective domains. For more efficient as well as cost effective provisions of services relating to water and energy could be possible by the lead of innovative and pragmatic national policies water and energy are both at the heart of sustainable development and need to be recognized as such”.

The United Nations Conference organised in Mardel Plata, Argentina in 1977 first expressed the importance of access and quality of water. Article 6, para 1 of the 1996 International Covenant on Civil and Political Rights as well as Article 12, para 2 of the 1996 International Covenant on Economic, Social and Cultural Rights have implicitly mentioned about water in the context that ‘right to life’ comprises water within the liberal interpretation. By emphasizing the specific water-quality requirements i.e., importance of adequate access to clean drinking water, the Conventions relating to Elimination on All Forms of Discrimination against

Women⁸, the Convention on the Rights of the Child⁹, the Protocol on Water and Health¹⁰ and the Convention on the protection of Use of Transboundary water Courses and International lakes¹¹ have been explicitly incorporated.

The need for protection and the quality of supply of fresh water was marked in ‘Agenda 21’. Article 18, Para 2 of Agenda 21 stated as follows:

“Water is needed in all aspects of life. The general objective is to supply adequate water of good quality which is to be maintained for the entire population of this planet and to make it certain while preserving the hydrological, biological and chemical functions of ecosystems, adapting human activities with the capacity limits of nature and combating vectors of water related diseases”.

The General Comment 15 in ‘United Nations Committee on Economic, Social and Cultural Rights’ explicitly recognises the right to water as human right under Article 11 and 12. Further, General Comment 15 under para 1 recognises water as a “limited natural source and a public good fundamental for life and health”. The definition of human right entitles “everyone to sufficient, safe, acceptable, physically accessible, affordable water both for personal and domestic use”. In ‘para 2 of General Comment 15’, it has been highlighted the importance of ‘adequate amount of safe water for primary use for consumption relating to cooking, personal and domestic hygienic requirements. This is important for the purpose of prevention of death due to dehydration and also to minimize the risk of contracting diseases due to unclean water. Further, it is also highlighted in Article 11 and 12 of ICESCR that water resources are essential and required to prevent starvation and diseases in order to fulfil the core objectives of covenant rights. Since it fulfils the needs as pre-requisites for realization of every other human right for the decent existence of human being, it is considered as human rights. Therefore, the human need is at the heart of human right of water¹².

Sustainable Development Goals

The main aim of ‘Sustainable Development Goals’ relating to water is the access and management of water and also the ability to meet the challenges for the future of water

⁸ The Convention was adopted in the year 1979.

⁹ The Convention was adopted in the year 1992.

¹⁰ The Convention was adopted in the year 1999.

¹¹ The Convention was adopted in the year 1992.

¹² VIRGINIA J. M. JASSIN, REGULATION AND PROTECTION OF WATER IN INTERNATIONAL LAW: TERRESTRIAL AND MARINE PERSPECTIVES in Ed. JULIEN CHAISSE, CHARITY THE WATER REGULATORY FUTURE: ISSUES CHALLENGES AND DIRECTIONS (U.K. Edward Elgar 2017).

governance. It is otherwise called as ‘global goals’ which is one of the major outcomes of ‘Rio+20 conference’ and was adopted by UN in 2015 as a Universal call for active participation in the eradication of poverty in order to ensure peace and prosperity across the globe. In the list of 17 goals clean water and sanitation falls under Goal 6. The purpose of this goal is ‘to ensure availability and sustainable water management and sanitation for all’. UNICEF reported that in 2017, 2.2 billion persons were suffering till date without safely managed drinking water¹³. This goal addresses the problems relating to water resources in terms of quality and sustainability, in addition to clean drinking water and sanitation. Since, these are all critical issues for the survival of people on earth, the 2030 Agenda recognizes the centrality of water resources to sustainable development. This is because the improvement in the quality of drinking water, sanitation and hygiene influences the progress in areas such as health, education and poverty reduction. The ultimate goal to achieve by 2030 is “to ensure universal and equitable access to safe and affordable drinking water”. Specifically, the goal is to end up open defecation by paying attention to vulnerable situations faced by the women and girls and also to achieve the protection and restoration of water-related ecosystem along with mountains, forests, wet lands, rivers, aquifers and lakes. For the implementation of programs and activities relating to ‘water-harvesting, desalination, water-efficiency, waste-water treatment, recycling and reuse technology’, the goal emphasis to achieve the expansion and support of international cooperation and capacity building. Goal is also included for the support and strengthening the active participation of the communities at local level for improving water and sanitation management. Water is inextricably linked to the development of all nations but there are lots of pressures on water resources as the demand for water globally is expected increase 50% by 2030. In case of agriculture activities, it is expected to experience 70% increases in demand of 2050¹⁴. Therefore, effective solutions are needed to meet out the challenges.

Target fixed by Millennium Development Goals

These Goals have fixed specific target to measure 8 international development goals. By 2015, these Goals focused to achieve the following:

1. Minimise the population who suffer from hunger and thereby eliminating poverty;
2. Focussing on every child in getting primary education at universal level;

¹³ SUSTAINABLE DEVELOPMENT GOALS, <https://sdgs.un.org/goals> (last visited Oct. 21, 2022).

¹⁴ FOOD AND AGRICULTURE ORGANISATION OF THE UN WATER SCARCITY-ONE OF THE GREATEST CHALLENGES OF OUR TIME, <https://www.fao.org>fao-stories>article> (last visited Oct. 21, 2022).

3. Addressing on the elimination of Gender discrimination and track the progress of empowerment of women in order to ensure equality among men and women;
4. Minimising the mortality rate among children by ensuring food security and nutrition;
5. Reducing the maternal mortality rate and improving reproductive health of women;
6. Fighting against the risk of being infected by HIV or AIDS and protecting people vulnerable to malaria and other infectious diseases;
7. Creating sustainable environment in order to reduce the damage to the environment;
8. Achieving the co-operation of working together internationally by developing effective global partnership¹⁵.

In target 7A while ensuring the sustainability of environment, the target is to integrate the principles relating to sustainable development in the policies and programmes of the country in order to reverse the loss of environmental resources. Target 7B deals with reduction in biodiversity loss and target 7C aims to achieve a sustainable access to an improved water source in rural and urban areas as well as access to an enhanced sanitation.

Right to clean water: an Indian perspective

Access to clean water is recognized as a basic human right. In India, right to water is not enumerated justiciable right, but it is a derivate of constitutional and fundamental right to life. In plethora of cases, the apex Court of India has affirmed the justifiability of the right to water.

Constitutional provisions and legal system in the protection of water

The impact of Stockholm conference in 1972 has brought out 42nd Amendment to the Constitution of India to have serious concern for living creatures and the protection of environment. It has issued a direction to both state and citizen for the conservation of natural resources by inserting Article 48A into the Indian Constitution to protect and promote environment. This is also to protect the flora and fauna of the Country. Similarly, by the same amendment, Article 51A(g) was inserted in order to impose a duty on “every citizen of India to protect and improve the natural environment” including forest, lakes, rivers and wildlife. There is no provision in Part III of the Constitution of India regarding right to access to clean and safe drinking water. It is solely on the wider interpretation of Article 21 of the Constitution

¹⁵ THE WORLD BANK, <https://www5.worldbank.org/mdgs/> (last visited Oct. 23, 2022).

of India by the Indian judiciary, right to safe drinking water acquired the status of fundamental right¹⁶.

Water (Prevention and Control of Pollution) Act, 1974

This was the first statute in India to control pollution of water. The aim of the Act is not only to control and prevent water pollution but also to maintain and restoring the wholesomeness of water. The Act establishes 'Central and State Pollution Control Board' for conferring on and assigning powers for the administration of the Act.

The Act also provides State Board has the authority to limit the territorial jurisdiction of any order issued by State Board in matters connected to the prevention and control of water pollution¹⁷. This implies that the State Board's instructions will only apply in regions plagued by contamination of water. The State Board has to decide the areas which are to be designated to be water contaminated and which are not.

Section 20 of the Act empowers the State Board to give directions to any person requiring him to give information about abstraction of water from any stream or well. The State Board may make surveys of any area for gauging and keeping records of volume or flow of any stream or well in that area. Section 23 of the Act lays down that persons empowered by the State Board shall have the power to enter any place for the purpose of inspection and also for examination of any plant, record, register, document or other material object.

Where any person defaults in complying with the directions given under various sections of the Act shall lead to various kinds of punishments as prescribed under the Act itself. Particularly, section 42 specifies penalties for several types of acts, such as removing, destroying, or removing any notice posted by the board.

Rights of Riparian Owner under Indian Easements Act 1882

The Act deals with the rights of a riparian owner to unpolluted water. The Act recognises the right of riparian owner to use the water of the natural streams which closed past his land equally with other riparian owners. He has the right to use and consume natural streams water for drinking as well as for watering his cattle and sheep. The Act also lays down that there is a right to continued flow of water of natural stream in its natural condition without any distraction or unreasonable pollution for every riparian owner¹⁸.

¹⁶ A.P. Pollution Control Board v. M.V. Naidu, AIR 1999 SC 812.

¹⁷ Water (Prevention and Control of Pollution) Act, 1974, s 19, No.6, Acts of Parliament, 1974 (India).

¹⁸ The Indian Easement Act, 1882, s 7, No. 5, Acts of Parliament, 1882 (India).

The Shore Nuisances (Bombay and Kolaba) Act, 1853

The earliest statute on control of pollution in India with wider power has been given to collectors of land revenue. Board has to issue notice to an affecting party requiring the removal of nuisance anywhere below the high-water mark. The legislation that's been implemented for big sea in the islands in order to permit the clearance of nuisances, obstacles, including encroachments underneath high-water mark in harbour, either upon or near the beaches of islands in Mumbai (previously Bombay) throughout former British India.

Preventing Of Water Pollution under IPC 1860

The provisions relating to water pollution has been dealt with control of public health and safety under section 269, 277 and 290 of the code which is used to keep the environment clean. Section 268-294-A of Chapter XIV of the IPC deals with offences relating to safety, public health, and so on. These laws prioritise public health and make any conduct that pollutes the environment or endangers an individual's life illegal.

Section 268 describes the term "public nuisance" as follows:

1. Any individual who commits an illegal act or omission is responsible for the crime.
2. A 'common damage' or risk must have resulted from such a conduct. Inconvenience to the public or to the individuals in the surrounding area, or other an act must infringe someone's public right.
3. A frequent annoyance is not justified on the grounds that it provides some benefit or convenience.

Section 277 of the IPC says that anybody who intentionally corrupts or fouls the water of a public spring or reservoir, rendering it unsuitable for ordinary public use, is punished by imprisonment extending up to three months or a fine up to Rs. 1000, or both.

Furthermore, Section 290 renders the violation of public nuisance subject by a fine of up to Rs. 200. As a result, every act or omission that pollutes the environment and causes injury to any person is punishable by law it also considers noise pollution a crime as well.

Indian Fisheries Act, 1987

This act prohibits poisoning of water and the consequent distinct of fish. The act under section 5 provides "if any person put poison, lime or noxious material into any water with intention to

anybody catch or destroy any fish shall be punished with imprisonment of 2 months or fine of Rs. 200.”

Forest Act, 1927

In India the Forest Act, 1927 where subsection (1) of sec 26 provides that if any person who is in prohibited in any forest activity that has been carried out by him for which the rules of state government under section 32(f) relating to poisoning of water in forest , poisonous water of forest area makes it punishable.

Factories Act, 1947

Specific provisions are provided with regard to factors and effluents section 12(2) provided effective management made by every factors more effluents discharge. The act empowers state government to make rules prescribes arranging to be made and requite it.

Water (Prevention and Control of Pollution) Cess Act, 1977

The Act empowered the Central Government for imposing CESS on water consumed by listed industries. Though there is no mechanism under the Act for control and prevention of water pollution, it serves as an instrument for implementation of the Act in an effective manner. This also serves as an economic incentive for controlling pollution by providing adequate funds to the State Boards for its effective functioning. The CESS money credited to the consolidated fund of India will later be disbursed by the Central Government to the State Board¹⁹. The Act prescribes the penalty of imprisonment extending to 6 months or/and fine extending to Rs. 1000/- or both for submitting false assessment report²⁰.

Conclusion

Humans have created wonderful truths and equipment for enhancing the quality and comfortable of their lives. But it has resulted in damage to the human environment as well as human beings itself. The main causes responsible for deterioration of the environment is due to haphazard urbanization, increasing industrial activities, pesticides, agricultural practices and enormous uses of water for multi-purposes. This has ended up in water pollution, food insecurity, difficulties in water management. The UN Water Report in 2016, has cautioned about the severe water scarcity through which one-third of the global population could suffer in 2025. The International Agenda for Conservation of Water have focused that access to clean

¹⁹ The Water (Prevention and Control of Pollution) CESS Act, 1977, s 8, No. 36, Acts of Parliament, 1977 (India).

²⁰ *Ibid.* Section 14.

water as a priority issue in development which influences the other developments for human being in ensuring quality life. Man's survival depends on the conservation of nature in which water is fundamental resources even for existence itself. From the above analysis it is clear that one of the major and common issues across the globe is rights of the people to safe drinking water. There is a growing recognition of water resources as an integral part of environmental protection and management. It is a high time for achieving the goal of equitable and universal access to safe, adequate and affordable drinking water. The international instruments committed to take efforts for ensuring clean drinking water as well as for protection and enhancement of human environment. This is possible when all nations co-operate and enhance the participation in water resources management.

ON NOAH'S ARK: BUILDING ARGUMENTS FOR CLIMATE MIGRANTS

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Abstract

The principle of state sovereignty occupies a ubiquitous position in public international law, and climate change is a problem that is adversely affecting the entire planet. Thus, the connection between state sovereignty and climate change is not difficult to perceive. But this apparent congenial relationship breaks down in the context of climate migration, and we encounter an essential question – how far can state sovereignty be considered an appropriate frame in the context of negotiating the status of climate migrants? Scholars are already reasoning that the severity of climate change necessitates re-looking at the antediluvian state principle under international law. Alternatively, it can also be argued that climate change provides a marvelous opportunity for states to redefine their bargaining assumptions on global negotiating platforms. One of the major problems is finding a comprehensive definition for people displaced by climate change-related events. Thus far, for ‘refugees,’ the only workable definition comes from the 1951 Refugee Convention that fails to recognize climate change as a factor. Subsequent developments have also not guided offering overlapping and alternative suggestions. The limitation stems from definitional challenges and the ever-present cause-and-effect dichotomy. But what stops states from adopting a more comprehensive approach transcends far beyond these operational challenges. In this article, we posit that the obstacle is primarily related to the conflict of state interests, and it is, thereby, possible to review the status of climate migrants under the emerging consensus supporting the dilution of the principle of state sovereignty.

Keywords: Climate Change, Migration, Refugee, Sovereignty, International Law.

