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Beyond Green Complexities: Understanding Environmental Issues and Challenges



BEYOND GREEN COMPLEXITIES: UNDERSTANDING ENVIRONMENTAL ISSUES AND CHALLENGES

FIRST EDITION



Edited by
Dr. Rangaswamy D. | Dr. K.I. Pavan Kumar
Dr. D. Ganesh Kumar | Dr. G.Vinodini Devi
Mr. Sarthak Arya



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Editorial Prelude

At the outset, with the blessing of the Almighty, we would like to thank the management of **KLE College of Law, KLEF (Deemed to be) University**, for organizing the International Conference on 16th September 2016 on the theme "**Reconstructing Anthropogenic Activities for Better Environment: A Multidisciplinary Approach**" as a part of World Ozone Day, in collaboration with **AEQUITAS VICTORIA RESEARCH CENTRE, BIHAR**. We are also extremely grateful to the Prof. Ishwar Bhatt, former Vice Chancellor of Karnataka State Law University and West Bengal National University of Juridical Sciences, Kolkata, for accepting the invitation and for sparing his valuable time and gracing with his presence and delivering such an insightful address at the international conference and for facilitating in bring out this book titled '**Beyond Green Complexities: Understanding Environmental Issues and Challenges**'. The Editors also express their profound gratitude to Prof. Sairam Bhatt, Co-Director, Centre for Environmental Law, National Law School of India University, Bengaluru for accepting the invitation to be a keynote speaker by sparing his valuable time and addressing the participants at the international conference and enlightening with his illuminating lecture and permeating with the knowledge on the theme.

The editorial team would also express their deep sense of gratitude to the venerable keynote speakers, and presenters from India and abroad who were instrumental in instilling the noble enthralling thoughts relating to this grey area. They have brought their unique perspectives with global relevance to the themes of the Conference. Their participation highlights the spirit of collaboration that this conference intended to foster and their expertise and contributions have enriched this conference and pushed the boundaries of knowledge in [conference theme/field].

Special thanks are due to all the guest editors of this voluminous book for extending their unstinted support in editing the articles with due diligence for bring the book to a shape.

We also acknowledge the contribution made by the stakeholders of the Conference for their fruitful support. They were consistently and relentlessly present at all reasonable time with their assistance for the successful completion of the conference and subsequently for the editing and culmination of the final edited Book.

We would like to thank all the authors of the articles for their deep analysis and insights on divergent themes and sub-themes relating to Environmental

issues, without whose contributions, this work wouldn't have come into existence.

We would also like to thank all those who are directly or indirectly involved in the process of editing, publishing and compiling of the book and in the successful culmination of this work, from the nascent stage to till the accomplishment of the conference and finally for the publication of this book within the stipulated time .

Last but not the least, we would be failing in moral duty and responsibility, if we do not acknowledge the constant assistance, motivation and guidance that we received from various sources while bringing out this book.

29-09-2024

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Systemic Approach for Systematic Progress towards Sustainable Development

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Currently, the world is undergoing environmental turmoil to a point that that very frequently it feels clueless as to how to handle the enormous and encircling challenges of the same. We are at the receiving end of the backlash of our own actions in the form of unimaginable disasters and unmanageable scarcities. The current state of affairs from climate change and biodiversity destruction vouchsafes for this. What is glaringly obvious is - we have led ourselves into this state of affairs as the primary initiators and blind pursuers of various environmental mis-deeds. Nature has issued enough danger bells which demand the human race to mend its ways if it wishes to survive. In the light of this, 'Reconstructing Anthropocentric Activities for Better Environment with a Multidisciplinary Approach' became the absolute need of the hour. It is not an option. Not – anymore. If we wish to survive in the long run it is not an option but it is the mandate.

Deconstructing Notions for Reconstructing Actions

Reconstruction of anthropocentric actions essentially has to be preceded or at least accompanied by deconstruction of our glorified notions and predominant approaches of conduct.

They are,

Firstly, we assume that by virtue of the higher plane of intelligence, human being is the only creature in the world which can understand the intricacies of the Nature and hence is the only suitable species to take care of the Nature.

Truth is – Nature is wholesome. It has its own remediation. It is its best manager – with or without the special role of human intelligence. So, let's begin to talk of reconstruction of our activities not for the protection of giant nature but for protection of humans, a fraction species in the natural environment.

Secondly, we glorify that human being is not only intelligent but is also rational unlike other creatures generating the opinion that humans would not cross ethical domain in matters of their life in Nature.

Truth is - Experience proved that humans surpass their ethical domain which is demonstrated in the way humans carry out their unsustainable activities irrespective of the unwanted and many times avoidable suffering of fellow biological creatures. For that matter, they proved their irrationality even with

regard to their own race in the way they disregard the interests of future generations.

Thirdly, human welfare is directly proportionate to human development.

Truth is – Human welfare lies not in human development as determined in its modern sense. Human welfare lies in the environmentally sustainable development. This is the hard message we got from the accumulated results of the environmentally insensitive human development of the past and continuing present.

Fourthly, we assume that environmentally sustainable development is feasible through richness and techno richness of the world.

Truth is –Richness and techno richness cannot help irreversible environmental damage. Richness and techno richness may help to set right a reversible environmental damage. But, even that is not feasible in a divided world of Have and Have Nots with equity deficit.

Fifthly, we perceive that the segregated focus on individual environmental issues and Sectoral exclusivity facilitate simple and manageable planning and yields effective results

Truth is - Natural world demands systemic approach for better results.

While there is a long and uncertain wait for the human world to deconstruct its unsustainable but irresistible notions or approaches of its prospects in the natural world, environmental urgencies compel us to get to right away kick start the reconstructing of anthropocentric activities.

Call for Systemic Approach

The existence of humans in an interconnected natural world interacting with that of manmade world which is politically and economically connected calls for systemic approach if we desire to be successful in reconstruction of anthropocentric activities for securing the prospects of survival and development of human race facing critical environmental challenges. What constitute daunting blocks in our attempts at reconstruction of anthropocentric activities are primarily, the largeness of the task of having to rectify the long accumulated environmental wrongs and secondly, the limits of our human capacity, some of which are natural limits and some are the limits born out of the erratic man- made world. Despite these blocks, we need to make a beginning of reconstructing anthropocentric activities for a better existence. However tough and imperfect it might be, we need to explore the ways out.

United Nations while giving its clarion call to work on sustainable development has already provided substantial policy directions for the world to move on, some of which are general and some of which are specific. I wish to focus on two major directions advocated by the UN both of which rest on the major premise of - the interconnectedness of the natural world and that of the man-made world.

Keeping in view the interconnectivity of the natural world, the UN has been advocating ecosystem approach. Likewise, keeping in mind the interconnectivity of the manmade world, the UN has been advocating global partnership for achieving sustainable development.

Call for Eco-systemic Approach

Ecosystems are under severe threat primarily because of human activities. From the beginning of the 20th century, human activities changed ecosystems more rapidly than ever before. The resultant environmental calamities have sufficiently demonstrated the urgent need to restore damaged ecosystems for nurturing back our compatibility with Nature for survival.

The UN GA through its resolution in 2019 has declared and dedicated the decade from 2021 to 2030 for the cause of ecosystem restoration. The UN Decade 2021-2030 positions the ecosystem restoration as a major nature-based solution towards meeting a wide range of global development goals and national priorities. The UN Decade aims to build a strong, broad based global movement to ramp up restoration and put the world on track for a sustainable future. Attempts are on to generate political momentum. The UN declared this Decade in the overall context of its emphasis on the need for collective efforts to promote sustainable development in a coordinated, environmentally sound, open and shared manner. This is understandable because ecosystems support all life on Earth. The healthier our ecosystems are, the healthier the planet - and its people. Only with healthy ecosystems can we enhance people's livelihoods, counteract climate change, and stop the collapse of biodiversity. The Convention on Biological Diversity has promoted the ecosystem approach by focusing on managing environmental resources and by promoting a balance between human needs and biodiversity. Though CBD, 1992 introduced the concept of ecosystem on a global level, we find that ecosystems as such are generally not recognised as discrete objects of protection by international treaties until recent times.

What is ecosystem in the first place and what is ecosystem approach with regard to environmental management?

Simplest description of ecosystem is; ‘a community or group of living organisms that live in and interact with each other in a specific environment’.

The idea of ecosystem management finds its origin in the 1990s in North America, where it emerged as an alternative to sectoral approaches to nature conservation¹. CBD defines ecosystem as ‘a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit’.².

Ecosystem approach is a strategy. CBD has described the “ecosystem approach as:

“a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way.”³ The hope of the Convention is that the application of the ecosystem approach will and should help to achieve the three-dimensional sustainable development (conservation, sustainable use and equitable sharing of benefits). CBD parties have recognised the need to elaborate and find consensus on an international notion of ecosystem approach

As a strategy ecosystem approach calls for integrated management of land, water and living resources which include humans. Clearly, the conceptual development of ecosystem approach did not let off the anthropocentric focus from its realm obviously for reasons of practical expediency. Thus, we observe that Millennium Ecosystem Assessment⁴ defined ecosystem benefits as ‘the benefits people receive from ecosystem’. Likewise, the term ‘Ecosystem services’ is usually defined as “the aspects of ecosystems used (actively or passively) to produce human wellbeing”.⁵

Principles of Ecosystem Approach

CBD parties have developed 12 principles of ecosystem approach⁶

Principle 1: The objectives of management of land, water and living resources are a matter of societal choices.

¹ Anthony W. D’Amato, Brian J. Palik, Jerry F. Franklin, and David R. Foster, ‘Exploring the Origins of Ecological Forestry in North America’, *Journal of Science & Technology for Forest Products and Processes*. J. For. 115(2), 2017, pp126-127

² Art 2

³ ‘The Ecosystem Approach’, E-Newsletter, CBD, 6-12-2024

⁴ The Millennium Ecosystem Assessment is initiated by the UN in 2001 to assess the consequences of ecosystem change for human well-being. Its findings provide scientific appraisal of the condition and trends in the world’s ecosystems and the services they provide and also helps in providing the scientific basis for action to conserve and use ecosystems sustainably.

⁵ Millennium Ecosystem Assessment, 2005

⁶ ‘The Ecosystem Approach’, E-Newsletter, CBD, 2-7-2007

Principle 2: Management should be decentralized to the lowest appropriate level.

Principle 3: Ecosystem managers should consider the effects (actual or potential) of their activities on adjacent and other ecosystems.

Principle 4: Recognizing potential gains from management, there is usually a need to understand and manage the ecosystem in an economic context.

Principle 5: Conservation of ecosystem structure and functioning, in order to maintain ecosystem services, should be a priority target of the ecosystem approach.

Principle 6: Ecosystem must be managed within the limits of their functioning

Principle 7: The ecosystem approach should be undertaken at the appropriate spatial and temporal scales.

Principle 8: Recognizing the varying temporal scales and lag-effects that characterize ecosystem processes, objectives for ecosystem management should be set for the long term.

Principle 9: Management must recognize the change is inevitable.

Principle 10: The ecosystem approach should seek the appropriate balance between, and integration of, conservation and use of biological diversity.

Principle 11: The ecosystem approach should consider all forms of relevant information, including scientific and indigenous and local knowledge, innovations and practices.

Principle 12: The ecosystem approach should involve all relevant sectors of society and scientific disciplines.

On an ideological note, express adoption of ecosystem approach in the reconstruction of anthropocentric activities for a better environment provides an attractive ideological premise for providing impetus for making decision making process far more inclusive and integrated. But on practical terms, it throws considerable challenges.⁷ Obvious challenge comes from scientific complexity. Also, when the complexities of the two systems – natural and social – are combined, the result is almost utterly incomprehensible. which requires the integration of different fields of scientific knowledge as well as the constant need for the acquisition of up to date and improved data on natural and social systems alike.

⁷ See, Carsten H Richter, 'Opportunities and Challenges of Ecosystem Approach', Futures, Vol 67, Mar 2015, pp 40-51

In addition to monitoring and scientific research, closing the knowledge gap of stakeholders is essential. This necessitates effective collaboration with a wide set of stakeholders, both as knowledge bearers and as actors whose participation and acceptance are often crucial for the successful implementation of management measures. In this respect, participation is fundamental to the ecosystem approach. While participation is often key to successful, it is not without its challenges. There is the typical risk of economically stronger or more well-organized interests becoming overly dominant in participatory processes or structures.

Regarding the role of law as an instrument for the implementation of the ecosystem approach, natural ecosystems can pose an inherent challenge to the process of developing legal frameworks and public institutions.⁸

Thus, when we make certain delimitation of certain sections of ecosystems, for certain purposes and based on a certain level of understanding, we often fail in making meaningful delimitations due to the dynamic and interlinked nature of ecological and other natural processes.

Clearly, governance structures should have the geographical scope and structure that best fits the ecosystem(s) at issue. This, in turn, may require existing social structures to be reconfigured, which may be challenging not only because of path dependency but also because those existing structures may have been designed to correspond with other societal logics and needs.

A further challenge is, the apparent conflict between the adaptivity required by the ecosystem approach and the traditional virtues of law, such as stability and legal certainty.

So, a central challenge to successful legal governance is the need for legal structures capable of providing both stability and a high degree of flexibility and responsiveness to changes both in natural ecosystems as well as the human behaviour that affects those systems. So, legal mechanisms and structures providing for continuous learning and adjustment of policy measures, may be at risk of losing (some of their) capacity to steer human activities

Equally challenging for the effective application of the ecosystem approach is achieving the political will necessary for the bridging of jurisdictional conflicts in areas with shared ecosystems. Clearly, the locus of responsibility within States for implementing ecosystem approach, is crucial for successful

⁸ See, Thomas Falk et al.' Identifying governance challenges in ecosystem services management – Conceptual considerations and comparison of global forest cases', *Ecosystem Services*, Vol 32, Part B, Aug 2018, pp 193-203 and Lasse Loft et al, 'Challenges in ecosystem services governance: Multi-levels, multi-actors, multi-rationalities', *Ecosystem Services*, Vol 16, Dec 2015, pp 150-157

implementation. But coordination between States is a challenge. Coordination between legal regimes at the regional and global level is also necessary.

Call for Global Partnership

Keeping in mind the interconnectedness of modern human world and keeping in mind the oneness of the Nature, UN has been advocating for global partnership for achieving sustainable development.⁹ But our experience is - it remains an elusive goal in a world of divided world. Power politics, Greedy economics, predominant national interests, decentralised governance, equity deficit in international relations are the major factors which typically come in the way of executing global partnership much needed for environmentally sustainable development. Major barriers of the global partnership are, power politics, lack of equity, national interests, commercial actors, lack of political will of the states which are the primary actors of international community.

Nothing short of environmental emergencies seem to instigate any genuine and all out collective actions whereas such a spirit of coordination and coordination must be the driving forces for embarking on the mission of reconstruction of anthropocentric activities. In this context, we come across a most encouraging example of what a committed and well- placed global partnership can achieve. Thus, in the context of ozone layer depletion due to CFC gases international community resolved to phase out¹⁰ the production of CFCs which lead to Ozone layer depletion through conclusion of the Montreal Protocol, 1987. The treaty aimed at banning CFCs, HCFCs and Halon substances that deplete ozone in a phased manner.¹¹ Developing Countries are given flexibility with the spirit of Common but Differential Responsibility principle.¹²

Contrasted with half-baked success of many environmental treaties of global significance, it is very heartening to note that this international agreement proved itself to be the world's most successful international agreement. It emerged out as effective agreement that was ever negotiated. In a report published every four years on the progress of the Montreal Protocol¹³, the panel confirmed the phase-out of nearly 99 per cent of banned ozone-depleting substances.¹⁴ Behind its success lies the unprecedented level of committed international cooperation on a global scale. It is to be noted that at

⁹ Art 27 of Rio Declaration on Environment and Development, 1992

¹⁰ Art 2, Montreal Protocol on Substances that deplete the Ozone Layer, 1987.

¹¹ See Annex A list of Montreal Protocol, 1987.

¹² Art 10 of the Montreal Protocol, 1987

¹³ The work of Scientific Assessment Panel (SAP)'s work created under the Protocol provides the scientific information that guides the decisions made by the parties to the Montreal Protocol. The SAP also produces a quadrennial Scientific Assessment of Ozone Depletion report.

¹⁴ UN News, 9th Jan 2023

the time of treaty conclusion, science was not yet conclusive to indicate a settled course of action and therefore to rely on precautionary approach. So, it was designed to be a flexible instrument to make it possible to amend the instrument to include stricter controls towards total phase out from time to time and also add more ODS to the list of banned substances.¹⁵ The Protocol also allowed industry to plan long term research and innovation. To their credit, chemical industries have kept innovating that helped the transition from the use of ODS while at the same time getting benefitted from the reasonably priced innovations sans the use of ODS which improved the environmental state of affairs.

Creation of multilateral fund¹⁶ did help the developing states to meet their targets. They were lent even institutional support. The capacity building efforts helped a lot to implement phase out activities and establish regional networks to enable sharing of experiences to learn from each other. Another feature of having an independent Technology and Economic Assessment Panel helped the signatories reach timely and solid decisions on complex matters.¹⁷ Compliance mechanism was non-punitive in its character and rather prioritised on helping out the default countries to catch up with compliance of targets. The Protocol has the credit of being ratified by all the states in the world. It is the first treaty to have the credit of universal ratification.¹⁸ One element that helped out the huge ratification is the trade provision in the Protocol which restricted the signatories to carry out trade only with the signatories of the Protocol. Once the main producing countries signed the treaty, other countries too followed up to avoid the risk of not having access to increasingly limited supplies of CFCs and other ODS.

In a nut shell, the success of Montreal Protocol is the result of unprecedented cooperation by the international community and collaboration between public and private sectors. The success of the Protocol is attributable to states, environmental groups, industry and science and technical experts. The

¹⁵ By Kigali Amendment in 2016 the Parties to the Montreal Protocol reached an agreement to phase down HFCs. Countries agreed to add HFCs to the list of controlled substances and approved a timeline for their gradual reduction by 80-85 per cent by the late 2040s. The first reductions by developed countries are expected in 2019. Developing countries will follow with a freeze of HFC consumption levels in 2024 and in 2028 for some nations.

¹⁶ The Multilateral Fund for the Implementation of the Montreal Protocol was established in 1991 with an objective to provide financial and technical assistance to developing country parties to the Montreal Protocol whose annual per capita consumption and production of ODS is less than 0.3 kg to comply with the control measures of the Protocol. It is created by virtue of Art 10 of the treaty.

¹⁷ Technology and Economic Assessment Panel (TEAP) was established in 1990 as the technology and economics advisory body to the Montreal Protocol Parties. TEAP provides technical information related to the alternative technologies that have been investigated and employed to make it possible to eliminate ODS.

¹⁸ The Montreal Protocol on Substances that Deplete the Ozone Layer has been ratified by 197 countries, making it the first United Nations treaty to achieve universal ratification. South Sudan is the first country to ratify the Protocol and Palestine was the last to join.

expectation is the ozone layer would be restored to its 1980 level by the period between 2045-2060. Montreal Protocol success is the classic example of what a committed global partnership can achieve with a true spirit of cooperation and coordination.

With this classic example on our side, our efforts at restructuring anthropocentric activities carry substantial hope for us to move forward and achieve the much-needed systemic transformation of anthropocentric activities provided we begin our actions and do not give up our grit and determination to fare better amidst the daunting challenges. A long-standing acknowledgment has been that – ‘necessity is the mother of invention’. As the human race is getting incrementally encircled by consistently intensifying environmental problems with an near immediate potential of endangering human survival, we would have no other pressing need than having to adopt the necessary attitude and willingness to know our limits and opt for actions that are in compatibility with the much advocated systemic approach for systematic progress towards sustainable development.

Regional protection of the environment: Insight from the European Court of Human Rights and the African Commission on Human and Peoples' Rights

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Abstract

*One of the most crucial prerequisites for the enjoyment of human rights is a healthy environment. In this sense, environmental conservation is not an aim in and of itself, but rather a means to an end that benefits human interests. The African Charter on Human and Peoples' Rights, the European Convention on Human Rights, and the case law of the judicial organisations that are affiliated with them all clearly recognise this relationship. However, doubt has been raised on the fact that the human rights frameworks in Europe or Africa could provide a clear advantage in terms of environmental conservation. By analysing two cases namely *Dubetska v. Ukraine* and *SERAC v. Nigeria* this article argues that both frameworks are environmentally beneficial insofar as they endeavour to ensure that people have the best possible living conditions. However, despite the fact that these intricate environmental issues continue to threaten human rights, the regimes are primarily ill-equipped to address broader environmental challenges like pollution, climate change, or biodiversity loss in a way that results in long-lasting environmental protection because they are intended to promote human well-being rather than environmental well-being. As a result, this article emphasises the necessity of additional proper legal procedures so that people and communities can speak up for their environmental rights and get the required compensation when environmental deterioration violates their human rights.*

Introduction

Since it is a prerequisite for many acknowledged human rights, environmental protection is an essential component of modern human rights doctrine.¹⁹ This knowledge has impacted the approval and progressive expansion of national and international legislation acknowledging that environmental circumstances may constitute a human rights violation; these laws are commonly referred to as 'greening human rights'.²⁰ Other academics have conceptualised this relationship using the idea of a 'environmental minimum', which attempts to operationalise this relationship by giving people the ability to bring human

¹⁹ Gabcikovo-Nagymaros Project (Hungary v Slovakia) (Separate Opinion of Vice-President Weeramantry) [1997] ICJ Rep 7, 91–2.

²⁰ John Knox, *Greening Human Rights*, 14 July 2015, <https://www.opendemocracy.net/en/openglobalrights-openpage/greening-human-rights/> (accessed May 25, 2019).

rights claims against states to ensure that fundamental environmental regulations are implemented.²¹ This idea sees environmental protection as a prerequisite for the meaningful enjoyment of human rights. The environment can be directly or indirectly impacted by human rights. When pollution has a detrimental impact on health, for example, a terrible environment directly restricts the ability of a person or a group to enjoy a certain right. A breach of procedural or substantive human rights obligations may give rise to a legal action in certain jurisdictions if environmental damage has occurred.²²

The European Court of Human Rights (ECtHR) has read the ECHR in a way that recognises the need for a healthy environment in order to effectively enjoy several of its rights. To guarantee that the right balance may be struck, the Court has established procedural standards, even when some environmental harm may be justified by other justifiable goals.²³ The African Commission on Human and Peoples' Rights (ACommHPR) is mandated to interpret the ACHPR. Notable decisions such as the *Social and Economic Rights Action Center v. Nigeria* demonstrate how the ACommHPR interpreted Article 24 of the ACHPR.²⁴

A healthy environment is considered by human rights jurisprudence as a necessary pre-requisite for the enjoyment of human rights. Nevertheless, the ECHR and ACHPR are anthropocentric, adopting an instrumentalist approach toward environmental conservation premised on the importance of the environment in preserving or improving the quality of human life.²⁵ Conversely, an ecocentric approach cherishes nature for its own sake and promotes its protection, but this one may result in apathy towards the environment.²⁶ Notwithstanding this prejudice, human rights litigation can contribute to the increasing comprehension of the interdependent relationship between environmental protection and human rights. Case-handling involving complainants harmed by environmental harm is increasingly being delegated to regional human rights authorities, allowing for value-oriented debate. The

²¹ Stefan Theil, 'Introducing the Environmental Minimum' Paper No. 53/2016, University of Cambridge Faculty of Law Legal Studies Research Paper Series.

²² Birgit Peters, 'Unpacking the Diversity of Procedural Environmental Rights: The European Convention on Human Rights and the Aarhus Convention', *Journal of Environmental Law* 30, no. 1 (March 2018): 1–27, 2.

²³ *Hatton and Others v United Kingdom* (European Court of Human Rights, Application no 36022/97, 8 July 2003).

²⁴ *Max Planck Encyclopedia of Public International Law*, s.v. 'African Commission on Human and Peoples' Rights (ACommHPR)' (by Rachel Murray), <https://opil.ouplaw.com/view/10.1093/law:epil/9780199231690/law-9780199231690-e742> (accessed June 6, 2019).

²⁵ Centre for Minority Rights Development (Kenya) and Minority Rights Group International on behalf of Endorois Welfare Council v. Kenya, Communication No 276/2003 (2010).

²⁶ Jacqueline Peel and Hari M. Osofsky, 'A Rights Turn in Climate Litigation?', *Transnational Environmental Law* 7 (2017): 37.

methodology is being challenged as climate change and other environmental damages have a more complex influence on human life.

2. The European and African frameworks: key principles and cases

With the objective of industrial activity control and reduction of environmental harm, the application of human rights law towards the protection of the environment is increasing with the regional human rights systems.²⁷ The primary reason behind this approach is the realisation that the protection of the environment is critically essential to the success of human life. This being said, a regional human rights system's capacity to protect the environment by using human rights claims is dependent on a number of factors, including its manner of interpretation and application of human rights to confer environmental protection in a substantive and long-lasting way. The success of a case is proportional to its ability of addressing environmental harm and whether the state is brought to the point of taking remedial or preventative action to restore the environment.²⁸

2.1 ECHR

A traditional interpretation of human rights based on innate individuality is upheld by the European Court of Human Rights (ECHR). The ECHR's intrinsic individualism is best demonstrated by its individualist standing doctrine and propensity to only enforce rights in reaction to violations of purely individual rights. With the ECHR coming into effect on September 3, 1953, every one of the 47 members of the Council of Europe is required to make a commitment to protect the fundamental civil and political rights of every individual within their respective regions. States must control private actors to prevent indirect interferences and abstain from directly interfering with their subjects' rights.²⁹

The "evolutive approach" is adopted by the ECtHR to take into account the constantly evolving societal conditions in which the ECHR is enforced.³⁰ As clarified by the European Court of Human Rights in *Kyrtatos v. Greece*, there is no recognition for an autonomous right to a sound or healthy environment.³¹ However, the concept that environmental law and human rights law are "mutually reinforcing" is coming out more frequently in the ECtHR's rulings. The European Court of Human Rights' broad interpretation of Article 8, which

²⁷ Bridget Lewis, *Environmental Human Rights and Climate Change: Current Status and Future Prospects* (Springer, 2018).

²⁸ *Ibid.*

²⁹ *Fadayeve v Russia* [2005] IV Eur Court HR 255; *Tatar v Romania* (European Court of Human Rights, Application no 67021/01, 27 January 2009); *Giacomelli v Italy* [2006] XII Eur Court HR 345.

³⁰ Steering Committee for Human Rights, Final Activity Report, 10.

³¹ *Kyrtatos v Greece* [2003] VI Eur Court HR 257.

protects the right to respect for one's home, correspondence, and private and family life, represents the most comprehensive development of the relationship between human rights and the environment.³²

As a result of its ever-expanding body of case law addressing fundamental rights, the ECtHR has clarified a number of important ideas. First, under some conditions, the State may encumbrance a right guaranteed by Article 8 of the ECHR.³³ Second, when limiting human rights, states have to abide by domestic laws, including applicable environmental laws and regulations.³⁴ Thirdly, the actions taken by the government must be commensurate with its need to intervene.³⁵

The European Court of Human Rights (ECtHR) employs the idea of the 'margin of appreciation' to analyze proportionality in environmental protection. This concept respects the plurality of states within the Council of Europe as well as the independence of their national authorities and laws by allowing the ECtHR to defer to national organizations to balance conflicting demands within their respective domains. The margin of appreciation incentivizes the European Court of Human Rights to examine if the state achieved a just equilibrium between the conflicting interests of the individual and the community at large.³⁶

The European Court of Human Rights (ECtHR) has determined that a State's inability to enforce or comply with its own substantive environmental legislation by private actors cannot be justified by a margin of appreciation. The European Court of Human Rights (ECtHR) has adjudicated that significant pollution of the environment can have an impact on people's well-being without representing a major hazard to their health.³⁷ Applicants are unable to directly challenge private actors' activities given that the ECHR is applied vertically. Nonetheless, through complaints against the State, applicants frequently assert strong indirect claims against private actors, contending that the State has neglected to appropriately control private actors' behaviour or enforce their adherence to procedural and substantive legal requirements. Since private actors are primarily responsible for the majority

³² 49 Iliana Cenevska, 'A Thundering Silence: Environmental Rights in the Dialogue between the EU Court of Justice and the European Court of Human Rights', *Journal of Environmental Law* 28, no. 2 (July 2016): 301–24, 308.

³³ *Hatton v United Kingdom* 54 (European Court of Human Rights, Application no 36022/97, 8 July 2003).

³⁴ *Taskin v Turkey (Merits and Just Satisfaction)* [2004] X Eur Court HR 179.

³⁵ *Fadeyeva v Russia* [2005] IV Eur Court HR 255, [102].

³⁶ Hana Müllerová, 'Environment Playing Short-handed: Margin of Appreciation in Environmental Jurisprudence of the European Court of Human Rights', *Review of European, Comparative and International Environmental Law* 24, no. 1 (December 2014): 83–92, 83.

³⁷ *Fadeyeva v Russia* [2005] IV Eur Court HR 255.

of environmental harm, this is especially crucial in the field of environmental protection.³⁸

As per the decisions of the European Court on Human Rights (ECrHR), unfavourable environmental conditions can be regarded as an unlawful interference in the right to respect for an individual's home, correspondence and private and family life in contravention of article 8 of the European Convention. The Dubetska lawsuit was filed by 11 Ukrainian accusing the State of Ukraine of failing to safeguard their family and personal lives affected by excessive pollution caused by industrial sites owned by the State. The latter's argument of the complainants failing to exhaust available local remedies and therefore the case should not be admissible was rejected by the Court.³⁹

The Court made an application of Article 8 of the European Convention from two perspective: firstly, whether the Government's obligation was engaged and secondly, whether a reasonable balance was struck by the Government between the interests of the applicants and those of the community in resolving environmental challenges.⁴⁰ The applicants claimed that due to industrial pollution and the State's disregard for its duty to regulate hazardous industrial activity, they suffered severe State interference with their rights under Article 8. The European Court of Human Rights (ECtHR) highlighted that, given the political sensitivity and complexity of environmental policy and regulation, the Government should be given a broad margin of appreciation in fulfilling its commitments under the ECHR.⁴¹

The request of the applicants for pecuniary damages in the amount of the buying price of their homes were rejected on the grounds that there was no causal connection between the violation and the loss of their houses' market value. Instead, they were awarded €32,000 and €33,000 for non-pecuniary damages, which included psychological and physical suffering.⁴²

2.2 ACHPR

In 1978, Keba M'baye, the Chairman of the Group of Experts tasked with drafting the ACHPR, conducted a comparative analysis of the human rights perspectives of Europe and Africa. In Africa, the individual is seen as the

³⁸ Buys, E., & Lewis, B. (2021). Environmental protection through European and African human rights frameworks. *The International Journal of Human Rights*, 26(6), 949–977. <https://doi.org/10.1080/13642987.2021.1986011>.

³⁹ *Dubetska v Ukraine 15 (European Court of Human Rights, Application no 30499/03, 10 February 2011)*.

⁴⁰ *Ibid.*, 16–29 [88]–[156].

⁴¹ *Ibid.*, 26 [147], 28 [28].

⁴² *Ibid.*, 29 [158]–[161].

group's guardian angel or common ancestor who blends in.⁴³ The ACHPR was ratified by the African Union in 1981, and all rights are interconnected and mutually reliant. The ACHPR encompasses collective rights, including group rights or third-generation rights, in addition to civil, political, economic, social, and cultural rights.⁴⁴

Under Article 24, it creates a separate right to a "general satisfactory environment favourable to human development". There are not many cases on the specifics and intricacies of the right, in contrast to the ECHR. Under Article 27 of the ACHPR, corporate organisations equally have legal obligations towards rights holders. These requirements include both positive and negative duties pertaining to impact assessments and stakeholder involvement.⁴⁵

The Nigerian military government was allegedly involved in oil production in the Ogoni region through the Nigerian National Petroleum Company, which was working in conjunction with Shell Petroleum Development Corporation. This claim was made in a communication filed by two non-governmental organisations on behalf of the Ogoni people in Nigeria, which was reviewed by the ACommHPR in SERAC. According to the statement, the Ogoni peoples' rights to life, property, health, housing, food, and the freedom to dispose of their riches and natural resources, as well as a generally good environment that is conducive to their growth, have all been violated.⁴⁶

The ACHPR Articles 16 and 24 guarantee the right to health and a healthy environment, and the ACommHPR clarified a comprehensive framework to assess if the Government had breached the rights of the Ogoni people.⁴⁷ The Government is required to fulfil these obligations. According to the ACommHPR, the Nigerian government did not take the appropriate action to shield the Ogoni people and their territory from harm brought about by the security forces of the NNPC Shell Consortium. The ACommHPR urged the government to take specific actions to protect Ogoniland's ecology, people's health, and way of life.⁴⁸

⁴³ Keba M'baye, 'Les droits de l'homme en Afrique', in *Les Dimensions internationales des droits de l'homme*, ed. Karel Vasak (UNESCO, 1978), 651 [1609];

⁴⁴ Olufemi O. Amao, 'The African Regional Human Rights System and Multinational Corporations: Strengthening Host State Responsibility for the Control of Multinational Corporations', *International Journal of Human Rights* 12, no. 5 (2008): 761–88, 765.

⁴⁵ African Commission on Human and People's Rights, 'State Reporting Guidelines and Principles on Articles 21 and 24 of the African Charter relating to Extractive Industries, Human Rights and the Environment', adopted at the 62nd Ordinary Session of the African Commission on Human and Peoples' Rights held on 25 April to 9 May 2018, 37.

⁴⁶ SERAC, [1].