Introduction

In 2018 at Sundance Film Festival, a documentary called *Anote's Ark*, made by Canadian filmmaker Matthieu Rytz was screened. The documentary was on climate change and was not the first documentary on this century's most controversial topics. Yet, it stood apart in one sense because it captured the essence of a sensitive but often ignored impact of climate change,

metaphorically what could be called ‘death by the sea.’ Sure enough, this expression is not purely symbolic as it is almost certain that sea level rise, one of the direct impacts of climate change, will wipe out a vast part of this planet in the future, and a number of Small Island nations have to accept that destiny helplessly. The documentary was the portrayal of the fate of Kiribati, an island nation in the South Pacific. The camera captured the relentless assault of the waves destroying the life of Kiribati in every aspect. Its President Anote Tong helplessly approached the leaders of other nations to ensure asylum with dignity for his fellow citizens without much success. Eventually, the fate of his diplomatic effort got entwined with an intense human rights struggle that came to the limelight in 2015 when his fellow countryman Ioane Teitiota approached the New Zealand Government, claiming recognition as a climate refugee. His application was rejected, and he filed a complaint before the UN Human Rights Committee (HRC), which oversees the International Covenant on Civil and Political Rights implementation.

The central issue in *Ioane Teitiota v. New Zealand*¹ was applying the principle of non-refoulement under human rights treaties.² HRC recognized several impending threats posed by climate change but took sides with New Zealand’s decision. It solemnly held that “without robust national and international efforts, the effects of climate change in receiving states may expose individuals to a violation of their rights under articles 6 or 7 of the Covenant, thereby triggering the non-refoulement obligations of sending states. Furthermore, given that the risk of an entire country becoming submerged under water is such an extreme risk, the conditions of life in such a country may become incompatible with the right to life with dignity before the risk is realized.”³ Hence, *Teitiota*, as HRC concluded, failed to fulfill the criteria under Article 6 to get recognition as a climate refugee.

What this decision entails has much broader significance than merely reading the status of people affected by climate change under the human rights jurisprudence. Generic and well-debated issues since the passing of the judgment by HRC include the validity of the decision taken by New Zealand under international law, the principle of non-refoulement under human rights treaties, causal effects of climate change to buttress the claim under human rights laws

¹ Chhaya Bhardwaj, *Ioane Teitiota v New Zealand (advance unedited version)*, CCPR/C/127/D/2728/2016, UN Human Rights Committee (HRC), 7 January 2020, 23 ENVIRONMENTAL LAW REVIEW 263 (2021).

² Principle of non-refoulement. For a detailed discussion, see *id.* at para 9.11.

³ *Id.* at Para 9.11.

and the acceptability of climate refugee definition. Almost unanimously, particular upshots were approved - that in *Teitiota*, New Zealand did not violate any international law; the principle of non-refoulment has indeed received a new incentive to motivate state actions in the future in similar circumstances; with the severity of climate change problems, it is increasingly becoming easy to establish the causal connection; and the definition of climate refugee is at flux (This is just a remarkable fact that HRC does not have any jurisdiction to pass any order over the status of climate refugee). Our aim in this paper is not to revisit *Teitiota* or the issues it has already triggered. Instead, we will focus on a much more complex and conflict-ridden issue in international law - state sovereignty - that silently shapes international decision-making. Intuitively, we suggest that the antiquated state sovereignty principle in international law plays a central role in shaping the international climate change negotiation process in an almost uncontested fashion. Following this axiom, we will examine whether the legal status of climate refugees can be addressed better if we can conceive state sovereignty differently.

There is, however, a theoretical complexity. It is extremely difficult to locate an inclusive and satisfactory definition of climate refugees within the framework of human rights laws. What should we call them - climate refugees or climate migrants, or simply ill-fated people displaced by the forces of nature? The only available suggestion comes from the 1951 Convention on the Status of Refugees (the 1951 Refugee Convention). But the definition of climate refugee under the Convention with its additional protocol does not cover people displaced by climate change-related events. Because the debate is about a law (or lack thereof) that may apply to people affected by climate change, a stronger argument can be made in favor of addressing the problem under the existing climate change laws, both international and domestic. But efforts to include provisions about the legal protection of climate refugees within the UNFCCC framework have been futile mainly because of normative challenges. After all, under the international climate change regime, states generally vehemently argue for their interests, and anything they agree to accept under the legal rule is always qualified by sufficient long-term incentives that may or may not be available to them.

For India, the inflow of people from neighbouring countries is already a severe problem. The estimation suggests that India will face a substantial increase in migration in the days ahead.⁴ In most cases, total displacement with loss of home and livelihood has gone unnoticed.

⁴ INTERNAL DISPLACEMENT MONITORING CENTRE, GLOBAL REPORT ON INTERNAL DISPLACEMENT 2020 (2020)., <https://www.internal-displacement.org/global-report/grid2020/> (last visited November 26, 2022).

Domestically, the little legislative framework can deal with the displacement problem. For example, the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation, and Resettlement Act, 2013 is one legislation that provides compensation in cases of land acquisition by the Government for developmental activities to take place in the state. Another legislation that deals with rehabilitation in climate events is the Disaster Management Act of 2005, which prepares disaster plans, prevents or mitigates the effects of disasters, and coordinates and manages responses. However, these laws do not address the rehabilitation of climate refugees from other nations. This indicates a crisis that already needs a domestic solution. But can that solution be exclusionary in nature? Here, we may sheepishly forward a line of reasoning leading to some more tricky questions – does it make sense for India to accept climate refugees from Bangladesh? What is the difference when India can refuse to accept migrants from Kiribati but should accept them when they come from Bangladesh? Here also, theoretically, the search for plausible answers should begin with the inquiry into India's sovereign rights *vis a vis* its position in international law. In the following progression, we posit that India is already positioned to extend protection to vulnerable populations who enter the country after being severely affected by climate change events. In this way, India forwards a unique template of state sovereignty that may open up a tremendous opportunity for other nations to learn from regional cooperation, which can have a meaningful impact on future climate change negotiations.

The article is divided into five parts. The first part introduces the subject. Part II deals with the definitional challenges that are connected to the identification of people displaced by the events of climate change. Disconcertingly, we note that international law challenges have proved difficult to overcome. Part III discusses the relevant theories of state sovereignty. This Part is divided into two segments – the first section touches briefly upon the conventional understanding of state sovereignty, The following area opens up to a more contemporary application of the concept. The discussion prepares us to delve into an inquiry undertaken in Part IV related to the status, importance, and application of state sovereignty in international environmental law. The following section of this Part examines the application of the idea of state sovereignty in the context of climate migration. Part V is about India's standing. By adopting a nuanced and tolerable class towards climate displacement, we argue that India advances a regional model of cooperation under which the concept of state sovereignty makes way for profound humanitarian reasons. Part VI concludes the paper.

Definitional Challenges

Because the plight of climate refugees has been a matter of open debate since the 1980s, the existing definitional discontent is somewhat undesirable.⁵ Typical classification with somewhat interchangeable expressions such as environment/climate migrant, climate refugees, and environmentally/climate displaced persons has led us to overlap and contested jurisprudence. In this article, for the sake of simplicity, we prefer to use them interchangeably, though.

Upfront, we face difficulty determining the reasons responsible for displacing people from their original places. Suppose rising levels inundate a low-lying area of a country, and affected people start migrating. In such a case, it is possible to assume that increasing sea level is the direct negative impact of climate change causing displacement. The same issue in another country, where low-lying areas are better protected because of proper and timely initiatives taken by the government, will not be severe enough. However, then the focus of the debate shifts from a lack of options available to the affected group to a lack of action on the part of the government.⁶ This takes us to a standoff. How should we identify groups forced to move only because of climate change? How should we segregate climate change as a reason from other possible causes? How far different terminologies used thus far accept these nuances?

It, therefore, certainly makes sense to understand the specific terminologies. In 1970, Lester Brown of the World Watch Institute coined the term ‘environmental refugee’ or ‘climatic refugee,’ which began to gain popularity in the 1990s.⁷ The general understanding that followed presented a plain meaning of climate refugee - a person or a group of persons who become stateless due to anthropogenic or natural climate change. One can argue that such an understanding of climate refugees is a subset of the climate-induced migration ‘or displacement.’ As it suggests, climate-induced migration or displacement can be categorized further based on the extent of the removal caused. In addition, there can be further classification

⁵This perhaps came in the limelight when Essam El-Hinnawi of UNEP called environmental refugees ‘as: ... *those people who have been forced to leave their traditional habitat, temporarily or permanently, because of marked environmental disruption (natural and/or triggered by people) that jeopardized their existence and/or seriously affected the quality of their life*’

⁶ Alex Randall, *Climate refugee statistics*, CLIMATE AND MIGRATION COALITION (Nov 25, 2022, 11.07 A.M) <https://climatemigration.org.uk/climate-refugee-statistics/> (last visited November 26, 2022).

⁷ James Morrissey, *Rethinking the Debate on Environmental Refugees: ‘From Maximalists and Minimalists’ to Proponents and Critics*, 19 JPE 36, 49 (2012); See also CAMILLO BOANO ET.AL., ENVIRONMENTALLY DISPLACED PEOPLE: UNDERSTANDING THE LINKAGES BETWEEN ENVIRONMENTAL CHANGE, LIVELIHOODS AND FORCED MIGRATION (2008).

- internal and cross-border migration. Internal migration means the migration which causes the person to migrate within the nation, for example, a shift from rural to urban regions. What we need to acknowledge is that migration is a phenomenon that has numerous push factors, such as better job opportunities, health care facilities, education systems, political stability, religious freedom, etc.⁸

Nevertheless, an expression like climate or environmental refugee has been criticized as misleading. These criticisms mainly point towards the 1951 Refugee Convention and international refugee law, where the expression ‘climate refugees’ finds a place. The definition available under the 1951 Convention is narrow and misses an additional category of persons like climate migrants. It was meant to be that way because international law did not include the debate over climate change within its fold when the 1951 Convention took shape. This is amply reflected as some scholars reasoned that the term ‘climate refugee’ is a phantom manifestation of something without lawful subsistence. According to them, persons forced to escape their country due to ecological or climatic processes or events will not necessarily meet the refugee definition defined by Article 1A (2) of the Refugee Convention⁹ and Protocol.¹⁰ It does not accept climate change as one of the criteria for creating refugees.

Over the years, critics have urged us to break free from the thin understanding of climate refugees. They have contended that instead of climate refugee, environmental migrant, or something more contemporary, an expression such as ‘displaced person’ appears to be more appropriate vocabulary.¹¹ Alternatively, from the theoretical point of view, as J. McAdam argues, the term climate migrant seems to be more appropriate in comparison to climate refugees:

The movement of a person or groups of persons who, predominantly for reasons of sudden or progressive change in the environment due to climate change, are obliged to leave their

⁸ STEPHEN CASTLES & COLIN RAJAH, ENVIRONMENTAL DEGRADATION, CLIMATE CHANGE, MIGRATION AND DEVELOPMENT: MEXICO (2010).

⁹ Convention relating to the Status of Refugees, 1951 (adopted 28 July 1951, entered into force 22 April 1954).

¹⁰ Protocol relating to the Status of Refugees, OHCHR 1967, <https://www.ohchr.org/Documents/ProfessionalInterest/protocolrefugees.pdf>. (last visited November 26, 2022).

¹¹ STELLINA JOLLY & NAFEEES AHMAD, CLIMATE REFUGEES IN SOUTH ASIA: PROTECTION UNDER INTERNATIONAL LEGAL STANDARDS AND STATE PRACTICES IN SOUTH ASIA (2019).

*habitual place of residence or choose to do so, either temporarily or permanently, within a State or across an international border.*¹²

Making a move towards recognition of this idea in 2018, United Nations finalized the text of the Global Compact on Safe, Orderly, and Regular Migration. This first internationally negotiated agreement exclusively covers several drivers of international migration, including climate change. In Preamble it referred to the United Nations Framework Convention on Climate Change and other notable conventions. In several paragraphs, the 2018 Global Compact on Refugees touches upon issues related to climate change, which is neatly condensed in Objective 2, which is about ‘minimizing the adverse drivers and structural factors that compel people to leave their origin.’¹³ Subsequently, member states agreed to set up an International Migration Review Forum (IMRF) to assess the progress made on the 2018 Global Compact. The first IMRF took place on May 2022 in New York, resulting, unsurprisingly, in a report on Progress Declaration.¹⁴ The short and mostly rhetorical Declaration offers little in terms of transforming state enthusiasm into something binding. It mainly emphasizes upon cooperative model at the international level through hortatory language. Besides, the 2018 Global Compact and IMRF text fails to recognize any actionable commitment to mitigate various artificial factors triggering global mass migration.

It appears that the test adopted to examine the legal status of people affected by climate change follows an archetype – think, feel and bargain for the formless pledge. The pattern was repeated in the report submitted to the Human Rights Council in 2022 by Ian Fry, the Special Rapporteur on promoting and protecting human rights in the context of climate change.¹⁵ Nonetheless, the six-point plan to address the challenges faced by people uprooted by climate change is explicitly considered from a human rights perspective. It does little to address the gap that exists in the definition.

¹² J. McAdam, *From Economic Refugees to Climate Refugees? Review of International Refugee Law and Socio-Economic Rights: Refuge from Deprivation*, 31 Melbourne Journal of International Law 579 (2009).

¹³ United Nations Framework Convention On Climate Change, United Nation (1992) Objective 2, https://unfccc.int/files/essential_background/background_publications_htmlpdf/application/pdf/conveng.pdf (last visited November 26, 2022).

¹⁴ International Migration Review Forum & UN Migration (IOM), Pledges of the International Organization For Migration (IOM) in the Context of The International Migration Review Forum, <https://www.iom.int/sites/g/files/tmzbd1486/files/documents/iom-pledges-v3.pdf> (last visited November 26, 2022).

¹⁵ Ian Fry, *Connection between human rights and climate change ‘must not be denied’*, UN NEWS GLOBAL PERSPECTIVE HUMAN STORIES, CLIMATE AND ENVIRONMENT (Oct 21, 2022).

Hence, it is more feasible that apart from convening a separate treaty to address the definitional and status conundrum, at least two options can be tried - relooking at the status of climate refugees under the 1951 Convention and upgrading the United Nations Framework Convention on Climate Change by adding a protocol. In the case of the former, Article 1(A)(2) of the 1951 Refugee Convention defines 'refugee' as a person:

"...owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality and is unable or, owing to such fear, is unwilling to avail himself of the protection of that country; or who, not having a nationality and being outside the land of his former habitual residence as a result of such events, is unable or, owing to such fear, is unwilling to return to it."

It is challenging to read climate change as a driver within this definition because the causes are diverse, and it is difficult to identify one factor that contributes to climate alteration. If the matter can reasonably be solved by strengthening domestic institutional mechanisms, then there is no need to refurbish the definition provided by the 1951 Refugee Convention. Yet, an option is provided in the Convention itself to revise the above description. Article 45 of the Refugee Convention provides that any member "state may request a revision of this Convention at any time by a notification addressed to the Secretary-General of the United Nations."¹⁶ Thus far, no such proposal has been forwarded. The upshot is simple. With the growing scientific understanding, climate change as a cause of displacement is difficult to establish conclusively with the ever increasing scientific knowledge. This, however, gets further complicated if we treat climate change as a subset of environmental problems. This distinction is essential as not all environmental problems arise because of climate change, but all climate change-related issues can be read within the broader ambit of environment-related problems. Therefore, the term 'environmental refugee' receives more purchases.