⁴⁷ SERAC [52].

⁴⁸ SERAC [69].

3. Evaluating the frameworks by using the jurisprudential indicators

Different approaches have been adopted by the European Convention on Human Rights (ECHR) and the ACHPR in relation to the protection for the environment. On one hand, the ECHR emphasises on individual rights while on the other hand, the ACHPR focuses on collective rights. This being said, the ECHR's framework on human rights is not entirely compatible with environmental harm, making it challenging to support environmental claims. Individuals have been allowed to bring claims against those responsible for environmental degradation whereas the ACommHPR permits NGOs to engage with it on similar matters. This broad standing approach addresses power imbalances between individuals and governments, particularly in countries with poor rule of law. The ACHPR's broad standing also helps poorer communities in developing nations access legal mechanisms for holding their state accountable for environmental damage.

The European Convention on Human Rights (ECHR) prioritizes human rights over environmental protection, an anthropocentrism that has been criticized by deep ecology and earth jurisprudence movements. The *Dubetska* case highlighted the relationship between a healthy environment and ECHR Article 8, but this approach limits the ECtHR's contribution to environmental protection. The *Kyrtatos v Greece* case exemplified this limitation. The *Serena v Nigeria* case links the right to health and the environmental right, imposing obligations on the Nigerian Government to prevent pollution and ecological degradation. This approach allows the ECtHR to serve environmental protection more effectively.

The African Commission on Human Rights (ACommHPR) has recommended Nigeria to comply with core environmental and human rights obligations, including independent scientific monitoring, environmental impact studies, and community information. These measures aim to protect the environment and human rights, but are vague and aspirational. The ACommHPR built upon the African Charter Relating to Extractive Industries, Human Rights and the Environment, but there is a lack of cases enforcing these obligations. The ACHPR has the potential to mitigate these issues.

4. Conclusion

Environmental protection is often viewed as a prerequisite for human rights, but this legal framework is limited in its effectiveness. The European and African human rights frameworks, such as the ECHR and ACHPR, are primarily individualistic and focus on individual rights rather than collective

relationships with the environment. The ECHR's restrictive approach to standing limits its effectiveness in addressing environmental harm. The ACHPR, on the other hand, acknowledges the collective interest humans share in a healthy environment but has limited power to achieve its aims in securing a healthy environment for human development. Instead, governments should focus on the intrinsic value of the environment alongside human rights objectives. Accessible legal mechanisms should be available for individuals and communities to advocate for remedial action against environmentally polluting activities and omissions. These mechanisms should include pathways for collective action, as group claims are better suited to addressing collective environmental harms.

Right to Breathe Fresh Air – The Cauldron of Human Rights Infraction

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Abstract

“Because no matter who we are or where we come from, we're all entitled to the basic human rights of clean air to breathe, clean water to drink, and healthy land to call home.”

-Martin Luther King III

This article delves into the multifaceted issue of air pollution, covering its origins, ramifications, global response, and potential solutions. The concept begins with the origin-development of the concept from the nascent ancient esoteric texts to the present enactment and judicial elucidations, opinions and with Haagen-Smit's pioneering work through an amalgamation of archival and experimental studies, indicating the surprising link between exposure to air pollution and unethical behavior, both physical and mental. The focus shifts to India, where rampant air pollution disproportionately affects the less affluent. Akanksha Singh's investigation of the "Pay-To-Breathe" industry underscores the stark contrast in air purifier access. The present paper attempts to touch upon the subtleties by delving the intricacies and fathoms of this area and delineate the upshot of these international agreements, treaties and declarations and the various provisions of these protocols and enactments in a lucid precise manner. The author also would be referring certain, catena/plethora of landmark judgements enunciated through impassionate plea's on this area wherein the Supreme Court has struck a chord either poignantly or with resonating trumpet. The author at the end concludes with his suggestion and recommendations in order to meet the end goals. (Abstract)

Keywords: - International documents, Human right, clean air, environment, reprisal

Primordial Approach in India

India as an ardent supporter of a healthy environment, has contributed a lot through its ancient culture and traditions in the form of vedas, puranas, smruthi's, Smrithi's and Upanishads in protecting the environment. These sources have divulged that the sun, earth, water, fire and the air are the manifestation of the divine embodiments as celestial bodies.⁴⁹ The Sages during the ancient vedic period while chanting in their mantras for the eternal peace and the well-being of humankind for enjoying the fruit of the chores and against the unnatural calamities and providence have laid down certain eternal principles which have contributed for rejuvenating the environment against air pollution. They have cautioned and sent an insinuation against

⁴⁹ SC Sastri, Environmental Law, 2015, pp.2-8

deforestation and felling of trees⁵⁰ as it would result in poor rainfall and ecological imbalance. Sacred groves were kept unmolested and undisturbed since time immemorial⁵¹. There was a conviction that causing harm to these groves would offend the forest spirit and deities. Rituals in the form of Yagnas were performed in the Vedic societies to purify the air in vicinity⁵². In fact it is believed and argued by our ancestors that thick forestation and plantation of trees or groves would enhance the oxygen levels in the ecosystem and would cure many diseases relating to heart, lungs and mind naturally. It also culminates in building a balance in the ecology.

The Indian Supreme Court made an observation in *Fomento Resorts and Hotels Ltd. V Minguel Martins*⁵³,

“Sages and Saints of India lived in forests. Their preaching contained in Vedas, Upanishadas, Smritis, etc. are ample evidence of the society’s respect for plants, trees, earth, sky, air, water and every form of life. It was regarded as a sacred duty of every one to protect them. In those days, people worshipped trees, rivers and sea which were treated as belonging to all living creatures. The children were educated by their parents and grandparents about the necessity of keeping the environment clean and protecting earth, rivers, sea, forests, trees, flora fauna and every species of life.”

Right to Inhale and Exhale Fresh Air

Right to breathe fresh air as an integral part of right to pollution free environment is universally accepted as a basic human right by the global community at large and the Westphalian system. There are many treaties, agreements, protocols and declarations entered by the so called civilised States in order to safeguard and protect this basic human right which over a period of time has reached the pinnacle of the realm.

Clean air as a fundamental human right is not an alien issue or concept and there has been many deliberations on this issue in the past and within international community. The United Nations High Commissioner for Human Rights has elucidated in the “World Health Organization’s First Global Conference on Air Pollution and Health” that , “there can be no doubt that all

⁵⁰ Punishments were prescribed by Kautilya for felling of trees and exploitation of the forest produces. The quantum of punishment for felling of the trees was proportionate to the utility of the trees. For further study refer to : Rama Jois, Seeds of Public Law in Ancient Indian Jurisprudence, 1992, pp.115-116; RP Kangle, The Kautilya Arthashastra Part II, 1972, stanza 17,s.35, ch.17, book 2, Kupyadhyakasha, pp.129-130. Also refer to Max Muller, The Sacred Books of the East, 1965, Vol. XIV, Part II, p.385.

⁵¹ VD Vartak, ‘Sacred Groves- A Sanctuary for Lofty Trees and Lianas’, in Eco-development of West of Western Ghats, Kerala Forest Research Institute, 1986, p.55, at p.58.

⁵² Subhir K Bhatnagar, ‘Sanitary Environment: The Constitution and Judicial Approaches’, in Paras Diwan, *Environment Protection : Problems, Policy Administrative Law, 1987, p.447.*

⁵³ (2009)3 SCC 571 at p.617; Also refer to Nature Lovers Movement V State of Kerala, (2009)5 SCC 373.

human beings are entitled to breathe clean air”. By virtue of their birth as a human being, this cardinal right is enjoyed.

David Boyd, the UN Human Rights Special Rapporteur had explicated:

“The failure to respect, protect and fulfil the right to breathe clean air is inflicting a terrible toll on people all across the world. The statistics presented in the present report depict a public health catastrophe, yet the numbers fail to capture the magnitude of human suffering involved. Each premature death, every illness and every disability afflicts an individual with hopes, dreams and loved ones. Air pollution is a preventable problem. The solutions – laws, standards, policies, programmes, investments and technologies – are known. Implementing these solutions will of course entail large investments, but the benefits of fulfilling the right to breathe clean air for all of humanity are incalculable.”

He pointed out that “People cannot avoid inhaling whatever contaminants are present in the air inside their homes or in their communities” and failure on the part of these nations to ensure clean air to an individual constituted a slur, breach of their fundamental right to a pollution free healthy environment, which these nations are legally obligated through international treaties, constitution and enactments.

Constitutional Foundation

In fact this right is inoculated by incorporating as one of the facet and dimension of the right to freedom of life in most of the Constitutions through informal method⁵⁴ of amendment of the Constitution⁵⁵. The Constitutional edifice and basis for this right can be found in Article 13(3)⁵⁶ and Article 141⁵⁷, Article 142⁵⁸ read with 144⁵⁹ of the Indian Constitution.

⁵⁴ The process of sluggish metamorphosis through informal methods of amending the constitution can be envisaged by referring to the Conventions, Customary practices, Constitutional usages and the judicial pronouncements in the pertinent field of controversy and law wherein we can find the growth and modification in the constitutional provisions through extensive and elaborative interpretation without any modification to the original constitutional verbatim, text and phraseology.

⁵⁵ It is pertinent to refer to the opinion expressed by the former judge of the Supreme Court Kuldip Singh, J, who was instrumental in the setting up of separate benches for environmental issues and because of whose undaunted efforts through judgements, Green Benches for adjudicating and disposing environmental cases were established.

⁵⁶ “Article 13(3) reads, In this article, unless the context otherwise requires law includes any Ordinance, order, bye law, rule, regulation, notification, custom or usages having in the territory of India the force of law; laws in force includes laws passed or made by Legislature or other competent authority in the territory of India before the commencement of this Constitution and not previously repealed, notwithstanding that any such law or any part thereof may not be then in operation either at all or in particular areas”.

⁵⁷ “Article 141 reads, The declared by the Supreme Court shall be binding upon all the courts except the Supreme Court itself.”

⁵⁸ “Art 142 reads, Enforcement of decrees and orders of Supreme Court and unless as to discovery, etc (1) The Supreme Court in the exercise of its jurisdiction may pass such decree or make such order as is necessary for doing complete justice in any cause or matter pending before it, and any decree so passed or orders so made shall be enforceable throughout the territory of India in such manner as may be prescribed by or under any law made by Parliament and, until provision in that behalf is so made, in such manner as the President may by order prescribe.”

⁵⁹ “Article 144 reads, all authorities civil and judicial, in the territory of India shall act in aid of the Supreme Court. ... Non-compliance of any directions of the Supreme Court by any civil or judicial authority may invite contempt of court proceedings and punishment.”

Article 48-A⁶⁰ of the Indian Constitution was added as a Directive Principle of State Policy under Part IV, by bringing the 42nd Constitutional Amendment Act, 1976, imposed an obligation upon the State to protect the Environment. A significant Fundamental Duty was also added imposing a duty upon every citizen to protect the environment, under Article 51-A(g)⁶¹ under Part IV-A under the same amendment to the Constitution. Further the Parliament can legislate on State subjects under certain circumstances, when it involves and concerns the national interest⁶², or when a proclamation of emergency⁶³ is made or with the consent of two or more States⁶⁴ in their common interest.

The right to breathe pollution free air is guaranteed as one of the facet of Article 21⁶⁵ of the Indian Constitution through broader judicial interpretation and now has become the part and parcel of Article 21 of the Constitution through informal method of amendment to the Constitution and hence is made enforceable.

⁶⁰ “Article 48-A reads, The State shall endeavor to protect and improve the environment and to safeguard the forest and wildlife of the Country”.

⁶¹ “Article 51-A(g) reads, Every citizen has fundamental “duty to protect and improve the natural environment including the forests, lakes, rivers and wildlife and to have compassion for living creatures.”

⁶² Article 249 of the Indian Constitution speaks about the ‘Power of Parliament to legislate with respect to a matter in the State List in the national interest’ - (1) Notwithstanding anything in the foregoing provisions of this Chapter, if the Council of States has declared by resolution supported by not less than two thirds of the members present and voting that it is necessary or expedient in national interest that Parliament should make laws with respect to any matter enumerated in the State List specified in the resolution, it shall be lawful for Parliament to make laws for the whole or any part of the territory of India with respect to that matter while the resolution remains in force.

(2) A resolution passed under clause (1) shall remain in force for such period not exceeding one year as may be specified therein: Provided that, if and so often as a resolution approving the continuance in force of any such resolution is passed in the manner provided in clause (1), such resolution shall continue in force for a further period of one year from the date on which under this clause it would otherwise have ceased to be in force

(3) A law made by Parliament which Parliament would not but for the passing of a resolution under clause (1) have been competent to make shall, to the extent of the incompetency, cease to have effect on the expiration of a period of six months after the resolution has ceased to be in force, except as respects things done or omitted to be done before the expiration of the said period.

⁶³ Article 250 of the Indian Constitution speaks about- ‘Power of Parliament to legislate with respect to any matter in the State List if a Proclamation of Emergency is in operation’-

(1) Notwithstanding anything in this Chapter, Parliament shall, while a Proclamation of Emergency is in operation, have, power to make laws for the whole or any part of the territory of India with respect to any of the matters enumerated in the State List

(2) A law made by Parliament which Parliament would not but for the issue of a Proclamation of Emergency have been competent to make shall, to the extent of the incompetency, cease to have effect on the expiration of a period of six months after the Proclamation has ceased to operate, except as respects things done or omitted to be done before the expiration of the said period

⁶⁴ Article 252 of the Indian Constitution speaks about- ‘Power of Parliament to legislate for two or more States by consent and adoption of such legislation by any other State’

(1) If it appears to the Legislatures of two or more States to be desirable that any of the matters with respect to which Parliament has no power to make laws for the States except as provided in Articles 249 and 250 should be regulated in such States by Parliament by law, and if resolutions to that effect are passed by all the House of the Legislatures of those States, it shall be lawful for Parliament to pass an Act for regulating that matter accordingly, and any Act so passed shall apply to such States and to any other State by which it is adopted afterwards by resolution passed in that behalf by the House or, where there are two Houses, by each of the Houses of the Legislature of that State

(2) Any Act so passed by Parliament may be amended or repealed by an Act of Parliament passed or adopted in like manner but shall not, as respects any State to which it applies, be amended or repealed by an Act of the Legislature of that State

⁶⁵ “Article 21 reads, No person shall be deprived of his right to life and personal liberty except under a procedure established by law.”

As rightly observed by the former Judge of Indian Supreme Court, Kuldeep Singh, J.,

“We are of the view that there is no distinction between the ‘Constitutional law’ and an established ‘Constitutional Convention’ and both are binding in the field of their operation. Once it is established to the satisfaction of the Court that a particular convention exists and is operating then the convention becomes a part of the constitutional law of the land and can be enforced in the like manner.”⁶⁶

Apart from these derived sources of this right, there are several commendable enactments⁶⁷ enacted by the legislature of the respective States in consonance with their Constitution and the various protocols, international treaties, agreements and declarations. As an environment scruples, these laws have provided for reprehensive and reprisal measures in order to safeguard and enforce this right. As a ramification, these laws are binding upon everyone uniformly and universally.

In *Subhash Kumar vs. State. of Bihar*⁶⁸ the Supreme Court held that right to life guaranteed under Art. 21 of the Constitution includes the right to fullest enjoyment of life with pollution free water and air. If anything endangers or impairs that quality of life in derogation of laws, a citizen has a remedy to take recourse under Art.32 of the Constitution for abating or eliminating the pollution of water or air which may be detrimental to life.

The problem of Environment is not the concern of one nation and it cannot be seen from the nuance or niche of national concern as the problems relating to environment have grown beyond the national dimension to the international dimensions, sans political boundaries, accepting the bioregional and the eco-boundaries⁶⁹. The problem of Air pollution is also one of the major aspect relating to environment and can take place in several nuances like due to a Catastrophe⁷⁰ whether arising out negligence⁷¹ or a natural calamity⁷². Some of the blatant instances of such pollution being smoke, dust arising out of and

⁶⁶ “*Supreme Court Advocates on Record Association vs Union of India*, AIR 1994 SC at p.405”

⁶⁷ In compliance with this directive, the Indian Parliament has enacted the The Air Act- Air (Prevention & Control Of Pollution) Act, 1981

⁶⁸ (1991) 1 SCC 598,

⁶⁹ For further reading refer to Patricia M Mische, ‘Ecological Security and the Need to Conceptualise Sovereignty’, Alternatives, Vol. XIV, p. 389, at pp 391-393.

⁷⁰ Many catastrophes have occurred in India in the past few decades like the Bhopal gas Tragedy(Methyl Isocyanides Gas Leakage case), Sriram Foods and Fertilizers cases (Oleum Gas Leakage case), Chernobyl nuclear accident etc., to name a few.

⁷¹ The recent catastrophe is that which has affected the people residing in the vicinity of LG polymers in the outskirts of Vishakhapatnam during the corona pandemic lockdown period wherein due to the leakage and emission of the gases from the chemical plant, people have died due to suffocation or asphyxia. The corona pandemic and the lockdown have added to the catastrophe and have aggravated the perils of the people in the precincts.

⁷² Natural calamity include earthquakes, floods and one such natural calamity is the Fukushima Daiichi nuclear disaster, 2011 which has devoured the lives of many people. The poisonous gases released from the nuclear plant were inhaled by many people, resulting in bodily infirmity and mental infirmity and has also affected the next generation offspring in several ways . In fact some of the future generation progeny are born with bodily infirmity and mental retard.

emanating from the vehicles⁷³, industries⁷⁴ or through smoking⁷⁵. In fact the Supreme Court has in several cases enunciated several principles and guidelines for curbing and controlling the air pollution and contamination. There are also instances where the environmental perpetrators have fought long skirmishes in vein only to get defeated or loose, for ascertaining, safeguarding and protecting their rights guaranteed through various human rights documents. In fact the wrong doers or the perpetrators in environmental issues had no dispute with the other party(ies) whose right(s) are getting violated, it's for the other party to get a favourable order in their favour from the court of competent jurisdiction. The courts, be it Indian or foreign, have given precedence and primacy to the environment over the individual human right and in many cases the court have directed the perpetrators to either abate the pollution or have directed the owners/ proprietors of the industries/factories to be nestled or shift their activities to the outskirts of the city⁷⁶.

In *Andhra Pradesh Pollution Control Board v. M.V Nayudu*, (1999(2) SCC 718) , Hon'ble Justice M. Jagannatha Rao has positioned the human rights issues and environmental problems on the same pedestal and held without any hesitation that both human rights and environmental rights derive their strength from Article 21 of the Constitution of India.

He further made an observation that –

“Environmental concerns arising in this Court under Article 32 or Article 136 or Article 226 in the High Courts are, in our view, of equal importance as Human Rights concerns. Both are to be traced to Article 21 which deals with the fundamental right to life and liberty. While environmental aspects concern life, human rights aspects concern liberty. In our view, in the context of emerging jurisprudence relating to environmental matters, - as it is the case in matters relating to human rights, this Court must render Justice by considering all aspects”.

⁷³ “M.C. Mehta v. Union of India (1991) AIR SC 813 (Vehicular Pollution Case); (1992) Supp. (2) SCC 85; (1992) Supp. (2) SCC 86; (1992) 3 SCC 25”.

⁷⁴ The fight against the large gamut of small and large Pharmaceutical Industries polluting the air in the vicinity of Qutbullapur, (Bachupally, Nizampet, Miyapur, Kukatpally, Kompally) in the State of Telangana, releasing untreated toxic substances and poisonous gases flouting the Statutory regulations, has shown serious implications on the residents residing within the precincts and vicinity, posing treat to their health and life.

⁷⁵ “In *K. Ramakrishnan v. State of Kerala* [AIR 1999 Kerala 385] the court held that smoking in public places causes positive nuisance. Further in *Murli S. Deora v. Union of India*, 2001 Supp(4) SCR 650 the Apex court while taking cognizance of passive smoking, recognized that a gullible person's right to life is in susceptible state when such person is subjected to passive smoking and is made a victim of smoker's act.”

⁷⁶ “M.C. Mehta V Union of India (Taj Trapezium case), (1997) 2 SCC 353; M.C. Mehta V Union of India (Closing down of hazardous industries and thermal power plants and for regulation of pollution caused by Automobiles in Delhi) , (2017) 7 SCC 243; *Indian Council For Enviro-Legal Action V Union Of India And Ors.* (woes of people living in the vicinity of chemical industrial plants), 1996 AIR 1446; *Trail Smelter Arbitration* (*United States v. Canada*), *Arbitral Trib.*, 3 U.N. Rep. Int'l Arb. Awards 1905 (1941); etc., to cite a few.”

In *Arjun Gopal vs Union Of India*⁷⁷. a petition was filed for banning of fire crackers on diwali on the pretext that it causes air/smoke pollution. The court while taking note of the deleterious impact of the pollution caused by crackers on the health of the people, specifically the children, held that ‘the right to health coupled with the right to breathe clean air’ undoubtedly should be protected. The court further held that air pollution should be eliminated by all possible means and one of the method for prohibiting the bursting of firework crackers implicitly would be by suspending the license for the sale of fireworks.

The various customary law principles like precautionary principle, sustainable development, intergenerational equity principle , polluter pay principle , public trust doctrine coined by the Indian supreme court relating to the environment is the result of the provisions of the Stockholm declaration, 1972 and the subsequent Rio Declaration,1982 (Earth summit)⁷⁸.

In furtherance of the principles laid down in the Stockholm declaration, the Indian Parliament in exercise of the power conferred under Article 246 of Seventh schedule of the Indian Constitution had enacted the enabling enactment ‘Air (Prevention & Control of Pollution) Act, 1981’ (The Air Act, 1981, in short) to curb and control air pollution .

Further in view of the then prevailing Covid pandemic situation, the recent stubble burning issue in the States of Uttar Pradesh, Haryana and Punjab has been taken up in the constitutional courts, the Delhi High Court and the Supreme Court in the month of September, 2020. The petitioners in their petition have submitted that “right to breath clean air” is a fundamental right enshrined under Article 21 of the Constitution and it is the duty of the State or the Central Government to protect this sacrosanct right of the citizens.⁷⁹ The Court made an observation that stubble burning in the month of October/November comprises approximately 40% of the pollution, but for the remaining period, it was noted that several other factors were responsible for causing pollution which include:- 1. Construction and demolition activities; 2. Open dumping of waste/ garbage; 3. Unpaved roads/ pits; 4. Road dust; 5. Garbage burning; 6. Traffic congestion. The following issues factors responsible for pollution were considered and the Court recommended the following mechanisms relying upon a Status Report submitted in the form of an affidavit filed on 16.12.2019 by the Ministry of Environment, Forest and Climatic Change viz., a) Smog Towers; b) AntiSmog Guns; c) OxyFurnace; d) Nanotechnology; e) Chemical Methods; f) Monitoring Technologies i.

⁷⁷ 2018 SCC Online SC 2118

⁷⁸ “Document of Stockholm Declaration Also see: Rio Declaration, Agenda 21, Chapter 8 - Integrating Environment and Development in Decision Making (adopted at the United Nations Conference on Environment and Development, 1992)”

⁷⁹ M.C. Mehta V Union of India, AIRONLINE 2020 SC 27, (2020) 2 SCALE 63

Wireless Sensor Networks ii. Laser Methods iii. Spectroscopic Monitoring Techniques.⁸⁰

For this sake the court has directed the States to use antismog guns in Delhi and NCR region for the following purposes : (a) Large construction sites; (b) Road construction stretches, particularly during earthwork and compacting; c) Mining activities; (d) Large parking sites on unpaved areas and during large public gatherings; (e) Demolition activities; (f) Sprinkling on dustprone traffic corridors.⁸¹

The matter had gone to the apex court in the form of a PIL filed by two students through their advocate Mr. Nikhil Jain, under Article 32 of the Indian Constitution. On the ground that the stubble burning affects the respiratory system of human beings resulting in a weak immune system. Another petition was filed before the Delhi High Court. A Division bench of the Delhi High Court comprising of chief Justice D.N Patel and Justice Prateek Jalan acting on the petition has issued notices to the Centre, central pollution control board and the neighboring states. Earlier a Supreme Court mandated Pollution Control Board had directed the Punjab and Haryana Government to implement measures to reduce stubble burning on priority urgent basis.

A plea in the form of a *Public Interest Litigation* (PIL) has been filed in the Supreme Court seeking direction to the Centre for faster adoption of electric vehicles (EVs, in short)⁸² to safeguard the citizen's fundamental rights to "breathe, health, and clean environment". The court comprising of Division Bench, Chief Justice Ranjan Gogoi and Justice Sanjiv Khanna, though were at the outset were reluctant to consider the plea on the pretext that it pertained to the policies of the Government and it cannot interfere with policy decisions and matters, later sought the Centre's response to the PIL within four weeks while taking note of the averments/submissions made by Senior Advocate Prashant Bhushan who appeared and represented the NGO's Viz., Centre for Public Interest Litigation, Common Cause, Sita Ram Jindal Foundation.

International Perspective

As per the Guidelines set forth by the World Health Organization (WHO, in Short), not every country other than the wealthy, can afford the rising cost of air purifiers.

The International Day of Clean Air for Blue Skies, marked annually on September 7th since 2020, underscores the widespread pollution

⁸⁰ *Ibid*

⁸¹ *ibid*

⁸² "Comprehensive National Electric Mobility Mission Plan, 2020 (NEMMP-2020) of the Ministry of Heavy Industries was devised in 2015 to promote and incentivize electric vehicles."

predicament and its devastating impact on global health, economy, and climate. The theme "The Air We Share" highlights the collective responsibility for clean air. The discussion segues into the causes of air pollution, spanning emissions from fossil fuels, transportation, household practices, and agricultural activities. The dire consequences of household air pollution, especially for women and children, are underscored. International efforts gain prominence as air pollution's transboundary nature becomes apparent, emphasising the right to a clean environment.

Establishing the International Day of Clean Air for Blue Skies in 2019 as an initiative of the United Nations Environment Programme (UNEP) demonstrates growing global interest in combating air pollution. Reflections on previous observances reveal the evolving themes of the day, from "Clean Air for All" to "Healthy Air, Healthy Planet," celebrating victories such as eliminating leaded petrol usage. The narrative continues with a spotlight on effective strategies for addressing air pollution, including transitioning to renewable energy, adopting cleaner cooking fuels, embracing electric vehicles, rethinking food systems, and curtailing waste and burning.

The Climate and Clean Air Coalition's collaborative endeavours are crucial to tackling short-lived climate pollutants and enhancing air quality. The article culminates with the Clean Air Accelerator, a coalition of cities pledging action against air pollution. This alliance aims to establish reduction targets, implement policies, and confront primary pollution sources within specified timeframes.

There are many such catastrophes globally which were not exhumed, but have taken place. The survivors of these catastrophes envied for the dead. The problem of air pollution has no longer remained a Intra-State or inter-State problem but has become a universal problem with global concern. Where so ever the problem be nestled, whether a State accedes to the requests or demands of another State, or whether a State is a party to the agreement⁸³ or convention, it will be held liable. Hence whether a Nation adopts the global environmental principles into its municipal law or not, the Nation will be held liable for causing Air Pollution. Hence it can said that right to Pollution free air is a basic human right which has outstretched its tentacles or contours from the field of Municipal law to the field of International law.

Clean air and water are both vital to human health and well-being. In the year 2010, the United Nations General Assembly passed a revolutionary

⁸³ Art 253 of the Indian Constitution speaks about- 'Legislation for giving effect to international agreements' - Notwithstanding anything in the foregoing provisions of this Chapter, Parliament has power to make any law for the whole or any part of the territory of India for implementing any treaty, agreement or convention with any other country or countries or any decision made at any international conference, association or other body

resolution, recognizing this right to access to clean water as a indispensable human right. An attempt and genuine progress is made to provide clean water to tens of millions of people every year.⁸⁴ Astonishingly, till date, no analogous UN resolution on the right to breathe clean air or the right to live in a pollution free clean air and healthy environment has ever been passed. Definitely it's high time that appropriate measures are taken and a suitable resolution is passed.

The Human Rights Council in its recent report has set forth seven key steps⁸⁵ to be taken by the States in-order to fulfill their legal obligation to protect the human rights of an individual from air pollution.⁸⁶ There is indisputable evidence that concrete strong laws, scrupulously imbibed and followed principles and policies, coupled with huge investments in clean technologies have made incredible variation. The transformation desired to lessen air pollution is time and again is exactly the same transformation that is needed to reduce the greenhouse gas emissions causing climatic alteration. Relying upon the right- based approach; the susceptible person presently suffering from the nastiest air quality should be the primary beneficiary. There is no time or room left for vacillate or to debate and reiterated that clean air is a basic human right and an imperative obligatory policy objective and cannot be considered as a discretionary. While referring to the 2017 review he accentuated and pointed out that more than 80 countries didn't have any air quality standards or guidelines and even those nations which have incorporated the WHO guidelines into their air quality standards have not adopted all the guidelines.

On the concluding day of the three-day Global Conference on air pollution and health organized by the World Health Organization (WHO, in short), the Director-General of WHO, Tedros Adhanom Ghebreyesus, held that the every human is entitled to breathe clean air⁸⁷.

⁸⁴ “UNICEF and World Health Organization Joint Monitoring Programme. Progress on household drinking water, sanitation and hygiene 2000–2017.

2019. <https://washdata.org/sites/default/files/documents/reports/2019-07/jmp-2019-wash-households.pdf>.”

⁸⁵ “Read the press release from the UN High Commissioner for Human Rights: Air pollution: The silent killer that claims 7 million lives each year.

The seven key steps to be taken for protecting the basic human right of an individual from air pollution include:-

establishing air quality monitoring networks;

quantifying the main sources of air pollution;

engaging and informing the public;

enacting strong laws, regulations, and air quality standards;

developing a national air quality action plan to achieve the standards and if necessary at regional and local level too;

allocating adequate resources to implement the plan; and

evaluating progress to determine if there is any necessity for stronger actions.”

⁸⁶ “Report of the Special Rapporteur on the human rights obligations related to the enjoyment of a safe, clean, healthy and sustainable environment. 2019. UN Document A/HRC/40/55.”

⁸⁷ Reported on 2nd November 2018

The Same view was reiterated and an insinuation was sent by the UN Human Rights Representative David Boyd at the 40th meeting of the Human Rights Council held at Geneva⁸⁸ while presenting his report and concomitantly reminding the legal obligation of the nations towards securing and ensuring a safe, clean, healthy and sustainable environment to their citizens. The UN's Special Rapporteur remarked in his report the "complete absence or weakness of national air quality standards in many States" and held that it is a indication for a "a widespread failure to fulfill this fundamental human right obligation, with devastating impacts" on child health globally. The report also reflects the link with a wide range of human diseases and impairments, sense of the magnitude of the problem, its cross-sectional nature, the availability of viable solutions and the human health and economic cases for action for clean air. Through his report he has drawn the attention of the Council to pathetic conditions of more than six billion people- one third of them children and as to how they have become victims of Air Pollution. He further stated in his report that, "Surely if there is a human right to clean water, there must be a human right to clean air. Both are essential to life, health, dignity and well-being." The UN Environment Report also emphasized, that though there is a noteworthy augmentation in the enactment and agencies since 1970 to safeguard the ecology, a extensive paucity of enforcement has also contributed to an inadequate response in diminishing of air pollution. The pandemic situation has added peril to this calamity as this epidemic lament and receives inadequate attention to the torment in the form of lung cancer, respiratory disorders etc., and to the endurance and turmoil⁸⁹.

Recommendations and Conclusion

Hence it can be concluded in unison that, there is a need for according protection to this basic human rights, namely, 'The right to pollution free air and health' and in the form of a concrete enforcement mechanism for dealing with the air pollution infractions by giving supremacy and paramountcy to this basic human right and the health of each and every human being. There is a need to embed and incorporate the relevant provisions relating to air pollution into the municipal law. Every nation should make provisions relating to air pollution in their Constitution and if necessary suitable legislations should be enacted to tackle the problems pertaining to air pollution. For the sake of legislating a suitable legislation, the relevant resolutions, recommendations, suggestions, opinions, international treaties

⁸⁸ "The 40th meeting of the Boyd recommended that the General Assembly- which has adopted many resolutions on the right to clean water- adopt a resolution on the right to clean air, which he believes could help spur and guide action. Human Rights Council was held at Geneva. on 6th March 2019."

⁸⁹ "People in some parts of India, especially some areas of Delhi, have developed breathing problem and are impelled to buy oxygen cylindered for their survival. Due to the outbreak of the present pandemic, there is a scarcity of oxygen cylinders and people are constrained to buy oxygen cylinders rather relying upon the natural air and oxygen."

and agreements, declarations, conventions and the various protocols of international bodies and environmental enforcement agencies should be perused and considered. Liability and punishment must be fixed and awarded upon the perpetrator under the relevant provisions of the law taking into consideration the nature and gravity of infraction pertaining to air pollution.

The right to free air though recognised and enforced under the municipal law through judicial enunciations and pronouncements, must be more firmly rooted through legislations and attempts should be made to deracinate measures to initiate and taken more stringent action against perpetrators meddling with environment. The Indian and foreign courts and the adjudicating bodies have coined several doctrines and principles to tackle with air pollution and have fixed liability for the infractions upon the wrongdoers.

Albeit, there is no express provision in the Constitution guaranteeing 'right to free air' as basic human right, the Indian courts have recognised Right to pollution free air and health as a fundamental right guaranteed implicitly under Article 21 of the Constitution, Through it is not practically possible to completely mitigate and annihilate air pollution, taking into consideration the sustainable development goals of the nation, it is the need of the hour to take remedial measures to protect this basic human right by deprecating air pollution and polluters and reducing the quantum and percentage of air pollution in the universe.

Sustainability for Future Generations: With Special Reference to Right to Healthy Environment

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Abstract

Sustainable development is integral part of the human life for both the present and the future generations, in all of its three forms—social, economic, and environmental as well as the preservation of the environment, including ecosystems, support and enhance human well-being and the enjoyment of human rights. According to the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change, ‘it is undeniable that human actions have impacted the planet resulting in the warming of the atmosphere, ocean, and land’. Environment and human rights are inextricably linked: enjoying human rights requires a safe, clean, healthy, and sustainable environment, whereas surroundings that are hazardous, filthy, or otherwise unhealthy may infringe upon our rights. One of the fundamental human rights acknowledged by the world community is the right to live in a healthy environment; on the other hand, humans are the main causes of ill environments, or vice versa. The most urgent and significant challenges to the ability of current and future generations to enjoy human rights are environmental degradation, climate change, and sustainable development. This paper aims to examine the existing international framework and States’ obligation in implementation of international law at domestic level.

Keywords: Sustainability, Future Generations, Human Rights, Environmental Degradation, and Healthy Environment.

Introduction

“The Earth provides enough to satisfy every man’s need but not, but not every man’s greed”

----- Mahatma Gandhi

From the Stone Age to the Satellite Age, people rely on the environment for every moment in their lives for their personal benefit. In all progressive stages, human beings use and cause harm to the environment, which in turn offers a great threat or jeopardize to human life. However, states realized about their activities and expressed their grave concern about environmental protection and societal development in the name of ‘sustainability’ with an aim to save succeeding generations from the scourge of environmental pollution. An integrated strategy that balances economic growth with

environmental considerations is necessary for sustainable development. All three of its manifestations—social, economic, and environmental—as well as the maintenance of the environment, which includes ecosystems, are essential to the enjoyment of human rights and the well-being of current and future generations. Maintaining sustainability is essential for future generations. Ensuring a healthy world for future generations is the responsibility of the current generation. The term "sustainability" was first defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" in the 1987 Brundtland report "Our common future" by the World Commission on Environment and Development.

Global Undertaking for Sustainability:

Indeed, if not an absolute component of the notion of sustainable development, are the constraints placed on environmental resources by the current level of social organization and technology, as well as the limitations placed on the biosphere's capacity to absorb the impacts of human activities. However, there are ways to govern and advance technology and social structure to create new opportunities for economic expansion.⁹⁰ In order to implement the recommendations presented in the report, the Brundtland report recommended that the UN create the UN Program of Action on Sustainable Development. The United Nations Commission on Sustainable Development was eventually established as a result of the RIO Summit in 1992, which was made possible by the Report.⁹¹ The 1992 UN Conference on Environment and Development in Rio de Janeiro brought to light the interdependence and mutual evolution of various social, economic, and environmental aspects as well as the necessity of taking action in other sectors in order to sustain success in one area over time. The principal aim of the Rio 'Earth Summit' was to formulate a comprehensive agenda and a novel framework for global action on environmental and development concerns, which would aid in directing international collaboration and development strategies in the twenty-first century. The 'Earth Summit' determined that, whether at the local, national, regional, or international level, sustainable development was an achievable objective for all people on the planet. It also acknowledged that an integrated strategy is feasible and that addressing our needs while integrating and balancing economic, social, and environmental concerns is essential to maintaining human life on Earth. The conference acknowledged the need for fresh perspectives on how we produce and consume, live and work, and make

⁹⁰ 'Our Common Future', A Report of the World Commission on Environment and Development: Our Common Future, to the United Nations General Assembly in 1987.

⁹¹ The United Nations Commission on Sustainable Development(CSD) was established by the UN General Assembly in in December 1992 to ensure effective follow –up of the United Nations Conference on Environment and Development, also known as the Earth Summit.

decisions in order to integrate and balance the economic, social, and environmental components. This idea was groundbreaking for its day and generated a spirited discussion about how to guarantee sustainability for growth both inside governments and between governments and their constituents.

The Rio Declaration on Environment and Development and its 27 universal principles, the United Nations Framework Convention on Climate Change (UNFCCC), the Convention on Biological Diversity, Agenda 21⁹², and the Declaration on the principles of forest management are outstanding accomplishments of the "Earth Summit." The 'Earth Summit' also resulted in the establishment of the Commission for Sustainable Development, a high-level body tasked with overseeing the World Summit on Sustainable Development's follow-up and tracking the advancement of globally agreed-upon development targets.⁹³

Right To Healthy Environment:

A healthy environment, which includes clean air, water, and land, is essential to human life and wellbeing. Extensive technological advancement poses a severe risk to sustainability and is also a major contributor to pollution and environmental deterioration, which poses a considerable risk to human health by raising the risk of cancer, respiratory disorders, and other diseases. Social injustices are frequently exacerbated and new ones are created when minority communities are disproportionately affected by environmental deterioration. Important functions that healthy ecosystems provide include carbon sequestration, water filtering, and pollination. These functions are essential to human existence and economic activity. The right to a healthy environment is acknowledged as one of each person's fundamental human rights in the following international accords and declarations.

- Everyone has the right to a level of living sufficient for their own and their family's health and well-being, according to Article 25 of the 1948 Universal Declaration of Human Rights...
- Everyone has the right to the best possible state of physical, mental, and social well-being, which is known as health according to Art.10 of the International Covenant on Civil and Political Rights (ICCPR), 1966.

⁹² It is a comprehensive plan of action to be taken globally, nationally and locally by organizations of the United Nations System, Governments, and Major Groups in every area in which human impacts on the environment.

⁹³ <https://www.un.org/en/conferences/environment/rio1992>, site vst. On10-09-2024.

- States Parties to the International Covenant on Economic, Social and Cultural Rights (ICESCR), 1966 acknowledge that everyone has the right to the best possible level of physical and mental well-being.
- The first principle of the Stockholm Declaration, 1972 asserts that every individual has the inherent right to freedom, equality, and suitable living conditions within a setting that upholds their dignity and well-being. The national and regional recognition of the right to a healthy environment was sparked by the Stockholm Declaration.
- The right to a healthy and productive environment is acknowledged as a fundamental human right in Principle 1 of the Rio Declaration on Environment and Development, 1992.
- The Paris Agreement, 2015 acknowledges that addressing climate change is crucial in order to guarantee a healthy environment for both current and future generations.

In contrast to the more conventional approach of environmental regulation, which concentrates on effects to other States or the environment itself, the right to a healthy environment employs a human rights approach to protect environmental quality. This approach addresses the impact of environmental harm upon individual humans. "It is undeniable that human actions have impacted the planet resulting in the warming of the atmosphere, ocean, and land," states the Intergovernmental Panel on Climate Change (IPCC), the United Nations (UN) agency responsible for evaluating the science connected to climate change. Human rights and the environment are intricately intertwined. While it is necessary to enjoy our rights in a safe, clean, healthy, and sustainable environment, our rights may be violated by dangerous, unclean, or otherwise harmful circumstances.⁹⁴ The right to a healthy environment is not a new concept. It is part of Indigenous legal systems. This right has been vehemently recognised by the Human Rights Council in 2021,⁹⁵ by the General Assembly in 2022, and over 150 United Nations Member States through their constitutional provisions as well as substantial legislations.⁹⁶ In order to guarantee that the right to a healthy environment is one of the fundamental human rights that applies to everyone and has become a widely recognized customary rule of law, numerous global environmental agreements and sustainable development frameworks combine environmental protection with human rights.

⁹⁴ <https://www.ipcc.ch/2022/02/28/pr-wgii-ar6/>, site vst. On 10-09-2024

⁹⁵ The UN Human Rights Council adopted Resolution 48/13 on October 8, 2021, recognizing the right to a healthy environment as a human right.

⁹⁶ on 28 July 2022, the United Nations General Assembly adopted resolution 76/300 recognizing the human right to a clean, healthy and sustainable environment, UN_CommonNarrative_Upholding-Human-Right-to-Healthy-Environment_2022.28.11.pdf.

Human rights and the environment are linked, as acknowledged by a number of environmental and sustainable development frameworks and agreements, such as the 2030 Agenda, the Just Transition Guidelines, the Glasgow Climate Pact, Scotland in 2021, the draft post-2020 global biodiversity framework, the Kunming Declaration 2021, the post-2020 chemicals and waste framework, and more. These documents addressed how pollution, climate change, and the loss of nature and biodiversity threaten every nation's capacity to achieve human well-being and sustainable, people –centered development.

States are required to protect future generations and address climate change "on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities," according to the 1992 UN Framework Convention on Climate Change (UNFCCC). All individuals are impacted by climate change, but the poor, children, and future generations are the most impacted because they have made the least contribution to greenhouse gas emissions. For climate action to be equitable, developing nations, indigenous peoples, vulnerable populations, and future generations must all gain from efforts to reduce the effects of climate change and adapt to them. A clean environment guarantees the fundamental right to a healthy environment, which is of the utmost importance to the current era and the generations to come.

India's Commitment towards International Obligations:

India's adherence to sustainable development is reinforced by its global responsibilities and pledges. India is committed in preserving the values of environmental stewardship, biodiversity protection, and climate action on a worldwide scale as a signatory to numerous international treaties and agreements, such as the UNFCCC and the Convention on Biological Diversity. India wants to contribute to international efforts to address global concerns by increasing the effect of its sustainable development initiatives through partnerships, knowledge sharing, and cooperative action.

The Wild Life (Protection) Act of 1972, the Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Environmental (Protection) Act 1986, the Public Liability Insurance Act 1991, the Biological Diversity Act of 2002 (BD Act), and the National Green Tribunal Act 2010 are among the significant laws that the Indian Parliament has enacted in order to fulfill its international obligation to promote environmental protection and sustainability. The Energy Conservation Act of 2001 was modified in 2022 to give the Central Government the authority to establish a carbon credit trading program. In order to guarantee access to and encourage the use of green energy, the Electricity (Promoting Renewable Energy Through Green Energy Open Access) Rules 2022 were created in

accordance with the authority granted by the Electricity Act 2003. The National Solar Mission, the National Mission for Enhanced Energy Efficiency, the National Mission for a Green India, and the National Mission on Strategic Knowledge for Climate Change are just a few of the numerous initiatives that the government's executive branch has carried out throughout the years.

Judicial Activism in Environmental Protection As Well As Right To Life:

The right to life is recognized on a global scale as a fundamental right that encompasses a suitable environment for each person's health. The Indian judiciary's rulings are especially important in determining how to preserve the environment for human well-being in the context of such global events. The Supreme Court of India has consistently emphasized the need to protect human rights from environmental contamination from the landmark decision in *Ratlam Municipality v. Vardhichandi*⁹⁷ by Hon'ble Justice V.R. Krishna Iyer to the recent decision in

*M K Rajnitsinh and Ors. v. Union of India and Ors*⁹⁸ by Dr. Dhananjaya Y Chandrachud.

The Apex Court established the Public Trust Doctrine⁹⁹, the Polluter Pay Principle¹⁰⁰, and the Precautionary and Sustainable Development Principle¹⁰¹, among other environmental protection principles, to ensure the individual protections guaranteed by the Indian Constitution and enshrined under various international covenants with regards to India's fulfillment of its international obligations to protect environment keeping in view of the human rights protection.

The Supreme Court in *M.C. Mehta v. Kamal Nath*,¹⁰² ruled that Articles 48A¹⁰³ and 51A (g)¹⁰⁴ of the Indian Constitution have to be read in the context of Article 21. Any disruption to the elements of the basic environment—soil, water, and air—that are essential to "life" would be dangerous to "life" as defined by Article 21 of the Constitution.

This Court acknowledged that environmental, ecological, air, water, pollution, etc. should be considered violations of Article 21 in *Virender Gaur v. State of Haryana*.¹⁰⁵ Thus, having a clean and hygienic environment is essential to have the right to a healthy existence, and further emphasized that living in

⁹⁷ 1980 AIR 1622.

⁹⁸ https://main.sci.gov.in/supremecourt/2019/20754/20754_2019_1_25_51677_Judgement_21-Mar-2024.pdf. site vst. on 02 -09-24.

⁹⁹ *Mehta v. Kamal Nath and Others* [(1997) 1 SCC 388].

¹⁰⁰ *Indian Council of Enviro-Legal Action vs Union of India*, 1996 AIR 1446.

¹⁰¹ *Vellore Citizens' Welfare Forum v Union of India*, 1996 AIR 2715.

¹⁰² (2000) 6 SCC 213.

¹⁰³ The State shall endeavor to protect and improve the environment and to safeguard the forests and wild life of the country.

¹⁰⁴ To protect and improve the natural environment including forests, lakes, rivers and wild life, and to have compassion for living creatures.

¹⁰⁵ (1995) 2 SCC 577.

human dignity would be impossible without both. Because of this, environmental protection is now a major priority for human survival. Climate change was acknowledged as a "major threat" to the environment by this court in the case of *Bombay Dyeing & Mfg. Co. Ltd. v. Bombay Environmental Action Group*.¹⁰⁶

Although earlier rulings identified the connection in between the right to a clean environment and essential rights such as equality, health, and life, however in *M K Rajnitsinh and Ors. v. Union of India and Ors* case¹⁰⁷, the Supreme Court specifically addresses the negative impact of climate change on these rights. The Court drew attention to the lack of clear language addressing people's right to be protected from the effects of climate change, citing the close connection between this right and the more general right to a clean environment. There is an increasing need to distinguish this as a separate right recognized by Articles 14 and 21 of the Constitution as climate change worsens. According to Article 21, a variety of climate-related factors, such as pollution, rising temperatures, droughts, crop failures, storms, and natural disasters, exacerbate inequality and disproportionately harm marginalized groups. These factors also violate the right to health, which is essential to life. In this case, panel of three judges - Chief Justice DY Chandrachud, J B Pardiwala, and J. Manoj Misra, has made a significant ruling that will bolster the country's efforts to combat climate change. The facts of the cases were that a writ petition was filed in the Supreme Court of India, requesting that it exercise its jurisdiction and issue the necessary order to protect two endangered birds i.e, Great Indian Bustard (GIB) and Lesser Florican. This petition pertained to the April 19, 2021, ruling of the Supreme Court, which directed that a significant portion of the land not be utilized for overhead transmission lines, mandated a one-year conversion to underground power lines, and established a committee to assess the viability of constructing high-voltage underground power lines.

In order to fulfill their commitments under the 2015 Paris Agreement, under the United Nations Framework Conventions on Climate Change, the Ministry of Environment, Forests, and Climate Change, the Ministry of Power, and the Ministry of New and Renewable Energy (collectively, "MNRE") requested a modification of the judgment dated April 19, 2021. They claimed that the implementation of the said judgment would have a negative impact on the power sector and India's international commitment to energy transition. The two main concerns in this case were:

¹⁰⁶ (2006) 3 SCC 434.

¹⁰⁷ https://main.sci.gov.in/supremecourt/2019/20754/20754_2019_1_25_51677_Judgement_21-Mar-2024.pdf. site vst. on 02 -09-24

(1) Changing the guidelines set forth in the previous ruling from April 19, 2019; and

(2) Striking a balance between India's commitments in reducing climate change by justly switching from fossil fuels to renewable energy sources while protecting the Great Indian Bustard. The Apex Court examined the threats to Great Indian Bustards and the steps the Indian government has taken to address them, including the 2016 launch of the "Habitat Improvement and Conservation breeding of Great Indian Bustard" program and other initiatives. The Court also spoke about the effects of climate change and India's pledges and initiatives to mitigate it. Promoting renewable energy sources has been found to be essential for advancing social equity because it guarantees that all societal segments have access to affordable, clean energy, which in turn promotes inclusive growth and development across the country. The Court emphasized that protecting the natural world and showing compassion for all living things is a fundamental duty of citizens under Article 51 A(g)¹⁰⁸ and the State's obligation under Article 48 A¹⁰⁹ of the Indian Constitution.

The court observed that India has several urgent short-term issues that directly affect people's right to a healthy environment, especially those who belong to marginalized and indigenous communities, such as those who live in forests. Many people's lack of access to a steady supply of power not only impedes economic growth but also disproportionately impacts communities, particularly those headed by women and low-income households, thus escalating inequality. Thus, the idea that every person has the right to live in a clean, safe, and environment that promotes their well-being is embodied in the right to a healthy environment. States are forced to prioritize environmental protection and sustainable development by acknowledging the rights to a healthy environment and to be free from the negative effects of climate change. This allows them to address the underlying causes of climate change and protect the welfare of both current and future generations.

Further, the Court also observed that there are only 400 kV¹¹⁰ subsurface electrical transmission cables available. There are more joints in these wires and thereby the risk to safety rises in proportion to the number of joints, particularly for farmers whose land the cables are buried. There will also be more power plant outages. AC power is not efficiently transmitted via underground lines. These cables have a five-fold increase in transmission loss.

¹⁰⁸ to value, protect and improve the natural environment including forests, lakes, rivers, and wildlife, and to have compassion for living creatures.

¹⁰⁹ To protect and improve the environment and to safeguard the forests and wildlife of the country.

¹¹⁰ One of the strongest electrical installations in the entire power system is the double-circuit 400 kV(kilovolt) power transmission line, which creates a high magnetic field at a frequency of 50 Hz(Hertz).

Numerous sensitive species may experience environmental problems as a result of underground cables. Strong electric and magnetic fields produced by high-voltage transmission lines can have an impact on people, cars, plants, animals, fences, and pipes. They could also ignite additional wildfires. In addition, the Court took note of international committee's joint statement made before UN Office of the High Commissioner which emphasized that "State parties have obligations, including extra-territorial obligations, to respect, protect, and fulfil all human rights of all peoples. States may be in violation of their human rights responsibilities if they fail to take action to stop foreseeable harm to human rights caused by climate change or to control activities that contribute to such harm"¹¹¹, and international rulings such as the 2017 advisory opinion of the Inter-American Court of Human Rights (IACtHR) reaffirming the right to a healthy environment as a basic human right. The IACtHR¹¹² emphasized that the right to a healthy environment is a fundamental human right, that states have an obligation to ensure that their actions do not impact the enjoyment of these fundamental rights, and that environmental degradation, including the negative effects of climate change, affects the enjoyment of this fundamental human right and others.

With reference to the above findings, the Supreme Court ruled that people's fundamental rights to a clean environment and to be free from the negative effects of climate change should be recognized under the Constitution's Articles 14 and 21. This case is not only establishes a precedent for future climate-related litigation and policy development, but it also affirms citizens' rights in the face of climate change issues, opening the door for a more sustainable and rights-centric approach to environmental governance. The right to life, personal integrity, health, water, and housing are just a few of the rights domains that can be affected by violations of the right to a healthy environment. Procedural rights including the right to information, expression, association, and participation can also be affected. Due to their gender roles and duties, such as the amount of time they spend on household tasks and unpaid caregiving, women and girls are disproportionately affected by unequal energy access, the court stated. In this case, the Apex Court emphasized the significance of solar electricity in mitigating the negative effects of climate change. Hence, the Supreme Court decided that a "*safe*

¹¹¹ UN Office of the High Commissioner, Five UN human rights treaty bodies (the Committee on the Elimination of Discrimination Against Women, the Committee on Economic, Social, and Cultural Rights, the Committee on the Protection of the Rights of All Migrant Workers and Members of Their Families, the Committee on the Rights of the Child, and the Committee on the Rights of Persons with Disabilities) issue a joint statement on human rights and climate change, 16 September 2019. <https://www.ohchr.org/en/statements/2019/09/five-un-human-rights-treaty-bodies-issue-joint-statement-human-rights-and>, site vst. On 1-09-24.

¹¹² Inter-American Court of Human Rights Advisory Opinion (OC-23/17).

and healthy environment free from the negative consequences of climate change is a fundamental human right."

The Way Forward:

India's environmental legislation is still in its very early stages, with separate laws pertaining to each aspect of the environment. Despite official policies, rules, and regulations acknowledging the negative impacts of climate change and trying to mitigate them, there is a need for comprehensive legislation pertaining to climate issues in India. The recent environmental issues such as sea levels rising, continued rainfall, floods, and the unpredictability of weather conditions have severely affected individuals in their day-to-day life activities such as health, food, housing, occupations, jobs, etc. Nevertheless, the various legislative measures and the state's initiatives are not enough to combat environmental challenges. Apart from administrative strategies, civil societies and individuals are also responsible for taking immediate steps to protect the environment. To achieve sustainable development and protect fundamental human rights, the following **5 P's** suggestions shall be implemented at the national, state, and local levels.

Firstly, **prevent** environmental deprivation by encouraging communities to take up certain imminent measures, especially to protect soil, water, and air.

Secondly, **protect and preserve** natural resources for the succeeding generations. By way of encouraging solar radiation energy, wind energy, tidal energy, biomass energy, and geothermal energy.

Thirdly, **promote and produce** awareness amongst civilians' on green consumerism through universities', educational institutions', civil societies, etc., by way of encouraging them to buy products and services that are less harmful to the environment.

Fourthly, establishment of a **permanent three-tier infrastructure** to continuously check for sustainable development in collaboration with non-governmental organizations and civil societies.

Fifthly, **Pledge for sustainable development** is nothing but a self-discipline program, which shall be encouraged by every society, institutions, organizations, universities, etc., through their various agendas. As Barack Obama said that "**we are the First generation to feel the impact of climate change and the last generation to that can do something**".

Emergence of Infrastructure Development and Impact on Environment: Balancing Strategies

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Abstract

Infrastructure is critical for growth. Infrastructure impacts nearly every facet of human life, from the water we consume to our daily commutes. A country with sound infrastructure can easily become a developed country. Infrastructure is the backbone of any economy. It could influence the natural environment, either positively or negatively. With the growing global population, increasing urbanization, and rising demands for services from emerging middle classes in developing nations, the demand for infrastructure is rapidly increasing. It provides services that enable society to function and economies to develop, from transportation infrastructure to power generation facilities and water and sanitation networks. Infrastructure is now at the centre of efforts to achieve the Sustainable Development Goals (SDGs). Balancing the emergence of infrastructure development with environmental preservation necessitates the use of deliberate and strategic strategies. Strategic planning, such as completing comprehensive environmental impact studies and engaging in stakeholder engagements, ensures that potential environmental problems are identified and addressed early in the development process. It also including conducting thorough environmental impact assessments and engaging in stakeholder consultations, ensures that potential environmental impacts are identified and addressed early in the development process. Implementing conservation measures, such as protecting critical habitats and restoring affected areas, can further mitigate negative effects. By prioritizing these balancing strategies, it is possible to advance infrastructure development while safeguarding the environment for future generations. This paper aims to explain the significance of development of infrastructure facilities to achieve the millennium development goals and on the other hand impact on environment, balancing strategies, and judiciary role thereon.

Keywords: *Environment Protection, Infrastructure Development, Infrastructure Projects. Nation progress, Protection of Environment.*

Do you know!

Weaving sarees is one of the main occupations of the Saguna villagers, Baraddamam, West Bengal. Earlier the weavers used to carry the sarees on their cycle to the nearby local market and sell them. Sushanto Banik (Weaver) also was no such exception. He would sell the sarees in Shantipur and Phulia and his wife would weave them. Many times, he complained that the sarees would get spoilt, especially during the raining season. But he did not have any

other option than carrying them on his bicycle. After the upgradation of the PMGSY¹¹³ road from Bagachra to Sreerampur, he carries the sarees in a van. Four villagers have pooled in money and bought a small van to carry sarees to the market. He comes home early and thus has time to weave himself. Now the husband and wife weave the sarees together. Shushanto goes twice a week to the Phulia bazar to sell the sarees. He says that he can devote many more hours on weaving. Earlier much of his time was spent on travel. He makes more sarees and thus gets more money. The road has helped the weavers in more ways than one. With connectivity, the travel time to the markets has also reduced. The time spent on collecting the raw materials for making sarees has thus decreased considerably¹¹⁴. Connectivity of PMGSY roads has helped in increasing the average household income of Shushanto and other beneficiaries.

Introduction

Infrastructure is the foundation upon which modern society is built, influencing nearly every aspect of daily life, from the roads we travel on to the energy powering our homes. The development of robust infrastructure is essential for economic growth and the well-being of a nation's population. Countries with strong infrastructure networks often experience higher standards of living, increased global competitiveness, and enhanced social development. Transportation systems, power generation facilities, water and sanitation services, and communication networks all form critical components of a functioning economy, enabling the smooth operation of industries, the facilitation of trade, and the delivery of essential services. As such, infrastructure is often seen as a key driver of development and a core element of national progress.

The demand for infrastructure development is particularly pressing in developing nations, where rapid urbanization, population growth, and the rise of emerging middle classes create an increasing need for enhanced services. In countries like India, China, and Brazil, expanding infrastructure is vital to meeting the demands of burgeoning populations and supporting economic aspirations. Infrastructure not only plays a pivotal role in urban centers but also in rural areas, where improved access to roads, electricity, and clean water can drastically improve the quality of life and economic opportunities for underserved communities. For many developing nations, the development of infrastructure is viewed as a pathway to achieving sustainable development goals, fostering economic resilience, and reducing poverty.

¹¹³ Pradhan Mantri Gram Sadak Yojana

¹¹⁴ Case Study of The PMGSY Road Project and Weaving Industry in West Bengal

However, the expansion of infrastructure is not without challenges. Large-scale infrastructure projects, while necessary for economic growth, often come with significant environmental costs. The construction of roads, bridges, dams, and power plants can lead to deforestation, biodiversity loss, air and water pollution, and increased carbon emissions. In many cases, these projects also result in the displacement of local communities and the disruption of ecosystems. The environmental consequences of rapid infrastructure growth are becoming increasingly pronounced, especially in regions already vulnerable to climate change¹¹⁵. The need to balance infrastructure development with environmental sustainability has become one of the most pressing issues facing policymakers, developers, and environmentalists alike¹¹⁶.

Achieving this balance requires strategic planning and the implementation of sustainable development practices. Governments, developers, and stakeholders must work together to ensure that infrastructure projects are designed and executed in ways that minimize environmental damage while maximizing economic and social benefits. This involves conducting thorough environmental impact assessments (EIAs), engaging in community consultations, and adopting green technologies and construction practices. Additionally, infrastructure projects should prioritize long-term sustainability, integrating resilience to climate change and natural disasters into their design. By adopting these practices, it is possible to advance infrastructure development without compromising the ecological health of the planet or the well-being of future generations¹¹⁷.

This paper explores the complex relationship between infrastructure development and environmental preservation, highlighting the importance of balancing the two in today's rapidly changing world. It delves into the environmental risks associated with unchecked infrastructure growth, examines strategic approaches to mitigate these risks, and considers the judiciary's role in regulating and enforcing environmentally sustainable practices. Through case studies and examples of successful infrastructure projects, this paper demonstrates how nations can pursue economic growth while safeguarding the environment for future generations. Ultimately, the goal is to show that infrastructure development and environmental

¹¹⁵ Sir Chuni Lal V. Mehta & Sons vs. Century Spinning and Manufacturing Co. AIR 1962 SC 1314

¹¹⁶ Chen, S., Wang, Y., Ni, Z., Zhang, X., & Xia, B. (2020). Benefits of the ecosystem services urban green infrastructures provide Differences between perception and measurements. *Urban Forestry & Urban Greening*, 54, 126774. <https://doi.org/10.1016/j.ufug.2020.126774> accessed On 1.09.2024

¹¹⁷ Sooraram Pratap Reddy and Ors. Vs. District Collector, Ranga Reddy Distt. and Ors. MANU/SC/3817/2008

conservation are not mutually exclusive, but rather, can be harmonized through thoughtful planning and sustainable practices.

Possible causes of social conflict related to the development of large infrastructure projects:

(i) Impact on human development: The denial of basic needs owing to a lack of infrastructure, both in terms of quantity and quality, is a factor behind the potential for social conflict.

(ii) Impact on the environment: The development of new infrastructure, especially mega works, can have a negative impact on the environment by altering ecosystems and the livelihoods of local communities, particularly indigenous or Afro descendent populations, that have deep ties with nature, thus affecting their social reproduction and continuity as a social group. In these cases, a conflict may arise from opposing views on the type of development desired, where the main factor would not be the impact on nature itself, but the competition for resources or the potential impact of works on the economic activities of the local population¹¹⁸.

(iii) Issues relating to employment and the procurement of goods and services: Communities demand that infrastructure companies hire labour and services locally as a means of improving the living standards of local communities.

(iv) Resettlement of communities: Infrastructure projects that are in the State's interest may involve the forced expropriation of land and the resettlement of communities in other locations.

(v) Accelerated industrialization processes in rural societies: Large infrastructure projects can produce accelerated social changes in communities, affecting their socioeconomic conditions as a result of increased living costs, altering production modalities and changing their social systems fundamentally, based on mostly rural relationships.

(vi) Poor infrastructure and land-use planning: New economic realities attract migration flows, which can be a factor behind social tension when public systems, such as health and education, or housing availability, are not properly prepared for a substantial increase in demand for these services¹¹⁹.

Infrastructure development serves as the backbone of a nation's economy and is a key driver of growth, innovation, and improved quality of life. The development of transport networks, power generation systems, and communication frameworks underpins both urbanization and rural development. Countries that boast well-developed infrastructure are more resilient to global economic shocks and are able to provide a higher standard

¹¹⁸ Estache, A., Perrault, J. F., & Savard, L. (2012). The impact of infrastructure spending in SubSaharan Africa: A CGE modeling approach. *Economics Research International*. <https://doi.org/10.1155/2012/875287>

¹¹⁹ Hughes, A. C. (2019). Understanding and minimizing environmental impacts of the Belt and Road Initiative. *Conservation Biology*, 33(4), 883-894. <https://doi.org/10.1111/cobi.13317>

of living for their populations. Yet, as the demand for infrastructure grows, particularly in developing nations, the environmental consequences of large-scale projects are becoming increasingly pronounced. The challenge lies in finding a balance between infrastructure growth and environmental sustainability.

Role of Infrastructure in National Development

Infrastructure is one of the most critical components for a nation's development, serving as the bedrock upon which economies are built. It enables the efficient movement of goods and services, connects people to markets, facilitates communication, and supports the functioning of industries¹²⁰. From highways that link cities and rural areas to power grids that supply energy to homes and factories, infrastructure forms the backbone of both modern economies and everyday life. Without reliable infrastructure, economic activities stagnate, opportunities are limited, and the overall quality of life for citizens diminishes. The construction and maintenance of robust infrastructure, therefore, is essential for fostering national progress, ensuring that countries can meet the needs of their populations while competing on the global stage¹²¹.

For many developing nations, infrastructure development is a top priority, as it provides the necessary framework for sustainable growth. Countries like India and Brazil, for instance, have been investing heavily in infrastructure to address the needs of their growing populations and to spur economic development¹²². Improved roads and railways reduce transportation costs, enabling goods to move more efficiently across regions, while energy projects ensure that businesses and homes have the power needed to function smoothly. These investments also create jobs, both in the construction phase and later, as businesses take advantage of the improved infrastructure to expand their operations. In this way, infrastructure serves as a catalyst for economic growth, fostering innovation, boosting productivity, and increasing the overall wealth of a nation¹²³.

However, the benefits of infrastructure extend beyond economic gains. Infrastructure also has significant social implications, as it directly impacts people's access to basic services like healthcare, education, and clean water. In

¹²⁰ Fernandez, L., & Acheampong, R. (2019). Social impacts of road infrastructure development. *Journal of Social Change*, 31(4), 210-229.

¹²¹ Green, F., et al. (2021). Sustainable road development: Integrating environmental considerations. *International Journal of Sustainable Development*, 17(1), 18–33.

¹²² Perz, S. G., Cabrera, L., Carvalho, L. A., Castillo, J., Chacacanta, R., Cossio, R. E., ... & Costa Silva, A. (2012). Regional integration and local change: road paving, community connectivity, and social–ecological resilience in a tri-national frontier, southwestern Amazonia. *Regional Environmental Change*, 12, 35-53. <https://doi.org/10.1007/s10113-011-0233-x>

¹²³ Smith, J., & Liu, H. (2020). Environmental impacts of road infrastructure: A review. *Environmental Management Journal*, 22(2), 134–145.

many rural areas, poor infrastructure has historically hindered access to critical services. Roads and transportation systems connect remote villages to hospitals and schools, ensuring that people can receive the care and education they need. Similarly, water and sanitation projects reduce the spread of diseases, improve public health outcomes, and elevate the standard of living. These social benefits demonstrate that infrastructure plays a pivotal role not only in supporting economies but also in enhancing the well-being of populations.

Urbanization further amplifies the importance of infrastructure development. As more people migrate to cities in search of better job opportunities and living conditions, the demand for infrastructure grows exponentially. Cities require reliable public transportation systems, housing, and utilities to accommodate their expanding populations. Without these investments, urban areas can become overcrowded, leading to poor living conditions, increased pollution, and strained public services¹²⁴. Proper urban planning and infrastructure investments are, therefore, essential to ensure that cities remain livable, sustainable, and capable of meeting the needs of their residents. Moreover, efficient infrastructure is crucial for industrialization, as it supports the growth of manufacturing sectors and other industries that drive economic development.

Nonetheless, the rapid expansion of infrastructure brings with it several challenges, particularly in terms of environmental sustainability. Large infrastructure projects, while necessary for development, often have significant environmental consequences. Deforestation, habitat destruction, and pollution are common byproducts of such projects¹²⁵. For instance, the construction of highways through rainforests can lead to biodiversity loss and increased carbon emissions, while the building of dams can disrupt ecosystems and displace communities. The environmental costs of infrastructure development are increasingly being recognized as a serious concern, especially as the world faces the growing threat of climate change. Without proper safeguards, the long-term environmental impacts of infrastructure projects could outweigh their immediate economic benefits.