Evolution of the concept of Sovereignty

The concept of state sovereignty is always considered a challenging puzzle to solve in international law. Over the years, intense arguments ensued between positivists, realists,

¹⁶ The Refugee Convention, 1951, art. 45.

liberals and critical thinkers about its contents, importance, and application. This section briefly covers that discourse.

A. Theories that Matter Most

The concept of state sovereignty enjoys an enigmatic position in international law, neither accepted entirely as a powerful influencer in international relations nor relegated to a place of rhetoric when it comes to evaluating the associations between states. Therefore, the long history of state sovereignty is marked by literature reflecting both thflavorsrs, formalism, and realism. Stephen D. Krasner, in his classic book *Sovereignty: Organized Hypocrisy*, recognizes at least four different representations that are associated with sovereignty - domestic sovereignty, interdependence sovereignty, international legal sovereignty, and Westphalian sovereignty.¹⁷ In general, among all the classes, Westphalian and international legal sovereignty gained prominence in public international law most. According to Krasner, they are examples of organized hypocrisy.¹⁸ In a different take on state sovereignty,, Anne Bodley distinguished between external and internal sovereignty by emphasizing the ‘power of independent action in external and internal relations’ that represents the a comprehensive idea of sovereignty.¹⁹

Conceivably, a combination of states experiencing both internal and external sovereignty sets up an international order under which they interact. It is not difficult to understand what internal and external sovereignty means. Whereas internal sovereignty denotes complete authority and control exercised by a state in matters located within the state boundary, external sovereignty deals with issues outside the territory of a state. A typical description of external sovereignty is found in the *Island of Palmas Case*, where ‘sovereignty’ was signified as ‘independence regarding a portion of the globe’ and was further stated as ‘the right to exercise therein, to the exclusion of any other State.’²⁰

¹⁷ STEPHEN D. KRASNER, *SOVEREIGNTY: ORGANIZED HYPOCRISY* (1999). Domestic sovereignty means how a state manages its activities within its territory and about control. which refers to the organization of political authority within a state and the level of control enjoyed by a state. By interdependence sovereignty, a state deals with cross-border issues. International legal sovereignty is about states’ ability to take part in international political system and Westphalian sovereignty denotes a well-recognized principle in international law that each state has exclusive sovereign authority over its territory. However, state can have only type of sovereignty at a time.

¹⁸ *Id.* at. 25

¹⁹ Anne Bodley, *Weakening the Principle of Sovereignty in International Law: The International Tribunal for the Former Yugoslavia*, 31 N.Y.U. J. I INT’L L. & POL. 419 (1999).

²⁰ *Island of Palmas Case* 2 RIAA 829 (1928) 838 https://legal.un.org/riaa/cases/vol_II/829-871.pdf (last visited November 26, 2022).

In his influential book, Professor F.H. Hinsley, while discussing the theory of sovereignty,, emphasized the ever-changing social, political, philosophical, legal, and economic backgrounds of nations that keep altering the frame of their relationships. For him, sovereignty is simply an idea that does not add many qualifications to the statehood itself.²¹ This is not easy to grasp in the first place, given the fact that sovereignty as a concept has significantly saturated international legal outcomes over the years. But similarly, it can also be pointed out that such impact is to be adjudged only as a matter of degree. In other words, we focus more on the outcome of state exchanges or negotiations where sovereignty has played a part,. Eventually, we understand little about the content and theoretical justification of the concept. Indeed, one can trace the opposing idea as well. For example, Alan James, a contemporary scholar of Hinsley, focused more on existing state practices. According to him, sovereignty is an integral aspect of state practice, the ambit, and application of which only a state can justify in the context of its membership in international society.²²

To add this, we may refer to the classic postulation forwarded by John Austin in his *The Province of Jurisprudence Determined*, where he stated that “[s]upreme power limited by positive law is a flat contradiction in terms.”²³ This sharp observation was made with the idea that the sovereign states enjoy unparalleled authority within their given territories. Surely then, according to this theory, conditions can make and enforce any law they want. The power a sovereign state enjoys is limitless, and there cannot be any superior force to which it must bow down. In this way, sovereignty to Austin (also to Jeremy Bentham) is the fact that makes law possible.²⁴ An important question, therefore, can be asked - Can sovereign voluntarily give consent to limit its own authority? In the world of Hobbes this is also impermissible, as he said:²⁵

The Sovereign of a Common-wealth . . . is not subject to the Civil Lawes. For having power to make, and repeale Lawes, he may when he pleaseth, free himselfe from that subjection, by

²¹ See, F.H. HINSLEY, SOVEREIGNTY 126–213 (2d ed., Cambridge Univ. Press 1986). Even before the state emerged as a distinctive form in the sixteenth century, medieval theorists viewed the problem of regulating secular rulers in both their domestic and external affairs through the common lens of Christian theology and natural law. See *id.* at 45–125, 164–78.

²² ALAN JAMES, SOVEREIGN STATEHOOD: THE BASIS OF INTERNATIONAL SOCIETY (1986).

²³ JOHN AUSTIN, THE PROVINCE OF JURISPRUDENCE DETERMINED 141 (Wilfrid E. Rumble Ed., Cambridge Univ. Press 1995) (1832).

²⁴ Pavlos Eleftheriadis, *Law and Sovereignty*, OXFORD LEGAL STUDIES RESEARCH PAPER NO. 42/2009, <http://dx.doi.org/10.2139/ssrn.1486084>, see, also H. L. A. Hart, *Bentham on Sovereignty*, 2 IRISH JURIST 327-335 (1966).

²⁵ See generally THOMAS HOBBS, LEVIATHAN 190 (A.R. Waller ed., Cambridge Univ. Press 1935) (1651).

repealing those Lawes that trouble him, and making of new; and consequently he was free before. For he is free, that can be free when he will: Nor is it possible for any person to be bound to himself; because he that can bind, can release; and therefore he that is bound to himself only, is not bound.

For Hobbes, this uninhibited power comes from the social contract. It can also be said that common consent justifies infinite sovereignty. It is clear that sovereignty as perceived by Austin, Bentham and Hobbes, as normativity in it and their blunt portrayal of a legal system exists because certain governance structures are present. Unsurprisingly, this strange realm of sovereignty faced strong criticism from H.L.A. Hart and Joseph Raz²⁶ and clearly, is at odds with the popular vision of international law where state consent, whether diligently conformed or not, is considered fundamental. However, it is important at the same time to enquire into whether state consent can independently produce legally binding obligations. Immediately we recall the influence of *pacta sunt servanda*,²⁷ the centrality behind the formation of international law-making through treaties. But this alone cannot explain why state consent should be legally binding because consent can simply be a means for creating international law.²⁸

This feels somewhat intuitively logical as the process of creating a law cannot possibly validate why that law should bind the lawmakers. This theoretical challenge is so difficult to overcome that it frustrated international law scholars who later stressed upon legal fictions like *jus cogens* or peremptory norm deviation which is not possible in international law. After the Second World War, the dilution of consent as a basis for creating international law continued, and treaties started covering non-consenting parties as well. For example, Article 2(6) of the UN Charter provides that the countries which are not members of the UN are also to abide by the principle of Sovereign equality and any other principle required to maintain international peace and security.²⁹ Similarly, the Statute of the International Criminal Court gives power to the court to proceed against non-parties who commit crimes in the territories of party states.³⁰ Some

²⁶ JOSEPH RAZ, *THE CONCEPT OF A LEGAL SYSTEM* 27-43 (1970); H. L. A. HART, *THE CONCEPT OF LAW* (1994), chaps. 1- 4; *see also id.* at 93 (“Disputes as to whether an admitted rule has or has not been violated will always occur . . . if there is no agency specially empowered to ascertain finally, and authoritatively, the fact of violation.”). Hart calls this second problem “inefficiency,” but its relationship to “uncertainty” in the intuitive sense is obvious.

²⁷ I. I. Lukashuk, *The Principle Pacta Sunt Servanda and the Nature of Obligation Under International Law*, 83 *THE AMERICAN JOURNAL OF INTERNATIONAL LAW* 513-518 (1989).

²⁸ Jack Goldsmith & Daryl Levinson, *Law For States: International Law, Constitutional Law, Public Law*, 122 *HARVARD LAW REVIEW* 1847 (2009).

²⁹ U.N. Charter art 2.

³⁰ *Supra* note 28.

scholars even proposed to do away with state sovereignty completely, an idea which we intend to trade with care. At this stage, it appears, at least in the context of international environmental law and especially in the context of climate migration, that the complete negation of state sovereignty may not be promising. Accordingly, the Permanent Court of International Justice's observation in the *Case of S.S. Lotus* appears to be relevant - "International law governs relations between independent States. The rules of law binding upon States, therefore, emanate from their own free will as expressed in conventions or by usages generally accepted as expressing principles of law and established in order to regulate the relations between these co-existing independent communities or with a view to the achievement of common aims. Restrictions upon the independence of States cannot, therefore, be presumed."³¹ This opinion of PCIJ was not above controversy because of the ingrained positivist flavour. But the underneath idea survived in later international law, though with necessary modification as felt imperative after the Second World War.

B. Sovereignty as We Understand Now

After the Second World War, gradually, it became clear to the international community that cooperation was the key for survival and any rigid understanding of sovereignty should be revised for that reason. Scholars were more concerned about the legal position of sovereign states in international law. A strong argument came from Hans Kelsen, whose the monistic view and negative response to state sovereignty became part of the universal legal system. The reason for his rejection of the rigid idea of sovereignty was quite direct, though. He expected that by challenging the imperialistic 'dogma' of sovereignty, international law would promote a unitary legal view of the world order.³² Sure enough, Kelsen's line of argument and the need to normatively bind a state in a situation where it did not give consent introduced new thinking in international law. It also appeared that state consent could not be treated as a firm tenet of state sovereignty as once conceived.

One significant blow to the consent theory comes from increasing interactions between states in the present era. The relationship has become so complex and interwoven that it is impossible to separate and identify any state interest in isolation. In his seminal work, Frédéric Mégret has introduced an additional layer to this debate. For him outsourcing various sovereign functions

³¹ S.S. 'Lotus', France v Turkey, Judgment, Judgment No 9 (Decision No) PCIJ Series A No 10 (Official Citation) ICGJ 248 (PCIJ 1927) (OUP reference) (1935) 2 Hudson, World Ct Rep 20 (Other Reference) p.18.

³² HANS KELSEN, PURE THEORY OF LAW 200 – 201 (translated by Max Knight, 1970).

by the state promotes the privatization of state sovereignty. One of the reasons that have forced Mégret to raise this concern is the ‘light-touch’ regulation of corporate interests and creating of much space for commercial entities principally swayed by profit maximization motives.³³

Therefore, moving away from the classical system of international law in search for co-existence and cooperation gradually became the norm, though the theory giving prominence to the will of the state was not completely discarded. The general consensus is now to put some restraints upon states against forwarding the immutable sovereignty argument. Strong supportive observation can be found in the advisory opinion of President Bedjaoui in the *Legality of the Threat or Use of Nuclear Weapons* when he asserted:³⁴

It scarcely needs to be said that the face of contemporary international society is markedly altered. Despite the still modest breakthrough of "supra-nationalism," the progress made in terms of the institutionalization, not to say integration and "globalization," of international society is undeniable. Witness the proliferation of international organizations, the gradual substitution of the international law of Cooperation for the traditional international law of Co-existence, the emergence of the concept of "international community" and its sometimes-successful attempts at subjectivization. A token of all these developments is the place in which international law now accords to concepts such as obligations erga omnes, rules of jus cogens, or the common heritage of mankind.

These inferences further open up a possibility to enquire into state sovereignty and its scope in the context of recognizing the rights of climate migrants. We have already noted that there remains a profound and pervasive tension between the concept of boundless sovereignty, and suggestions in support of imposing certain limitations on such sovereignty are also well accepted. This indeed affects the domestic decision-making process of any state. It may, therefore, undoubtedly be argued that whether it is justified for a state to deny the rights of climate migrants. The argument forwarded by Goldsmith and Levinson can provide us with the reason for this inquiry that stands upon the strength of “moral theory and international law alike” and “there is no easy escape from the challenge of reconciling normative constraints and demands on the state with the traditional claims of state sovereignty and self-determination.”³⁵

³³ Frederic Megret, *Are There “Inherently Sovereign Functions” in International Law?*, 115 AMERICAN JOURNAL OF INTERNATIONAL LAW 452-492 (2021).

³⁴ *Declaration of President Bedjaoui*, INTERNATIONAL COURT OF JUSTICE, Available at: <https://www.icj-cij.org/public/files/case-related/95/095-19960708-ADV-01-01-EN.pdf> (last visited 22 October, 2022)

³⁵ Supra note 28.

For the same reason, the line of reasoning forwarded by David Luban in response to demands that democracies engage in humanitarian intervention resonates:³⁶

In a democracy, the political support of citizens is a morally necessary condition for humanitarian intervention, not just a regrettable fact of life. If the folks back home reject the idea of altruistic wars and think that wars should be fought only to promote a nation's self-interest, rather narrowly conceived, then an otherwise-moral intervention may be politically illegitimate. If the folks back home will not tolerate even a single casualty in an altruistic war, avoiding all losses becomes a moral necessity.

State Sovereignty, Environmental Obligations, and International Law

This part analyses the status of state sovereignty in the context of international environmental laws. We have tried to confirm the dissents to the unqualified status of sovereignty in environment-related matters,. Further, argue that in the case of climate migrants, the idea of sovereignty must give away to a more inclusive and accommodative approach.

A. Tracing the Uncomfortable Intimacy

Unsurprisingly, the intimacy between state sovereignty and environmental obligations under public international law cannot be easily explained. We have already acknowledged that the popular idea in public international law, with all theoretical conflicts, supports a basic notion, *i.e.*, within national territory, a state is sovereign and enjoys the authority to deal with its subjects and resources. This includes natural resources too. Yet, in environment related matters, this absolutism is somewhat conditioned by the state's responsibility to not inflict harm on the territory of other nations.³⁷ For decades this model remained a prodigious inspiration in international environmental laws. It is difficult to see the importance of this model inversely because no matter what challenges new global environmental problems pose, the orthodox configuration in public international law is systematized through the long historical discourse. In the previous part, we have already pointed out the diverse opinions of some prominent thinkers. At the same time, we acknowledged that the theoretical challenge is almost impossible to overcome, and therefore, international legal scholars in later years focused on developing a

³⁶ David Luban, *Intervention and Civilization: Some Unhappy Lessons of the Kosovo War*, in GLOBAL JUSTICE AND TRANSNATIONAL POLITICS: ESSAYS ON THE MORAL AND POLITICAL CHALLENGES OF GLOBALIZATION 79, 85–86 (Pablo de Greiff & Ciaran Cronin eds., 2002).

³⁷ Stockholm Declaration, 1972, <https://wedocs.unep.org/bitstream/handle/20.500.11822/29567/ELGP1StockD.pdf> (last visited 22 October, 2022).

model through which the relations among states get legitimized and validated. Part of this discourse includes increasing scrutiny of state sovereignty in recent times as it is believed that the diluting this unbending norm is desirable to solve some of the complex global environmental problems that were unknown in antiquity.

Let us look at it from another perspective. Couched in concise form in the Charter of United Nations³⁸ – *(t) the Organization is based on the principle of the sovereign equality of all its Members* – state sovereignty appears to be a modest expression of territorial autonomy and mutual recognition. If this can be called the modern depiction of state sovereignty from the preview of environment, then, yet again there, appear limitations in locating any descriptive content in it. Going back to the 17th century, we know that a foundation of state sovereignty was laid down during the Peace of Westphalia in 1648, resulting in the signing of two treaties between the empire and the new great powers, Sweden and France.³⁹ However, if we look at the Treaty of Westphalia closely, the absence of any clear idea to consider the state as a sovereign entity within organizational principles of international law surprises us. Perhaps, one can imagine that the jurisprudential gulf between positivists and realists in later days was only the result of this ambiguous legal understanding.

How should we then perceive state sovereignty as a guiding force of international environmental law in the contemporary world? Here, we need to remember that the development of international environmental law in modern era only started after the 1970s when environmental treaty-making took the center stage. Unfortunately, the resulting jurisprudence carries the legacy of the the same sovereignty conundrum that plagued international law for centuries. Most environmental treaties (or treaty-making processes) explicitly or impliedly bear the mark of it, as no state will like to be part of a treaty system if the treaty does not provide them enough flexibility to make a decisions by domestic policies. More universal the problem (such as climate change) greater the flexibility. Isn't it true that Common but Differentiated Responsibility (CBDR) that prodigiously influences climate change negotiation is a construction of the clear sense of territorial sovereignty? There should hardly be any reservation that state obligations as in later years articulated through the sinuous language of the Paris Agreement, 2015 (and its predecessors too), fancifully what we call

³⁸ U.N. Charter, art 2.

³⁹ Anuschka Tischer, Peace of Westphalia (1648), OXFORD BIBLIOGRAPHIES, <https://www.oxfordbibliographies.com/view/document/obo-9780199743292/obo-9780199743292-0073.xml> (last visited 23 October, 2022).

‘obligation of conduct,’ is the most violent manifestation of self-awareness and self-preservation.⁴⁰ It is stated that because greater participation enhances the chance to find a solutions to the problem like climate change, making more room for states is desirable so that they can put efforts to achieve targets in accordance with their capabilities. The choice, lies in understanding the nature of the problem. If a problem is dynamic, like climate change, the structure of a treaty should be designed with supple provisions adjustable with time. Conversely, this idea leaves room for us to think about a territorial and stationary problem for which a treaty configuration can be more circumscribed, offering less leeway for states to argue unilaterally for self-preservation.

A close enough analogy can be drawn from the international regime of hazardous and ultra-hazardous substance regulation, such as oil spills and nuclear accidents. The development of the principle of absolute liability certainly indicates a notion of state responsibility that does not offer exceptions. Here, the issue of sovereignty remains mute, at least for those states responsible for the act. Looking from another viewpoint, in such a situation, the affected states’ sovereign rights take precedence over the responsible state, and a model of hierarchy, though approximately, materializes. In this way, the legitimization gap⁴¹ between internal and external sovereignty also appears immaterial. The solution is found based on the severity and territorial effect of a problem.

The question further comes – Is climate migration itself an emotional problem or a derivative of a complex emotional problem like climate change but, in essence, territorial in nature? We believe that climate migration is a severe territorial problem that, if not addressed quickly, can create a domino effect worldwide. There may be certain dynamism in it as the more severe the climate catastrophe, the larger the possibility of population shift. However, this idea must not be used to build a satisfactory argument justifying the limited or lack of steps taken by the states to ameliorate the problem. In other words, while addressing climate change, a state may give consent conditioned by its sovereign interests. But tackling climate migration demands a stricter regime of state obligations. This is even more justified if we recall our argument in the opening part of this article, *i.e.*, it is possible to see the issue of climate migration as an institutional failure within a state where the problem originates.

⁴⁰ Resounding statement comes from Article 4.

⁴¹ *Supra* n. 28.

B. In Search of Environmental Normativity

Undeniably, climate change poses multiple threats. Other than pure environmental challenges, several concerns over international security also emerge. It is now given that negative changes in natural environmental conditions are largely attributable to human activities. Increasingly it is becoming difficult for us to react with appropriate mitigation and adaptation strategies to address the problems associated with climate change. As a result, we have started to understand that the relationships between nations are bound to be altered, and consequently, our understanding of state sovereignty and state fragility must also be re-worked.

If we accept that the modern concept of state sovereignty is built on both a state's output and input legitimacy, climate change seriously compromises a state's capability to provide basic resources to its population and, thereby, can drastically affect its output legitimacy. This attrition can lead to state fragility and failure, which in succession can upset regional and international security.⁴² In fact, it should make sense to make an inclusive argument to legitimize environmental claims by abolishing the divide between internal and external sovereignty in some issues. The struggle of climate migrants for survival in different parts of the world undoubtedly appears to be a potential reason for such dilution. Therefore, the legitimization gap that a sovereign state often uses to validate its decision in domestic matters will appear to be a weak justification to avoid universal duties towards humanity. Even so, it feels necessary not to reject the concept of sovereignty entirely as states are endowed with a commitment to protect their citizens from external authority. This duty is a non-negotiable component of the sovereignty itself. For this reason, it is better to rework the concept to make it more accommodative and distributed across the border, especially within the states in question.

For now, it should be clear to us, as argued by Derek Croxton, that "(a)although no one yet conceived sovereignty as the recognition of the right of other states to rule the territory, the increasingly complex diplomatic milieu shows how a polar system was able to develop. In this sense, one may locate the origins of sovereignty around the peace of Westphalia, but only as a consequence of the negotiations, not of an explicit or implicit endorsement of the sovereignty

⁴² Caitlin E. Werrell & Francesco Femia, *Climate Change, the Erosion of State Sovereignty, and World Order*, 22 THE BROWN JOURNAL OF WORLD AFFAIRS (2016).

in the terms of the treaties.”⁴³ It will surely be a logical conclusion not to accept state sovereignty as an overwhelming guiding criterion for environmental treaty-making. Likewise, it will be wrong to obey the absolute supremacy of state sovereignty while interpreting provisions of treaties, at least in certain situations. At the most, we can treat state sovereignty as a contested concept similar to democracy and liberty.⁴⁴ The first meaning is given and accepted. But the proper application should be further examined in the light of the nature of the contest at the ground level. In this way, we can definitely repudiate absolute normativity that backs the supremacy of state sovereignty. Reasonably, what we can prefer is the idea of ‘conditional normativity,’ especially in the context of recognition of the rights of displaced people affected by climate change.

V. India and Climate Migration: An Alternative Expression

India’s considerable bargaining advantage comes from its clever approach in international politics. Being a growing economy and intellectual hub India enjoys a strategic advantage in South Asia. Unsurprisingly, with China, India has been able to assert its demands during climate talks without inviting any coercive consequences. From taking part in the 1992 United Nations Framework Convention on Climate Change (UNFCCC) and thereafter avoiding binding quantified carbon emission limits laid down under Kyoto Protocol, India always firmly pointed out the differentiated responsibilities that participating countries should take for mitigating the effects of climate change. It has remained India’s consistent narrative, and in the post-Kyoto period, India successfully presented before developed nations challenging conditions to rework their incentives.⁴⁵

Later, when countries started to work on the legal character of the Paris Agreement, India’s typical abhorrence towards binding emission targets started to attract criticism. This was not unexpected as before the Paris negotiation started, at Durban Platform, India, it tried hard to put forward its preference for the inclusion of an ambiguous phrase, such as ‘agreed outcome with legal force’, into the parties’ decision.⁴⁶ The upshot of this effort is largely reflected in the flexible language of Article 4 of the Paris Agreement in the form of obligation of conduct. At

⁴³ Derek Croxton, *The Peace of Westphalia of 1648 and the Origins of Sovereignty*, 21 THE INTERNATIONAL HISTORY REVIEW 569-591 (1999).

⁴⁴ ANDREW DOBSON, FAIRNESS AND FUTURITY: ESSAYS ON ENVIRONMENTAL SUSTAINABILITY AND SOCIAL JUSTICE (1999).

⁴⁵ See Lavanya Rajamani, *India’s Approach to International Law in the Climate Change Regime*, 57 INDIAN JOURNAL OF INTERNATIONAL LAW 6 (2017).

⁴⁶ Ibid.

COP 26 held at Glasgow, Scotland,⁴⁷ India maintained its stance and demand for more carbon space, deferring its Net Zero goal by 2070. Recently held COP 27⁴⁸ has not added much to this set-up. The significant outcomes of the COP 27 include the establishment of the Loss and Damage fund for Vulnerable countries and also the incorporation of a five-year program to promote climate technology solutions in developing countries. It also initiated a work program aiming at the implementation and mitigation of climate change. The States were also requested to strengthen and revise their climate action plan at the national level and expedited the process of phasing out of fossil fuel subsidies in order to meet the 2030 targets.⁴⁹ But how far these lofty aspirations will materialize is doubtful at this stage.

Nonetheless, India's overall target is to improve energy efficiency by enhancing solar power capacity, promoting electric transport, and using hydrogen reserves as an alternative to other fossil fuels. But what remains unsatisfactory is India's domestic approach towards an already established and envious environmental jurisprudence. Apparently, it is possible to see this separately from the difficulties faced by a part of the population who have lost their land and livelihood because of climate change-related events. But on closer look, a different argument can be made. As we have already pointed out that in the last decade, India has diluted some of its essential environmental laws, which can have a more significant negative impact on the overall environment of India. Two of the most important areas where such dilution has happened are coastal zone regulation and environment impact assessment.

Hence, India stands at a crossroads. On the one hand, it wants to uplift the lives of its population in all matters. On the other, it is either bound by specific international legal obligations or general (customary) norms of international law. Recently, the United Nations High Commissioner for Refugees has identified India as a safe place for asylum seekers.⁵⁰ Even if we consider this a the compliment, it is bound to raise a few uncertainties when we think about potential governance issues that may arise in accepting the inflow of displaced populations

⁴⁷ COP26: India PM Narendra Modi pledges net zero by 2070, BBC, November 2, 2021, <https://www.bbc.com/news/world-asia-india-59125143> (last visited 30 November, 2022).

⁴⁸ COP27 Reaches Breakthrough Agreement on New "Loss and Damage" Fund for Vulnerable Countries, UNITED NATIONS CLIMATE CHANGE, November 20, 2022, <https://unfccc.int/news/cop27-reaches-breakthrough-agreement-on-new-loss-and-damage-fund-for-vulnerable-countries> (last visited 30 November, 2022).

⁴⁹ Fiona Harvey, *What are the key outcomes of Cop27 climate summit?*, THE GUARDIAN, November 20, 2022, <https://www.theguardian.com/environment/2022/nov/20/cop27-climate-summit-egypt-key-outcomes>.

⁵⁰ UNHCR India – Help for Refugees, UNHCR, <https://help.unhcr.org/india/?lang=en> (last visited 23 October, 2022).

from other nations. India has not signed the 1951 Refugee Convention and its 1967 Protocol. Hence, legally India is not bound to bend down to any related external demands.

Yet, answering the questions raised by Shrikant Eknath Shinde and Helena Vijaykumar Gavit in Lok Sabha on February 2022, Union Minister of Environment, Forest and Climate Change Shri Bhupender Yadav accepted that “there is no established study for India providing a quantified attribution of climate change triggering migration/displacement of people. While many studies monitor extreme events in the environment, the science of attribution of these changes particularly to climate change, is far more complex and currently an evolving subject.”⁵¹ One thing becomes clear from these observations. India is yet to acknowledge completely that climate change is the main driver for human displacement. In spite of that it is accepting population from its neighbouring states, although, in the absence of any clear planning. It is expected that this may lead to ‘*ad hoc* measures such as forced deportation, detention, and selective protection and assistance based on religion, region, gender, and other factors.’⁵²

The analysis of such situations is beyond the scope of this article. Rather we prefer to suggest that India has already shown the hint of leadership in developing a regional framework for addressing the climate induced migration. It could have easily forwarded a sovereignty argument. The reason for which India has preferred not to do so, we suppose, is mainly geographical. It shares important international borders with many countries, some of which share the common ancestry and culture as well. In such backdrop, it does not make any sense for India to shy away from humanitarian catastrophe, irrespective of in which side of the border such crisis arises. Only couple of things it needs to do specifically from here on. Firstly, India must ensure the proper application of its domestic environmental laws so that climate catastrophe can largely be mitigated up to a meaningful level. This to certain extent can help India to address the domestic life and livelihood issues arising out of environment related problems. The benefit will be seen in the long run as India can have more space for governance to address the issue, such as inflow of people affected by climate change from other nations. Secondly, India must work out a plan to make its leadership prominent in the South Asian

⁵¹ LOKSABHA, QUESTIONS: LOK SABHA (February 2, 2022), <https://loksabhaph.nic.in/Questions/QResult15.aspx?qref=33192&lsno=17> (last visited 23 October, 2022).

⁵² Surbhi Arul, *India needs to recognise the rights of climate refugees*, IDR, June 3, 2022, <https://idronline.org/article/climate-emergency/india-needs-to-recognise-the-rights-of-climate-refugees/> (last visited 23 October, 2022).

region when it comes to provide solution to climate migrants. Avoiding the thorny sovereignty dilemma, it can play a leadership role to make its neighbours responsive towards the long-term benefits of shared responsibilities. Overall, the condition is ripe for India to promote an alternative solution to the problem of climate induced displacements and given the climate vulnerability of India and other countries in the South Asian region, it should not be a matter of choice. In fact, more accurately it should be treated as a mandate that emanates from the necessity for the survival of humanity.

VI. Conclusion

To close the discussion, we can say that the construct of state sovereignty in the context of climate migration is in flux. The increasing complexity associated with climate migration demands that there cannot be any stubborn reference to the old notion of state power and control. Surely, the normative foundation should emerge from that growing need of urgent action that potentially and preferably is likely to alter any ontological dogma in favour of selective international dealings. India, being a key player for developing a global climate action plan and strategies, holds the enormous potential to forward an alternative narrative that can infuse the international climate change law in future. For that matter, the regional inclusive model for addressing the climate migration problem that it is already informally advancing holds the key for a better tomorrow. Perhaps, the countries from other parts of the world are watching.

**STOCKHOLM +50 OUR RESPONSIBILITY TOWARDS
SUSTAINABILITY AND HEALTHY PLANET FOR ALL – A STUDY
WITH SPECIAL REFERENCE TO INDIA**

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Abstract

The world community has started its concern towards environmental protection much from 1972 Stockholm conference in order to protect people and planet. Sustainable development was the main principle which was adhered in this conference and the principles of Stockholm were dealt with environment, action plan for protection of environment, proposal for observing of a world environment day to be observed, resolution for the nuclear weapon test, resolution for convening a second conference, the declaration of human environment etc. Human environment and the declaration of human environment was the first and foremost achievement having 26 principles towards sustainable future. India with 122 nations attended ratified the conference. After Stockholm the global community continues to search towards better environmentalism through RIO 1992, RIO +5, RIO +10, RIO +20, establishment of UNFCCC, IPCC etc. To maintain sustainability the global citizens having responsibility to protect and preserved our Mother Earth as 'we have no planet B'. We need to protect our Mother Earth with utmost responsibility and to secure healthy environment for all with prosperity and peace.