This is where the concept of sustainable infrastructure comes into play. Sustainable infrastructure aims to balance the economic and social benefits of infrastructure development with the need to protect the environment. It

¹²⁴ Thompson, R., & Maguire, D. (2018). The role of road infrastructure in economic development. *Journal of Infrastructure Studies*, 12(3), 45–60.

¹²⁵ Turner, R., Blundell, A., Collins, C., Exeter, O., & Wills, J. (2021). Sustainable development in Cornwall: local perspectives on challenges and opportunities. https://ore.exeter.ac.uk/repository/bitstream/handle/10871/126154/Turner%20et%20a1%202021%20SustainableDevelopmentInCornwall_FullReport.pdf?sequence=1

involves the use of green technologies, renewable energy, and environmentally friendly construction practices that minimize the ecological footprint of infrastructure project¹²⁶s. In addition, comprehensive environmental impact assessments (EIAs) are conducted before the start of major projects to identify potential environmental risks and ensure that they are addressed. By incorporating sustainability into the planning and execution of infrastructure projects, it is possible to advance development while safeguarding natural ecosystems for future generations.

The judiciary also plays a crucial role in regulating infrastructure development and ensuring that it aligns with environmental preservation goals. In many countries, courts have intervened to halt or modify projects that pose significant environmental risks¹²⁷. For example, in India, the Supreme Court has repeatedly ruled in favour of environmental protection, suspending infrastructure projects that threaten protected areas or endangered species. These judicial actions are critical for holding governments and developers accountable for adhering to environmental laws and ensuring that economic development does not come at the expense of ecological integrity.

Infrastructure development is essential for national progress, offering numerous economic and social benefits. However, these benefits must be carefully weighed against the environmental costs associated with large-scale projects. As the global demand for infrastructure continues to grow, it is vital to adopt sustainable practices that ensure infrastructure development can coexist with environmental conservation¹²⁸. Through strategic planning, judicial oversight, and the use of green technologies, countries can achieve the delicate balance between development and sustainability, ensuring that future generations inherit a world that is both prosperous and ecologically sound.

The Environmental Impact of Infrastructure Development:

The environmental costs of infrastructure development have become increasingly significant as nations rush to meet the demands of growing populations, urbanization, and industrialization. Infrastructure projects, while vital for economic and social development, can severely disrupt natural ecosystems and contribute to environmental degradation. Roads, dams, airports, and energy plants are essential for national growth, but their

¹²⁶ Ward, T. (2011). The right to free, prior, and informed consent: Indigenous peoples' participation rights within international law. *Nw. UJ Int'l Hum. Rts.*, pp. 10, 54. <https://heinonline.org/HOL/LandingPage?handle=hein.journals/jihr10&div=8&id=&p age>

¹²⁷ Williams-Subiza, E. A., & Epele, L. B. (2021). Drivers of biodiversity loss in freshwater environments: A bibliometric analysis of the recent literature. *Aquatic Conservation: Marine and Freshwater Ecosystems*, 31(9), 2469-2480. <https://doi.org/10.1002/aqc.3627>

¹²⁸ Wilson, M. C., Li, X. Y., Ma, Y. J., Smith, A. T., & Wu, J. (2017). A review of the economic, social, and environmental impacts of China's South-North Water Transfer Project: A sustainability perspective. *Sustainability*, 9(8), 1489. <https://doi.org/10.3390/su9081489>

construction often comes at the cost of deforestation, habitat destruction, and the displacement of wildlife. As the global community becomes more aware of climate change and biodiversity loss, it is imperative to understand the environmental impact of these projects and explore strategies for mitigating their harmful effects.

One of the most profound environmental consequences of infrastructure development is deforestation and habitat destruction. Large infrastructure projects, such as highways, bridges, and energy plants, often require the clearing of vast tracts of forest. This is particularly concerning in tropical rainforests, which are rich in biodiversity and serve as carbon sinks that mitigate climate change. Projects like the Trans-Amazonian Highway have contributed to deforestation on a massive scale, opening up the previously untouched areas to logging, mining, and agriculture. The loss of forests not only reduces biodiversity but also releases significant amounts of carbon dioxide into the atmosphere, exacerbating climate change. In addition, the destruction of habitats can lead to the extinction of plant and animal species that rely on these ecosystems for survival¹²⁹.

Another critical environmental impact of infrastructure projects is pollution. Construction activities generate considerable amounts of air and water pollution. Dust, emissions from construction machinery, and the burning of fossil fuels during the building phase contribute to air pollution, which has serious health consequences for nearby communities. Water bodies near construction sites are often contaminated with runoff, chemicals, and waste materials. This can harm aquatic life and make the water unsafe for human consumption. The construction of airports, power plants, and industrial facilities also results in long-term pollution, as these facilities continue to emit greenhouse gases and industrial waste even after the construction phase is completed¹³⁰. The cumulative effects of pollution from infrastructure projects contribute significantly to global environmental issues like climate change and ecosystem degradation.

In the context of global warming, climate change is one of the most pressing concerns associated with large-scale infrastructure development. Infrastructure projects that rely on fossil fuels, such as coal-fired power plants, are significant contributors to carbon emissions. Even infrastructure projects that appear environmentally neutral, such as dams, can have a sizable carbon footprint. The flooding of large areas for dam reservoirs results in the

¹²⁹ Olawale, Y. & Sun, M., 2010. Cost and time control of construction projects: inhibiting factors and mitigating measures in practice. *Construction Management and Economics*, 28(5), pp.509-26.

¹³⁰ Muir, B., 2005. Challenges Facing Today's Construction Manager. [Online] Available at: <http://www.ce.udel.edu/courses/CIEG%20486/Challenges%20Facing%20Today's%20CM.pdf> accessed on 25.08.2024

decomposition of vegetation, which releases methane, a potent greenhouse gas. Furthermore, deforestation for infrastructure projects removes trees that would otherwise absorb carbon dioxide. As a result, infrastructure development is a double-edged sword, accelerating climate change while simultaneously being vulnerable to its effects. Rising sea levels, extreme weather events, and shifting climate patterns pose a threat to the very infrastructure we rely on, creating a vicious cycle of environmental degradation¹³¹.

Infrastructure projects also heighten vulnerability to natural disasters. Poorly planned projects, such as dams or coastal developments, can increase the likelihood and severity of natural disasters like floods, landslides, and storms. For instance, the Three Gorges Dam in China, one of the world's largest infrastructure projects, has been criticized for increasing the risk of landslides and altering the natural flow of the Yangtze River. Flooding events and earthquakes have raised concerns about the dam's long-term safety. Climate change, driven by infrastructure development, exacerbates these risks by increasing the frequency and intensity of natural disasters. As global temperatures rise and extreme weather events become more common, infrastructure systems that are not designed to withstand such challenges face the risk of collapse, endangering both human lives and the environment.

Perhaps one of the most significant social impacts of infrastructure development is community displacement. Large infrastructure projects, especially dams, highways, and industrial plants, often require vast amounts of land, leading to the forced relocation of communities, particularly in rural and indigenous areas. The construction of the Sardar Sarovar Dam in India, for example, displaced thousands of people, disrupting their livelihoods and cultural practices. Indigenous communities, who have deep ties to their land, are often disproportionately affected by such projects¹³². Their displacement not only causes economic hardship but also threatens their social and cultural fabric. Protests by indigenous communities in Latin America against infrastructure projects that disrupt their way of life highlight the social tensions that arise from displacement¹³³. The environmental costs of infrastructure development are not limited to ecosystems but also extend to human communities that depend on these landscapes for their survival.

Infrastructure development is essential for national growth, it is critical to consider its far-reaching environmental and social impacts. Deforestation,

¹³¹ Forsman, S., Bystedt, A. & Öhman, M., 2011. Interaction in the construction process—system effects for a joinery products supplier. *Lean Construction Journal*, pp.1-18

¹³² Forsman, S., Bystedt, A. & Öhman, M., 2011. Interaction in the construction process—system effects for a joinery products supplier. *Lean Construction Journal*, pp.1-18

¹³³ Kubba, S., 2010. *Green Construction Project Management and Cost Oversight*. Oxford: Taylor & Francis.

pollution, climate change, vulnerability to natural disasters, and community displacement are just some of the significant costs associated with large-scale infrastructure projects¹³⁴. The challenge moving forward is to develop sustainable infrastructure that meets the needs of growing populations while minimizing harm to the environment and the communities that depend on it. Strategic planning, environmental impact assessments, and the adoption of green technologies are essential to balancing the benefits of infrastructure with its potential to cause environmental and social harm¹³⁵.

Balancing Strategies for Sustainable Development:

Finding a balance between infrastructure development and environmental sustainability is crucial in today's world, where rapid urbanization and industrial growth often come at the expense of natural ecosystems. The challenge lies in meeting the growing needs for roads, energy, and other vital services while ensuring that the environment remains protected for future generations¹³⁶. This balance is achievable through a range of strategic approaches that incorporate both technological advances and community involvement. These strategies not only mitigate the environmental impacts of infrastructure development but also promote long-term sustainability by ensuring that projects are designed and executed with ecological integrity in mind¹³⁷.

One of the most widely used and effective tools for achieving this balance is the Environmental Impact Assessment (EIA). EIAs provide a thorough analysis of the potential environmental impacts of proposed infrastructure projects, ensuring that decision-makers are aware of any negative effects before construction begins. By identifying risks such as habitat destruction, pollution, and resource depletion early in the planning process, EIAs allow for the development of mitigation strategies that can reduce or eliminate these impacts¹³⁸. In many countries, conducting an EIA is a legal requirement for large-scale infrastructure projects, and failure to adequately assess environmental risks can result in delays or project cancellations. Moreover, EIAs encourage developers to consider alternative approaches or designs that may have a lower environmental footprint, making it a critical tool for sustainable development.

¹³⁴ Munier, N., 2012. *Project Management for Environmental, Construction and Manufacturing Engineers*. London: Springer

¹³⁵ Huemann, M., 2010. Considering human resource management when developing a project-oriented company: case study of a telecommunication company. *International Journal of Project Management*, 28(4), pp.361–69

¹³⁶ Erik Daniel Kaeding, *Special Economic Zones: Problems and Solutions*, 2 *GNLU L.REV.* 69 (2009).

¹³⁷ Whitfield, J., 2012. *Conflict in Construction*. New Jersey: John Wiley & Sons.

¹³⁸ Abhijeet Rawat & Udit Narayan, *Land Acquisition Issues in India: Overview, Critique and Pragmatic Suggestions*, 9 *NUALS L.J.* 56 (2015)

Beyond technical assessments, stakeholder engagement is essential for fostering sustainable infrastructure development. Involving local communities, environmental organizations, and governmental bodies in the planning and decision-making process helps ensure that diverse perspectives are considered and that projects are carried out responsibly. Infrastructure projects often affect not only the environment but also the social fabric of communities, particularly when they involve land use changes or displacement¹³⁹. By engaging with stakeholders, developers can address concerns about environmental degradation, displacement, and changes to livelihoods. Meaningful consultation also helps build trust between developers and communities, reducing the potential for conflict and increasing the likelihood of successful project completion¹⁴⁰.

Incorporating green infrastructure is another key strategy for balancing development with environmental preservation. Green infrastructure refers to the integration of natural processes and eco-friendly designs into infrastructure projects, reducing their environmental impact while delivering the necessary services¹⁴¹. Examples include the development of renewable energy sources like solar and wind farms, which provide essential energy without the carbon emissions associated with fossil fuels. Additionally, urban planners are increasingly adopting green infrastructure solutions, such as permeable pavements, green roofs, and urban forests, which help manage stormwater, reduce heat islands, and improve air quality. By focusing on environmentally friendly designs, governments and developers can create infrastructure that supports both human needs and ecological sustainability.

In cases where infrastructure projects inevitably disrupt natural habitats, habitat restoration and conservation efforts can play a significant role in offsetting the damage. Restoration projects can help to repair ecosystems that are disturbed during construction, ensuring that biodiversity is protected and ecosystems continue to provide essential services such as carbon sequestration, water purification, and soil stabilization. Reforestation efforts, for example, can replace trees lost during the construction of roads or energy facilities, while wetland restoration projects can recreate crucial habitats for aquatic species. Countries like Costa Rica have demonstrated the effectiveness of these approaches, successfully balancing infrastructure development with environmental restoration, particularly through large-scale reforestation programs that have restored critical ecosystems.

¹³⁹ A. Aggarwal, *Special Economic Zones: Revisiting the policy debate*, 41 EPW 4533,(2006)

¹⁴⁰ Arjun Bhagi & Pranshu Chopra, *The New Land Acquisition Act: Analyzing the Act, th 2014 Amending Ordinance and the Act's Impact on the Indian Infrastructure Sector*, 5 GNLU J.L. DEV. & POL. 27 (2015).

¹⁴¹ MoCI, *Special Economic Zones in India*, Available at: <http://sezindia.nic.in/cms/introduction.php> accessed on 10.09.2024

Technological innovations also provide new opportunities to reduce the environmental impact of infrastructure projects. Advances in construction materials and methods are enabling the development of more sustainable infrastructure. For instance, low-carbon concrete and recyclable building materials can significantly reduce the carbon footprint of new construction. Smart cities are another example of how technology can be harnessed to create more sustainable infrastructure. By using data-driven systems for managing energy, water, transportation, and waste, smart cities can optimize resource use and minimize waste, creating more efficient and environmentally friendly urban environments. These technological advances show that sustainable infrastructure is not only possible but also economically viable, as they often result in long-term cost savings through improved efficiency¹⁴².

Balancing infrastructure development with environmental sustainability is not only essential for protecting the planet but also for ensuring that future generations can enjoy the benefits of economic growth without suffering the consequences of ecological degradation¹⁴³. Through the use of Environmental Impact Assessments, stakeholder engagement, green infrastructure, habitat restoration, and technological innovation, it is possible to create infrastructure that meets the needs of society while safeguarding the environment. As the global demand for infrastructure continues to grow, these strategies will be increasingly important for ensuring that development is sustainable, and that the natural world is preserved for future generations¹⁴⁴.

Judiciary's Role in Environmental Preservation:

The judiciary plays a pivotal role in safeguarding the environment by ensuring that infrastructure development adheres to national and international environmental laws and standards. As infrastructure projects continue to grow in scale and impact, courts have become central figures in the balancing act between development and conservation¹⁴⁵. Their role goes beyond merely interpreting existing laws; courts often make landmark rulings that set legal precedents, shaping the future of infrastructure development. By enforcing environmental regulations and ensuring that governments and corporations remain accountable, the judiciary acts as a critical check on unchecked growth, which could otherwise lead to irreversible environmental damage.

In recent decades, there have been numerous judicial precedents that highlight the courts' ability to intervene in infrastructure projects that threaten

¹⁴² Priya S. Gupta, *The Peculiar Circumstances of Eminent Domain in India*, 49 *Osgoode Hall L.J.* 455 (2012).

¹⁴³ Maitreesh Ghatak, *Land Acquisition and Compensation: What Really Happened in Singur?* 48 *EPW* 32, (2013).

¹⁴⁴ McCarthy, J., 2010. *Construction Project Management: A Managerial Approach*. Westchester: Pareto.

¹⁴⁵ *NHAI v. Sayedabad Tea Estate*, 2019 SCC ONLINE SC 1102

ecosystems. A notable example is the Supreme Court of India's 2013 ruling, which halted the construction of a highway passing through the protected tiger reserves of Madhya Pradesh. This decision was significant not only because it protected a critical wildlife habitat, but also because it set a precedent for future projects involving protected areas. Similar rulings around the world have emphasized the judiciary's role in preserving endangered species, forests, and marine ecosystems¹⁴⁶. These decisions often become legal benchmarks that developers and governments must consider when planning new infrastructure, compelling them to integrate environmental safeguards from the outset¹⁴⁷.

One of the judiciary's key responsibilities is to ensure that environmental laws and regulations are respected in the planning and execution of infrastructure projects. In countries like the United States, the National Environmental Policy Act (NEPA) requires that all major infrastructure projects undergo environmental assessments to identify potential negative impacts before construction can begin. Similarly, India's Environmental Protection Act (EPA) mandates that infrastructure projects meet specific environmental criteria¹⁴⁸. Courts play an active role in interpreting these laws, often stepping in when there are violations or when assessments are not properly conducted. By enforcing these regulations, the judiciary ensures that projects minimize harm to the environment and adhere to legal standards designed to protect natural resources.

In many countries, the judiciary has also been instrumental in promoting the enforcement of the Sustainable Development Goals (SDGs), which have been integrated into national legal frameworks¹⁴⁹. The SDGs emphasize sustainable infrastructure as a key component of global development, advocating for projects that promote economic growth while minimizing environmental harm. Courts have increasingly used these international commitments to hold governments accountable for ensuring that infrastructure development aligns with these broader goals. For instance, when courts evaluate infrastructure projects in the context of the SDGs, they often emphasize long-term sustainability over short-term economic gains, pushing developers to adopt more environmentally conscious approaches. By aligning rulings with the SDGs, the judiciary ensures that infrastructure projects contribute to environmental preservation and social equity.

¹⁴⁶ Sears, S.K., Sears, G.A. & Clough, R.H., 2010. *Construction Project Management*. New Jersey: John Wiley & Sons.

¹⁴⁷ *Sudarsan Trading Co. v. Government of Kerala And Anr.*, AIR 1989 SC 890

¹⁴⁸ Olawale, Y. & Sun, M., 2010. Cost and time control of construction projects: inhibiting factors and mitigating measures in practice. *Construction Management and Economics*, 28(5), pp.509-26.

¹⁴⁹ Kubba, S., 2010. *Green Construction Project Management and Cost Oversight*. Oxford: Taylor & Francis.

Moreover, judicial intervention often brings attention to public interest litigation (PIL), where citizens and environmental groups challenge infrastructure projects that pose significant environmental risks. PIL has become a powerful tool in many countries, empowering communities to hold governments and corporations accountable for environmentally harmful projects. Courts, through PIL, serve as mediators between development and community concerns, ensuring that public voices are heard in decisions that directly impact the environment¹⁵⁰. This not only democratizes infrastructure development but also ensures that projects do not disproportionately affect marginalized communities or fragile ecosystems. Courts, by upholding PIL cases, help create a legal framework where environmental preservation becomes an integral part of infrastructure planning¹⁵¹.

The judiciary is a powerful force in shaping the future of infrastructure development, ensuring that environmental protection remains a priority even in the face of growing development pressures. By enforcing environmental laws, setting precedents through landmark rulings, and promoting sustainable development goals, courts act as guardians of ecological integrity. Their rulings not only prevent irreversible damage to the environment but also promote a future where infrastructure development can coexist with the preservation of natural resources. In an era of increasing environmental awareness, the judiciary's role in enforcing sustainable practices in infrastructure projects will only become more critical.

Conclusion:

The global push for infrastructure development is driven by the need to support growing populations, increase economic opportunities, and enhance living standards, particularly in developing nations. Roads, energy plants, sanitation systems, and other infrastructure projects are vital for fostering economic growth and addressing inequalities. However, as the pace of development accelerates, so too do the environmental challenges. Infrastructure projects can lead to deforestation, pollution, biodiversity loss, and displacement of communities if not carefully planned and managed. Recognizing these environmental costs is crucial for creating sustainable development strategies that prioritize both economic and ecological well-being.

One of the most effective ways to address these challenges is through strategic planning that incorporates environmental impact assessments (EIAs). By

¹⁵⁰ Shen, L., Tam, V.W.Y., Tam, L. & Ji, Y., 2010. Project feasibility study: the key to successful implementation of sustainable and socially responsible construction management practice. *Journal of Cleaner Production*, 18(3), pp.254–59

¹⁵¹ Scott, W.R., Raymond, E. & Levitt, J., 2011. *Global Projects: Institutional and Political Challenges*. Cambridge: Cambridge University Press.

assessing the potential environmental risks of infrastructure projects before they begin, governments and developers can take steps to minimize negative effects. These assessments allow for the early identification of problems, enabling mitigation measures such as habitat restoration, pollution control, and the use of renewable energy sources. Alongside environmental assessments, stakeholder involvement plays a critical role in ensuring that infrastructure projects are developed in a manner that respects the needs and concerns of local communities. By including community input, projects are more likely to succeed in balancing economic growth with environmental sustainability.

In addition to proactive planning and stakeholder engagement, the judiciary plays a vital role in holding governments and developers accountable for environmental standards. Courts worldwide have intervened in cases where infrastructure development posed significant risks to ecosystems and local populations. By enforcing environmental laws and regulations, the judiciary ensures that projects align with sustainable development goals. This legal oversight helps prevent environmentally destructive projects from moving forward and encourages the adoption of greener technologies and methods. Through judicial intervention, developers are compelled to prioritize long-term environmental protection over short-term economic gains.

Ultimately, achieving a sustainable future requires a balanced approach to infrastructure development one that integrates green technologies, fosters economic growth, and preserves natural ecosystems. The challenge lies in managing the increasing demand for infrastructure while simultaneously protecting the planet's resources. By leveraging the latest advancements in eco-friendly construction practices, embracing renewable energy, and adhering to stringent environmental standards, infrastructure development can become a force for positive change. With careful planning, legal enforcement, and community engagement, we can create infrastructure that serves humanity's needs without jeopardizing the environment, ensuring a more sustainable world for future generations.

Conflict between Human Development and Environmental Protection - A Lesson from Kerala

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Abstract

Biblically, the evolution of earth originated with the creation of stars, water, land, plants and animals (so-called environment) before humans. Environment, the natural surroundings necessitated the existence of biotic and abiotic organisms and was found to be pre-vital for further progression or evolution. Anthropocentrically, it encompasses the idea that environment is the only one abode of human beings. Since its evolution, humans were directly dependent on environment for their survival and existence. They developed and became much stronger and greedier due their acquisition of knowledge and technology; which in turn triggered the conflict between humans and nature. These conflicts are more predominant in developing countries like India which is overwhelmed by over population and environmental exploitation for development. This tension between the right to growth and right to environment are particularly visible and conspicuous in different parts of India especially the southernmost region of India, the Kerala State. The Kerala State renowned for its scenic beauty, better standards of living and development are facing and suffering environmental surges for the past many years. Increased urbanization, industrialization, tourism - oriented developments, twisted agricultural activities, deforestation and mismanaged projects in Kerala negating alarming reports, judicial warnings and rows from environmentalists had resulted in frequent climate change, floods, landslides, health risks etc. Hence, this paper focuses on the defaulting balance between the human development and necessity of environmental protection borrowing the ongoing environmental disasters in Kerala.

Key Words: Development, Environment, Human, Kerala, Protection

Introduction

Humans are a part of nature. Their relationship is as older as the evolution of the earth. Primarily, man depended on nature for their genuine needs and survival – the air they breathe, the water for their thirst, the food for their hunger, the abode for their shelter and for all. But as humans developed, their needs also progressed far more for greedier ends than for survival. Unsustainable urbanization, industrialization, technological innovations and further more were excavated by man at the cost of nature. In turn, man dominated nature and was detached from it. This domination and exploitation made the environment his enemy, who was once a provider; the aftermath which are seeing today in the form of earthquakes, tsunamis, floods,

landslides etc; which in turn increased the skirmishes between man and environment.

When the conflict between human development, environmental protection and its impacts were analyzed, it was found to be more apparent in developing countries like India. **India** which is known for its historical and cultural heritage, today are **uniquely** obstructed by climate change posed by the challenges of different kinds of pollution, deforestation, loss of biodiversity etc.¹⁵² And all these destructions are the result of the unethical developmental policies and other human activities caused by overpopulation, extreme urbanization, mining and logging. And its impact is now appallingly seen in the southernmost region of India – Kerala, whose name are not recently in the headlines but for the past one decade due to its uncontrollable environmental devastations.

Environmental Scenario in India

India is the most populous country in the world with 1.3 billion, but still far behind in the process of conserving and preserving the environment. Today, our country is perforated with innumerable environmental concerns in the name of development such as air pollution, water pollution, food and water shortages, waste management, biodiversity loss and much more. According to the 2021 World Air Quality Report, India is rated as the 63 of the 100 most polluted cities, with New Delhi being worst air quality in the world. Moreover in 2021, India was ranked among the world's most polluted countries after Bangladesh.¹⁵³ As regards water pollution, it was estimated that 70% of the surface waters has become unfit for human consumption due to illegal dumping of raw sewage and garbage into rivers and lakes strictly contaminating the waters of India. Furthermore, it was reported by the World Bank that water pollution costs the Government of India between US\$6.7 and \$7.7 billion a year.¹⁵⁴ Regarding, waste management, it was founded that 277 million tons of municipal solid waste (MSW) are produced every year. Experts estimate that by 2030, Municipal Solid Waste is likely to reach 387.8 million tones and will more than double the current value by 2050. Apart from these statistics, the Intergovernmental Panel on Climate Change (IPCC) reported that India is the country expected to pay the highest price for the impacts of the climate crisis. In this respect, a NITI Aayog report of ground water stated that “21 Indian cities including Delhi, Bengaluru, Chennai, and

¹⁵² ‘Environmental Issues Concerning India And The World’ (Unacademy) <<https://unacademy.com/content/railway-exam/study-material/current-affairs/environmental-issues-concerning-india-and-the-world/>> accessed 13 September 2024.

¹⁵³ ‘5 Biggest Environmental Issues in India | Earth.Org’ <<https://earth.org/environmental-issues-in-india/>> accessed 13 September 2024.

¹⁵⁴ *ibid.*

Hyderabad - will run out of groundwater by 2020, affecting around 100 million people. It also says that 40 percent of India's population will have no access to drinking water by 2030".¹⁵⁵

Among these environmental issues, the most threatening problem India facing today is the recurring floods and landslides. According to 2018 India Spend Report, primary cause of landslides in India is caused by human intervention. The Report further stated that 18% of global human-induced landslide casualties occur in India.¹⁵⁶ Landslides, caused by heavy rainfall, flooding, erosion, and earthquakes moving rocks, are becoming more of a threat in India as climate change is making monsoon seasons unpredictable and dangerous. Moreover, human activities like imbalanced quarrying, mining, construction works and hydro-power projects results in loosening and removing soil, gravels, and vegetation resulting in lower groundwater preservation capabilities increasing the peril of flooding which in turn leads to landslides when heavy rainfall or earthquakes occur. Examples are numerous – as early as the 1948 Guwahati landslide,¹⁵⁷ to the 1968 Landslide in Darjeeling,¹⁵⁸ the 1998 Landslide Malpa, Uttarakhand¹⁵⁹, Char Dam Road construction process which stimulated the new probable landslide zones in Uttarakhand threatening the Himalayan ecosystem and the recent environmental devastations in the Wayanad District of Kerala, which are undoubtedly human persuaded. According to the National Crime Records Bureau data, 65% of 2019's landslide fatalities happened in either the Himalayas or the Western Ghats.¹⁶⁰

Human Development vis-à-vis Environmental Protection – A Kerala Experience

¹⁵⁵ 'Water_index_report2.Pdf' <https://social.niti.gov.in/uploads/sample/water_index_report2.pdf> accessed 13 September 2024.

¹⁵⁶ Over 2020, landslides severely harmed lives and livelihoods in West Bengal, Meghalaya, Assam, Arunachal Pradesh, and Kerala. Refer -'Most Indian Landslides Are Caused by Humans: Report' <<https://www.theswaddle.com/most-landslides-in-india-are-caused-by-humans>> accessed 13 September 2024.

¹⁵⁷ 'The landslide occurred on September 18, 1948, due to heavy rains. More than 500 people died in the landslide and, according to reports, the landslide buried an entire village'. - Shobhana Ramteke, '51 Publications 481 Citations See Profile (2024) 12.

¹⁵⁸ 'The landslide occurred around 4 October 1968. The landslide was caused by floods and the 60km highway was cut into 91 sections. Thousands of people died in the landslide, according to reports'- ibid

¹⁵⁹ 'Between 11 and 17 August 1998, successive landslides occurred in the village of Malpa, killing over 380 people when the entire village was swept away by the landslide. The landslide is one of the worst landslides in India' -ibid

¹⁶⁰ According to the 2018 Report, which examined the years 2004-2016 and more than 5,000 landslides, India registered the most deaths in the world caused by human-triggered landslides (10,900 deaths across 829 landslides). This made up 18% of the world's landslide casualties over those 12 years. Within this range, India also accounted for maximum mining-triggered landslides worldwide (12% of the total). - 'Most Indian Landslides Are Caused by Humans: Report' <<https://www.theswaddle.com/most-landslides-in-india-are-caused-by-humans>> accessed 13 September 2024.

The Kerala State, better known as the ‘God’s own Country’, the most literate State in India endowed with its unique scenic beauty and cultural-geographical heritage have attracted people to this landscape for centuries. It lies between the Arabian sea in the West and Western Ghats in the East.¹⁶¹ But during the last few years, its name has been known for its extreme floods and landslides breaking the normal, life health and economy of the State. The main causes for these continuing desolations in the State are identified as due to the drastic and unsustainable human development in this region.

Major Environmental challenges:

Pressures on Land:

Scarcity of land is one of the reasons for the environmental degradation in Kerala. Due to this, people migrated to the hilly and forested areas and transformed parts of these areas into agricultural land, causing a severe deterioration in the region under the forests. As a part of this, generally in Kerala, majority of human settlements are seen in ecologically sensitive areas which in turn is obstructing the functions of natural systems, like the wetlands and streams which is creating a negative and direct effect on human life with the environment. It is mostly in the form of landslides sporadically leading to the loss of life and property, minimization of area for the temporary storage of water during the rains leading to flooding or non-storage of adequate water for recharge purposes. These fluctuations have priced costly to human life when there were changes in the pattern of rainfall as part of climate change. These deviations have been shown by the tragic recurring floods and landslides happening in Kerala during the last couple of years.¹⁶²

Another reason for land deterioration is the ongoing extreme urbanization. It is seen that Kerala has been urbanizing at a very high rate and by 2017 it was estimated that more than 50 percent of the people here are living in urban households. The result, this influence of urbanization has been so mixed with environment leading to environmental pressures. On the other side, urbanization has caused in rising population density, including construction of multistoried buildings, sky scrapers leading to increased compressions on land for building construction. Moreover, this augmented population density in these areas without requisite urban services, such as the facilities of public transport, proper solid waste management and waste water supply, all has led towards major urban environmental issues in Kerala.¹⁶³

¹⁶¹KRERA: Kerala real Estate regulatory Authority, ‘Kerala House’ <<https://keralahouse.kerala.gov.in/>> accessed 13 September 2024.

¹⁶²Development and Environment Linkages_ Lessons from Kerala – University Practice Connect’.

¹⁶³ Ibid

Decline of Water Resources

Kerala is a state rich in abundance of pure water which is seen in rivers and open wells. The water quality is worsening due to dumping of solid waste, discharge of trade effluents, domestic sewage and bacteriological pollution. Besides this, ground water contamination has also increased at a high rate and its potential is very low in Kerala. This has resulted in extreme environmental problems such as the drying of wells, intrusion of salt water, lowering of underground water levels etc. In coastal areas, the problem is severe due to the presence of excess salinity, high fluoride, hardness and excess chloride concentration. The use of such contaminated water in turn has affected the health of the people of the area.