After 50 years of Stockholm we are facing so much threat to protect our environment one of them is climate change and unsustainable use of the Earth. We all the multi stakeholders and inhabitant of this beautiful habitat, we have the responsibility to protect our planet and secure healthy sustainable future for all. Covid 19 is threatening our right environment and sustainability in the era in globally and regionally. India is a developing nation and committed towards a sustainable future and taking the pledge towards healthy environment for all from Stockholm. In this era of climate crisis India and other nation having the responsibility towards the collective future by rebuilding, trust and value. If a new dawn is to be our goal all the nations of Global North and South should be connected and contributed towards a sustainable future.

Keywords: Stockholm +50, Human Right to Life, Sustainability, Healthy Planet for All, India.

Introduction

Sustainable development is the core issue of environmental jurisprudence especially in early seventies in Cocoyoc Declaration on environment. It includes intergenerational equity and integration of development and environmental continuity. The environment and development should be for people, planet and profit. Sustainable development in its facet consists of three pillar which includes Environmental law, International Human Rights Law and International Law relating to Economy. The Stockholm declaration on human environment 1972 can be seen as an awakening of the world community towards environmental protection. The convention starts of 5th June 1972 which last up to 16th June is declared as World Environment Day. So the main contribution of Stockholm is to provide new procedure to be followed for the protection of environment, proposal of conducting 2nd conference, unanimous call for state directions for action at national level, the declaration of human environment etc. The emphasizes on the Humanity as a part of Environment is one of the most important aspect of the Stockholm conference 1972. It is divided in two parts – first part deals with seven truths and interrelation of man and his environment and part two deals with 26 principles. The first part contains general observation as man is both the creator and molder of his environment which gives in physical sustenance and affords the opportunity of growth in every aspect. The protection and improvement of people and planet is an important issue in the World. Part two of the declaration contains principles which are 26 in total. The Conference of 1972 is a remarkable chapter in protection of the environment containing official agenda for all nations' state. There are two conflicting approach in this Conference (1) primary concern is on the human impact on human environment. It contains control of pollution and conservation of natural resources, (2) second approach emphasizes on social and economic development. Environmental continuity and sustainability bridged the two conflicting interest. It was a remarkable incident as 114 nations gathered and ratified the principles which combined the World in just one environment. India is the signatory of the Stockholm Declaration as a developing country and taking pledge to implement the plight of Stockholm it its municipal arena. Stockholm ended fifty years back but its impacts after fifty years is still the force of our environmental continuity and the World history of Environmental protection has been reshaped with the prudent dictate of Stockholm. In this article the author through doctrinal methodology tries to discuss Stockholm and its impacts even after fifty years of its implementation to protect the healthy environment for all. The hypothesis of my research is that though Stockholm was the first of its kind bring a strong environmentalism in the mind of global citizens all the principles are not properly implemented

in World Scenario with strict procedure. Unless and until we having any common law for all to implement the conventions in international scenario the goal set forth by this convention cannot achieve fully.

Stockholm Conference and Sustainable Development

Stockholm declaration talked about sustainable development which is a strategy for economic and social development with a balance towards natural resources protection. So development and environment will go hand in hand and human right to life and environment is under the consideration. The present human beings are liable to protect natural resources for the descendants who will enjoy their right to life and right environment in a future date. So we not only consider present and past we have to think about future and their right to life and protection of it. For the benefit of the future generation the present generation should exploit nature in a modest way so that heritage of the mankind will be protected in continuity. So RIO Principle 1, 2, 3, 4, 11, 13, 14, 15, 16, and 18 talked about sustainable development in a broader way. The concept of sustainable development also taken into consideration in 1980 when ICUN prepare World conservation strategy. According to Brundtland Commission Report 1987 *“sustainable development is a development that meets the needs of the present without compromising the ability of future generation to meet there own needs”*.¹ Sweden in 1968 suggested for convening an International Conference on Environment under the aegis of UNO on the problem of human environment. It was sanctioned by the UN authority and the Secretary General endorsed by Economic and Social Council. In general debate speakers emphasized of the declaration and some are in favor of the adherence of the principles without amendment. Somewhere accepting it with dissatisfaction as it was inadequate of the developing countries.² The Principles of the Stockholm Declaration was a milestone in the history of human environment protection though Soviet Russia, Cuba, Romania was not there in Conference. Principle 2 of the Stockholm Declaration talks about natural resources of Earth including water, air, land, and ecosystem should be safeguarded for the present and future generation. This includes intergenerational equity also the main contribution was introducing two important doctrine precautionary principle and polluter pay principle into the environmental jurisprudence. Article 18 provides science and technology and their impact to development

¹ Our Common Future - The World Commission on Environment and Development, 43 (1987). See also Centre for Environmental Law, *World Wide Fund-India v. Union of India*, (2013) 8 SCC 234. Available at DR. PARAMJIT S. JASWAL, DR. NISHTHA JASWAL, VIBHUTI JASWAL, ENVIRONMENTAL LAW, (Allahabad Law Agency, Faridabad, Haryana, 4th Edition).

² U.N.Doc.A/conf.48/t4,at831972.

should be applied to the identification avoidance and control of environmental risk and solution to the environmental problem for common good. Principle 21 opens the legal control regarding acid rain, greenhouse gas effect, ozone depletion etc. Principle 19 of the Stockholm Declaration emphasized on environmental education for the young generation. Various principles like principle 22, 24 and 25 talks about cooperative spirit of all countries in handling environmental problem. All this 26 principles are for betterment of human health and human environment. India was a signatory the Stockholm Declaration and the then Prime Minister Mrs. Indira Gandhi created enormous impact over the minds of the people through her deliberation. Principle 26 talks about the prohibition of the nuclear weapons through the cooperation of the states. In protection and improvement of environment the state parties in International arena should cooperate with liability and apply all the principles in there municipal arena it was the dictate the Stockholm Declaration.

Human Right to Environment and Sustainability Meaning, Concept and Issue

The UN General Assembly (UNGA) recognized the right to clean healthy environment as a human right. The resolution (A/76/L.75) notes that right to environment is a human right under the International Environmental Law. The United Nations Human Right Council (UNHRC) in 2021 recognizes right to clean, healthy and sustainable environment. The crisis of climate change pollution and biodiversity loss are causing destruction in human right to life and right to environment. According to UN Secretary General the resolution creating history and will help to reduce in justice in environmental arena and defend environmental human rights of children, youth, women and indigenous people in this planet.³ Human right and environment are interrelated issue. Sustainable development is the prerequisite of enjoyment of human rights as declared by the UN and the judiciary time to time. A protected, clean and good fresh environment and sustainable development is the core facet of human rights jurisprudence as just fair and reasonable issue. Environmental rights are measurable, transparent, functional, and relevant towards the progress the society and ecology. Our present is the continuation of the past future is the continuation of present.⁴ The Stockholm Declaration, Montreal Protocol,

³ UNGA RECOGNIZES HUMAN RIGHT TO CLEAN, HEALTHY, AND SUSTAINABLE ENVIRONMENT, Available at [https://sdg.iisd.org/news/unga-recognizes-human-right-to-clean-healthy-and-sustainable-environment/#:~:text=UNGA%20Recognizes%20Human%20Right%20to,News%20%7C%20SDG%20Knowledge%20Hub%20%7C%20IISD&text=The%20UNGA%20adopted%20the%20resolution,zero%20against%2C%20with%20eight%20abstentions,\(Last visited 09/11/2022.\)](https://sdg.iisd.org/news/unga-recognizes-human-right-to-clean-healthy-and-sustainable-environment/#:~:text=UNGA%20Recognizes%20Human%20Right%20to,News%20%7C%20SDG%20Knowledge%20Hub%20%7C%20IISD&text=The%20UNGA%20adopted%20the%20resolution,zero%20against%2C%20with%20eight%20abstentions,(Last visited 09/11/2022.))

⁴ Due to the agricultural chemicals, solvents and mercury, which flowed into the Rhine River during a warehouse fire in Switzerland, millions of fish were killed and the drinking water in the Federal Republic of Germany and

on Ozone Layer, Brundtland Commission, Earth Summit, Agenda 21, UNFCCC, UNCBD, IPCC, Kyoto Protocol, SDG Goals, and MDG Goals all talked about sustainable development. The term “sustainable development” was defined the Brundtland Commission in its seminal 1987 report *Our Common Future*. It is a development that balances the needs of the present with future without losing the future generations Right to enjoy Environment..⁵

Salient Principles of Sustainable Development

Sustainable development is needed to face extreme weather events which cause loss of Biodiversity. Disaster may cause barrier to sustainable development goals. We need trust; transparency effective measure to achieve sustainable development .Relationship with nature should be maintained will pave the way of sustainable development. Some important principles of sustainability are Inter – Generational Equity; The Precautionary Principle; (5) The Polluter Pays Principle.⁶ In India according to Article 21 of the Indian Constitution right to life includes right to environment. The judiciary in *M.C. Mehata* cases specially re-imposed the idea of the protection of environmental right as fundamental right which are also human rights. In *Rural Litigation Kendra Deheradun v. State of U.P.* Air 1985 the Supreme Court held the protection of environment is the paramount consideration. It also established that fundamental rights and right to life would be meaningless without healthy environment. The judicial creativity now liberated the locus standi rule and include right to life in healthy environment under Article 21 as a human right and implementation of it through PIL Mechanism.⁷

Stockholm and its implementation

Environmental protection in every country is based on a highly developed environmental jurisprudence of their municipal arena as well as through convention treaty directives policies principles of International communities. So International Law and Municipal Law both have contribution towards protection of environmental in global, regional and local level. The term

the Netherlands was threatened. Available at DR. PARAMJIT S. JASWAL, DR. NISHTHA JASWAL, VIBHUTI JASWAL, *ENVIRONMENTAL LAW*, (Allahabad Law Agency, Faridabad, Haryana, 4th Edition).

⁵ *Our Common Future – The World Commission on Environment and Development*, 43(1987). See also Centre for Environmental Law, *World Wide Fund – India v. Union of India*, (2013) 8 SCC 234. Available at DR. PARAMJIT S. JASWAL, DR. NISHTHA JASWAL, VIBHUTI JASWAL, *ENVIRONMENTAL LAW*, (Allahabad Law Agency, Faridabad, Haryana, 4th Edition).

⁶ See *Vellore Citizens' Welfare Forum v. Union of India*, (1996) 5 SCC 647 at 658. (This case is popularly known as *Tamil Nadu Tanneries case*). Available at DR. PARAMJIT S. JASWAL, DR. NISHTHA JASWAL, VIBHUTI JASWAL, *ENVIRONMENTAL LAW*, (Allahabad Law Agency, Faridabad, Haryana, 4th Edition).

⁷ See Paramjit S. Jaswal, “Development in Environmental Law : The Case of India,” *Proceedings of the Workshop on Development and Planning*, Vol. II, SOAS, the Centre for Asia and Africa, University of London, London (January 6th to 18th, 1992). Available at DR. PARAMJIT S. JASWAL, DR. NISHTHA JASWAL, VIBHUTI JASWAL, *ENVIRONMENTAL LAW*, (Allahabad Law Agency, Faridabad, Haryana, 4th Edition).

environment means “to surround”. So all our surroundings human being, all species, flora, fauna, tree, water, air, lake, mountains, biotic, a biotic components all includes in the term environment. These are actually natural environment; we also have manmade environment comprising of park, garden, building, road, bridges etc. “environment means surrounding .which contains Water, Air and Land and the inter-relationship with Human Beings, other Living Creatures, Plants, Micro Organisms and Property.”⁸ Stockholm 1972 was the first attempt of this time to preserve environment internationally and spreading awareness of various environmental problems in International scenario. United Nations department of Economic and Social Affairs (UN-DESA) produce a report on sustainable development on 21st century project to construct the idea of sustainable development and its implementation. The project funded by the European Commission talked about RIO Conference and its implementation. Sustainability principle was first stated in Stockholm and reiterated on RIO after 20 years so Stockholm can be seen as the source of RIO Convention and sustainability. All human beings having right to equality and environmental rights as human rights. Through enacted legislation in municipal arena the state parties recognize the principles of the declaration. Principle 2 of the RIO convention is inspired from Stockholm Declaration which talks about the demonstration and sustained commitment of the principle between the member states. That talks about the nation states can exploit their natural resources with responsibility so that the outside jurisdiction of their nation state and environment of the area are not damaged. Principle 2 provides a right for states to exploit their own resources. The establishment of Reducing Emission from Deforestation and Forest Degradation (REDD) scheme under the UNFCCC can be seen as an example of international commitment. The state parties are bound by national sovereignty of other nation’s state. International cooperation and prevention of environmental harm as a Tran’s boundary issue which was implemented through Stockholm and RIO. International court for environment and its establishment was dictated in Pulp Mills on the River Uruguay.⁹

Stockholm and its implementation in India: “You know that India is one sixth of the global community. Our development needs are enormous. Our poverty or prosperity will have direct

⁸ LEGISLATIVEDEPARTMENT, THE ENVIRONMENT (PROTECTION) ACT, 1986, <https://legislative.gov.in/actsofparliamentfromtheyear/environment-protection-act-1986>, (Last visited 07/11/2022).

⁹ Pulp Mills on the River Uruguay (Argentina V Uruguay) 2010, see: <http://www.icj-cij.org/docket/index.php?case=135> , Sustainable Development in the 21st Sustainable Development in the 21st century (SD21) century (SD21), *Review of Implementation of the Rio Principles*, Study prepared by the Stakeholder Forum for a Sustainable Future, December 2011, Detailed review of implementation of the Rio Principles, 1127rioprinciples_221108_161633. (Last visited 08/11/2022).

impact on the global poverty or prosperity. People in India have waited too long for access to modern amenities and means of development. We have committed to complete this task sooner than anticipated. However, we have also said that we will do all this in a cleaner and greener way”

- Prime Minister Narendra Modi (2018)¹⁰

Sustainable development is a core issue of environmental jurisprudence all over the World nay India and adaptation of 2030 SDG Goals and implementation of various policy on sustainable development, climate change etc. in India are the example of the concern of this nation state towards responsible future by establishing the enabling environment for sustainable development and climate actions. India has been very much concerned about climate change and sustainable development and our country is striving towards excellence for sustainability through installation of renewable. India emphasized on National Clean Air Programme (NCAP) as an initiative to address air pollution. India is implementing the SDG Goals on the area of poverty, innovation, climate change, sustainable consumption, etc. The Central Government Flagship policies are can be the best example towards India’s commitment in implementation of sustainable development goals. The Flagship programme namely Swachh Bharat Mission (SBM), Beti Bachao Beti Padhao (BBBP), Pradhan Mantri Awas Yojana (PMAY), Pradhan Mantri Jan-Dhan Yojana (PMJDY), Deen Dayal Upadhyay Gram Jyoti Yojana (DDUGJY) and Pradhan Mantri Ujjwala Yojana (PMUY) are the Central Government achievement towards sustainable development. The NITI Aayog of Government of India preparing measurable index of SDG’s and their achievement in India state wise. India has continuously accepting the threats of climate change and implementing various principles to protect adapt and mitigate climate change based on Common but Differentiated Responsibilities (CBDR) and Clean Development Mechanism (CDM). The Kyoto Protocol has brought CDM mechanism to reduce emission to the non-Annex I parties. India as a developing country is promoting clean technology and clean energy and established National Action Plan on Climate Change (NAPCC) and State Action Plan on Climate Change (SAPCC) in 2008 which can be said as a back drop of India’s voluntary commitment of emission reduction. India through Nationally Determined Contribution (NDC) talked about India’s intention to undertake the pledge of Paris agreement which was ratified by India on October 2, 2016. Green

¹⁰ ECONOMIC SURVEY, ECONOMIC SURVEY VOLUME II (ALL CHAPTERS), Sustainable Development and Climate Change, Economic Survey 2018-19 Volume 2, echap05_vol2_221108_161132. (Last visited 08/11/2022).

technology transfer, innovation and implementation are helping India's climate actions as a developing country. India in November 30, 2015 with France formulated International Solar Alliance (ISA) for better commitment towards sustainability.

- India implements 2030 SDG targets by introducing various CDM Projects ,According to NITI Ayogs SDG index 2021 India's score is 66.
- Kerala and Himachal Pradesh Chandigarh and Puducherry are the front runners in SDG index.
- Namami Gange Mission- was launched to achieving the SDG 6 –as a priority programme for the period 2015-2020.¹¹

In India before Stockholm we have Indian Constitution Tort Law, Indian Penal Code, Criminal Procedure Court then Forest Act 1927, Wildlife Protection Act etc. to deal with the protection of environment. After the Stockholm convention which India ratified Stockholm and implemented it in Municipal Legislation by introducing Environment Protection Act 1986. As Stockholm is the Magna Carta of environmental law and the then Indian Prime Minister Mrs. Indira Gandhi created history by participating and delivering lecture in the conference. Immediately after Stockholm 42nd amendment of the Indian Constitution bring paradigm shift towards protection of fundamental rights as well as environmental protection by introducing Article 48(A) and Article 51A(g). **Article 48-A of the Constitution of India** which is a part of the Directive Principle of State Policy, it imposed a duty on the state, **“to protect and improve the environment and to safeguard the forests and wildlife of the country”**.¹² **Article 51-A (g)** conferred the fundamental duty on the citizens, **“to protect and improve the natural environment including forests, lakes, rivers, and wildlife, and to have compassion for living creatures”**.¹³ **Article 21 of the Indian Constitution deals with protection of life and liberty of Indian citizen as well as the Foreigners. After 1978 Maneka Gandhi case the dimension of right to life has changed which includes fundamental right to live in a pollution free environment and access to fresh water and quality air.**¹⁴

¹¹ ECONOMIC SURVEY, ECONOMIC SURVEY VOLUME II (ALL CHAPTERS) Sustainable Development and Climate Change, Economic Survey 2018-19 Volume 2, echap05_vol2_221108_161132. (08/11/2022.3).

¹² PROF. NARENDER KUMAR, CONSTITUTIONAL LAW OF INDIA, (Allahabad Law Agency, 7th Edition).

¹³ Ibid.

¹⁴ DR. KAILASH RAI, CONSTITUTIONAL LAW OF INDIA, CENTRAL LAW PUBLICATIONS, (Allahabad, 11th Edition).

Judicial Notion of Indian Judiciary and Judges creativity to improve environmentalism includes protection of natural environment can be seen in various important cases they are (1) *Rural Litigation and Entitlement Kendra v. State of U.P.*, 1985 AIR 652, (2) *Indian Council for Enviro-Legal Action v. Union of India*, 1996 AIR 1446, (3) *Vellore Citizens Welfare Forum v. Union of India*, (1996) 5 SCC 647, (4) *M.C. Mehta v. Union of India*, (1986) 2 SCC 176, (5) *M.C. Mehta v. Union of India*, (1987) 4 SCC 463, (6) *M.C. Mehta v. Union of India*, (1988) 1 SCC 471, (7) *M.C. Mehta v. Union of India*, (1996) 4 SCC 750. Under Article 32 and 226 of the Indian Constitution through public interest litigation environmental litigations are maintainable under the Supreme Court and High Court in India. In *M.C. Mehta v. Union of India*¹⁵, the victim of the gas leak case through public interest litigation get compensation under the polluter pay principle. *M.C. Mehta* cases are the strong basic of Indian environmental jurisprudence which based on enormous guidelines towards environmental protection in India. In *Rural Litigation and Entitlement Kendra, Dehradun v. State of U.P.*,¹⁶ a group of public spirited citizens brought to the notice of the Court that the quarry owners had indiscriminately mined skipper slops and therefore, depriving them of trees and damaging the natural structure in the valley mainly due to extraction of more and more limestone, resulting into landslides and blocked underground water channels which caused dryness of many rivers and spring rivers in the valley. The Supreme Court in *Municipal Council, Ratlam v. Vardhichand*,¹⁷ has held that pollution free environment is our human right. We cannot secure social justice to the society unless corroborated with rule of law. In *T.N. Godavaman Thirumulpad v. Union of India*¹⁸ the Supreme Court banned mining activity in Aravalli hills and the forest area adjacent there to. In this case the Supreme Court given interim direction to the ongoing activities within forest area throughout the country cannot be allowed without the permission of Central Government. The Supreme Court also directed the saw mills and wood based industries where not permitted to cut trees within the forest area. According to the SDG Index, India is ranked

¹⁵ *M.C. Mehta v. Union of India*, AIR 1987 1086.

¹⁶ *Dehradun v. State of U.P.*, AIR 1985 S.C. 652.

¹⁷ *Ratlam v. Vardhichand*, AIR 1980 S.C. 1622.

¹⁸ *T.N. Godavaman Thirumulpad v. Union of India*, (2009) 17 SCC 764, it is a continuous writ petition which also known as Forest Conservation Case where the Hon'ble Supreme Court has given various direction to protection of Indian Environment. *T.N. Godavarman Thirumulpad v. Union of India*, (2009) 17 SCC 776; *T.N. Godavarman Thirumulpad (103-B) v. Union of India*, (2009) 17 SCC 169; *T.N. Godavarman Thirumulpad v. Union of India*, (2010) 11 SCC 599, *T.N. Godavarman Thirumulpad v. Union of India*, (2012) 12 SCC 236 and 297. Available at Our Common Future - The World Commission on Environment and Development, 43 (1987). See also Centre for Environmental Law, *World Wide Fund-India v. Union of India*, (2013) 8 SCC 234. Available at Dr. Paramjit S. Jaswal, Dr. Nishtha Jaswal, Vibhuti Jaswal, Environmental Law, Allahabad Law Agency, Faridabad, Haryana, 4th Edition, P – 154.

110 out of 149 in the amount of progress in the implementations of 17 goals.¹⁹ A high Level Steering Committee has been constituted for a yearly review of the framework.²⁰ The NITI Aayog is the prime authority for implementations of SDGS;²¹ Every SDG is under specific ministry and other collateral ministries for implementation.²²

Stockholm +50 Healthy Planets for all – Our Responsibility: “It is time for international solidarity across the board”.

*“Solidarity that respects all human rights and guarantees a safe space for environmental defenders and all actors in society to contribute to our climate response. **Let’s not forget that the war on nature is in itself a massive violation of human rights**”.*

— Secretary-General Antonio Guterres, High-Level opening of COP27²³

In 2022 towards sustainable development and its implementation the recommendation for Stockholm+ 50 meeting can be cited as action based program towards healthy planet for all. In this Stockholm+ 50 meeting 3 main idea are involved (1) Healthy planet and prosperity for all, (2) recovery from Covid 19 pandemic, (3) implementation of environmental regulations, rules and securing sustainable development. It ended with various recommendations on right to healthy and sustainable environment, a global petition for UN Declaration of rights of Mother

¹⁹ SUSTAINABLE DEVELOPMENT SOLUTIONS NETWORK (SDSN), AND BERTELSMANN STIFTUNG, (2016) INDEX MAP, <http://www.sdgindex.org/date/index/>, Available at S. Hazra, A. Bhukta (eds.), SPRINGER NATURE SWITZERLAND AG 2020, Sustainable Development Goals, Sustainable Development Goals Series, https://doi.org/10.1007/978-3-030-42488-6_15, An Article by on *Biodiversity Conservation and the UN’s Sustainable Development Goals: India’s Responses Evaluated – Particularly in Relation to SDG 15*, Clement A. Tisdell.

²⁰ MINISTRY OF STATISTICS AND PROGRAMME IMPLEMENTATION, http://mospi.nic.in/sites/default/files/announcements/SDG_07122018.pdf?download=1, Available at S. Hazra, A. Bhukta (eds.), SPRINGER NATURE SWITZERLAND AG 2020, Sustainable Development Goals, Sustainable Development Goals Series, https://doi.org/10.1007/978-3-030-42488-6_15, An Article by on *Biodiversity Conservation and the UN’s Sustainable Development Goals: India’s Responses Evaluated – Particularly in Relation to SDG 15*, Clement A. Tisdell.

²¹ MINISTRY OF HEALTH AND FAMILY WELFARE, PRESS INFORMATION BUREAU (FEB. 26, 2016) Press Release, <http://pib.nic.in/newsite/PrintRelease.aspx?relid=136880>, Davies, Supra note 7. See Also <https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1597981>, <https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1597981>, Available at S. Hazra, A. Bhukta (eds.), SPRINGER NATURE SWITZERLAND AG 2020, Sustainable Development Goals, Sustainable Development Goals Series, https://doi.org/10.1007/978-3-030-42488-6_15, An Article by on *Biodiversity Conservation and the UN’s Sustainable Development Goals: India’s Responses Evaluated – Particularly in Relation to SDG 15*, Clement A. Tisdell.

²² Sustainable Development Goals (SDGs), Targets, CSS, Interventions, Nodal and other Ministries (As on Mapping – SDGs%20V19-Ministries%20Feedback%20060416_0.pdf), Available at S. Hazra, A. Bhukta (eds.), SPRINGER NATURE SWITZERLAND AG 2020, Sustainable Development Goals, Sustainable Development Goals Series, https://doi.org/10.1007/978-3-030-42488-6_15, An Article by on *Biodiversity Conservation and the UN’s Sustainable Development Goals: India’s Responses Evaluated – Particularly in Relation to SDG 15*, Clement A. Tisdell.

²³ HUMAN RIGHTS AND THE ENVIRONMENT, <https://www.genevaenvironmentnetwork.org/resources/updates/human-rights-and-the-environment/>, (Last visited 09/11/2022).

Earth. 50 years after the Stockholm conference on human environment the humanity is facing climate change, global warming, pollution and Covid 19. The biodiversity loss is also a great cause for panic which can hamper the idea of healthy planet for all. In this Stockholm+ 50 convention of two day on 2nd - 3rd June 2022 in Stockholm the state parties are after the securing the prosperity for all. Sustainable development is the key issue the implementation of which in environmental jurisprudence is a great action and commemoration and conservation. The ten actionable recommendations for healthy planet for all is the outcome of this convention.²⁴

- Consider human well-being as an important issue to secure healthy planet and prosperity for all;
- Safe, protected ,sustainability is key for a good Earth:
- Adaptation of changing dimension with economic stability is the correct approach.
- Existent commitment and its implementation in regional ,international level is needed
- public and private financial activities in environmental, climate, and sustainable development commitments and their mingling is the solution
- Accelerate transformations of important sectors are liable for the growth with sustainability , which are food, energy, water, buildings and construction, manufacturing, and mobility;
- relationships of trust cooperation and solidarity is needed, participation of all stakeholders, in policy formulation and implementation at all levels is need of the hour.
- ensuring “a fair and effective multilateralism” is the wayout;
- spot out intergenerational responsibility as a key feature of rule making
- Looking to the future with the Stockholm+50 outcomes, to the 27th session of the Conference of the Parties (COP 27) to the UNFCCC, and implementation of the world leaders vision is important to secure sustainable development.

The Stockholm+ 50 also include a Sweden led Ministerial statement on the rights of Mother Earth and also talked about an action plan for sustainable planet in the digital edge. It also talks about green job for youth pact and accountability and transparency towards a sustainable future. In the changing environment the global citizen need to secure sustainable and healthy

²⁴ STOCKHOLM+50 URGES ACTION, RENEWAL, TRUST FOR OUR COMMON FUTURE, <https://sdg.iisd.org/news/stockholm50-urges-action-renewal-trust-for-our-common-future/>, (Last visited 09/11/2022).

future for all the generations. Healthy environment presupposes close relationship between human rights and environmental protection and securing clean environment, biodiversity, protection of ecosystem services and safe climate for human health and well-being. Stockholm+ 50 is a collaborative approach to share the experience to protect the planet people and peace even in pandemic time. A healthy planet and prosperity for all is the moto of this conference to protect the sustainability and facing climate change. Which will be based on intergenerational responsibility, implementation, and accelerating, wide action on sustainable development, connectivity and measuring the progress of well-being? The slogan of Stockholm declaration was we only have one Earth is still relevant today. It is the responsibility of the World parties to protect environment and accelerate development by protecting the Mother Earth. The Global North and South should focus on the mandate of Stockholm+ 50 towards the protection of all the stakeholders. In Stockholm 1972 Mrs. Indira Gandhi said poverty is the biggest polluter and there is an interconnection between development, poverty and environment. Today is human being should contribute towards the path of sustainable consumption of the Mother Nature and follow the International conventions in a collective way. The present responsibility is to recover from pandemic, accelerated growth, and measure the progress and well being. It is the duty of the state parties to recognize human right to clean, healthy and sustainable environment for the welfare of the humanity and to achieve 2030 agenda of SDG goals. We are inherited earth from ancestors but we are consuming it form the future generation's right to life and environment. As we have to planet B we need to protect the Mother Earth globally, regionally and locally with utmost care and caution. During the event a call for International and indigenious contributions was sought Right to nature having its impact also in sustainability issue as well as restoration. The gesture shown by citizen's assembly to hold right to nature with solidarity is important issue to be followed. This is our Mother Earth we global citizens need to cherish every legacy of this Earth, we need zero tolerance to the fossil fuels after 50 years of Stockholm. Stockholm+50 stressed on green technologies, A fossil fuel non-proliferation treaty is the need of the hour as stated by the state parties .Stockholm +50stressed on protection of Environment and protection of humanity from nuclear Risks. It talks about everyone, act now, cooperation, solidarity. Only one Earth is still the motto to achieve sustainable development.

Conclusion

Stockholm Conference of 1972 placed human being at the center of concern and securing healthy sustainable planet for all. Securing the right to clean, healthy and sustainable

environment in every country of the World was the main objective of the conference. Adapting new measures by promoting polluter pay principle, precautionary principle, technology transfer, cooperation, implementation of the commitment through policy resolution was the vision of the World leaders to secure sustainable development. Relationship of trust and cooperation lead to ensuring rule based multi lateral system. After fifty years climate change condition global warming is now at a condition that if it is not answered in the ongoing Cop 27 we will lose our right to environment forever. The participation of World youth, in the climate action is the ray of hope for protection of biodiversity of today. The global leadership are accepting urgent action based solution for achieving sustainable development and its implementation through intergenerational responsibility. Indigenous people, World youth, the relationship between developed and developing nation are given importance to stop the planetary crisis. According to Stockholm+ 50 conference consultation, report policy paper, UN environment management group, Stockholm resilience center, regional consultation all have a great significant to strengthen present environment by implementing the vision of 1972. It is the responsibility of the global commons to ensure a healthy planet for all and to secure prosperity and opportunity to build a greater tomorrow.