Human activities have also induced the demise of river waters in Kerala. Kerala has an abundance of 44 living rivers. Lack of rain, deforestation, indiscriminate mining of sand, encroachment of the banks by unauthorized settlers, wet land filling, construction of dams and barrages, deepening of land along the river banks to manufacture bricks, indiscriminate use of fertilizers and pesticides, pollution caused by the discharge of effluent from industries, civic bodies and domestic wastes, salinity intrusion, soil erosion, siltation and drying up of rivers in the summer season, discharge of hazardous pollutants like phosphates, sulphides, ammonia, fluorides, heavy metals and insecticides by the industries into the river has in effect caused the death of these rivers.¹⁶⁴

Another reason for the degradation of water resources in this region is the unscientific Sandmining. It is caused by the construction of residential and other buildings by indiscriminate mining of sand from rivers. This has pushed the water table down, reduced the water holding capacity. The sand holds water and fills the nearby ponds and lakes by raising the water level. When the sand is removed from the river bed it reduces the availability of water in the wells and canals near the river. Removal of sand has resulted in lowering or sinking of riverbeds which encourage the intrusion of saline water into fresh water, causing serious threats to drinking and irrigation. Indiscriminate sand mining in some rivers systems in the state is posing severe threat to the stability of bridges and banks.¹⁶⁵

Climate Change:

¹⁶⁴ Ismayil P, 'Sustainable Development of Kerala: A Rethinking for the 21st Century| EPRA International Journal of Economic and Business Review(JEBR)Vol - 3, Issue- 4, April 2015' <<https://eprajournals.com/IJES/article/9088/abstract>> accessed 13 September 2024. Pg. 92-93

¹⁶⁵ *ibid*

Climate change is another environmental problem affecting Kerala. The climate of Kerala is tropical monsoon with seasonally excessive rainfall and hot summer.¹⁶⁶ The emissions of greenhouse gases and population pressure are found to be the reasons for these climatic changes which has in turn led to declining of forests. Furthermore, higher density of carbon dioxide in the atmosphere. And methane emissions from various sources are also identified as the key sources of climate change in this region.¹⁶⁷

Loss of Biodiversity:

Biodiversity is the variety of life on earth. It includes the variability of species in terrestrial, aerial and aquatic habitats. It is an essential component of the nature and it ensures *virto* mankind. Biodiversity serves the humans by providing the basic life supporting systems such as clean air, water and fertile soil. The current challenge on our bio diversity is the interference of human beings on environment. Over exploitation of nature and industrialization led by the human beings are threatening the existence of many lives.¹⁶⁸

The pressures and impacts of human involvement and development on the biodiversity has been reflected in the Western Ghats. It is recognized as one of the eight hotspots of biodiversity in India and is a decisive ecological region for both Kerala and Tamil Nadu. It is acknowledged that from 1920 to 2013, the Western Ghats in Kerala experienced the highest forest cover loss, with a 62.7% reduction in forested area. Rapid urbanization, Deforestation, mining, unplanned development and poor planning were identified as the noteworthy factors which were intensifying the climate crisis in India. It is evident that development plans and human interference are not complementing the ecological balance of the mountainous terrain. According to numerous studies and reports, the region of Western Ghats is severely affected by mining and development related projects.¹⁶⁹ In this respect the Indian Space Research Organization (ISRO) in its 2018 Report has observed that unscientific and illegal mining is one of the causes for severe

¹⁶⁶ The entire state is classified as one meteorological sub division for climatologically purposes. The year may be divided into four seasons. The period March to the end of May is the hot season. This is followed by Southwest Monsoon season that continues till the beginning of October. Then North East Monsoon season From October to December, two months January and February are winter season. - *ibid*

¹⁶⁷ *ibid*

¹⁶⁸ The major causes for the loss of bio diversity are the degradation of native agricultural ecosystems, large conversion of agricultural land, introduction of exotic crops, mechanized farming, encroachments, cattle grazing, collection of fire wood, unscientific collection of non-timber forest produce, forest Fires, invasive species and mass tourism. - *ibid*

¹⁶⁹ A total loss of 2500 hectares of Western Ghats' forestlands was estimated to have been due to mining in the period between 1988–1997- TERI, Area environmental quality management (AEQM) plan for the mining belt of Goa, Directorate of Planning Statistics and Evaluation, Government of Goa (1997) – Pooja Chandran, 'Mining in the Western Ghats: Implications and the Demand for Sustainable Management'. Pg.20.

environmental degradation and desertification in this area.¹⁷⁰ It has also been reported that mining poses as a major threat to the fragile ecosystem of the Western Ghats in the wake of the torrential floods that engulfed the State of Kerala in the years 2018 and 2019; and also regard the ecological degradation of the Ghats caused predominantly by uncontrolled mining to be the major causes for the increase in the frequent occurrences and intensity of natural catastrophes.¹⁷¹ An example is the recent horrific and tragic Wayanad landslide which took away more than 250 lives and incurred an 1200 Crores economic loss.¹⁷², the deterioration and loss which has already been predicted by the 2013, Gadgil Report¹⁷³ and 2017 Kasturirangan Report.¹⁷⁴ Post Wayanad incident, there was a high criticism on the State Government on the negation of these reports, Because, years before these upheavals in Kerala, the Gadgil commission and the Kasthurirangan report alarmed the upcoming environmental devastations in western Ghats and made strong recommendations to save and preserve the region, which was ignored unjustifiably.

Highlights of Gadgil Committee Report¹⁷⁵:

1. The Western Ghats Ecology Expert Panel (WGEEP) designated the entire hill range as an Ecologically Sensitive Area (ESA).
2. The panel, in its report, has classified the 142 taluks in the Western Ghats boundary into Ecologically Sensitive Zones (ESZ) 1, 2 and 3.
3. ESZ-1 being of high priority, almost all developmental activities (mining, thermal power plants etc) were restricted in it.

¹⁷⁰ Indian Space Research Organization, Desertification and Land Degradation Atlas of Selected Districts of India, Ministry of Environment, Forest and Climate Change (2018) available at – ‘Desertification_Land_Degradation_Atlas_2018_SAC_ISRO_Vol-1.Pdf’ <https://vedas.sac.gov.in/static/atlas/dsm/Desertification_Land_Degradation_Atlas_2018_SAC_ISRO_Vol-1.pdf> accessed 13 September 2024.

¹⁷¹ Chandran (n 18), Pg.19.

¹⁷² The Hindu Bureau, ‘Loss of ₹1,200 Cr. Incurred in Wayanad Landslides, Kerala Tells HC’ *The Hindu* (16 August 2024) <<https://www.thehindu.com/news/national/kerala/loss-of-1200-cr-incurred-in-wayanad-landslides-kerala-tells-hc/article68533552.ece>> accessed 13 September 2024.

¹⁷³ Gadgil Commission, an environmental research commission is named after its chairman Madhav Gadgil. The commission is formally known as Western Ghats Ecology Expert Panel (WGEEP). The commission submitted the report to the Government of India on 31 August 2011. Lukmaan IAS, ‘Reading Ecology, Reinventing Democracy - The Gadgil Report on the Western Ghats - Lukmaan IAS Editorials’ (*Lukmaan IAS*, 7 January 2023) <<https://blog.lukmaanias.com/2023/01/07/topic-reading-ecology-reinventing-democracy-the-gadgil-report-on-the-western-ghats/>> accessed 13 September 2024.

¹⁷⁴ The Kasturirangan Committee were a High Working Group on Western Ghats set up in August 2010 under the Chairmanship of Kasthurirangan to examine the Gadgil Committee Report.

¹⁷⁵ ‘Gadgil Report and Kasturirangan Report on Western Ghats - Clear IAS’.

4. Gadgil report recommended that “no new dams based on large-scale storage be permitted in Ecologically Sensitive Zone 1. Since both the Athirappilly of Kerala and Gundia of Karnataka hydel project sites fall in Ecologically Sensitive Zone 1, these projects should not be accorded environmental clearance,” it said.
5. Gadgil Committee report specifies that the present system of governance of the environment should be changed. It asked for a bottom to top approach (right from Gram sabhas) rather than a top to bottom approach. It also asked for decentralization and more powers to local authorities.
6. The commission recommended constitution of a Western Ghats Ecology Authority (WGEA), as a statutory authority under the Ministry of Environment and Forests, with the powers under Section 3 of the Environment (Protection) Act, 1986.

Recommendations of Kasturirangan Report¹⁷⁶:

- Instead of the total area of Western Ghats, only 37% (i.e. 60,000 sq. km.) of the total area be brought under ESA under Kasturirangan report.
- A complete ban on mining, quarrying and sand mining in ESA.
- Distinguished between *cultural* (58% occupied in the Western Ghats by it like human settlements, agricultural fields and plantations) and *natural* landscape (90% of it should come under ESA according to the committee).
- Current mining areas in the ESA should be phased out within the next five years, or at the time of expiry of mining lease, whichever is earlier.
- No thermal power be allowed and hydropower projects are allowed only after detailed study.
- Red industries i.e. which are highly polluting be strictly banned in these areas.
- Kasturirangan report on the Western Ghats has made several pro-farmer recommendations, including the exclusion of inhabited regions and plantations from the purview of ecologically sensitive areas (ESAs).
- The Kasturirangan report had said 123 villages fall under the ESA purview.

¹⁷⁶ *ibid.*

Judicial Intercessions

In the conflict between development and environmental protection, the Indian judiciary has always shown appreciable activism in interpreting and raising the consciousness of the need for enforcing Sustainable Development principles through their landmark decisions.

In the case of *Charan Lal Sahu Etc. v. Union of India and Others*,¹⁷⁷ the Supreme Court incorporated the right to a healthy environment ensuring the link between environmental quality and the right to life

In *Subhash Kumar v. the State of Bihar*,¹⁷⁸ the Supreme Court of India interpreted Article 21 of the Indian Constitution holding that the right to pollution-free water and air for full enjoyment of life is a part of the right to healthy environment.

In *M.C. Mehta v. Union of India & Others*,¹⁷⁹ popularly known as the Oleum Gas Leak Case, the Supreme Court adopted the doctrine of “absolute liability” for calamities occurring from the storage or use of hazardous materials from their industries.

Moreover, in *Vellore Citizen Welfare Forum v. Union of India*¹⁸⁰, the honorable Supreme Court interpreted that while businesses are important for a country’s development, the doctrine of sustainable development must be adopted by them as a balancing concept, and the ‘precautionary principle’ and the ‘polluter pays principle’ must also be accepted as part of the law.¹⁸¹

In yet another milestone case, the Supreme Court stated in *M. C. Mehta vs. Kamal Nath*¹⁸² that “any disruption of the basic environment elements, namely air, water, and soul, which are necessary for existence, would be hazardous to life.” As a result, a court exercising jurisdiction under Article 32 can award not only damages but also fines for environmental degradation.¹⁸³

Again in 2019, the Honourable Supreme Court in great concern for environmental protection gave order in a sensational landmark case known as the *‘Marad Apartment Demolition Case’*¹⁸⁴ in which the Court ordered for the demolition of four apartments in the Maradu Municipality of Ernakulam District for violating the Coastal Regulation Zone (CRZ) norms. This order

¹⁷⁷ (1989) Supp. (2) S.C.R., 597

¹⁷⁸ AIR 1991 420

¹⁷⁹ AIR 1987 1086

¹⁸⁰ 1996 5 SCR 1996

¹⁸¹ Sneha Mahawar, ‘Role of Indian Judiciary in Protection of the Environment’ (*iPleaders*, 9 April 2022) <<https://blog.ipleaders.in/role-of-indian-judiciary-in-protection-of-the-environment/>> accessed 13 September 2024.

¹⁸² (1997) 1SCC 388

¹⁸³ Mahawar (n 30).

¹⁸⁴ The Kerala State Coastal Zone v. The State Of Kerala Maradu Municipality, 8 May, 2019, Civil Appeal NOS. 4784 – 4785 of 2019.

was passed by the Court on the basis of the decision in certain earlier significant cases such as the *Piedade Filomena Gonsalves v. State of Goa*¹⁸⁵. Furthermore, in September 2022, the Apex Court dismissed a Public Interest Litigation filed by a non-profit against the Gadgil and Kasthurirangan Report which banned activities like mining, quarrying, thermal power plants.

Conclusion

We the humans depends on the nature for every single minute of our day today life. It's our surroundings, the so-called environment which provides our ecology and aids in its expansion. It provided us with everything for our life and livelihood, for which we considered nature as God. But today, in the name of development for better ends we are destroying our provider, the nature and are making it our enemy. Though after facing the heat of innumerable environmental devastations, we have adopted sustainable development theories through the various International Environmental Conventions, judicial interpretations, plans and projects. But still we are not fully able to survive from these unethical activities created by us. The Kerala Experience is a great instance of this. Now, it is high time to arose, to implement effectively the sustainable theories and fight together by not against the nature, but for the environment sustainability and development; and thereby making again our provider our God and not our enemy.

¹⁸⁵ (2004) 3 SCC 445. In this case, the court explained the significance of CRZ notifications in the interest of protecting environment and ecology in the coastal area and the construction raised in violation of the regulations cannot be lightly condoned.

A study on the Challenges in the implementation of Environmental Impact Assessment

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Abstract

Environmental Impact Assessment can be understood as a technique for evaluating the environmental effect of a planned activity. It's a crucial management technique for ensuring that natural resources are used optimally to achieve sustainable development. Impact evaluations are conducted to evaluate the outcomes of individual projects or for any policies and also for programs carried out on environmental sustainability. During an Environmental Impact Assessment, the interconnected socioeconomic, cultural, and human health aspects are considered. Environmental Impact Assessment originated in the 1970s. Industrialized countries first used Environmental Impact Assessment, but it was gradually adopted by developing countries such as India. This operates as a web-based distributed network of subject-specific databases. The primary goal of environmental impact assessments is to identify, anticipate, and evaluate the economic, environmental, and social consequences of development operations. Providing information on the environmental impacts of decision-making and promoting environmentally sound and suitable development through the identification of appropriate alternatives and mitigation strategies. The process includes several steps for assessment, from screening to scoping a public hearing and appraisal. It comes up with various challenges in the implementation process, like awareness amongst the general public to convince them to move further, lack of expertise in conducting the evaluation, or a possibility of restricted data. This study will provide a clear understanding of the importance of EIA in Environment Protection and sustainability by highlighting the issues and challenges faced during the implementation process. It shall suggest ways to evaluate in a manner that reaches its utmost goal.

Keywords: Environment, Environment Protection, Assessment Process, Challenges, Government Initiatives

Introduction

Like a coin, has two sides. Similarly, the development process has an impact on the environment. Protecting the environment and promoting national growth are not mutually exclusive. Now, we have numerous options for combining these two principles to meet the demands of future generations. EIA is an assessment of a proposed project's positive and negative environmental impacts, taking into account social and economic aspects.

The UN Environment Programme (UNEP) describes an EIA as "an examination, analysis, and assessment of planned activities to ensure environmentally sound and sustainable development." The environmental movement of 1950 and early 1960 laid the groundwork for the creation of the EIA. The United States Congress then passed the National Environment Policy Act (NEPA), which requires them to prepare an environmental impact statement. Then several countries began to create and execute EIAs. In addition, compliance with environmental criteria is now required in order to obtain World Bank financing. For example, the World Bank has chosen to cancel its \$300 million loan for the Amaravati Sustainable Infrastructure and Institutional Development Project in Andhra Pradesh¹⁸⁶. In 1992, the Rio Summit approved the Environmental Impact Assessment as a viable instrument for dealing with environmental issues. In 1978, the river valley project in India underwent an Environmental Impact Assessment. Only later, in 1986, did the Environmental Protection Act take effect. In 1994, the Environmental Impact Assessment was introduced.

The Need for Environmental Impact Assessment

The Environmental Impact Assessment (EIA) is necessary for the following reasons:

Modern society's environmental impact is rapid, extensive, and profound.

- Modern civilizations are individualistic, thus traditional community control must be replaced by legal controls.
- Environmental consciousness and political interests have evolved.

Past civilizations brought forth significant changes, but they happened gradually, giving time to evaluate them. Additionally, the effects of their actions on the environment tended to be restricted and localized. Currently, materials that will last for a very long time can contaminate entire oceans and even the earth's atmosphere. The organization of societies has changed, which is the second alteration. Compared to modern society, ancient civilizations exercised greater social control over their communities. The shifting political priorities that come with wealth and the public's increasing awareness of and discontent with environmental damage are two major changes.

Advantages of Environmental Impact Assessment

¹⁸⁶ Dr. Opangeren Jamir, (2021), India's Environment Impact Assessment Draft 2020: Issues and Challenges, Environment Impact Assessment (EIA) 2020, Manohar Parrikar Institute for Defence Studies and Analyses.

According to the United Nations Environment Program Training Resource Manual¹⁸⁷, the main advantages and benefits of Environmental Impact Assessment are:

- enhanced project planning and site selection with better knowledge, making more ecologically conscious choices
- enhanced transparency and accountability throughout the development process
- enhanced project integration concerning the surrounding environmental and social context
- decreased harm to the environment
- more successful initiatives in terms of achieving their financial and socio-economic goals
- a constructive step toward attaining sustainability.

Indian Scenario of Environmental Impact Assessment

1. Environmental impact assessments, as a national instrument, are required for proposed activities that are likely to have a major negative impact on the environment and are subject to approval by a competent national body. This is stated in Article 17 of the Rio Declaration.
2. The Indian Constitution's Article 51(A)(g) states that we should have compassion for all living things and work to preserve and enhance the natural environment, which includes lakes, rivers, forests, and wildlife.
3. Precautionary principle - The Precautionary principle suggests taking preventive action in the face of uncertainty. That means if an action or policy has a suspected risk of causing harm to the public or the environment and there is no scientific consensus on the matter, the burden of proof falls on those advocating for the action to show that it is not harmful. The Environmental Impact Assessment as an environmental policy tool reflects the precautionary principle in part because it seeks to identify and reduce the uncertainties and negative impacts associated with development.¹⁸⁸
4. The Environmental Impact Assessment is a vital tool for achieving the objectives outlined in the Environmental Protection Act of 1986.
5. Environmental Impact Assessment 2006 Notification and its amendments: Environmental Impact Assessment 2006 Notification was formed as a result of the recommendations made by the

¹⁸⁷ <https://www.herinst.org/envcrisis/eis/background/purpose.html>

¹⁸⁸ Nicolas De Sadeleer (2002) Environmental Principles. From political slogans to legal rules, UP Oxford, ISBN-13,978-0199254743

Govindarajan Committee and the Environmental Management Capacity Building Technical Assistance project of the World Bank.

The salient features of EIA Notification 2006 are:

- A greater quantity of projects falling under the environmental clearance process' jurisdiction
- An attempt to transfer authority to the state government by dividing development projects into two categories: Category B (State Level Appraisal), which is approved by the State Level Expert Appraisal Committee (SEAC) and the State Level Environment Impact Assessment Authority (SEIAA). Category A projects are evaluated by the Impact Assessment Agency (IAA) and the Expert Appraisal Committee (EAC).
- No project classification according to investment.
- The project's size or capacity dictates whether the federal or state governments approve it.
- The requirement to establish a state-level expert panel known as the Environmental Appraisal Committees (SEAC).
- An introduction to "Scoping," which was absent from the previous notice
- Outlining "The Terms of Reference (ToR)" for the project, which have been determined by expert committees
- The ability of expert committees (SEACs and EACs) to meet with experts, visit the site, and conduct public consultations to determine the ToR.
- A clear reference to the evaluation procedure
- The consultation process has been divided into public hearings for local people and submission in writing from other interested parties.
- Reduction in time required for the entire environment clearance process.

6. Environmental Impact Assessment Notification 2020:

The primary ideas of the 2020 draft are reduced time for public hearings, post-clearance compliance, and post-facto clearance. However, due to the numerous errors in this notification, it was kept as a draft. The Ministry of Environment and Forests (MoEF) released a second EIA notification in 2006, focusing on improving investment approvals and execution processes. The committee aimed to attract foreign investment by reducing environmental clearance barriers. The MoEF also conducted a thorough examination of the World Bank's Environmental Management

Technical Capacity Building Project, aiming to re-examine the entire EIA process for sustainable growth.

Measures implemented after 2020 notification

Following the 2020 Notification, various steps were taken by the government to resolve the issues in the existing notification. The Union environment ministry has been making modifications to the 2006 version of India's environmental clearance law in spite of the substantial opposition to the 2020 version and its pending status. The Environmental Ministry released the draft Environmental Impact Assessment (EIA) Notification in 2020 during the COVID-19 shutdown. The lack of regional language versions and popular outrage over the timing of its release into the public domain kept it open for public discussion for over four months, longer than the ministry typically permits. As of May 2021, we have recorded that thirty-three modifications had been made to notifications. Since then, there have been 49 modifications. Since the notice was released, there have been at least 80 changes in total.

The EIA notice is a procedural law that is derived from the Environment Protection Act and Rules of 1986. It outlines a list of actions whose effects on the environment must be evaluated in advance, following a predetermined sequence of processes. The environmental protection regulations were revised by the ministry in March 2020 when it released the draft notice. This also resulted in an extension of the validity period for all notifications issued under the rules, from approximately 1.5 years to two years from the date of publication in the gazette. The draft EIA 2020 should have ended in April of this year, according to this modification. However, the pandemic period was not included in the two-year validity term of a draft notification issued by the environment ministry in June 2021. By doing this, the draft EIA notification's validity was essentially extended to October 11, 2022. Even though there is still a chance that the draft EIA 2020 will become law, the environment ministry hasn't stopped fiddling. Additionally, it has carried on the tradition of minimizing the public's input into laws and policies. This time, the tempo is faster and the changes are more drastic on both fronts.

The more controversial changes made to the draft notification—which, for the most part, were office memorandums have been implemented piecemeal. These changes include eliminating the requirement for previous evaluation or public consultation for some types of activities and permitting post facto environmental clearances. Office memoranda are released without prior public notice, in contrast to draft notifications.

Environmental evaluation is replaced by standard methods.

The environment ministry has been releasing standard operating procedures and clarifications for different dilutions that were previously introduced in June 2021. The processes either cover up additional dilution or provide justification for earlier dilutions. For instance, the ministry permits self-certified compliance reports with an environment clearance no older than six months in its directive outlining the process for project proponents to furnish certified compliance reports to extend current projects. This "good faith" approach makes the assumption that project owners will adhere to the clearance's requirements and uphold their pledges to the public and the environment. The project's backers have a dismal history of environmental compliance, but this hasn't been enough to cause the ministry to lose hope. Our analysis of thirty coal mine expansion projects revealed that environmental approvals were obtained by mining companies even in the face of noncompliant practices. The ministry also eliminated the requirement for approval for ropeway projects, roadways located within 100 km of border areas, and the extension of airport terminals within the current area. The ministry has only recommended that standard operating procedures be adhered to during construction in these situations.

Comparably, the recently released draft Building Construction Environment Management Rules by the ministry shift away from environmental scrutiny and towards standardizing compliance with the requirement that project proponents self-declare their efforts. A dilution for building construction may be in the works, despite the ministry's clear statement that the Rules do not replace approvals or consents required by any other law (see the draft EIA Notification 2020). The notification specifically stated that any construction projects up to 20,000 square meters and "green buildings" up to 150,000 square meters should not require professional environmental appraisals.

A summary and analysis of every office memorandum released during this time frame can be found below:

A new metric for evaluating State Environmental Impact Assessment Agencies (SEIAAs) will be decision-making speed. In essence, SEIAAs evaluate projects' effects on the environment at the state level. Ranking SEIAAs would seem to be a means of evaluating their effectiveness in assessing and mitigating environmental hazards, given the objective of the Environmental Protection Act of 1986. Rather, the Ministry of the Environment has established a system for ranking SEIAAs according to how quickly clearances are granted. SEIAAs who make quick choices don't repeatedly visit project locations, and request less supplementary information will receive higher scores.

The expert appraisal committees were also instructed by the environment ministry to convene once every two weeks with "strict adherence" in October. Paradoxically, "development" projects are given more time to finish construction and start, even though the ministry pressures SEIAAs and appraisal committees to approve projects more quickly. Over this period, the ministry has extended the validity of environment approvals from seven to ten years for projects other than mining and nuclear, and from ten to thirteen years for projects located in river valleys.

Given the idea that environmental characteristics, the living circumstances of individuals impacted, and the context change over time, environmental clearances are intended to be granted for a specific amount of time. Therefore, precautions need to take these components' dynamic nature into consideration. However, the ministry has prolonged the environmental clearances' validity without permitting altered conditions while the project is being built. Speaking of shifting circumstances, the draft EIA Notification suggests eliminating the requirement for public participation for projects involving modernization and expansion. In 2017, at the coal ministry's urging, a trial run of this exemption was nearly implemented, with coal mining projects exempted from public hearings for up to 40% growth of their initial capacity. The relaxation now applies to any projects looking to grow within the current region by up to 50% of their initial capacity¹⁸⁹.

A modified Environmental Impact Assessment

The last two years have demonstrated how quickly the EIA's nature is evolving. On the day that Prakash Javadekar resigned as environment minister last year, a significant modification that contradicts the EIA's goals was implemented. One of the most controversial aspects of the draft EIA 2020 is post facto clearance, as was previously discussed; nonetheless, it was included through an administrative process using a "standard operating procedure." The Madras High Court's appeal caused a first delay in its implementation. However, the process recently received a clean slate from the Supreme Court.

This new tendency of implementing significant changes through the administrative route is more concerning and limits the opportunity for public participation because courts have historically been hesitant to get involved in administrative and policy decisions. The Supreme Court's ruling in the Central Vista case¹⁹⁰, which stated that it could not assume the role of an approving body and that its jurisdiction was restricted to determining whether policies were constitutional, is another recent example of this.

¹⁸⁹ Meenakshi Kapoor and Krithika A. Dinesh (2022) 2020 EIA Notification Remains a Draft, Yet MoEFCC Continues To Edit 2006 Version, *Science The Wire*
¹⁹⁰ Rajeev Suri v. Union of India, Writ Petition (Civil) No. 8430 of 2020, Supreme Court of India (2021)

The environment ministry has disregarded the public's sentiment as demonstrated by the more than two million comments received on the draft EIA Notification 2020, many of which were critical of the post facto provision, and has instead avoided public consultation by implementing these and others changes through the instrumentalization of office memorandums. Environmental approvals are now being granted both before and after the event by the ministry's expert panels at the state and federal levels.

In the end, organizations created to thoroughly assess projects before they begin and to safeguard the environment have been encouraged to act otherwise. Not only that, but to expedite the process of granting clearances, environmental studies are routinely being substituted with basic protections, evading both public and professional scrutiny.¹⁹¹

Process of Environmental Impact Assessment

To guarantee a thorough assessment of potential environmental impacts, the EIA process consists of multiple essential components. Screening and scoping, gathering baseline data, estimating the impact, identifying alternatives and mitigating measures, consulting the public, and reviewing and making decisions are some of these processes.

- **Screening and Scoping Processes in EIA**

Determining if a project needs an EIA based on its size, nature, and possible effects is part of the screening process. Scoping is the process of determining the main concerns and possible effects that the EIA study should cover.

- **Baseline Data Collection and Impact Prediction Techniques**

Before a project is started, baseline data collection is essential to understanding the current environmental circumstances. This involves gathering data on soil conditions, biodiversity, water and air quality, and socioeconomic factors. The potential environmental effects of the proposed project are then evaluated using impact prediction methodologies, which are based on the baseline data that has been gathered.

- **Mitigation Measures and Alternatives Assessment**

Following the identification of possible impacts, mitigation strategies are put forth to reduce or eliminate negative effects. The process of alternative evaluation is comparing various project

¹⁹¹ Meenakshi Kapoor and Krithika A. Dinesh (2022) 2020 EIA Notification Remains a Draft, Yet MoEFCC Continues to Edit 2006 Version, Science the Wire (<https://science.thewire.in/politics/government/moefcc-eia-notification-modifications/>)

locations or possibilities to determine which has less of an impact on the environment.

- **Public Consultation and Participation in EIA**

A key component of the EIA process is public consultation, which gives impacted communities and other stakeholders a chance to voice their opinions and concerns. This guarantees that multiple viewpoints are taken into account and the decision-making process is transparent.

- **Review and Decision-Making Process**

The relevant authorities review the EIA report, including the findings from the assessment and proposed mitigation measures. Based on the report and public inputs, a decision is made regarding the project's approval, rejection, or approval with conditions.

Challenges in the implementation of Environmental Impact Assessment

There are a number of environmental impact difficulties associated with achieving the Sustainable Development Goals (SDGs). If these issues are not successfully resolved, they may impede the growth of sustainable development.

1. Environmental Impact Assessment is under the control of the promoters of the project:

Conflict of interest or unfair advantage: To begin with reporting, biased reporting is possible when project proponents oversee the EIA procedure. To get project approval, they might minimize adverse environmental effects, and secondly Project supporters frequently employ consultants to carry out EIAs due to their influence over consultants. It's possible that these consultants are under pressure to write positive reports in order to get new business. Bias is possible when project proponents have a lot of influence over the EIA procedure. They could minimize possible environmental effects in order to secure project approval, which ultimately leads to a lack of transparency¹⁹².

The caliber of the reports: If consultants employed by the project proponents prepare the EIA reports, their quality may be affected. There can be pressure on these consultants to generate positive reports.

Public Involvement: Strong public participation is essential to a successful EIA process. To avoid criticism, project supporters may, however, restrict stakeholder participation, which would result in a lack of attention to community issues.

¹⁹² Rachna Bhatia (2024) EIA Procedure—Mitigation and Impact Management, Springer EIA Procedure—Mitigation and Impact Management | SpringerLink

Mitigation Techniques: If the project proponents put cost savings ahead of environmental protection, there is a chance that the suggested mitigation measures won't be adequate or won't be performed correctly.

Regulatory Monitoring: Inadequate regulatory supervision may make these problems worse. Project proponents may disregard EIA regulations if regulatory agencies lack the means or power to enforce compliance.

2. Lack of an independent institutional framework for managing plan execution and conducting environmental impact assessments:

Conflict of interest or unfair advantage: In the absence of impartial supervision, project backers could sway the EIA procedure, resulting in skewed evaluations and insufficient mitigating actions.

Quality Assurance: To guarantee the calibre and correctness of EIA reports, independent organisations are essential. In their absence, assessments may be inadequate.

Regulatory Monitoring: Sturdy, independent institutions are necessary for the efficient monitoring and implementation of environmental protections. Without them, adherence to EIA regulations would be shaky.

Public Confidence: Transparency and public trust in the EIA process are improved by independent entities. Stakeholders may become sceptical and hostile in their absence¹⁹³.

3. Lack of accumulative legal provisions within the legislation:

Insufficient Impact Assessment: If cumulative consequences aren't taken into account, individual projects could be approved without knowing how they would affect the environment as a whole. Over time, this may cause a considerable deterioration of the environment¹⁹⁴.

Broken Regulation: Environmental rules that fail to take cumulative effects into consideration can lead to broken and inconsistent regulations. This can make it challenging to properly handle significant environmental issues.

¹⁹³ Ross Hughes (1998) Environmental impact assessment and stakeholder involvement, ISBN: 1 904035 31 0 Issue 11.PDF (iied.org)

¹⁹⁴ EPA Legal Tools to Advance Environmental Justice: Cumulative Impacts Addendum (2023), Publication No.: 360R22002 (EPA Legal Tools to Advance Environmental Justice: Cumulative Impacts Addendum)

Missed Opportunities for Mitigation: More extensive mitigation plans can be made possible by cumulative legal provisions, which can assist in identifying broader environmental patterns and issues. These possibilities are frequently lost when they are not present.

Risks to Public Health: Especially in communities that are already at risk, cumulative effects can have a major negative influence on public health. These populations may be at greater risk for health issues if there are no legal measures to mitigate these effects.

Poor Environmental Management: To be effective, environmental management needs to take a comprehensive strategy that takes into account all possible effects. These initiatives may be hampered by the lack of cumulative legislative measures, which would result in less effective environmental protection.

4. Environmental Impact assessment method lacks efficient quality control:

Variations in Report Quality: EIA report quality might differ greatly in the absence of strict quality control. Insufficient evaluations of the effects on the environment may result from this disparity.

Lack of Credibility: The EIA process's credibility may be weakened by inadequate quality control. The conclusions and suggestions of EIA reports may come to be seen as untrustworthy by stakeholders, including the general public and government agencies.

Insufficient steps to mitigate the issue: Inadequate or improper mitigation measures could result in poor environmental protection if the quality of EIA reports is not strictly regulated.

The Difficulties of Regulation: If the quality of reports is not consistently excellent, regulatory agencies may find it difficult to enforce compliance with EIA regulations. Projects may proceed as a result without the necessary environmental precautions.

5. Choosing the lowest feasible effect:

Subjectivity: Affected communities, regulatory agencies, and project proponents are just a few of the stakeholders whose opinions may differ greatly on what defines a "acceptable" impact.

Lack of standardized standards: Frequently, it is difficult to determine exactly what constitutes an acceptable impact. This may

result in erratic decision-making and challenges implementing rules¹⁹⁵.

Balancing Divergent Interests: Environmental preservation must be balanced with social and economic factors during the decision-making process. This can be difficult, particularly if there are competing interests.

Scientific Uncertainty: The effects on the environment might be complicated and unpredictable. Because of scientific uncertainty, project long-term effects prediction and impact threshold determination can be challenging.

6. Inadequate application of the law:

Absence of Necessary Mandates and Clear Standards: Environmental regulations are frequently devoid of essential mandates and clear standards, which makes them challenging to properly implement.

Underfunded Implementing Agencies: When compared to ministries and agencies concentrating on economic or natural resource development, those in charge of environmental protection are typically politically weaker and less well-funded¹⁹⁶.

Inadequate Agency-to-Agency collaboration: Ineffective enforcement frequently results from a lack of collaboration between different government agencies.

Corruption: When authorities are bought off to ignore infractions, corruption can impede efforts to uphold the law.

Restricted Information Access: Although public access to environmental data is essential for accountability, it is frequently limited.

Weak Institutional Capacity: Due to a lack of staff, resources, and training, many institutions are unable to effectively implement the law.

7. The standard of the report of the Environmental Impact Assessment:

¹⁹⁵Iema Environmental Impact Assessment Guide To Shaping Quality Development(2015),iema Institute of Environmental Management & Assessment (IEMA Guidance Documents EIA Guide to Shaping Quality Development V6.pdf (iaia.org))

¹⁹⁶Environmental Laws Impeded by Lack of Enforcement, First-ever Global Assessment Finds,(2019) International Institute of Sustainable Development (IISD Earth Negotiation Bulletin) (Environmental Laws Impeded by Lack of Enforcement, First-ever Global Assessment Finds – SDG Knowledge Hub (iisd.org)

Insufficient Baseline Data: It is common for EIA reports to be devoid of thorough baseline data, which is necessary in order to precisely evaluate the possible effects of a project¹⁹⁷.

Inadequate Experience: Depending on the assessors' experience levels, the quality of EIA reports can differ greatly. Reports written by experts with less training or experience may be shallow and inaccurate.

Limitations on Time and Resources: Enough time and resources must be allocated to comprehensive field surveys, data collection, and analysis in order to produce an excellent EIA report. Budget and timing constraints may cause the report's quality to suffer.

Bias and Conflict of Interest: Because EIA studies are frequently funded by project proponents, there may be a bias to reduce perceived negative effects in order to secure project approval.

Lack of Standardization: The preparation of EIA reports frequently lacks standardized procedures and standards, which causes variations in the reports' quality.

Public Participation: The validity of EIA reports depends on the effectiveness of public participation. Insufficient public consultation, however, may lead to reports that under-represent the views and knowledge of the local community.

Review and Monitoring: One of the most important steps in ensuring the quality of EIA reports is the review process. Nonetheless, inadequate institutional strength and a dearth of strict review procedures may result in the approval of reports that are of poor quality.