Suggestion:

- (1) There is an urgent need to take action by all the state parties for protecting our environment.
- (2) Unprecedented challenges faced by the humanity due to climate change and global warming should be given primary importance and the global commons as a whole.
- (3) The sustainable use of natural resources and balanced approach by the countries towards environment, development and human well-being can solve the problem.
- (4) The 2030 agenda of SDG Goals and combating Covid 19 and other deadly diseases is need of the hour which can be secure through healthy environment.
- (5) The climate controlling technology transfer, implementation of new green technology for the transformation of society at large towards combating climate change can be a solution to improve environment.
- (6) Accelerating the monitoring system and implementation of the dictate of Stockholm, taking collective action, rebuild relationship of trust among the country parties, will enhance well being and secure sustainable environment for all.

- (7) We should consider us as a part of global family while targeting to achieve common goals.
- (8) Stockholm+ 50 will help to accelerate action based achievement and implementation of humanity welfare and SDG agenda can save the World by ensuring prosperity for all.
- (9) We need a common statutory platform to secure one health and sustainable development, for all and by adhering solidarity and collaboration, the global leadership can rebuild the human well being by securing one environment for all.
- (10) Stockholm+ 50 really opens the opportunity towards multi stakeholder approach for sustainable future, we need to hold on and rethink about the intergenerational responsibility as a great issue to combat global climate change.

THE CONUNDRUM OF SPACE DEBRIS AND ITS SUSTAINABLE REMEDiation BY POLLUTER PAYS PRINCIPLE

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Abstract

The reach and advancement of humans in the technical fields and the scientific achievements have been profound in past few decades. The same can be witnessed in the field of exploring and traversing the space and the results have been nothing but extremely impressive. We have not just been able to travel to different planets and explore them but also speculate existence of life or the possibility of supporting life on these planets, intercept collision of meteorites and even talk about buying lands on the Moon! However, each coin has two sides to it and example of such brilliance has come with certain cons as well. In order to carry out the explorations, satellites and spacecrafts are sent to outer space, but what happens to these space objects when they become inactive? These inactive space objects end up remaining in the outer space and give rise to the growth of space debris. However, other than Outer Space Treaty, there is no such international or national legal framework to address the problem of space debris and therefore the question as to who would be responsible and liable for the debris creation and remediation remains unanswered. The proposed paper would, thus, examine the existing legal frameworks, identify the policy gaps and study whether the environmental principles of Rio Declaration, 1992, will be applicable in order to answer the questions related to the responsibility and liability for space debris. It would especially try and determine whether Countries can rely upon the Polluter pays principle in order to attach liability with any organisation in case of state funded or privately funded space missions. Thus, the author will attempt to provide solutions to the policy gaps and offer a workable remedy.

Keywords: Outer space, remediation, space debris, space-faring, sustainability.

Introduction

How many of us remember the movie “Gravity”? Yes, it is the 2013 movie by Alfonso Cuarón where everything on a NASA mission goes completely wrong when a defunct satellite is struck by a Russian missile. It involuntarily causes a chain of reactions- explosions and multiplication of space debris- which in turn were travelling at an extremely high speed. In no time, the said NASA Space Shuttle gets hit by the debris and an irreversible damage is caused to the shuttle

which resultantly leaves only two survivors- “Dr. Ryan Stone” and Mission Commander “Matt Kowalski”- abandoned in space with no communication with their Mission Control.

This seems to be an engaging plot for a science fictional movie, right? However, this story line may not be as speculative as one might prefer it to be. On 10th February, 2009, one of Russia’s “old military satellites happened to collide with the then functioning Iridium communications satellite” and the collision in turn created more than “200,000 pieces of debris” and this event marked the “first collision of two intact satellites in space”.¹

Humans have been exploring the space for decades now and their activities have given rise to an escalating amount of space debris which is also gravitating in orbit. Sputnik I, launched in 1957, burned up in 1958, thus becoming the first piece of space debris.² In 2007, January 11th, China purposely knocked down one of its satellites- weather satellite (Fengyun 1C)- thereby increasing the number of traceable space objects by 25%³ and subsequently, upto that point, it marked the largest new creation of debris in history.⁴ India too performed a similar test in 2019. Through “mission Shakti”,⁵ after the United States, China, and Russia, India became the fourth nation, to have conducted such a test.⁶ Thus, it is evident that since the time of Sputnik I, in 1958, the extent of space debris has seen a considerable growth.

The European Space Agency, in 2020, estimated the number of space debris present in the orbit and it includes more than “128 million objects, ranging from one millimetre to one centimetre, and 9,00,000 objects from one centimetre to ten centimetres, and 34,000 objects measuring more than ten centimeters”.⁷ Scientists have predicted that the statistics and numbers are expected to go up exponentially, even if nothing new is put in the orbit and this is known as the Kessler Syndrome. The threat that lurks with this growth in space debris is not only limited to space environment and satellites, but also to human explorers in space and also to life on

¹ Megan Ansdell, *M. Active space debris removal: Needs, implications, and recommendations for today's geopolitical environment*, Journal of Public and International Affairs, 2010 (Oct. 25, 2022, 10:20 am) <https://jpia.princeton.edu/sites/g/files/toruqf1661/files/space-debris-removal.pdf>.

² Nicholas L. Johnson., *Orbital Debris: The Growing Threat to Space Operations*, American Astronautical Society, 2010 (Oct. 25, 10:30 am) <http://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/20100004498.pdf>.

³ National Aeronautics and Space Administration, *Space Debris*, (Oct. 25, 10:35 am). https://www.nasa.gov/centers/hq/library/find/bibliographies/space_debris.

⁴ Mike wall, *Huge dead satellite may be space junk for 150 years*, (Oct. 25, 10:36 am) <https://www.space.com/15640-envisat-satellite-space-junk-150years.html>.

⁵ *India's mission Shakti: Can we leave space out of earthly conflicts?* (Oct. 25, 10: 40 am) <https://qz.com/india/1584560/indias-mission-shakti-lets-leave-space-out-of-earthy-conflicts/>.

⁶ The Hindu, *P.T.I. Narendra Modi announces success of mission Shakti, India's anti-satellite missile capability*, 2019 (Oct. 25, 10:10am) <https://www.thehindu.com/news/national/narendra-modi-announces-successof-mission-shakti-indias-anti-satellite-missile-capability/article26651731.ece>.

⁷ European Space Agency, *Space Debris by the Numbers*, 2020 (Oct. 25, 10: 05 am) https://www.esa.int/Safety_Security/Space_Debris/Space_debris_by_the_numbers.

Earth. “The issue of space debris is of major concern and it requires an immediate and competent reaction from all the States. Only then, it will be possible to fight the effects of such space pollution and also to make sure that space-faring can be carried on while protecting and preserving the outer space environment.”⁸ Nevertheless, though not an easy task to combat such a pressing issue, it surely will not be the first time when the international community is facing such a real problem. Time and again they have come together to take action to save the environment. Without an ounce of doubt, the problem at hand involves a series of complex political, economical and geopolitical interests which cannot be ignored, however, the focal point of this article will be to pay attention to the legal aspects and consider that the conduct of the States can be standardized by employing legal principles and conventions. Over the past few decades, the international environmental law has evolved by leaps and bounds, with sustainable development and fundamental principles at its core.⁹ Therefore, this article proposes to understand as to how can these international environmental law principles can be implemented in regulating the nations and thereby addresses the problem of dealing with space debris.

What is space debris?

The debate on space debris is pertinent and pressing at both national and the international level, however, there is still no legally sound international framework that defines “*space debris*”. However, there is one definition that is available. It has been given by the “Inter-Agency Space Debris Coordination Committee (IADC)” which has also been endorsed by the “United Nations Committee on Peaceful Uses of Outer Space”,¹⁰ which is regarded as the main forum where “countries assemble to discuss problems related to activities in outer space”.¹¹ The said definition defines space debris as “*all man-made objects including fragments and elements thereof, in Earth orbit or re-entering the atmosphere, that are non-functional*”.¹²

⁸ Scientific and Technical Subcommittee of the UNCOPUOS, *Active Debris Removal – An Essential Mechanism for Ensuring the Safety and Sustainability of Outer Space: A Report of the International Interdisciplinary Congress on Space Debris Remediation and OnOrbit Satellite Servicing*, 2012 (Oct. 25, 10:15 am) https://www.unoosa.org/pdf/limited/c1/AC105_C1_2012_CRP16E.pdf.

⁹ Eloise Scotford, *Environmental Principles and the Evolution of Environmental Law*, Oxford: Hart Publishing, 2017 (Oct. 25, 11:00 am) <https://media.bloomsburyprofessional.com/rep/files/9781849462976sample.pdf>.

¹⁰ United Nations Office For Outer Space Affairs, *Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space*, (Oct. 25, 10: 17 am) https://www.unoosa.org/pdf/publications/st_space_49E.pdf.

¹¹ General Assembly Official Records, *Report of the Committee on the Peaceful Uses of Outer Space*, 2007, Sixty-second session, Supp. No. 20, A/62/20 (2007), Annex IV (Oct. 25, 11:00 am) https://www.unoosa.org/pdf/gadocs/A_62_20E.pdf.

¹² Inter-Agency Space Debris Coordination Committee, *Space Debris Mitigation Guidelines*, section 3.1, (Oct. 26, 10:00 am) <https://orbitaldebris.jsc.nasa.gov/library/iadc-space-debris-guidelines-revision-2.pdf>.

Space debris, further, has been categorized to have been formed from four sources, namely:

- Inactive payloads- Also known as inoperative payloads, these are “the satellites that have been abandoned and cannot be controlled or operated from Earth”.¹³
- Operational debris- As the name suggests, this kind refers to “the debris that are released during any space operation and have been discarded since they are not in use anymore”. Example, debris created during the launch of a satellite.¹⁴
- Fragmentation debris- “Any break ups that takes place in-orbit, whether due to explosions, accidents or collisions”, give rise to fragmentation debris.¹⁵
- Micro-particulate matter- The environment in outer space is exceptionally aggressive and this causes the in-orbit objects and the manned spacecrafts to shed their exterior, thereby, creating micro-particulate matter.¹⁶

Thus, it can be said that space debris includes objects as diverse as “*satellites that are no longer in use, parts of space objects which have been ejected or fragments resulting from explosions and collisions, tools used during space walks, garbage dumped by manned missions, or even flakes of paint*”.¹⁷

Orbital debris and its issues

Space debris is extremely treacherous to both space and the Earth. In relation to the space, the debris present can cause collision, thereby, endangering both existing and future space missions. It has been noted by NASA that these debris can reach speeds almost near to “8,046.72 meter per second- almost 7 times faster than the speed of bullet- and it is fast enough to cause grave harm to spacecrafts or satellites”.¹⁸ Mankind, as a technologically advanced race, heavily depends upon satellite technologies and applications for a lot of essential activities- “communications, photograph and mapping, remote sensing and Geographic

¹³ Committee on the Peaceful Uses of Outer Space, Scientific and Technical Subcommittee, *Towards Long-term Sustainability of Space Activities: Overcoming the Challenges of Space Debris: A Report of the International Interdisciplinary Congress on Space Debris*, 2011 (Oct. 26, 10:30 am) https://www.unoosa.org/pdf/limited/AC105_C1_2011_CRP14E.pdf.

¹⁴ *Id.* at p. 12.

¹⁵ Committee on the Peaceful Uses of Outer Space, *supra* note 13, at p. 12.

¹⁶ Committee on the Peaceful Uses of Outer Space, *supra* note 13, at p. 12.

¹⁷ Lotta Viikari, *The Environmental Element in Space Law: Assessing the Present and Charting the Future*, IDC Publishers, Martinus Nijhoff Publishers and VSP, Leiden and Boston, 2008, p. 31-32 (Oct. 26, 12:00pm) https://books.google.co.in/books?hl=en&lr=&id=026wCQAAQBAJ&oi=fnd&pg=PR5&dq=+Lotta+V.+The+Environmental+Element+in+Space+Law:+Assessing+the+Present+and+Charting+the+Future.+IDC+Publishers,+Martinus+Nijhoff+Publishers+and+VSP,+Leiden+and+Boston,+2008.&ots=GMvTvc7JlZ&sig=1t-AYGr00IN2ssMi-tGwfX39x9E&redir_esc=y#v=onepage&q&f=false.

¹⁸ National Aeronautics and Space Administration, *supra* note 3.

Information System (essential to geographical studies), weather forecast, global positioning system, and even the defense sector”.¹⁹ Increase in debris population not only poses an alarming threat to the path of these satellites but also to the functional aspect of these satellites.

Further, there are a lot of human activities in the space- be it manned missions or space missions for tourism²⁰- and presence of debris affects the safety for such life in the space. Furthermore, the “International Space Station (ISS), which at present is space manned mission, it is constantly considered to be risking debris situation and it has been recorded by NASA that ISS has already managed to maneuver and avoid three collisions in 2020 alone”.²¹

As has been mentioned above, the danger from this debris situation is not exclusive to space. It extends beyond that and poses a threat to Earth and life on Earth as well. “A Soviet satellite fell to Earth in 1978, scattering radioactive particles over northern Canada; this crash required extensive cleanup of the area.”²² Further, in April, 2000, “different places in South Africa experienced space debris crashes”.²³ Similarly, on May 13, 2020, a “Chinese rocket falling back to Earth uncontrollably may have dropped debris in two nearby Ivorian villages”.²⁴ These events are not some isolated events and it can be deduced from these accidents that “large items from space can re-enter Earth successfully without totally burning up in the atmosphere and this can result in nuclear contamination of Earth's surface.”²⁵ These accidents can end up hurting human life on Earth and it is need of the hour that some steps are taken in light of the abovementioned risks.

¹⁹ Tipper D. Satellite application. (Oct. 26, 12:10 pm) www.pitt.edu/~dtipper/2720/2720_Slides17.pdf.

²⁰ Sheetz M. How SpaceX, Virgin Galactic, Blue Origin and others compete in the growing space tourism market, 2020 (Oct. 26, 12:15 pm) <https://www.cnbc.com/2020/09/26/space-tourism-how-spacex-virgin-galactic-blue-origin-axiom-compete.html>.

²¹ Mike Wall, *Astronauts take shelter as space station dodges orbital junk*, 2020 (Oct. 26, 12:30 pm) <https://www.space.com/space-station-dodges-debris-astronauts-soyuz-shelter>.

²² Committee For the Assessment of NASA's Orbital Debris Programs, National Research Council, *Limiting future collision risk to spacecraft: An assessment of NASA's Meteoroid and Orbital Debris Programs*, 2011, p.60 (Oct. 28, 10:00 am) [https://books.google.co.in/books?hl=en&lr=&id=sj5aTqhNVjkC&oi=fnd&pg=PR1&dq=+Comm.+For+the+Assessment+of+NASA%27s+Orbital+Debris+Programs,+Nat%27l+Research+Council.+Limiting+future+collision+risk+to+spacecraft:+An+assessment+of+NASA%27s+Meteoroid+and+Orbital+Debris+Programs+\(2011\).+www.nap.edu/catalog.php%3Frecord_id%3D13244+\(last+accessed+%&ots=cc06YXinhK&sig=a0_QsI_EuijF604Diuwao3k0vbA&redir_esc=y#v=onepage&q&f=false](https://books.google.co.in/books?hl=en&lr=&id=sj5aTqhNVjkC&oi=fnd&pg=PR1&dq=+Comm.+For+the+Assessment+of+NASA%27s+Orbital+Debris+Programs,+Nat%27l+Research+Council.+Limiting+future+collision+risk+to+spacecraft:+An+assessment+of+NASA%27s+Meteoroid+and+Orbital+Debris+Programs+(2011).+www.nap.edu/catalog.php%3Frecord_id%3D13244+(last+accessed+%&ots=cc06YXinhK&sig=a0_QsI_EuijF604Diuwao3k0vbA&redir_esc=y#v=onepage&q&f=false).

²³ CBC. *Space debris falls on South Africa* (Oct. 28, 10:30 am) <https://www.cbc.ca/news/technology/space-debris-falls-on-south-africa-1.197698>.

²⁴ Forbes, *O'Callaghan J. Chinese rocket debris may have fallen on villages in the ivory coast after an uncontrolled re-entry* (Oct. 27, 7:30 pm) <https://www.forbes.com/sites/jonathanocallaghan/2020/05/12/parts-of-a-chinese-rocket-may-have-fallen-on-an-african-village/#7ee8988d65a2>.

²⁵ Committee For the Assessment of NASA's Orbital Debris Programs, *supra* note 22, at p. 60.

Existing legislations on debris removal and prevention

Till now, there have been “multiple guidelines, policies, pieces of legislation, and regulations” which have been formulated to reduce and eliminate space debris, if possible. One such relevant and illustrious guideline is the “*Space Debris Mitigation Guidelines*”, IADC. The guidelines contain “preventative practices” which are intended to manage the amplification of “*space congestion in popular orbital regions such as low Earth orbit (LEO) and geostationary orbit*” in order to “preserve the commercial and scientific value”, while maintaining the “use of and access to space by future space users”.²⁶

Similarly, the UN Guidelines on “*Space Debris Mitigation*” is also one of the key instruments, engaged in curbing the issue of space debris.²⁷ The said guideline has in turn seven guidelines to mitigate the problem: “*Limit debris released during normal operations; Minimize the potential for break-ups during operational phases; Limit the probability of accidental collision in orbit; Avoid intentional destruction and other harmful activities; Minimize potential for post-mission break-ups resulting from stored energy; Limit the long-term presence of spacecraft and launch vehicle orbital stages in the low-Earth orbit (LEO) region after the end of their mission; and Limit the long-term presence of spacecraft and launch vehicle orbital stages in the low-Earth orbit (LEO) region after the end of their mission*”.²⁸

Road blocks in effective dealing of space debris

The current space legal treaties and guidelines, as mentioned above, are causing major problem as these are outdated and are not able to deal with the issue of space debris. Other than the IDAC definition of space debris, there is no other legal and uniform definition and all the instruments which are addressing the said issue are “soft laws” and do not have a binding effect on states *per se*.

Therefore, it is important to have a “working definition” to enforce an effective remediation regime. Without a uniform definition, it becomes difficult and illegal to remove any space objects without the launching State’s authority, since the concept of salvage rights is not acknowledged in space by neither the Outer Space Treaty nor the Registration Convention.²⁹ On the other hand, had there been a definite definition as to what space debris would include,

²⁶ Inter-Agency Space Debris Coordination Committee, *supra* note 12, Section 5.

²⁷ United Nations Office For Outer Space Affairs, *supra* note 10.

²⁸ United Nations Office For Outer Space Affairs, *supra* note 10, at Section 4.

²⁹ Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (Outer Space Treaty), Article VIII (Oct. 26, 9:00 pm) <https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/outerspacetreaty.html>.

maybe the international bodies could come up with a distinguished framework to deal with and remediate space debris.

Furthermore, the existent space laws which are binding upon the Party States are too ambiguous regarding the of space debris. However, remarkably, Article IX of the Outer Space Treaty commands States to “*abstain from harmfully contaminating the outer space*” but fails to provide for what amounts to “harmful contamination”, nor does it ascertain any machinery to make the States liable for a violation of the said article.³⁰ Additionally, there is the Article III of Liability Convention which is mirroring Article VII of Outer Space Treaty and it provides that “*a launching State shall be absolutely liable to pay compensation for damage caused by its space objects on the surface of the Earth or to aircraft and liable for damage due to its faults in space.*”³¹ It also provides for “*settlement of claims for damages for dispute resolution*” under the Liability Convention, however, “*decisions are final and binding only if agreed upon by the parties.*”³² Vague nature of these laws enables States to create intentional debris like that of Fengyun and there has been no urge to take relevant legal steps.

These laws are extremely State centered and have failed to take cognizance of the private segment involved in space exploration. The national laws which are leading space explorations are leaning towards “*entrepreneurial innovation*” and it is amplified by the concept of US privatization of outer space activities by way of “*public-private partnership arrangements*”.³³ Hence, it is of importance that the liability factor be extended to include the private sector to take part in curbing and reducing space debris.

However, there are a lot of issues that are involved in the absence of any definite legal framework. The most important problem is that the launching state’s security interest is vested in the space objects and even in the debris. While cleaning up the debris, sensitive and classified information might be leaked and technologies built for clearing up the debris might even incapacitate the functional space objects³⁴. These issues can give rise to doubt and lack of

³⁰ *Id.* 29, Article IX.

³¹ Convention on International Liability for Damage Caused by Space Objects, Article III (Oct. 27, 9:15 am) <https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/introliability-convention.html>

³² *Id.* 31, Article XIX.

³³ Khushi Kapoor, Keshav Todi, *The Privatisation of Space Exploration*, FIC SRCC, 2021 (Oct. 27, 7:00 pm) <https://ficsrcc.com/the-privatisation-of-space-exploration/>.

³⁴ Ward Munters, Jan Wouters, *The road not yet taken for defusing conflicts in active debris removal: A multilateral organization*. KU LEUVEN Working Paper No. 183, 2017, p. 23-24 (Oct. 26, 6:00 pm) https://ghum.kuleuven.be/ggs/publications/working_papers/2017/183munters.

assurance in debris removal programs amongst states, particularly in cases of “unilateral national implementation of removal technologies”.³⁵

Further, another problem which can be identified is the issue of funding of remediation steps. It can be agreed upon that there are “levels of space faring and contribution to debris”. It was three countries which were the major players in debris contribution- “China (~42%), United States (~27.5%) and Russia (~25.5%)”.³⁶ Therefore, the questions that arise are:

- “What is the manner in which the international community will fund the debris remediation action?”
- “Whether it is to be borne by the space-faring states, if yes, how is the cost be computed amongst the states?”

No matter what perception is agreed upon, the major setback related to space debris reduction and elimination is undoubtedly the “absence of a binding and comprehensive international legal framework”. The international framework should not only give a definition of space debris but also reflect upon including the private sector and individuals under the liability regime. Further, it should focus upon providing a regime that would provide “funding for the debris remediation and space traffic management”, a clear understanding of “fault, negligence and causation” in order to make a party liable and most importantly incorporate the “application of environmental law principles in space”.

It is to be noted that for protection of the environment, we have well defined international principles which have been agreed upon by states and is also implemented nationally from time to time. Therefore, the same may be applied in case of space and space law. It is extremely important that the development is sustainable in nature and hence, the article will focus on implementing the existing environmental law principles in the context of space debris and how it may be managed and remediated over time.

Application of environmental law principles

Time and again, while advocating the need to protect the environment, it has come across that certain parts and elements of the environment are common heritages of mankind. For instance, the Oceans- “Preamble” of the “UN Convention on the Law of the Seas” states that “*the seabed, subsoil, and its resources beyond the territorial jurisdiction of states are the common heritage*

³⁵ *Id.* 34, at p. 23-24.

³⁶ James M. Buchanan, *What should economists do?* Southern Economic Journal, Vol. 30, No. 3 (Jan., 1964), pp. 213-222 (Oct. 27, 7:15 pm) https://www.jstor.org/stable/1055931?seq=6#metadata_info_tab_contents.

*of mankind*³⁷. This signifies that such stretches of the oceans are owned by all mankind jointly thus the usage should be such that it is sustainable for the future generations as well. The same logic can be extended in case of space as well- the space surrounding Earth is a limited resource and should be used sustainably- for it is a common heritage of all mankind.

In order to recognize such a notion, a proper legal framework needs to be in place and while applying the international environmental law regime, principles like precautionary principle, environmental impact assessment and polluters-pay principle should be included amongst others. These principles have been enshrined in the Rio Declaration on Environment and Development, 1992³⁸ whose central theme is sustainable use of the environment. Therefore, the article hereunder defines the relevant environmental law principles in order to formulate a sustainable way of space use and debris remediation.

The precautionary principle

It is human nature that when a particular resource is given to man, he uses it to its fullest, without considering the negative effects. However, since this is not the way to go about the resources available to man, the concept of sustainable use was developed. One such aspect of this concept is “Precautionary Principle” and Article 15 of the Declaration advocates for the same.³⁹

As can be understood from the name, this principle requires mankind to take precautionary measures whenever an activity seriously threatens or causes irreversible damage human health or the environment even if the adverse effects have not been fully established scientifically. This principle is based on the notion of “precaution is better than cure”. The moment there is possibility that the new activity may have negative impacts on the environment, the burden is shifted to the State responsible, for such introduction of new activity, to take precautionary measures to protect the environment.

Although the said principle is an established part of “international customary law”, its application to space beyond Earth is difficult in the absence of a framework. It is therefore important to note that all states involved in the activity of space faring are also involved in creation of debris as it would be next to impossible to explore space with zero debris formation.

³⁷ United Nations Convention on the Law of the Sea, Preamble (Oct. 27, 9:15 am) https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf.

³⁸ Rio Declaration on Environment and Development, 1992, hereinafter mentioned as the Declaration (Oct. 26, 4:00 pm) <https://www.cbd.int/doc/ref/rio-declaration.shtml>

³⁹ *Id.* 38, Article 15.

However, what can be done is there can be threshold or benchmark created for permissible creation of space debris. Creation of any debris beyond the permissible limit would be held in violation of the precautionary principle.

The environmental impact assessment

Before taking the precautionary measures, one needs to gauge the impact of a particular project and thereafter take decisions. Whenever a project is proposed to be undertaken, before any activity is carried out, any significant adverse effects of the project on the environment is assessed and thereafter, the project is sanctioned by competent national authority. This is the principle of “environmental impact assessment” which is contained in Principle 17 of the Declaration⁴⁰ and should also be extended to the outer space.

In relation to outer space, whenever a space faring activity is to be undertaken, the launching state should provide with a mandatory environmental impact assessment, which would help the authorities to understand the exact effects if may have on the outer space and how it may affect the debris situation. Further, it should be mandated for the launching states to provide a disposal regime whereby it will allow the states to remove the spacecraft from outer space once its purpose is served in order to reduce debris formation.

The polluter-pays principle

The precautionary principle will help the states to safeguard certain activities in order to prevent any environmental mishap to take place and the environment impact assessment report only allows the authorities to decide upon the viability of a project and whether it would have any adverse effect on the environment or not. However, these principles do not provide the authorities with any framework to deal with the debris that is formed after a project (or launch) is carried out. There requires a mechanism that would hold the launching states responsible for the pollution created in outer space.

“If engaged in an activity which involves usage of inherently dangerous substance, one shall be liable to pay for the damages so caused to human and nature”.⁴¹ The basic rule that a State is responsible for guaranteeing sufficient damages for any hazardous and unsafe exercises carried on by it, was established in the landmark judgment of “*Trail Smelter Arbitration*”⁴² case that was between US and Canada.

⁴⁰ Rio Declaration, *supra* note 38, Article 17.

⁴¹ Indian Council For Enviro-Legal vs Union Of India & Ors, 1996 AIR 1446.

⁴² Trail Smelter Arbitration (U.S. v. Canada), 3 R.I.A.A. 1905 (1941).

Article 16 of the Declaration lays down the polluter-pays principle⁴³ and as the name suggests, it means whoever is responsible for polluting the environment- the polluter- shall be held liable by the national authorities to bear the cost of the pollution- prevention, control, and repair of damage caused - and there is a dire need to extend this principle in outer space too in relation to debris creation- whoever creates the space debris shall be responsible for cleaning such debris. A proper framework is required to allocate the liability as it would help in having a better space environment in two ways. First, it would act as a deterrent regime as states would be more vigilant of the debris being created in space exploration and second, it would create a legitimate way of creating funds to remediate space debris in an equitable manner.

As already stated above, it is almost impracticable for a space mission to not generate space debris. Therefore, by applying the polluter-pays principle, every launching state will be required to pay a certain sum for debris creation. There are a number of legal precedents which will help in enforcing this principle as polluter-pays principle is a well established and celebrated principle, both nationally and internationally.

This regime is very much possible if it can be ensured that each launch contributes to a particular amount of money in the form of solidarity contribution which can thereafter be employed to fund the removal of space debris.

A Workable Remediation Regime

Once the international communities come together and provide with a working regime of space debris and its related issues along with management of space traffic, they can focus on framing a funding regime for remediation. It is important for the launching states to know all about the past launches and therefore, states need to re-register the space objects and determine whether such space objects are still functioning or not, thereby identifying the debris. The states may also be allowed to give consent to third parties for removal of the non-functioning objects and even demand the return of any such debris, if the launching state is not participating in cleaning up. This can help avoid the impediment posed by “Article VIII of the Outer Space Treaty and Article II of the Registration Convention”.

Further, on re-registration, the competent authorities too will be aware as to all launches- that have been made in the past, being made in the present and to be made in the future. Thereby, it will be of immense help for the authorities to implement the environmental law principles to such launches- precautionary principle, environmental impact assessment and polluter-pays

⁴³ Rio Declaration, *supra* note 38, Article 16.

principle. Of all these principles, polluter-pays principle is the most important one to be recognized and implemented as the identified state or agency can be held liable to bear the cost of debris remediation. It would therefore provide with the much needed funds for the debris removal operations.

Conclusion

As the problem related to space debris is becoming evident every day, an increase in growth in awareness in relation to outer space and it being a limited resource is also visible amongst researchers and scientists. The current space treaties have proven to be inefficient in tackling the issue and the space to be used sustainably, a proper and uniform legal regime is very much necessary to be legislated. The legal framework must not only limit itself to mitigation but also try and curb further creation of debris. It has to define debris and its management guidelines, provide for funding regime to clean the debris and include the application of existent international environmental principles.

Since the Outer Space Treaty is state centric, the new framework should also consider involving the private sector in the process of removing debris and to incentivize the process, commercialization of debris removal can also be thought of. If the debris removal can be done according to a well structured plan whereby states and private bodies can aim at removal of certain number of debris from the orbit, we may even succeed at reducing the threat posed by Kessler Syndrome.

It is therefore the need of the hour that all existing efforts be unified, structured and standardized with the help of a legal framework at remediation of space debris, so that states and private bodies can be made liable for adversely affecting the outer space. The community, worldwide, is expected to come together and assume certain obligations to deal with this issue and develop arrangements to forestall the production of debris in large amounts.



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