8. Financial and technical assistance:

Building capacity: Offering government employees, stakeholders, and EIA practitioners training to improve their knowledge and abilities.

Data and Tool Access: granting users access to GIS tools, impact analysis and forecast software, and environmental data.

¹⁹⁷ Mr. Martin Smutny (2024), Main steps in EIA: EIA report and its quality analysis, EU4 Environment Green Economy in Eastern Partner Countries, Founded by the European Union

Expert Consultation: Getting specialized advice from professionals with knowledge of different fields, such as hydrology, ecology, and socioeconomics.

Standardised rules: To guarantee uniformity and quality, develop and distribute precise rules and procedures for performing EIAs.

Government Funding: Setting aside a sizeable sum of money for baseline studies, public meetings, and monitoring as part of the EIA procedures.

International Aid: Using funds from development banks and international organizations to support technical assistance and capacity building.

Private Sector Investment: Motivating backers of projects to part up their money for superior EIA reports and mitigating strategies.

Awards & Incentives: Offering monetary awards or incentives to projects that exhibit excellent environmental performance and adherence to EIA regulations.

Conclusion

In conclusion, the analysis of challenges in the implementation of Environmental Impact Assessment (EIA) reveals numerous crucial areas that demand attention. Even though environmental impact assessments (EIAs) are essential tools for sustainable development, problems like low public participation, technological limitations, lack of transparency, and corporate or political influence frequently make them less successful. Strong legislative frameworks, capacity-building programs, improved regulation enforcement, and comprehensive stakeholder engagement are all necessary to address these issues. The EIA process can be strengthened to better balance development requirements with environmental protection, resulting in more sustainable outcomes. The implementation can be made more effective by incorporating digital technologies, taking climate change into account, conducting a strategic environmental assessment, increasing stakeholder participation, promoting sustainability and the circular economy, and providing green funding.

The Emerging Need for Environmental Education in India for the Protection and Preservation of the Environment: A Critical Analysis

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Abstract

Nowadays, the protection, conservation and improvement of environment are main and major issues or problems in India and as well as all over the world. The term environment includes of both physical environment and biological or ecological environment. The physical environment includes issues relating to land, water and air and the other hand biological environment includes issues relating to plants, animals and other organisms. Both physical and biological environment are mutually dependent and connected each other. The major factor in India like Industrialization, urbanization, explosion of population, over-exploitation of natural resources, disruption of natural ecological balances, destruction of a multitude of animal and plant species for economic reasons, which have contributed to environmental worsening. Thus, it is true that, one country's deprivation of environment degrades the global environment for all the countries in the world. The problem of environmental pollution is of international level and India is no exception to it. In this present paper, an effort has been made to momentarily outline the various Indian legislations relating to the environment, which are mainly and more relevant to protect and improve the environment in India. The enforcement of these legislations has also been critically examined and evaluated in systematically manner. Lastly, some suggestions also have been provided by the author.

Keywords: Environmental Protection, Air Pollution, Water Pollution, Public Interest Litigation, Constitution of India, National Green Tribunal and Judiciary.

Introduction

The creative and innovative role of India Judiciary and National Green Tribunal [NGT] has been significant and laudable in this era. Pursuant to the provisions contained in Articles 48–A and 51–A[h] of the Indian Constitution, various Public Interest Litigations have been instituted in the Supreme Court against several industries for failing to provide sufficient pollution control and also against Pollution Control Boards to direct them to take proper measures to ensure pollution control in Indian perspective. For the purpose of effective, successful and well–organized enforcement of these legislations, it is required to set up an Adjudicatory Body in each State in India, which should consist of

legal as well as technical experts. Caring for regulating and protecting the environment is essentially a desire to see that national development should proceed along the rational sustainable laws. Protection of the environment and keeping ecological balance in Indian scenario unaffected is a task which not only the Government but also every individual, association, society, industry and corporation must undertake. It is a social compulsion and fundamental duty enshrined in Article 51–A[g] of the Indian Constitution.

Parliamentary Acts regarding Environmental protection in India

- **The Environment (Protection) Act, 1986** authorizes the central government to protect and improve environmental quality, control and reduce pollution from all sources, and prohibit or restrict the setting and /or operation of any industrial facility on environmental grounds. The Environment (Protection) Act was enacted in 1986 with the objective of providing for the protection and improvement of the environment. It empowers the Central Government to establish authorities charged with the mandate of preventing environmental pollution in all its forms and to tackle specific environmental problems that are peculiar to different parts of the country. The Act was last amended in 1991.
- The Environment (Protection) Rules lay down procedures for setting standards of emission or discharge of environmental pollutants.
- The objective of Hazardous Waste (Management and Handling) Rules, 1989 is to control the generation, collection, treatment, import, storage, and handling of hazardous waste.
- The Manufacture, Storage, and Import of Hazardous Rules define the terms used in this context, and sets up an authority to inspect, once a year, the industrial activity connected with hazardous chemicals and isolated storage facilities.
- The Manufacture, Use, Import, Export, and Storage of hazardous Micro-organisms/ Genetically Engineered Organisms or Cells Rules, 1989 were introduced with a view to protect the environment, nature, and health, in connection with the application of gene technology and micro-organisms.

The Biological Diversity Act 2002 and Biological Diversity Rules the Biological Diversity Act 2002 and Biological Diversity Rules provide for the conservation of biological diversity, sustainable use of its components, and fair and equitable sharing of the benefits arising out of the use of biological resources and knowledge associated with it.

Its key provisions aimed at achieving the above are:

- Prohibition on transfer of Indian genetic material outside the country, without specific approval of the Indian Government;
- Prohibition on anyone claiming an Intellectual Property Right (IPR), such as a patent, over biodiversity or related knowledge, without permission of the Indian Government;
- Regulation of collection and use of biodiversity by Indian nationals, while exempting local communities from such restrictions;
- Measures for sharing of benefits from the use of biodiversity, including transfer of technology, monetary returns, joint Research & Development, joint IPR ownership, etc.;
- Measures to conserve and sustain-ably use biological resources, including habitat and species protection, Environmental Impact Assessments (EIAs) of projects, integration of biodiversity into the plans, programmes, and policies of various departments/sectors;
- Provisions for local communities to have a say in the use of their resources and knowledge, and to charge fees for this; Protection of indigenous or traditional knowledge, through appropriate laws or other measures such as registration of such knowledge;
- Regulation of the use of genetically modified organisms; Setting up of National, State, and Local Biodiversity Funds, to be used to support conservation and benefit-sharing;
- Setting up of Biodiversity Management Committees (BMC) at local village level, State Biodiversity Boards (SBB) at state level, and a National Biodiversity Authority (NBA).

The Public Liability Insurance Act and Rules 1991 and Amendment, 1992

The Public Liability Insurance Act and Rules 1991 and Amendment, 1992 were drawn up to provide for public liability insurance for the purpose of providing immediate relief to the persons affected by accident while handling any hazardous substance

The Act has been created to award compensation for damages to persons, property, and the environment arising from any activity involving hazardous substances. The three major objectives of the Green Tribunal are

- The effective and speedy disposal of the cases relating to environment protection and conservation of forests and other natural resources. All the previous pending cases will also be heard by the Tribunal.
- It aims at enforcing all the legal rights relating to the environment
- It also accounts for providing compensation and relief to effected people for damage of property.

The salient features of amendment are as follows:

- Amendment provides an equal opportunity to any citizen of India to approach the National Green Tribunal.
- It ensures that the tribunal takes into consideration principles of Sustainable Development, Precautionary principles, Polluter Pays Principles and Inter-generational Equity while hearing any appeal and giving judgements.

National Green Tribunal Act, 2010

Under the National Green Tribunal Act 2010 for effective and expeditious disposal of cases relating to environmental protection and conservation of forests and other natural resources including enforcement of any legal right relating to environment and giving relief and compensation for damages to persons and property and for matters connected therewith or incidental thereto. It is a specialized body equipped with the necessary expertise to handle environmental disputes involving multidisciplinary issues. The Tribunal shall not be bound by the procedure laid down under the Code of Civil Procedure, 1908, but shall be guided by principles of natural justice.

The Tribunal's dedicated jurisdiction in environmental matters shall provide speedy environmental justice and help reduce the burden of litigation in the higher courts. The Tribunal is mandated to make and endeavour for disposal of applications or appeals finally within 6 months of filing of the same. Initially, the NGT is proposed to be set up at five places of sittings and will follow circuit procedure for making itself more accessible. New Delhi is the Principal Place of Sitting of the Tribunal and Bhopal, Pune, Kolkata and Chennai shall be the other 4 place of sitting of the Tribunal.

The National Environment Appellate Authority Act, 1997 ⁷The National Environment Appellate Authority Act has been created to hear appeals with respect to restrictions of areas in which classes of industries etc. are carried out or prescribed subject to certain safeguards under the EPA.

The Biomedical waste (Management and Handling) Rules,1998 : The Biomedical waste (Management and Handling) Rules,1998 is a legal binding on the health care institutions to streamline the process of proper handling of hospital waste such as segregation, disposal, collection, and treatment.

The Environment (Siting for Industrial Projects) Rules, 1999 : The Environment (Siting for Industrial Projects) Rules, 1999 lay down detailed provisions relating to areas to be avoided for siting of industries, precautionary measures to be taken for site selecting as also the aspects of environmental protection which should have been incorporated during the implementation of the industrial development projects.

The Municipal Solid Wastes (Management and Handling) Rules, 2000

The Rules apply to every municipal authority responsible for the collection, segregation, storage, transportation, processing, and disposal of municipal solid wastes.

The Ozone Depleting Substances (Regulation and Control) Rules, 2000

The Ozone Depleting Substances (Regulation and Control) Rules, 2000 have been laid down for the regulation of production and consumption of ozone depleting substances.

The Batteries (Management and Handling) Rules, 2001

These rules shall apply to every manufacturer, importer, re-conditioner, assembler, dealer, auctioneer, consumer, and bulk consumer involved in the manufacture, processing, sale, purchase, and use of batteries or components so as to regulate and ensure the environmentally safe disposal of used batteries.

The **Noise Pollution** (Regulation and control) (Amendment) Rules, 2010

These rules lay down such terms and conditions as are necessary to reduce noise pollution, permit use of loud speakers or public address systems during night hours (between 10:00 p.m. to 12:00 midnight) on or during any cultural or religious festive occasion.

Following are the salient features of the amendment:

- In the heading ‘PUBLIC ADDRESS SYSTEM’ the words ‘AND SOUND PRODUCING SYSTEMS’ shall be inserted.
- A loudspeaker or any sound producing system or a sound amplifier shall not be used at night time except in closed premises for communication within like auditorium, conference rooms, community halls, banquet halls or during public emergency.
- The noise level at the boundary of the public place where loudspeaker or public address system is being used the sound should not exceed 10dB above the ambient noise standards of that area or 75dB whichever is less.
- No horn shall be used in silence zones or residential areas at night except in emergency situations.
- Sound emitting construction equipment’s shall not be operated during night.¹

Land mark judgments relating to environmental protection in India

The fundamental right of a person or citizen of India, to pollution free environment is a part of basic jurisprudence of the land. Article 21 of the Indian Constitution guarantees a fundamental right to life and personal liberty and the

Supreme Court has interpreted the right to life and personal liberty to include the right to natural, clean and healthy environment. The Supreme Court through its various landmark-judgments in the field of environment have held that the mandate of right to life includes right to clean and healthy environment, drinking-water and pollution-free atmosphere.

In this view Sri Ram Food and Fertilizer case¹ is an important case. In this case a major leakage of Oileum Gas in Bhopal affected a large number of persons, both amongst the workmen and public.

The Apex Court held that where an enterprise involves in hazardous or inherently dangerous activity and in the conduct of such dangerous and inherently dangerous activity causes harm to anyone by accident resulting in the release of poisonous gas, the enterprise shall strictly and is solely accountable for paying recompense to all those affected by the accident and such liability is not subject to any exemption. Such liability called the „absolute liability“.

This case is related to the Taj Mahal situated in Agra. In Taj Mahal’s case,² the Apex Court issued directions and guidelines that coal and coke-based industries or factories in Taj Trapezium [TTZ] which were damaging Taj Mahal should either modify over to natural gas or to be replaced or relocated outside Taj Trapezium. Again, the Apex Court directed to protect the plants planted around Taj Mahal by the Forest Department. The Divisional Forest Officer [DFO], Agra is directed to take instant steps for seeing that water is supplied to the plants. The Union Government is directed to release the funds without delay and without waiting for receipt of the proposal from the Uttar Pradesh Government on the basis of the copy of the report. Funding may be afterward settled with the Uttar Pradesh Government, but in any set of conditions for want of funds the officer is directed to see that plants do not wither away.

In the present context smoking in public places is an offence in India. In 2001, the Supreme Court imposed ban on smoking of tobacco³[bidi, cigarette] in public places all over the country because smoking causes harm not only to the smokers then too to non-smokers who are enforced to inhale the second-hand smoke. More than 3 million people die per year in India as a result of smoking tobacco including bidis, cigar and cigarettes. One lakh Indians get lung cancer per year due to smoking. Certainly, lung cancer kills 95 percent of its victims. That is why the Apex Court ruling has immense social and cultural value. But no one cares for this ban. We know that the cigarettes, bidis and other tobacco items are openly sold in tobacco-free railway stations, bus stands, cinema houses and other public places. So, it is the great social awakening which can only help us to prevent dangerous smoking.

In the Dehradun Valley case,⁴ haphazard and dangerous limestone quarrying in the Mussoorie Mountain range of the Himalayas, dynamite eroding hills, and thousands of acres of limestone quarries disrupted the valley's hydrological system. The Apex Court ordered the closing of limestone quarrying in the hills and observed:

The Ganga Water Pollution case,⁵ the owners of some tanneries near Kanpur were discharging their trade waste matter from their industries in Ganga River without setting up primary treatment plants. The Apex Court said that the financial capacity of tannery factories should be treated as irrelevant, while they are required to set up first aid plants. The Court directed to stop the running of these tanneries and also not to let out trade waste matter from the tanneries either directly or indirectly into the Ganga river without subjecting the trade waste matter to a permanent process by setting up primary treatment plants as approved by the State Pollution Control Board. "It will undoubtedly cause hardship to them, but it is a value that has to be compensated for protecting and protecting people's right to live in a clean and healthy environment with minimal disturbance of the ecological balance."

The Apex Court has highlighted the importance of protection of public health. In *Subba Rao v. State of Himachal Pradesh*,⁶

The Apex Court ordered the shutting down of a bone factory which was polluting the environment by its sharp smell and making the life of the people unhappy. The Court held that no one can do business at the cost of public health. With a view to preserve and protect the environment and control pollution within the vicinity of tourist resorts of Badkhal and Surajkund, the Supreme Court directed⁵—the stoppage of mining activity within two Kilometres radius of these two tourist resorts.

In *Municipal Council, Ratlam v. Vardhichand and Others*,⁷

The Supreme Court observed that the grievous failure of local authorities to provide the basic amenity of public conveniences drives the depressed slum-dwellers to ease in the streets, on the sly for a time and openly thereafter, because under nature's pressure, bashfulness becomes a luxury and dignity a difficult art. A responsible city council constituted for the purpose of protecting public health cannot shirk its duty by pleading financial incompetence.

Suggestions for environmental protection in India

Education is the key to protecting the environment. Educate our child about the environment and educate our surrounding people and the steps they can take to protect it. Teach them to protect it. Teach them to respect nature and conserve resources. Encourage them to take part in environmental activities and to learn more about the environment.

Choose efficient appliances efficient appliances and heating system. Get an energy audit and follow the advice. Turn off electrical things and keep garbage in on place don't throw any ware we must throw in the right bins and don't throw plastics items and covers avoid plastic bags. Plant more tree avoid the environmental pollution things and habitat conservation, renewable energy. Sustainable forestry, and species conservation efforts and all time keep clean our surrounding. And conserve water and recycle waste to conserve natural resources. Cleaning rivers and ponds.

To control air pollution, we can reduce emission test our vehicle and industries, promote sustainable transportation options like public bus or train, walking. Making use friendly techniques of protection.

Government should take good steps about environmental pollution. The government of India has taken several initiative for protection of biodiversity and conservation through varies schemes like national action plan for climate change, national mission on sustainable habitat. National water mission for conserving water. Government should take initiative for notational forest preservation and wildlife animals.

Identify the problems, recognize that there is a problem, structure the problem and searching for solution and we should use less oil, gas use clean energy from sun and wind.

References:

1. Subhash Kumar v. State of Bihar AIR 1991 SC 420; M.C. Mehta v. Union of India AIR 2000 SC 1997.
2. M.C. Mehta v. Union of India AIR 1987 SC 1086. M.C. Mehta v. Union of India AIR 1999 SC 3192; See also, M.C. Mehta v. Union of India [2001] 9 SCC 520.
3. Murli S. Deora v. Union of India [2001] 3 SCC 765.
4. Rural Litigation and Entitlement Kendra v. State of Uttar Pradesh AIR 1985 SC 652.
5. AIR 1989 SC 171.
6. M.C. Mehta v. Union of India [1996] 4 SCC 351.
7. AIR 1980 SC 1622

Environmental Justice through Judicial Intervention: The Role of India's Supreme Court in Promoting Sustainable Development

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Abstract

The idea of 'sustainable development' is now a fundamental aspect of international environmental law. The notion of protecting resources for 'future generations' was first emphasized in the 1972 Stockholm Declaration. This aligns closely with the principles of sustainable development. The term 'sustainable development' received its official definition on an international stage through the Brundtland Commission report in 1987. India's journey toward achieving comprehensive environmental justice began with the Bhopal gas tragedy of 1984. Since then, the Indian Supreme Court has addressed numerous environmental challenges, including river pollution, groundwater contamination, air pollution, soil erosion, land degradation, deforestation, and wildlife poaching. Despite having several environmental laws in place, such as the Environment (Protection) Act of 1986, the Water (Prevention and Control of Pollution) Act of 1974, the Wildlife (Protection) Act of 1972, and the Forest (Conservation) Act of 1980, the Supreme Court sought international environmental principles to ensure effective and comprehensive justice. This strategy sought to achieve two objectives, offering suitable compensation to the victims of environmental calamities and ensuring that the polluters bore the financial responsibility for restoring the damaged ecosystems. In 1996, the Indian Supreme Court officially recognized sustainable development as part of the nation's legal framework. This article examines how the Supreme Court has applied the principle of sustainable development to deliver environmental justice for the greater good.

Keywords: Environmental Justice, Sustainable Development, Polluter Pays Principle, Precautionary Principle, Intergenerational Equity.

Introduction

There are two main ways to achieve environmental justice. The first involves authorities taking proactive measures to prevent environmental damage¹⁹⁸, while the second relies on courts directing government agencies to enforce

¹⁹⁸ J. Mijin Cha, 'Environmental Justice in Rural South Asia: Applying Lessons Learned from the United States in Fighting for Indigenous Communities' Rights and Access to Common Resources' (2007) 19 Geo Int'l Envtl L Rev 185.

environmental laws¹⁹⁹ and fulfill their constitutional duties²⁰⁰ to prevent harm. The second approach is often more effective, as it involves the judiciary holding the executive branch accountable for actions²⁰¹ that cause pollution and degradation, compelling them to follow environmental legislation and constitutional mandates.²⁰²

When courts consider cases of environmental harm, they typically examine whether there has been a violation of environmental laws or rights—whether statutory or constitutional. If such violations are found, the courts proceed with the case to deliver justice. Environmental degradation can also infringe upon human rights; for example, river pollution or air pollution can impact public health and the right to a standard living condition²⁰³.

In the wake of the 1984 Bhopal gas tragedy²⁰⁴, the Indian judiciary recognized that existing environmental laws lacked provisions for compensating victims or holding polluters financially accountable for restoring the environment²⁰⁵. Additionally, constitutional provisions like Article 21 and Article 32 were not actively interpreted to include the right to a clean environment until 1991. These provisions now recognize the entitlement to a safe and healthy environment as a fundamental right²⁰⁶.

In 1986-87, while deciding the *M.C. Mehta (Shriram Fertilizer) case*²⁰⁷, the Supreme Court sought a robust tool for delivering environmental justice. The landmark *M.C. Mehta (Absolute Liability) case*²⁰⁸ later established that hazardous industries must bear absolute liability, ensuring they compensate victims regardless of the precautions taken²⁰⁹. The court rejected the ‘Strict Liability’ principle due to its five exceptions²¹⁰, stating that hazardous industries are fully responsible for the costs of compensation.

¹⁹⁹ Isabelle Martin, ‘Environment Panel: The Limitations To The Implementation Of A Uniform Environmental Policy In The European Union’ (1994) 9 Conn J Int’l L 675, 709.

²⁰⁰ Michael D Wilson, ‘The Hawai’i Environmental Court: A New Judicial Tool To Enforce Hawai’i’s Environmental Laws’ (2015) 19 Hawaii BJ 4; see also, Sara Cutuli, ‘State Constitutional Law - Environmental Rights Amendment - Judicial Environmentalism Holds Pennsylvania Statute in Violation of the State’s Constitution. Robinson Township v Commonwealth’ (2016) 68 Rutgers L Rev 1573.

²⁰¹ Robert V Percival, ‘Massachusetts v EPA: Escaping The Common Law’s Growing Shadow’ (2007) 2007 Sup Ct Rev 111, 149, 161.

²⁰² J. Mijin Cha, ‘A Critical Examination Of The Environmental Jurisprudence Of The Courts Of India’ (2005) 10 Alb L Envtl Outlook 197.

²⁰³ Emily R Atwood, ‘Preserving the Taj Mahal: India’s Struggle to Salvage Cultural Icons in the Wake of Industrialization’ (2002) 11 Penn St Envtl L Rev 101.

²⁰⁴ Nehal A Patel and Ksenia Petlakh, ‘Gandhi’s Nightmare: Bhopal and the Need for a Mindful Jurisprudence’ (2014) 30 Harv J Racial & Ethnic Just 151.

²⁰⁵ Dean B Suagee, ‘Environmental Justice: Mobilizing For The 21st Century: The Indian Country Environmental Justice Clinic: From Vision to Reality’ (1999) 23 Vt L Rev 567, 579.

²⁰⁶ Deepa Badrinarayana, ‘The Emerging Constitutional Challenge Of Climate Change: India In Perspective’ (2009) 19 Fordham Envtl Law Rev 1

²⁰⁷ Subhash Kumar v State of Bihar AIR 1987 SC 965.

²⁰⁸ M.C. Mehta v Union of India AIR 1987 SC 1086.

²⁰⁹ Abhi Raghunathan, ‘The Grand Trunk Road from Salomon to Mehta: Economic Development and Enterprise Liability in India’ (2012) 100 Geo LJ 571.

²¹⁰ For example, damage caused due to natural use of land, consent of the plaintiff, plaintiff’s own default, act of stranger, act of God or vis major, common benefit of plaintiff and defendant, statutory authority.

However, absolute liability has its limitations, applying only to hazardous industries, and was not always used by the Supreme Court²¹¹. The search for a more comprehensive tool continued. In 1991, *Subhash Kumar v. State of Bihar case*²¹², the Supreme Court declared environmental rights a part of the fundamental rights protected under Article 32.

Despite its limitations, the concept of absolute liability was not sufficient for delivering comprehensive environmental justice²¹³. In 1996, while deciding the *Indian Council (Bichhri) case*²¹⁴ and *Vellore case*²¹⁵, the Supreme Court made a historic observation. It integrated international environmental law principles, such as sustainable development, intergenerational equity²¹⁶, the polluter pays principle²¹⁷, and precautionary principles²¹⁸, into Indian law. This incorporation led to numerous cases where the principle of sustainable development was applied to deliver environmental justice.

The Evolution of Sustainable Development: From Historical Roots to Modern International Law

The term ‘development’ has long been intertwined with societal progress. The advancement of any nation typically relies on the exploitation of natural resources. However, when this exploitation exceeds nature’s capacity to restore and replenish these resources, it leads to irreversible environmental damage. This damage could be avoided if nations embraced the concept of ‘sustainability’ in their development processes, ensuring that resource use does not surpass nature’s ability to regenerate. Consequently, ‘sustainable development’ has been globally recognized. This principle not only aims to foster national development while preserving ecological balance but also seeks to ensure that future generations inherit a sustainable path for their own development.

The widely accepted definition of sustainable development traces its origins to the 1987 World Commission on Environment and Development report, also known as ‘Our Common Future’ or the ‘*Brundtland Commission Report*’²¹⁹ highlighting sustainable development. However, the roots of this concept can be found earlier, in the 1972 Stockholm Declaration. Principles 1 and 2,

²¹¹ Indian Council for Enviro-Legal Action v Union of India AIR 1996 SC 1446 (Supreme Court of India)

²¹² M.C. Mehta v Union of India AIR 1991 SC 420.

²¹³ Sukanya Pillay, ‘Absence Of Justice: Lessons From The Bhopal Union Carbide Disaster For Latin America’ (2006) 14 Mich St J Int’l L 479

²¹⁴ Indian Council for Enviro-Legal Action v Union of India AIR 1996 SC 1446.

²¹⁵ Vellore Citizens Welfare Forum v Union of India AIR 1996 SC 2715.

²¹⁶ G.F. Maggio, ‘Inter/intra-generational Equity: Current Applications under International Law for Promoting the Sustainable Development of Natural Resources’ (1997) 4 Buff Env’t LJ 161

²¹⁷ Candice Stevens, ‘Interpreting the Polluter Pays Principle in the Trade and Environment Context’ (1994) 27 Cornell Int’l LJ 577

²¹⁸ James E Hickey, Jr and Vern R Walker, ‘Refining The Precautionary Principle In International Environmental Law’ (1995) 14 Va Env’t LJ 423.

²¹⁹ Poddar Arup, ‘Sustainable Development In India’ (2017) 3 Int’l J Legal Development & Allied Issues 48.

along with Proclamations 6 and 7, highlighted the protection of future generations' rights through the idea of sustainable development.

The environmental movement gained momentum with the 1969 *Santa Barbara oil spill case*²²⁰, which significantly impacted marine life and bird populations, leading to a broader understanding of the need to merge sustainability with development. This incident remains a poignant reminder of marine biodiversity degradation. The term 'sustainability' itself can be traced back to 1713, when the German forestry term 'sustainable yield' was used to describe responsible forestry practices. Over time, sustainable development has become a fundamental component of numerous international environmental law documents, as further discussed in the subsequent sections of this article.

Sustainable Development: From Stockholm to Agenda 2030

As highlighted in the discussion above, it is evident that the 1972 Stockholm Declaration did not explicitly name 'sustainable development' but laid the groundwork for recognizing and protecting the rights of future generations. The official definition of sustainable development was introduced in the 1987 Brundtland Commission report. The first significant international codification and operational framework for sustainable development were presented at the 1992 Rio de Janeiro Conference²²¹.

Several key principles from the Rio Conference pertain to sustainable development. Principle 1 emphasizes that humans are central to sustainable development and must live in harmony with nature to enjoy productive and healthy lives. Principle 4 states that national development should be balanced with environmental protection. Principle 5 highlights the elimination of poverty in developing nations as part of sustainable development. According to Principle 7, developed countries must transfer scientifically sound technology to developing nations to promote sustainable development. Principle 8 calls for balancing the consumption and production of natural resources, urging nations to eliminate unsustainable production patterns. Principle 9 underscores the importance of effective exchange of scientific and technological knowledge for sustainable development. Principle 12 suggests that economic growth and sustainable development require a well-structured international economy. Principle 20 asserts that women's roles are vital to the success of sustainable development and should be encouraged. Principle 21 acknowledges the contributions of youth in achieving sustainable development goals. Principle 22 emphasizes the importance of indigenous people's participation in sustainable development. Principle 24 warns that war

²²⁰ United States v Union Oil Co of California 296 F Supp 149 (CD Cal 1969).

²²¹ 'RioDeclaration' http://www.sustainableenvironment.org.uk/Action/Rio_Declaration.php accessed 28 April 2024

impedes sustainable development, suggesting that crisis management should focus on non-war fronts.

Following the 1992 Rio Declaration, the 2002 World Summit in Johannesburg²²² further advanced sustainable development, emphasizing poverty eradication as highlighted in Principle 5. In 2015, the United Nations organized a conference in New York, where India and other nations committed to achieving various sustainable development goals (SDGs) by 2030, known as Agenda 2030.²²³ Seventeen new SDGs were identified, with nations pledging to eliminate poverty and adopt scientific and economic policies to support these goals.²²⁴

Therefore, it is clear that implementing sustainable development at the grassroots level requires nations to integrate its principles into their laws and policies. Developing countries face challenges in this implementation, and to address these effectively, they need cooperation from developed nations, particularly in the exchange of scientific and technological knowledge.

The Working Pattern of Sustainable Development

The unique and effective approach of sustainable development, discussed in the previous section of this article, is exemplified through the various principles of the 1992 Rio Declaration²²⁵. Furthermore, Agenda 2030 outlines the sustainable development framework to achieve goals like eradicating poverty and hunger, creating sustainable cities and communities, and ensuring clean water and sanitation.

In India, the Supreme Court, in the Vellore case²²⁶, identified three core principles essential to sustainable development: intergenerational equity, the polluter pays principle, and the precautionary principle.

- **Intergenerational Equity:** This principle underscores the importance of protecting the rights of both current and future generations. Sustainable development demands that we meet today's needs without compromising the ability of future generations to meet theirs. Consequently, intergenerational equity is a vital component of sustainable development, ensuring that the rights of all generations are preserved.²²⁷

²²² World Summit on Sustainable Development' <https://sustainabledevelopment.un.org/milestones/wssd> accessed 28 April 2024

²²³ 'SDG Overview' <http://www.in.undp.org/content/india/en/home/post-2015/sdgooverview.html> accessed 28 April 2024.

²²⁴ Ibid.

²²⁵ Alhaji BM Marong, 'From Rio to Johannesburg: Reflections on the Role of International Legal Norms in Sustainable Development' (2003) 16 *Geo Int'l Envtl L Rev* 21.

²²⁶ *Vellore Citizens Welfare Forum v Union of India* AIR 1996 SC 2715.

²²⁷ William Onzivu, 'International Environmental Law, the Public's Health, and Domestic Environmental Governance in Developing Countries' (2006) 21 *Am U Int'l L Rev* 597, 672.

- **Polluter Pays Principle:** According to this principle, polluters are absolutely liable for compensating environmental victims and restoring the degraded environment. The polluter cannot claim a remedy based on due diligence after the pollution has occurred. Sustainable development requires discontinuing unsustainable activities to ensure harmony between humans and nature. When such activities continue, the polluter pays principle serves as a preventive measure, aligning with sustainable development goals by mandating that polluters bear the costs of their actions.
- **Precautionary Principle:** This principle mandates that preventive measures should be taken even in the absence of scientific certainty regarding potential irreversible environmental harm. Emphasizing the adage ‘prevention is better than cure’,²²⁸ the precautionary principle compels government agencies to establish preventive guidelines for developers. If these guidelines are ignored and pollution results, the polluter pays principle applies. This principle aims to prevent unsustainable activities, promoting development in a sustainable manner²²⁹.

The Supreme Court also highlighted the constitutional mandate for environmental protection and preservation. By incorporating these principles, sustainable development seeks to harmonize developmental goals with environmental conservation, thereby securing a sustainable future for upcoming generations.

Integrating Sustainability: The Evolution of Environmental Rights in the Indian Constitution

In 1976, Articles 48A and 51A(g) were introduced in the Constitution of India, establishing environmental responsibilities for both the state and its citizens. This marked the incorporation of ‘sustainability’ into the developmental framework of the Indian Constitution.²³⁰

However, Part III of the Constitution, which outlines fundamental rights, did not explicitly recognize the ‘right to environment’ as a fundamental right. Article 21, which guarantees the right to life, gained significance in this context through judicial interpretation. In 1987, the Andhra Pradesh High

²²⁸ Danielle M. Purifoy (Summer, 2013), “EPCRA: A Retrospective on the Environmental Right-to-Know Act”, 13 *Yale J. Health Pol’y L. & Ethics* 375

²²⁹ Nasser Alreshaid, ‘The 2016 Sustainable Development Goals: Lodging The Sustainable Development Goals In The International Trade Regime: From Trade Rhetoric To Trade Plethoric’ (2016) 16 *Sustainable Dev L & Pol’y* 4.

²³⁰ Vahbiz P Karanjia, ‘Why India Matters: The Confluence Of A Booming Economy, An Activist Supreme Court, And A Thirst For Energy’ (2009) 20 *Vill Envtl LJ* 49, 53, 62.

Court partially acknowledged the right to environment in the *T. Damodhar Rao case*²³¹. The Supreme Court further developed this understanding in the *Chhetriya Pardushan Mukti Sangharsh case*²³², connecting the right to life with environmental rights. The landmark *Subhash Kumar v. State of Bihar case*²³³ solidified this link when the Supreme Court asserted that Article 21 includes the right to pollution-free water and air. Consequently, the right to a pollution-free environment is now considered a fundamental and human right under Article 21. This judicial recognition underscores that unsustainable activities causing environmental pollution violate fundamental rights. Additionally, in the *Vellore case*²³⁴, the apex Court explicitly told that sustainable development integral to the law of the land. Since 1996, sustainable development has been recognized as part of the Indian legal framework, effectively making it a component of the Indian Constitution.²³⁵ To ensure effective implementation of sustainable development in India, both the Constitution and environmental legislations must incorporate and uphold these principles. This alignment is crucial for achieving satisfactory and comprehensive sustainable development across the country.

Bridging The Gap: India's Environmental Legislation And Sustainable Development Principles

In India, several environmental laws, such as the Wildlife (Protection) Act of 1972, the Water (Prevention and Control of Pollution) Act of 1974, the Forest (Conservation) Act of 1980, the Air (Prevention and Control of Pollution) Act of 1981, and the Environment (Protection) Act of 1986, surprisingly do not explicitly address the concept of sustainable development.²³⁶ However, the National Green Tribunal Act (NGT) of 2010, which established a specialized tribunal for environmental cases, does permit the application of sustainable development principles in its decisions, as stated in Section 20 of the Act. The National Environment Policy of 2006 emphasizes the importance of sustainable development, intergenerational equity, the polluter pays principle, and the precautionary principle²³⁷. While this policy is not legally binding, it

²³¹ M.C. Mehta v State of Andhra Pradesh AIR 1987 AP 171.

²³² Charan Lal Sahu v Union of India AIR 1990 SC 2060.

²³³ M.C. Mehta v Union of India AIR 1991 SC 420.

²³⁴ Vellore Citizens Welfare Forum v Union of India AIR 1996 SC 2715.

²³⁵ Katherine M Davis, 'I, Too, Sing America: Customary International Law For American State And Federal Courts' Post-Kiobel Jurisprudence, Guided By Australian And Indian Experiences' (2014) 29 Emory Int'l L Rev 119, 160.

²³⁶ Ibid.

²³⁷ Vahbiz P Karanjia, 'Why India Matters: The Confluence Of A Booming Economy, An Activist Supreme Court, And A Thirst For Energy' (2009) 20 Vill Envtl LJ 49.

serves as a framework for the state to revise existing laws or draft new legislation aimed at balancing development with environmental protection.²³⁸

It is noteworthy that India has participated in numerous international environmental conferences, such as the Stockholm Declaration in 1972²³⁹, the World Commission on Environment and Development in 1987²⁴⁰, the Rio Declaration in 1992²⁴¹, the Johannesburg Summit in 2002²⁴², Rio+20²⁴³, and the Paris Agreement in 2015²⁴⁴, fulfilling its obligations under Agenda 2030²⁴⁵. Despite this, Indian environmental laws lack substantive provisions for sustainable development.

A counterargument is that Schedule I of the NGT Act lists the environmental legislations that the tribunal can apply, allowing it to invoke sustainable development principles alongside these laws. This indicates that, even without explicit sustainable development provisions in environmental legislations, the tribunal can integrate this principle when making decisions.

However, the NGT is not a writ court²⁴⁶ and cannot address writ petitions or violations of fundamental rights under the Indian Constitution. Therefore, the role of the Supreme Court in providing environmental justice using tools like sustainable development is crucial for protecting fundamental rights.

Stance of Indian Supreme Court on Sustainable Development

The Indian Supreme Court has effectively incorporated the right to a pollution-free environment as a fundamental right under Article 21 of the Indian Constitution and declared that international environmental law principles, such as sustainable development, are part of Indian law. The court faced challenges in finding environmental legislation that provided provisions for compensating victims of environmental degradation and holding polluters financially accountable for restoring the environment. This struggle was

²³⁸ Josh Drew, 'Calculating Potential To Emit Under the Clean Air Act: The Importance of Federal Enforceability' (1997) 91 Nw UL Rev 1114.

²³⁹ Paolo Galizzi, 'From Stockholm To New York, Via Rio And Johannesburg: Has The Environment Lost Its Way On The Global Agenda?' (2006) 29 Fordham Int'l LJ 952.

²⁴⁰ Edith Brown Weiss, 'Book review: the evolving Antarctic legal regime: Environmental Protection and Sustainable Development: Legal Principles and Recommendations. Adopted by the Experts Group on Environmental Law of the World Commission on Environment and Development. RD Munro, Chairman, and JG Lammers, Rapporteur.' (1989) 83 AJIL 685.

²⁴¹ David A Wirth, 'The Rio Declaration On Environment And Development: Two Steps Forward And One Back, Or Vice Versa?' (1995) 29 Ga L Rev 599.

²⁴² S Jacob Scherr and RJ Gregg, 'Johannesburg and Beyond: The 2002 World Summit on Sustainable Development and the Rise of Partnerships' (2006) 18 Geo Int'l Env'tl L Rev 425.

²⁴³ Roger Martella and Kim Smaczniak, 'Rio+20: Introduction To Rio + 20: A Reflection On Progress Since The First Earth Summit And The Opportunities That Lie Ahead' (2012) 12 Sustainable Dev L & Pol'y 4.

²⁴⁴ Daniel Bodansky, 'The Paris Climate Change Agreement: Anewhope?' (2016) 110 AJIL 288.

²⁴⁵ Risa E Kaufman, 'Localizing Human Rights In The United States Through The 2030 Sustainable Development Agenda' (2017) 49 Colum Human Rights L Rev 99.

²⁴⁶ J Mijin Cha, 'A Critical Examination Of The Environmental Jurisprudence Of The Courts Of India' (2005) 10 Alb L Env'tl Outlook 197.

similar to the one faced when declaring the right to a pollution-free environment as part of the fundamental rights.

Lacking comprehensive environmental legislation to guide decisions on compensation²⁴⁷ and balancing development with conservation, the Indian Supreme Court turned to international environmental law principles for direction. These included sustainable development, intergenerational equity, the polluter pays principle, and the precautionary principle. The court reasoned that these principles are rooted in customary international law²⁴⁸ and can be incorporated into domestic law to ensure environmental justice.

The Supreme Court of India has delved into multiple facets of sustainable development in several landmark cases:

*Vellore Citizens Welfare Forum v. Union of India*²⁴⁹ : This landmark case critically examined the scope of sustainable development in India. The apex Court observed the example of tanneries in Tamil Nadu, which, although contributing to the nation's development, were causing severe environmental pollution. The court emphasized the need for industries to install pollution control devices and treat waste before releasing it into the environment. The court invoked the principles of sustainable development, precautionary principle, polluter pays principle, and intergenerational equity to deliver environmental justice.

*M.C. Mehta (Taj Trapezium Matter) v. Union of India*²⁵⁰ : The Supreme Court clarified that economic growth depends on the sustainable exploitation of natural resources. It emphasized that development should be balanced with the capacity of nature to replenish lost resources.

*Narmada Bachao Andolan v. Union of India*²⁵¹ : The court examined the concept of sustainable development and stated that development should be tolerable by nature. The rate of development should not compromise the ecological balance.

*Hanuman Laxman Aroskar and Ors. vs. Union of India*²⁵² : The apex Court recognized the importance of ecologically sensitive areas and environmental impact assessments. It also acknowledged the interlinking relations between the 17 Sustainable Development Goals (SDGs) from Agenda 2030 for overall human development.

²⁴⁷ Simon H Ginsberg, 'Economic And Environmental Challenges To Natural Resource Trade' (1996) 10 Emory Int'l L Rev 297.

²⁴⁸ Gary Born, 'Customary International Law In United States Courts' (2017) 92 Wash L Rev 1641.

²⁴⁹ *Vellore Citizens Welfare Forum v Union of India* AIR 1996 SC 2715, 2720.

²⁵⁰ *M.C. Mehta (Taj Trapezium Matter) v Union of India* (1997)

²⁵¹ *Narmada Bachao Andolan v Union of India* (2000) 10 SCC 664.

²⁵² *Hanuman Laxman Aroskar and Ors v Union of India (UOI) and Ors* (2019) 15 SCC 401.

*State of Himachal Pradesh v. Ganesh Wood Products*²⁵³ : The Supreme Court discontinued forest-based industries, such as sawmills, by applying the concept of intergenerational equity. The court highlighted that forest preservation is crucial for development, provided forest resources are utilized wisely and sustainably.

*State of Kerala v. Kerala Rare Earth and Minerals Limited*²⁵⁴ : The petitioner alleged non-adherence to sustainable development mandates in regulating mining industries. The court emphasized the constitutional obligation of both central and state governments to adhere to sustainable development principles.

*Indian Council for Enviro-Legal Action v. Union of India*²⁵⁵ : The court emphasized the need for an equitable balance between environmental conservation and development. It stated that both are essential and cannot be prioritized over one another.

*M.C. Mehta v. Union of India*²⁵⁶ : The court differentiated between ‘banning’ and ‘balancing’ actions in the context of mining industries. It emphasized that sustainable development involves promoting industries that operate within sustainable parameters and banning those that degrade the environment.

The Supreme Court’s proactive approach in these cases demonstrates the integration of sustainable development principles into India's legal framework to achieve environmental justice and balance development with environmental preservation.

Conclusion

One of the first concepts to be established and accepted internationally was sustainable development, emphasizing the protection of environmental resources today to ensure that future generations can meet their needs. This concept was significantly addressed in the Rio Declaration of 1992, which emphasized the dissemination of knowledge in science and technology as crucial to achieving sustainable development. The Johannesburg Summit of 2002 further stressed the elimination of poverty as a primary goal for developing nations while also highlighting the responsibilities of developed nations in supporting this endeavor. In 2015, the concept was expanded through the introduction of 17 Sustainable Development Goals (SDGs) to be achieved by 2030, allowing nations to independently devise strategies to meet these goals.

²⁵³State of Himachal Pradesh v Ganesh Wood Products [1996] AIR SC 149.

²⁵⁴ State of Kerala v Kerala Rare Earth and Minerals Limited [2016] AIR SC 1817.

²⁵⁵ Indian Council for Enviro-Legal Action v Union of India (1996) 5 SCC 281.

²⁵⁶ M.C. Mehta v. Union of India (2009) 6 SCC 142.

In India, environmental concerns gained significance with the 42nd Amendment in 1976, which added Articles 48A and 51A(g) to the Constitution. These articles mandate both the state and citizens to safeguard and conserve environmental resources. In the case of *Subhash Kumar v. State of Bihar*, the Supreme Court of India acknowledged the right to a pollution-free environment as an essential aspect of the fundamental right to life under Article 21 of the Constitution. The legal recognition of sustainable development was cemented by the Supreme Court in the 1996 *Vellore Citizens Welfare Forum case*, establishing this principle as a crucial means for ensuring environmental justice, compensating victims of environmental crises, and holding polluters financially responsible for environmental restoration.

The NGT, under Section 20 of the NGT Act, is empowered to apply the principles of sustainable development in its rulings. This principle serves not only as a corrective measure but also as a preventive one, ensuring the protection of environmental resources for both present and future generations. The Supreme Court of India has played a pivotal role in the effective implementation of sustainable development principles since 1996, establishing them as powerful tools for achieving environmental justice. The Court has played a pivotal role in establishing the right to a pollution-free environment as a fundamental right. It has also applied key principles such as intergenerational equity, the precautionary principle, and the polluter pays principle to ensure comprehensive and effective environmental justice.

In conclusion, the Indian Supreme Court has played a pivotal role in embedding sustainable development into the legal framework, ensuring that both development and environmental preservation go hand in hand for the benefit of current and future generations.

The Role of Non-Governmental Organization in Nuclear Disarmament: With Special Reference to Treaty the Prohibition of Nuclear Weapons

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Abstract

This paper examines the influential role of non-governmental organizations (NGOs), particularly the International Campaign to Abolish Nuclear Weapons (ICAN), in global efforts to eliminate nuclear weapons, culminating in the Treaty on the Prohibition of Nuclear Weapons (TPNW). The study outlines the historical context of disarmament, noting the limited attention given to environmental protection in existing disarmament laws. While nuclear, biological, and chemical weapons are widely acknowledged as threats to humanity, nuclear disarmament efforts have faced significant resistance, particularly from nuclear-armed states. The paper analyzes ICAN's formation in 2007 and its successful mobilization of global civil society, which contributed significantly to the adoption of the TPNW in 2017. Through its coalition of NGOs, ICAN played a key role in raising awareness of the humanitarian and environmental impacts of nuclear weapons, influencing international law and public opinion. The paper also discusses ICAN's structural framework, partnership model, and its advocacy efforts, including political lobbying, media campaigns, and financial pressure on institutions supporting nuclear weapons. Despite the treaty's historic achievement, nuclear-armed nations, including the U.S., Russia, and China, remain outside its framework, posing a challenge to its effectiveness. The paper concludes by evaluating the post-treaty actions of ICAN and other NGOs, such as advocating disarmament education, engaging with parliamentarians, and urging financial divestment from nuclear arms. ICAN's work exemplifies how civil society can influence international disarmament negotiations and contribute to shaping a safer, nuclear-free world.

Keywords: Nuclear disarmament, International Campaign to Abolish Nuclear Weapons (ICAN), Treaty on the Prohibition of Nuclear Weapons (TPNW), Non-governmental organizations (NGOs), Environmental protection, Multilateral disarmament, International law Disarmament education, Financial divestment, Global security, Weapons of mass destruction (WMD)

Introduction

The United Nations General Assembly adopted a resolution in 2016 to begin negotiations on a treaty prohibiting nuclear weapons. This put an end to nuclear weapons. [1] The mass destruction of nuclear weapons was prohibited comprehensively and universally. The Biological Weapons, Chemical Weapons, anti-personnel land mines and cluster munitions were completely banned and there was only a partial prohibition on nuclear weapons. From 1945, eliminating the nuclear threat was high on the United Nations Agenda.

In these modern times, the nuclear-armed nations heavily invest in nuclear weapons. The last negotiations on disarmament took place 20 years back. The United States and Russia have the majority of nuclear weapons approximately 14900 in the world. The UK, France, China, Israel, India, Pakistan and North Korea haven't supported and adapted to this treaty. The majority of United Nations member states believe that the prohibition of Nuclear Weapons is the remedy to escape from mass destruction. The Prohibition of Nuclear Weapons provides progressive elimination by a solid legal and political foundation. The increasingly influential role of non-governmental organisations under international law, especially in the progressive development of international law, is a fact that cannot be discounted. Contextually as well, several non-governmental organisations have played a crucial role in evolving the public opinion, law and practice regarding nuclear disarmament and the environment. Of them, the most important is the International Campaign to Abolish Nuclear Weapons. It is predominantly only through the contribution of the ICAN, the treaty completely prohibiting nuclear weapons is a reality. Its organisational structure along with its working nature have to be analysed to obtain a detailed account of the preparatory history of the TPNW. But the future of the Treaty is not bright considering the contempt and neglect from the nuclear weapon States. What the ICAN does to make this system efficacious has to be studied and tested whether this Organisation can serve as a model in the international legal scenario for the future welfare of the human environment community. Apart from this ICAN is a coalition of NGOs, the International Physicians for the Prevention of Nuclear War and think-tank movements like Reaching Critical Will and others have contributed immensely towards the sensitisation of nuclear weapons and their ill-effects including environmental effects.

The Evolution of Environmental Protection in Disarmament Law

The sphere of disarmament law has only given limited attention to the protection of environment, flora, fauna and vegetation. However, some noteworthy examples of recognition of environmental life deserve remembrance. The International Humanitarian Law regime is the closest place to search for legal provisions. It has prohibited the use of weapons that cause severe and widespread damage to the environment (as mentioned under Article 35 Para 3 and Article 55 Para 1 of the API). As mentioned earlier, the system under the ENMOD Convention has also restricted the use of environmental weapons. However, the scope of the ENMOD Convention is limited because it does not deal with the damage to the environment. But it only protects the environment from deliberate manipulation and modified use as a weapon during armed conflict. The IHL mechanism also prohibits attacks against the natural environment by war of reprisals. Further, the Convention

on Certain Conventional Weapons and the Inhumane Weapons Conventions (hereinafter referred to as the 'CCW') and its Protocol III on Prohibitions or Restrictions on the Use of Incendiary Weapons also prohibits weapons that cause damage to the environment. By way of an amendment in 2001, this provision was extended to even the Non-International Armed Conflict (hereinafter referred to as the 'NIAC'). As observed in the 1996 Advisory Opinion of the Court, nuclear weapons are inherently incompatible with the principles of humanitarian law such as distinction, proportionality, military necessity and humanity. [2] Other disarmament legal instruments indirectly address environmental concerns. The Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare of 1925 indirectly protects the environment given the nature of weapons. But it only prohibits the use of such weapons and not the research, stockpiling, development, etc. The Biological Weapons Convention of 1972 and the Chemical Weapons Convention of 1993 have a direct bearing on the protection of the environment because of the effects of biological and chemical weapons on the environment. The International Law Commission (hereinafter referred to as the 'ILC') is commissioned to study a long-term project concerning the environmental impacts relevant during, before and after the armed conflicts. [3]The International Criminal Court has recently announced its plans to consider environmental damage as admissible before it. [4]

Concerning nuclear weapons, the 1963 Partial Test-Ban Treaty does not touch the use of nuclear weapons. It concentrated on nuclear testing which was prohibited in places within the jurisdiction. Secondly, the 1968 Nuclear Non-Proliferation Treaty doesn't prohibit the use of nuclear weapons but it prohibits the manufacturing and acquiring of nuclear weapons. Thirdly, the most important treaty is the Comprehensive Nuclear Test Ban Treaty of 1996 which is comparatively more comprehensive than other mechanisms. It forbids all forms of use and nuclear testing. However, it didn't receive adequate international support. Apart from this, other regional mechanisms concentrate on the environment through nuclear disarmament. It includes the Tlatelolco Treaty for the Prohibition of Nuclear Weapons in Latin America and the Caribbean of 1967, the 1985 Treaty of Roratonga of the South Pacific, The 1995 Treaty of Bangkok for Southeast Asia, the Treaty of Pelindaba for Africa of 1996, The Treaty of Semipalatinsk for Central Asia of 2006 and the 1959 Antarctic Treaty. The International Union for Conservation of Nature (hereinafter referred to as the 'IUCN') 1988 adopted a resolution that discussed the environmental consequences of nuclear war and the earlier efforts taken by the General Assembly along with other international organisations. According to the Resolution of the General Assembly of the IUCN in 1984 and 1985 [5], several States cooperated and a report was

published by the Scientific Committee on the Problems of the Environment (hereinafter referred to as the 'SCOPE'). Accordingly, the report studied the environmental consequences of nuclear war. It addressed the dangerous phenomenon which may be looming called the 'nuclear winter'.^[6]

Structural and Organisational Framework of the ICAN

ICAN as a civil society group in the field of elimination of nuclear weapons plays a vital role in the prohibition of nuclear weapons and to this end in bringing the international community a commitment by way of a binding treaty. ICAN is a coalition group of non-governmental organisations. It was formally established in Australia in the year 2007 and it was internationally launched soon after in Vienna. They were inspired by the success of the International Campaign to Ban Landmines. Its International Steering Group is a non-profit association registered by Article 60 of the Swiss Civil Code. Its headquarters are in Geneva, Switzerland. The structure of the ICAN is that it operates based on a partnership model. ICAN is a coalition of different partner organisations. It voices against the production and use or threat to use of nuclear weapons, on behalf of civilians all over the world by representing them through various partner organizations. It is a campaign for mobilizing civil society around the world to support prohibiting and eliminating nuclear weapons. It consists of partner organizations, an international steering group, a Swiss-registered non-profit organization and an international staff team. The governance of the campaign is effectively functioned by the international steering group to promote the Campaign Goals. It received a Nobel Prize in 2017 for being a 'driving force when it comes to disarmament issues' and for its efforts in achieving a treaty prohibiting nuclear weapons. Concerning the different parts of the structure of the ICAN, the International Steering Committee is responsible for the overall governance of the campaign. It exercises several roles inter alia Supervisory (Supervising the activities whether in consonance with related legislation), Consultation (Consultation with partner organizations), Approving or Disaffiliate partner organizations, reviewing work of partner organizations, establishing committees or working groups, strategic planning, financial oversight, fundraising, and policy formulation. There are two major committees

1. Fundraising committee
2. Human resources committee

The role of such committees is communicating with the group, organising meetings, and reporting on the group's activities to the International Steering Group and International Staff Team. Further, the International Staff Team was empowered with the task of coordinating the campaign. The International Staff Team is responsible for contributing to strategies, tactics, work plans, budgets and proposals. They maintain a database of partner organisations and recruit new organisations. Apart from the internal integral structure of the

ICAN, it consists of a group of Partner Organisations. The partner organisations should have a clear policy to outlaw nuclear weapons to partner with the ICAN. Each organisation gets a vote through its representative in each matter in the International Steering Committee which meets once a month. The mode for reaching a decision is majorly by consensus. If it fails, then the decision is reached by a simple majority vote. These organisations are requested to sign a partnership agreement and function non-violently. They are contacted using the maintenance of a campaigner's list. The international work of the Campaign is coordinated by the Executive Director. The present Executive Director is Beatrice Fihn. The title of the organisation is that it is a campaign. The terminology does not reveal much detail about the nature and legal personality. Legally, it is a non-profit organisation registered under the Swiss Civil Code Article 30. [7] Thus, accordingly under the Swiss law it should be in the form of an association or foundation. It is a non-profit legal entity, with a full legal personality, which need not be registered and acquires legal personality as soon as the intent to exist as a corporate body becomes clear from the articles of association. These associations are not subjected to the supervision of the Government. Descriptively, it is known as a coalition of various non-governmental organisations

Being a coalition of NGOs itself, it maintains relationships with several international actors. It works closely with the UN. In 2014, ICAN inspired States submitted a joint appeal at the UN General Assembly regarding nuclear disarmament. Following, the UN General Assembly 2015 established an Open-Ended Working Group to study the humanitarian impact of nuclear weapons and make concrete recommendations to take forward action. ICAN campaigns actively in this open-ended working group. This group later authorizes negotiations towards a prohibition treaty. Resolution Number 71/258 adopted by the General Assembly on 23 December 2016, "Taking forward multilateral nuclear disarmament negotiations". Recognizes the value of the participation and contribution of international organizations and civil society to taking forward multilateral nuclear disarmament negotiations, as demonstrated during the work of the Working Group; and Welcomes further the efforts by all Member States, international organizations and civil society to continue to enrich the discussions on how to take forward multilateral nuclear disarmament negotiations in the United Nations bodies in which disarmament and peace and security are addressed. Other Resolutions requested for multilateral negotiations part - Resolution Number 67/56 adopted by the General Assembly on 3 December 2012; Resolution Number 68/46 adopted by the General Assembly on 5 December 2013; Resolution Number 69/41 adopted by the General Assembly on 2 December 2014; Resolution Number 70/33 adopted by the General Assembly on 7 December 2015.

ICAN has partner organisations in almost 106 countries of the world. There are in total 607 partner organisations currently as of July 2021. Thus, the nature of the relationship between is a partnership that may be acquired easily by signing of simple partnership form and demonstrating the interest of the objective in action.

Contribution towards Nuclear Disarmament and Human Environment: Evolutionary History of the TPNW

The objective of the ICAN:

Campaigners list Social Media Hashtags, Media Influence, Work in the UN, Work through Partner Organisations, and Code of Conduct. Identification of universities engaged in research of nuclear weapons and demanding them to stop the research promoting nuclear weapons, urging financial companies that aid in building nuclear weapons and encouraging disarmament education are some of the important functions undertaken by ICAN to facilitate compliance with the TPNW.

The Treaty:

Like the ban on chemical weapons, biological weapons landmines and cluster munitions nuclear weapons are also to be banned through international law. By holding regional conferences, national workshops and one-on-one meetings with officials and parliamentarians the ICAN brings the support of the States to the Treaty. Prevention is better than cure is the best solution for the prohibition of such weapons. ICAN commissioned public opinion polls among peoples to bring the common concern of the State to become a party to the treaty, in this way, it used to propel the States to be in part with their international commitments for the elimination of nuclear weapons. [8] Further by bringing the former leaders of a State and by appeal to the major cities administration the consensus for the party to the treaty is brought by the ICAN. [9]

Post-Treaty Movement

Nuclear weapons are affecting the human health and the environment. More specifically, it would cause severe casualties, destroy the ecosystems, disrupt the global climate, cause famine and starvation, the relief works etcetera. Those weapons are inhumane and indiscriminate. The nature of commitment given by the States for the elimination of nuclear weapons depends upon the leaders who are in power, hence the future partisan of the treaty will be based on this. The military or strategic purpose cannot be fulfilled by nuclear weapons. [10] The workability of the TPNW is a matter of Concern. However, ICAN has adopted certain works to reap the benefits of the Treaty.

(i) ICAN has adopted the task of political advocacy. It has encouraged the parliamentarians to represent the need for nuclear disarmament in their respective parliaments. On 26th August 2020, the International Parliamentary

Union along with ICAN sent a group of letters to parliamentarians to raise their concerns about the elimination of nuclear weapons. [11]

(ii) Financial Companies have been financing the Governments in developing nuclear weapons. ICAN has been urging these companies to divest. A report submitted by ICAN states that 71 financial institutions have a comprehensive policy to restrict investments in nuclear weapons producers. [12]

(iii) ICAN has identified 50 universities from the United States of America which has been actively participating in the development of nuclear weapons. It has been urged as a part of the disarmament campaign to dissolve research of such nature, advocating reinvestment of the funding of nuclear weapons to non-proliferation of nuclear weapons projects. [13]

Role of other NGOs

A handful of NGOs have upheld the ill consequences of the use of Nuclear Weapons and have urged the International community to engage in the total elimination of nuclear weapons. The contributions of them are as follows:

(i) It was announced only by the International Physicians for the Prevention of Nuclear War (hereinafter referred to as the “IPPNW”) to formulate the ICAN in 2007. It is the lead medical NGO that urged for a treaty to eliminate nuclear weapons. A group of Soviet and American doctors for the cause of Humanity irrespective of the ideological divide decided to commence the NGO. The group of doctors cautioned that the use of nuclear weapons would be the final time and that there could be no medical cure for the catastrophic harm that would be caused by the Nuclear Blast. The IPPNW has documented numerous reports and articles stating the health and environmental consequences of the production, testing and use of nuclear weapons. It urged during the review conference that the use of nuclear weapons not only is in contrary to International Humanitarian Law but also in the Regime of International Human Rights Law and International Environmental Law. [14]

(ii) other NGOs that join hands with the ICAN include the African Council of Religious Leaders, Peace Boat, Acronym Institute of Disarmament Diplomacy, Reaching Critical Will, and PAX Peace Organization. All these NGOs contribute towards the disarmament campaign by partnering with ICAN and also separately engage in disarmament education, testimonial collection, submitting reports and meeting parliamentarians to speak about the complete elimination of nuclear weapons to their respective governments.

Conclusion:

The contribution of ICAN is notable in the conclusion of the TPNW. With 55 state parties ratifying the Treaty and entering into force on 22nd January 2021 is inspirational. The measures adopted for the total elimination of nuclear weapons include urging Universities involved in Nuclear research to work

towards the non proliferation of nuclear weapons, demanding financial companies to divest in building nuclear weapons, and disarmament education. ICAN has also been active in meeting and encouraging parliamentarians to speak in their respective parliaments for the total elimination of nuclear weapons. Furthermore, the NGOs have played a central role in the Multilateral Nuclear disarmament efforts.

Reference:

- [1] On 27th October 2016, the UNGA adopted a resolution for total elimination of Nuclear Weapons. It was adopted in the 1st session, UNGA Res. L.41 available at <https://reachingcriticalwill.org/images/documents/Disarmament-fora/1com16/resolutions/L41.pdf> (Last accessed on 12.07.2021).
- [2] Generally, refer, to Case Concerning the Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion rendered by the International Court of Justice, 8 July 1996.
- [3] Analytical Guide to the Work of the International Law Commission titled 'Protection of the environment about armed conflicts', available at http://legal.un.org/ilc/guide/8_7.shtml#mandate, Accessed on 25/04/2021.
- [4] For an account of the jurisprudence of the International Criminal Court on Environment and Conflict, See Tara Smith, Why the International Criminal Court is right to focus on the environment, The Conversation, 23rd September 2016: <https://theconversation.com/why-the-international-criminal-court-is-right-to-focus-on-the-environment-65920>, Accessed on 26/04/2021.
- [5] UN General Assembly initiative on the Environmental Consequences of Nuclear adopted by the Resolution 16/1 of 10 February 1988, available at www.portals.iucn.org/library/node/43745, Accessed on 28/04/2021.
- [6] M.A Harwell, Hutchinson (1985), Environmental consequences of Nuclear War, Ecological and agricultural effects, International Atomic Energy Agency, Vol. No.18, Issue No. 13 available at <http://inis.iaea.org/search/searchsinglerecord.aspx?recordsFor=SingleRecord&RN=18055923>, Accessed on 27/04/2021.
- [7] The United Nations initially coined the term "NGO" after World War II. NGOs were first officially acknowledged in international law in 1945, with the introduction of the U.N. Charter. Article 71 of the Charter of the UN refers to "non-governmental organizations. This arrangement introduced a new standardized form of cooperation between actors in an international society. The United Nations introduced a negatively composed term (non-governmental organizations) solely to encompass a variety of actors under one heading, without defining it sufficiently. In the following decades, the term "NGO" has become popular for societal actors of all sorts engaged outside the U.N. framework, and has indeed been increasingly adopted by academics as well as by activists.
- [8] ICAN commissioned public opinion polls in late 2020 in six NATO countries - Belgium, Denmark, Iceland, Italy, the Netherlands and Spain - which showed very high levels of public support for their countries to join the Treaty on the Prohibition of Nuclear Weapons. Support for NATO countries to join the TPNW remains high with 89% of Spanish, 87% of Italians, 86% of Icelanders, 78% of Dutch and Danish and 77% of Belgians supporting their country joining the treaty.
- [9] ICAN Annual Report 2020, Page 7.
- [10] Unacceptable weapons include chemical and biological weapons, anti-personnel landmines, and cluster munitions.
- [12] The report submitted by ICAN titled "Beyond the Bomb: Exclusion of Nuclear Weapons Producers" is available at https://www.dontbankonthebomb.com/wp-content/uploads/2019/10/201910201910_Beyond-the-bomb_final.pdf. Further, for a concise understanding of works handled by the ICAN refer, to https://www.icanw.org/how_the_TPNW_works (Last accessed on 13.07.2021).
- [13] For a statistical understanding of the number of universities engaged in developing nuclear weapons, refer to the report of ICAN titled "Schools of Mass Destruction: American Universities in the Nuclear Weapons Complex, available at <https://d3n8a8pro7vhmx.cloudfront.net/ican/pages/405/attachments/original/1573590665/ICAN-Schools-of-mass-Destruction-Executive-Summary-nov2019.pdf?1573590665> (last accessed on 13.07.2021).
- [14] For the comments submitted by IPPNW refer to the working paper of the UN Conference to Negotiate a Legally Binding Instrument to Prohibit Nuclear Weapons, Leading Towards their Total Elimination, available at <https://www.ippnw.org/wp-content/uploads/2020/07/UN-WorkingPaperBanTreaty2017.pdf>, for other publications of IPPNW refer, <https://www.ippnw.org/programs/nuclear-weapons-abolition/abolition-of-nuclear-weapons-campaign-material-and-research> (last accessed on 12.07.2021).

Environmental Justice in India and National Green Tribunal

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Abstract

The National Green Tribunal (NGT) was established by the Government of India in 2010. The NGT is a quasi-judicial body that deals exclusively with civil litigation relating to environmental issues. The National Green Tribunal (NGT) was created by the National Green Tribunal Act of 2010 with the intention of offering a specialized forum for the settlement of environmental disputes. Inspired by Article 21 of the Indian Constitution, which upholds the fundamental right to a healthy environment, the NGT expeditiously handles cases concerning the preservation of forests, environmental protection, and natural resources. Section 19 of the National Green Tribunal Act, 2010 grants the Tribunal the authority to control its own processes. Furthermore, the Tribunal is guided by principles of natural justice and is not bound by procedure under the Indian Evidence Act of 1872 or the Code of Civil Procedure, 1908. But in order to carry out its duties, the Tribunal is endowed by the Code of Civil Procedure with the authority of a civil court. There were two earlier attempts to create green courts in India before NGT developed. These were the National Environment Appellate Authority Act of 1997 (NEAA) and the National Environment Tribunal Act of 1995 (NETA). NGT has resolved numerous environmental issues and received overwhelming support from various sources. This research examines the effectiveness of the NGT and examines NGT rulings from October 2010 to July 2024. It examines the NGT's effects and conflict locations. Despite the NGT Act's numerous shortcomings, it can be seen as a step in the right direction for environmental justice in India.

Keywords: Environmental Justice, National Green Tribunal, National Green Tribunal Act, 2010, impact of NGT, NGT judgments

Introduction

Various countries around the world have established separate “Green Courts” or “Green Tribunal” or “Environmental Court” to deal with environmental litigation. India is the third country after Australia and New Zealand to have a specialized environmental court. India is one of the pioneers in establishing the Green Court in developing countries. In India, the National Green Tribunal (NGT) was established in 2010 under Article 21 of the Indian Constitution. This special article of the Indian Constitution assured its citizens of protection of life and personal liberty. In light of this constitutional right,

the government has established a new green tribunal to deal exclusively with environmental litigation. This newly established “Green Tribunal” is a unique justice mechanism in the sense that it is a dedicated “fast-track quasi-justice” body designed to ensure speedy justice in environmental cases. The tribunal consists of an equal number of judges and environmental experts to ensure efficient processing of cases. It also provides for compensation to be paid by the polluter for damages caused to the affected parties. The court has jurisdiction over environmental issues. The court is not bound by the 1908 Code of Civil Procedure. It operates according to the “principles of natural justice”.

The Tribunal's headquarters are in New Delhi, the capital of India. Regional benches are available in Bhopal, Chennai, Kolkata and Pune²⁵⁷. The aim of these facilities in different parts of the country is to reach the remote parts of India. In this way, people from different parts of the country can gain access to the tribunal. The main benches as well as the regional benches of the Green Tribunal are currently functional. In addition, another important purpose of establishing green courts in various cities was to reduce the burden of litigation in the general courts. The Indian courts are already overloaded with the cases of all courts, from lower to upper levels.

This paper is an exploratory study, deals with genesis and the gradual evolution of green court in India. The first section deals with the background to the establishment of a green court in India, followed by the structure of the NGT and its jurisdictions. In the results section of the analysis of the NGT judgments, some important cases are discussed in general. The last section of the paper discusses the limitations of NGT and finally the concluding remarks.

Background

The United Nations Conference on the Human Environment highlighted the global need to take appropriate measures to protect and improve the environment. This groundbreaking global environmental conference led to the adoption of a plan of action known as the 1972 Stockholm Declaration. According to Principle 1 of the Stockholm Declaration, individuals have the fundamental right to freedom, equality and adequate living conditions in an environment of such quality that it ensures a life of dignity and well-being. Furthermore, it emphasizes the solemn duty of individuals to protect and improve the environment for both present and future generations. In accordance with the principles of the Stockholm Declaration of 1972, the Indian Parliament amended the Constitution of India and introduced Articles

²⁵⁷ <https://www.greentribunal.gov.in/>

48A, 51A(g) and Article 253. Following these changes, important environmental laws were enacted, including the Water (Prevention and Control of Pollution) Act, 1974, commonly referred to as “the Water Act”, and the Air (Prevention and Control of Pollution) Act, 1981 as “the Air Act”, and the Environment (Protection) Act, 1986. The Water Act 1974 (amended in 1988) was implemented to prevent the discharge of untreated domestic and industrial pollutants into water bodies. The Air Act 1981 (amended in 1987) was introduced to control and mitigate air and noise pollution. The Environmental Protection Act of 1986 aimed to protect and improve the overall environment by consolidating the provisions of the Air and Water Acts, including regulations on the storage, handling and use of hazardous wastes.

The second major environmental conference, the Rio Conference in 1992, highlighted the importance of providing citizens with access to judicial and administrative systems. It also underlined the need for national legislation to regulate liability and compensation for environmental damage suffered by victims of pollution. Principle 10 of the Rio Declaration states that environmental problems can be solved most effectively when all affected citizens participate at an appropriate level. At the national level, it requires individuals to have reasonable access to environmental information from public authorities, including details of hazardous substances and activities in their communities, as well as opportunities to participate in decision-making processes. In addition, States must promote public awareness and participation by ensuring the widespread availability of information. Furthermore, citizens should have effective access to judicial and administrative procedures, including avenues for redress and redress. Prior to the establishment of the National Green Tribunal (NGT) Act, the Indian government undertook two other initiatives to create specialized environmental courts. The first was the National Environment Tribunal Act (NETA) of 1995, and the second was the National Environment Appellate Authority (NEAA), formed under the National Environment Appellate Authority Act of 1997.

The National Environment Tribunal Act of 1995 was enacted by the Indian Parliament in response to the Rio de Janeiro Conference. Following this, the Indian Central Government established the National Environment Tribunal under the provisions of this Act. The tribunal's primary purpose was to provide compensation to individuals affected by incidents involving hazardous substances.

The National Environment Appellate Authority Act (NEAA) of 1997 was introduced to regulate specific industries, operations, or processes,

determining which should or should not be conducted under the Environment (Protection) Act of 1986. The Ministry of Environment and Forests, Government of India, set up the NEAA to handle environmental clearances and address issues in ecologically sensitive areas. However, this authority was eventually decommissioned and the law was repealed following the passage of the National Green Tribunal Bill in 2009.

Four landmark rulings by the Supreme Court of India *M.C. Mehta vs. Union of India* (1986)²⁵⁸, *Indian Council for Environmental-Legal Action vs. Union of India* (1996)²⁵⁹, *A.P. Pollution Control Board vs. M.V. Nayudu* (1999)²⁶⁰, and *A.P. Pollution Control Board vs. M.V. Nayudu II* (2001)²⁶¹ highlighted the necessity of establishing a specialized environmental court. These cases demonstrated that environmental litigation often involves complex scientific data that requires interpretation and analysis, underscoring the need for environmental courts to have both subject matter experts and professional judges. In the *A.P. Pollution Control Board vs. M.V. Nayudu* case, the idea of a "multi-faceted" environmental court, integrating both judicial and technical or scientific experts, gained significant support. These cases collectively underscored the importance of having judicial members and subject experts familiar with environmental issues due to the scientific complexities involved.

Based on these observations, the Government of India commissioned the Law Commission of India to conduct a detailed study on the establishment of "environmental courts". The study drew insights from Lord Woolf's recommendations in England and the environmental court systems in countries such as Australia and New Zealand. The Commission prepared a report advocating for the creation of Environmental Courts in India, proposing these courts to alleviate the workload of the High Courts and the Supreme Court. These specialized courts would serve as courts of both fact and law, possessing the full powers of a civil court in their original jurisdiction. Additionally, they would have appellate jurisdiction over decisions made by authorities under the Water (Prevention and Control of Pollution) Act of 1974, the Air (Prevention and Control of Pollution) Act of 1981, and the Environment (Protection) Act of 1986. There would also be provisions for the Central Government to designate these courts as appellate courts under other environmental laws. This legislative framework could be established under Article 253 of the Indian Constitution, in conjunction with Entry 13A of List I in Schedule VII, to implement the resolutions of the 1972 Stockholm Conference and the 1992 Rio Conference. The Law Commission further

²⁵⁸1987 AIR 1086,

²⁵⁹1996 AIR 1446

²⁶⁰(1999(2) SCC 718) (dated 27.1. 1999)

²⁶¹2000 AIR SCW 4573

recommended that these Environmental Courts should first be set up at the state level, with the potential for expansion to other regions across the country. This would ensure that citizens, including those from the most remote areas, have access to these courts.

National Green Tribunal Act, 2010

The National Green Tribunal (NGT) was established on October 18, 2010 under the National Green Tribunal Act 2010. Lok Sabha (the lower house of the Indian Parliament) passed the National Green Tribunal Bill in 2009. The bill replaces the former National Environmental Appellate Authority and has a broader scope and reach than the NEAA. This judicial body should deal exclusively with environmental laws and grant citizens the right to the environment. The bill initially decided that the main bench of the tribunal along with four other court benches would be set up in Bhopal. However, NGT's main branch is now located in Delhi, the national capital of India. The other branches are located in Bhopal, Chennai, Kolkata and Pune Circuit Bench.

Section 4 of the NGT Act outlines the composition of the Tribunal. According to this section, the Tribunal will include a full-time chairperson, who must be appointed from among the judges of the Supreme Court of India or the Chief Justices of the High Courts. The chairperson is authorized to invite expert members in relevant fields to assist with cases whenever needed. Together with the Central Government, the chairperson is responsible for establishing the procedures and rules that govern the Tribunal.

The Act specifies that there should be no fewer than ten and no more than twenty full-time judicial members. These members are typically appointed from among judges of various High Courts and the Supreme Court. In addition to judicial members, the Tribunal also includes an equal number of subject experts. These experts, who serve as full-time members, must also number between ten and twenty. This balance ensures equal representation from both judicial members and expert members. The expert members are required to hold a doctoral degree in either physical or life sciences, or they may be engineering postgraduates. Moreover, they must have at least fifteen years of relevant experience, including five years of practical experience dealing with environmental issues.

As per Section 21 of the NGT Act, the decision of the Court shall be taken by majority opinion. Section 21 of the NGT Act further states that after hearing a dispute, in the event of the same difference of opinion, the presiding judge shall have the power to decide the case after the hearing. If opinions are evenly divided even after the hearing in the presence of the presiding judge

himself, the case may be referred to other members of the court for hearing. The other member is responsible for hearing such requests or appeals and deciding the dispute.

Jurisdiction of Tribunal

The jurisdiction of the Tribunal encompasses all environmental laws related to air and water pollution, i.e. the Environment Protection Act, the Forest Conservation Act, and the Biodiversity Act. With this initiative, India aligned itself with countries like Australia and New Zealand, which also have specialized environmental tribunals.

Schedule I of the NGT Act includes the following legislation: the Water (Prevention and Control of Pollution) Act, 1974; the Water (Prevention and Control of Pollution) Cess Act, 1977; the Forest (Conservation) Act, 1980; the Air (Prevention and Control of Pollution) Act, 1981; the Environment (Protection) Act, 1986; the Public Liability Insurance Act, 1991; and the Biological Diversity Act, 2002. According to Section 14 of the National Green Tribunal Act, the Tribunal has authority over all civil cases related to environmental matters. However, it is notable that two significant environmental laws are excluded from Schedule I of the NGT Act: the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, and the Wildlife (Protection) Act, 1972. Section 14 also specifies a time frame for the disputes that can be addressed by the court. Clause three of this section states that “No application for adjudication of dispute shall be entertained by the Tribunal unless it is made within a period of six months from the date on which the cause of action for such dispute first arose. Provided that the Tribunal may, if it is satisfied that the applicant was prevented by sufficient cause from filing the application within the said period, allow it to be filed within a further period not exceeding sixty days.” The Tribunal is authorized to hear and resolve cases related to the acts listed in Schedule I, as outlined in Section 14 of the Act.

This Tribunal shall have the power to award compensation to the victims of pollution and other environmental damage arising under the Regulations listed in Annex II. This schedule includes accidents that occurred while handling hazardous materials. However, “the court would not entertain any application for grant of compensation or relief or restitution of property or environment under Section 15 of the Act unless it is made within a period of five years from the date on which the cause for such is given “Compensation is present” or “relief came first”. However, the court may process applications beyond this prescribed period if it is satisfied by the reasons given by the applicant. If

the court is satisfied, a further 60 days of leniency could be granted in this case.

The court also has the right to order compensation for damaged property as well as the restoration of the environment in the affected areas. In this case, the court has the same powers as a civil court. The arbitral tribunal shall also have the power to allocate the compensation or relief payable under the separate heading set out in Annex II. The NGT Act provides for the first time legal recognition of the principle of no-fault liability (absolute liability - recognized for the first time in the case of the Oleum gas leak)²⁶² and the principles of sustainable development, the precautionary principle and the polluter pays principle.

A number of different and diverse litigations are filed in the Green Tribunal from Maharashtra. For example; Complaints against M/s Lavasa Corporation Ltd. for hill station development, Nuclear Power Corporation of India Limited for setting up Jaitapur Nuclear Power Park, slum development projects in Mumbai and so on. In Goa, there are major legal disputes with the Goa State Pollution Control Board and the Coastal Zone Management Authority relating to environmental approvals for construction programs in and around the coastal areas in Goa. From the analysis of the dispute settled in NGT, it appears that very few cases were filed from the mineral-rich states of India. For example, about 19 cases were disposed of from Madhya Pradesh, 9 from Chhattisgarh and 5 from Orissa. There is strong opposition to the construction; Mining and many coal-based thermal power plants are planned or operating in these areas. Although there are a lot of mining and manufacturing activities taking place in these states, the Ministry of Environment and Forests (MoEF) has granted environmental clearance for these projects. The number of lawsuits filed in these cases is comparatively less. Although there are many large dams either planned or under construction in many northeastern states and there is strong popular opposition, there are no Green Court conflicts in any of these states.

The NGT has the authority to take suo motu cognizance of environmental issues and initiate proceedings independently. Among the various cases, the Tribunal has delivered judgments in instances like Court on its own Motion vs. State of HP & Others (Original Application No. 237/2013(THC)), Vs Ministry of Environment & Others (Original Application No. 16/2013(CZ)), and Suo Motu vs. State of MP & Others (Suo Moto Application No. 56 of 2013). Two significant suo motu rulings are discussed below.

²⁶²1987 AIR 1086

In the case of NGT vs. State of HP & Others (Original Application No. 237/2013(THC)), the Tribunal addressed the issue of rising vehicular traffic in Himachal Pradesh, especially in the Kullu-Manali and Rohtang Pass regions. The Court expressed concern over the degradation of natural habitats and the diminishing snow cover on the mountains due to the increase in tourist traffic and vehicle emissions, which release hydrocarbons in this highly eco-sensitive zone. The Tribunal ordered the state government to implement a scientific forestation program to protect the environment. Additionally, it directed the government to collect fees from vehicles, which would be deposited into a “Green Tax Fund” designated for environmental restoration efforts.

Some Landmark Cases

NGT has given its judgment on many important environmental issues. The rulings also include challenges to environmental permits, permission to launch large projects like Posco. A number of significant judgments have been made, including banning burning of plastics in the open, immersion of idols and so on. The keyword analysis of the cases shows that most cases are related to objections to different environmental releases. Some high-profile cases are discussed in the following section.

The NGT has upheld an appeal against environmental clearance for a thermal power plant project in Chhindwara district of Madhya Pradesh. This plea was filed by Medha Patkar and others (July 11, 2013, Appeal No. 1/2013). Adani Power Limited, the Ministry of Environment and Forests and the State of Madhya Pradesh had objected to the application. The objection was raised on the basis of limitation under Section 16 of the NGT Act. This section requires the complaint to be filed within 90 days of receipt of environmental approval for the project. The applicants justified the delay by saying that the response sought from the authorities concerned under the Right to Information Act (RTI) caused the delay. Therefore, the court dismissed the issue of limitation filed by the defendants and condoned the delay.

The environmental clearance granted to Pohang Iron and Steel Company (POSCO), a major iron and steel company of South Korea, in Orissa was stopped by the NGT on March 30, 2012 (Appeal No. 8/2011, Praffula Samantra vs. Union of India and other). Various fabric bleaching and dyeing units in the state of Tamil Nadu have submitted applications to start their industrial units. These applications will be disposed of with permission to contact the relevant authority.

RTI and environmental activist Rohit Choudhury from Assam have submitted a number of petitions to the NGT. The petitions alleged that the Assam government had approved a number of stone crushing and brick

manufacturing units in and around the Kaziranga National Park area. The permissions granted for stone crushing and interrogation facilities are violative of the 1996 Notification of the MoEF of the Government of India. In the 1996 Notification, this area was designated as a Prohibited Development Area. Therefore, NGT ordered immediate removal of industrial units operating in the area. The green court had also imposed a fine of Rs 1 lakh each on both the state and the environment ministry for violating the notification.

Results and Discussion

As mentioned in the origin of the NGT, the Supreme Court of India observed that many environmental cases involved complex issues. Consequently, the Court decided that a specialized green court was needed to handle these intricate matters. In line with this, the Supreme Court directed the Law Commission of India to study the feasibility of establishing specialized 'environmental courts' that could handle environment-related litigation more efficiently. Based on its study, the Law Commission recommended the creation of environmental courts under Article 247 of the Constitution. In contrast, "Tribunals" are established under Article 323A or Article 323B of the Constitution. Tribunals do not possess the same constitutional powers or authority as civil or high courts. Because of this, defendants in several recent cases have questioned the Tribunal's jurisdiction to adjudicate such matters.

There have been several confrontations at various levels between the government and the NGT. India's Ministry of Environment and Forests (MoEF) has told the Supreme Court of India that the tribunal has no power to act suo moto in environment-related cases. The MoEF mentioned several shortcomings in the functioning of the NGT and pointed out that it sometimes went beyond its purview. The ministry recently told the Supreme Court that the tribunal has no statutory mandate and sometimes the government (here the MoEF) also disagrees with the tribunal. However, NGT has gone beyond its jurisdiction and initiated suo motu proceedings in some cases. The ministry has raised further issues of impropriety and claimed that the NGT had followed regulations. Anti-government norms and the Goa government have also raised objections to the NGT's recent ban on sand mining across the country. The Goa government was of the view that the ban imposed was a judicial "overreach". As a result of the NGT order, many construction activities came to a halt due to high sand prices and black-market trading in the state.

There are also ongoing controversies surrounding the hiring practices of the NGT. According to the Ministry of Environment and Forests (MoEF), the recruitment of support staff for the NGT did not adhere to established

government norms and procedures. Additionally, there has been an uneven distribution of judicial and expert members across various benches, leading to an imbalance. The required numbers of both judicial and expert members have not been met, despite the government's assurance to the Court that it had enough members to establish six benches of the tribunal. Initially, while judges were appointed to staff the tribunal, the necessary infrastructure to ensure its efficient operation was lacking. Moreover, in its early days, the NGT faced financial constraints due to inadequate budget allocations.

Chapter III, Section 14(3) of the NGT Act outlines the jurisdiction, powers, and proceedings of the Tribunal. It states, "No application for adjudication of a dispute under this section shall be entertained by the Tribunal unless it is made within a period of six months from the date on which the cause of action for such dispute first arose." However, if there are valid reasons, the Tribunal may grant an extension of up to an additional 60 days. This time limitation is often insufficient, especially for cases related to health and pollution. The effects of pollution on health can take a long time to manifest. For instance, the impact of exposure to radioactive materials, mercury, arsenic poisoning, asbestos, silicosis, and other hazardous substances can take years to show symptoms in humans and animals.

The NGT's expert members include technical experts from the scientific community (life sciences, physics), engineering and other technology areas. Interestingly, there are no provisions for social scientists, environmental activists, or other concerned citizens with appropriate specialization or familiarity with environmental or occupational risks. Finally, it is important to note that NGT's jurisdiction is limited to the acts listed in the list. Therefore, both the High Courts and the Supreme Court continue to play a concomitant and important role as a forum for public interest litigation in the environmental sector.

Similar to the environmental courts established in developed countries like Australia and New Zealand, India launched the National Green Tribunal (NGT) in 2010. This specialized, fast-track, quasi-judicial body comprises an equal number of judicial members and subject matter experts, a combination designed to ensure environmental justice and the efficient resolution of cases. Since its establishment, the NGT has issued numerous prompt judgments and orders, addressing issues such as illegal sand mining, noise pollution in Delhi, the preservation of biodiversity in the Western Ghats, and wildlife protection in Kaziranga National Park in Assam. It has also suspended several environmental clearances when necessary.

Through these actions, the NGT is fulfilling its mandate to deliver justice in environmental matters. In the context of post-liberalization India, the NGT plays a crucial role in monitoring and regulating the unchecked drive towards industrialization within its jurisdiction. While the NGT may not be a solution to all environmental issues, it certainly represents a significant step forward in the resolution of environmental disputes. As a result, the NGT is expected to make a substantial contribution to the protection and sustainability of India's natural environment.

Need for Conservation of Forest Biodiversity

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Abstract

This paper intends to look into the way in which forest was considered in the past and how we are managing it in the present and how it ought to be managed in the future. There are many types of Forest, even though it needs to be looked at from a biodiversity point of view. Plantations and green canopies cannot be termed as forest. Increasing human wildlife conflicts within different parts of our country is a direct consequence of depletion of forest biodiversity. There are plethora of other reasons to conserve Forest biodiversity because it is essential for the sustenance of living organisms. This Paper also discusses the effect of alien invasive species on forest biodiversity. Forest management needs to be considered far more complex than rocket science when we look into the conservation of its biodiversity. The paper wishes to put forth a question of “How far we need science in governance”. Thus conservation of forest biodiversity requires urgent attention.

Keywords: *Forest, Biodiversity, Wildlife, alien invasive species*

Introduction

Forest is a geographical area wherein we can see rich and varied flora and fauna. In a cluster we can see different sorts of rich and varied organisms. With 2.3% of the world's land area, India accounts for 7.8% of recorded species. It has 668 protected areas, 15 biosphere reserves and 26 Ramsar Convention sites. There are four biodiversity hotspots; the Western and Eastern Himalayas, North East India, parts of the Western Ghats and Nicobar. In addition there are other areas of rich biological diversity along parts of the coastline and elsewhere. Biological Diversity, being the actual reservoir of every sort of development of the country, needs to be preserved and protected with utmost importance.

So if a forest cover is depleted we should understand that it is not just the loss of few trees or some plants or some animals. We are badly harming the diverse flora and fauna within that area, which we can't get back by simple compensatory afforestation programmes. By such acts we are actually causing irreparable loss and damage to the environment which can't be compensated by merely planting some saplings.

So loss of forest cover is of great concern. It resembles the story of a person who kills the duck who gives him golden eggs because of his myopic

thoughts. Depletion of forest cover is an irreversible action. Forest is a reservoir of resources. It serves as a raw material for many industries and controls climate, and helps in controlling natural calamities like floods, soil erosion, landslides and helps in maintaining water table. By which we can understand how much influence is there for forest in the life of every organism. In fact forest is life. So depletion of forest cover needs to be addressed with great caution and care. This is the reality of present time.

Now we are looking at the past in order to learn and unlearn about Forest biodiversity conservation.

Forest Conservation in puranas and Arthashastra

Early Indian texts such as the Vedas, Upaniṣads, Aranyakas , Epics, Puranas and the entire classical Sanskrit literature furnish us with innumerable instances on conservation, preservation and management of forests, which people considered to be the inseparable part of their life. Numerous descriptions of the bond between human beings and forest life are available in the Sanskrit writings.

In ancient texts books like agnipurana speaks about the importance of forest and spoke about issues that will arise if forests are not protected properly.

Agnipurana warned people about the impending disasters like drought and floods resulting from the destruction of forests. Mahabharata makes a distinction between natural forest and man-made forest.

Arthashastra which provides detailed instructions on afforestation (i.e. the scheme of plantation of new forests), non-injury to plants and emphasizes on the forests as the reservoirs of wealth, because the forest- produce was one of the main sources of income to the royal treasury. For the word “forest” (vana), Kauṭilya has given the definition that forests include enclosure for beasts, deer- parks, forests for produce and elephant-forests (Hasti vana) which means thick and dense forest where those elephants and other animals can thrive.

Next comes (paśu vana or Vyala vana) for Wild animals. Mriga Vana or Deer Forest are Forest for Domesticated animals where people used to have recreation. Whereas Dravyavana means forest earmarked for economic purposes or for meeting out human daily needs.

Apart from those forests there were forests for ascetics purposes called Tapovana and abhayaranya (Zoological Gardens). Forest was one of the sources of collection of revenues, the other ones being fort, country, mines, irrigation-works (setu) etcKauṭilya, while advising the king to select a place for establishing a new village, instructs that at the boundary line of such a village there should be a forest along with trees such as which give the village a sylvan beauty. On a land not suitable for agriculture, utilitarian

forests were laid down, such as, an animal park, which perhaps is a type of reserved forest, for the purpose of the kings' recreations. A special type of animal forest was advised to be constructed where various types of animals were given shelter with their full protection.

This appears to be a kind of Abhayāranya or a zoological garden. Special forests with considerable areas were created for the settlement of ascetics and respected Brāhmaṇas devoted to the study of the Vedas. These two types are respectively called tapovana and brahma somaranya. Thus only Dravya Vana was subjected to meet human requirements. We could understand that early human life was very well intertwined with forest and natural resources and they were keen in understanding its value that it holds in human life.

Definition of Forest

In order to conserve and protect something we need to understand what the same is in both qualitative and quantitative manner. In common parlance Forest means a dense growth of trees and underbrush covering a large tract. The dictionary meaning of the term 'forest land' was considered by the apex court such that a forest land is ought to comprise of "a large or extensive tract having dense growth of trees, thickets, mangroves etc.... and underbrush or plants resembling a forest in profusion or lushness." It was also stated that any isolated and small parcel of land with trees or thickets will not be covered under the scope of forest land in layman terms, Forest is a large area of land that is covered with trees and forest land is a land that is covered by such forests.

As per decision Conference of Parties (CP) 9-Kyoto Protocol, the forest can be defined by any country depending upon the capacities and capabilities of the country as follows:-

Forest is defined structurally on the basis of

- Crown cover percentage: Tree crown cover- 10 to 30% (India 10%)
- Minimum area of stand: area between 0.05 and 1 hectare (India 1.0 hectare) and
- Minimum height of trees: Potential to reach a minimum height at maturity in situ of 2 to 5 m (India 2m)

India's definition of forest has been taken on the basis of above three criteria only and very well accepted by United Nations Framework Convention on Climate Change (UNFCCC) and Food and Agriculture Organization (FAO) for their reporting/communications. The forest cover is defined as 'all land, more than one hectare in area, with a tree canopy density of more than 10 percent irrespective of ownership and legal status. Such land may not necessarily be a recorded forest area. It also includes orchards, bamboo and

palm'. The definition of forest cover has clearly been defined in all the India State of Forest Report (ISFR) and in all the International communications of India.

In ISFR 2021 recently published by the Ministry on 13th January, 2022, the forest cover figures are divided as 'Inside Recorded Forest Area' and 'Outside Recorded Forest Area'. Those 'Inside Recorded Forest Area' are basically natural forests and plantations of Forest Department. The Forest cover 'Outside Recorded Forest Area' are mango orchards, coconut plantations, block plantations of agroforestry. Thus data of mango plantations etc. is automatically getting separated out as Forest of India is reporting the figures of 'Outside Recorded Forest Area' separately.

The Interpretation of satellite data for classifying Very Dense Forest (VDF) is also supported by the ancilliary data like field inventory data of FSI, ground truthing data and high resolution satellite imagery wherever required.

At present, there is no plan to change the definition of forest cover and very dense forest. The definition of forest cover in ISFR represents true picture as described.

The Court recorded the meaning of "forests" under Section 2 of the Forest Conservation Act, 1980 to include the following three categories:

1. statutorily recognised forests including the reserved or protected forests which are covered under Section 2(i) of the 1980 Act;
2. any "forest" as defined according to the dictionary sense, which is covered under Section 2(ii) to (iv) of the 1980 Act; and
3. an area which is classified as a forest in the government records.

In the year 1995, T. N. Godavarman Thirumulpad filed a Public Interest Litigation in the Supreme Court of India for the protection of Nilgiri Forests from deforestation because of illegal timber operations. In this case, for the first time ever, the Supreme Court interpreted the meaning of the term "forest land" in view of the Forest Conservation Act of 1980.

The Court said that the 1927 Act was a pre-constitutional legislation and since then there have been a lot of changes and development. The Court observed that intent of the legislature while using the words 'any forest' was to bring all the forests under the ambit of the 1980 Act, irrespective of them being covered under the 1927 Act or not.

In India, there is no clear and uniformly-accepted definition of these terms. Even the 1927 Forest Act does not define the term 'forest'. While defining the term, the Allahabad High Court has adopted the definition given by the Food

and Agriculture Organization (FAO) which defines forest as “*all lands which bear a vegetative association demarcated by trees of any size, whether exploited or not, capable of producing wood or other food products*”. The Forest Advisory Committee (FAC) of the Ministry of Environment Forest and Climate Change (MoEFCC) in its meeting in September 2019, pondered on the definition of a forest. It was observed that there cannot be any uniform criteria to define a forest which can be applicable to all forest types as there are a wide variety of Forests all over India.

In order to protect India’s Forest Biodiversity, we must first need to appreciate and understand how diversified and rich is our Forest. Or whether our Forest is diverse. So our definition or how we perceive the term ‘Forest’ largely depends upon our conservation policy.

Causes of Biodiversity Loss

Climate change, of course is a driving reason for biodiversity loss among a plethora of other anthropogenic and natural reasons.

Table 1 Shows a List of AIS found in various evergreen deciduous and dry deciduous forests and grasslands of Forest in India done by Indian Forest Research Institute

Scientific Name	Invasiveness	Impacts	Distribution Potentials
Acacia mearnsii	High	High	High
Chromolaena odorata	High	High	High
Lantana camara	High	High	High
Merremia vitifolia	High	High	High
Mikania micrantha	High	High	High
Mimosa diplotricha var. diplotricha	High	High	High
Mucuna bracteata	High	High	High
Prosopis juliflora	High	High	High
Pueraria phaseoloides	High	High	High
Sphagneticola trilobata	High	High	High

Above listed species are instrumental in deteriorating the health of forest by amassing soil nutrient in an exorbitant way. Moreover propagules of the native species will have to with a large number of seeds of the invasive species.

Role of Technology in Forest Conservation

Forest Management Information System

The most modern way by which forest conservation programmes include uses of modern tools of remote sensing, GIS and statistics to advance the science of forest measurements cater to the needs of co- researchers and partners. This method has been actively engaged in various research activities including forest mapping, biodiversity mapping, ecosystem analysis, resource mapping, and population analysis. The technological application incorporates uses of high spatial, spectral and temporal remote sensing data for characterizing the compositional and functional attributes of forests. This wing of technological expertise partners with various national and international organizations, and is also actively involved in training on Remote Sensing and GIS.

Technology can help us to manage forests sustainably:

- i. Technology helps us manage forests across the landscape. GPS, GIS, and remote sensing allow us to more efficiently map, analyze, monitor, understand, and manage natural resources.
- ii. Technology helps us manage our forests through time. Forest modeling, tree improvement, and tree protection allow us to better plan, protect, and ensure the availability of forest values in the future.
- iii. Technology helps us reduce the environmental impact of transportation, heat, and electricity needs. Renewable energy technologies (e.g., photovoltaic panels, biofuels, and wind turbines) can reduce our dependence on fossil fuel sources of energy.
- iv. Technology promotes the modification of production from native forest to plantations with emphasis on relative advantage.
- v. More information is made available to forest manager which stimulate decision making, more alternatives for biodiversity conservation.
- vi. Annual planning cycle is possible coupled with formulation of objectives, preparation of a strategy, planning, implementing, monitoring and reappraisal.

But we have used technology at many times in a detrimental manner towards the interest of society. Aerial drone surveys used to exaggerate forest cover.

Sustainable Forest Management

Soil Science Department research include afforestation and eco- restoration of degraded sites, control of river bank erosion by planting, evaluation of factors affecting plantation productivity and soil nutrient management for important forestry species, composting and biochar technologies for soil amelioration as well as developing nanocomposites for soil applications. The Silviculture Departments commendable contribution in conservation and sustainable utilisation of resources include both forest and non-forest areas so that pressure on forest areas could be minimized. As part of facilitating conservation, the Department is implementing various programmes related to resource augmentation/ restoration in forest areas. In order to reduce pressure on forest and for increasing the availability of forest resources outside forest areas, several programmes are being implemented in collaboration with various other line departments. These grassroot level activities help the farmers to get much higher income also. Current specific programmes include: eco-restoration, conservation of both species and habitats, resource augmentation and enhancement in both forest and non-forest areas, developing ecologically sustainable high density forest in urban areas, standardization of seed handling protocols and nursery techniques, production of Quality Planting Materials, Environment Impact Assessment studies and various environmental issues, growing stock estimation of commercially important species, promotion of medicinal plants and timber trees in non-forest areas to reduce the pressure on forest, developing conservation plan for the developmental projects, control and management of Invasive Alien Species.

Conclusion

So far we have seen the Forest and its conservation measures from ancient literature like agnipurana, Mahabharata and Arthashastra. Thereafter we saw forest management during British era followed by a plethora of statutory frameworks made from post independent era on a timely basis till 2024 for meeting our anthropocentric and political interests.

Innovative policy in any field is appreciable. It is a continuous relentless process that can lead to the understanding of new ideas, new research results or new technologies or administrative procedures and new systems. Innovation consists of a cycle of several steps, namely: generating new ideas, selecting ideas, implementing said ideas, designing new problems,

maintaining methods, and promoting new methods to users and verifying feedback. Innovative policies are needed to protect forests from destructive technological and other measures taken without having a proper vision or mission towards conservation of forest biodiversity.

True law should be right in agreement with nature. Forest management is not rocket science, it is far more complex. If we sincerely wish to conserve forest biodiversity we need to observe the forest properly, for that employing scientific knowledge is indispensable. The sustainable forest Management Programmes comprises Tree Physiology, Silviculture and Soil Science Research carried out in this regard. The study of physiological and biochemical aspects of recalcitrant seeds, developing protocols for clonal and seed propagation of Threatened trees/Non - timber forest products/lesser known wild fruit trees, climate change impact on endemic and threatened trees all need to be considered for sustainable forest management. In fact we are witnessing technology used in a misleading way so as to make exaggerated and staggering figures about Forest cover by taking into account tree cover or green cover or plantations. So our aim should change from sustainable development to sustainable forest Management.

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The Role of National Green Tribunal in the Protection of Environment in India

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Abstract

In order to effectively and quickly settle the cases pertaining to the preservation and protection of the natural environment, the National Green Tribunal (NGT) was established in India in accordance with the National Green Tribunal Act, which was passed in 2010. Before establishment of the National Green Tribunal, the higher judiciary, using its constitutional authority, performed similar function in cases pertaining to the environmental protection. All civil cases pertaining to the environmental legislation, including those regarding waste management, biodiversity, conservation of forests, air and water pollution will be heard by the NGT. Ever since its founding, India's attempts to protect and conserve its natural resources have relied heavily on the NGT. One of the NGT's main advantages is its ability to swiftly and effectively deliver justice to those attempting to protect their constitutional right to a clean environment. It has cut the time needed to resolve environmental issues, making the process more streamlined and effective. It is important to examine NGT's competency during this time for a variety of reasons. One of the most difficult tasks, both administratively and legally, is resolving the conflict between environmental preservation and development.

Key words: National Green Tribunal, environmental legislation, air and water pollution, environmental preservation, NGT's competency

Introduction

Nearly a century ago, Mahatma Gandhi, the founder of the Indian nation, famously said, "Earth provides enough to satisfy every man's needs, but not every man's greed."²⁶³

The problem of environmental protection has been weighing heavily on the global agenda. Every year, a variety of environmental risks give rise to intricate problems. India is a very populous country, hence there are some special problems because most Indians adhere to the anthropocentrism philosophy, while regulators occasionally favor corporate-centrism. These included problems like urban lakes disappearing, fireworks-related pollution, kite-flying hazards, supplying drinking water to companies that manufacture

²⁶³ <http://14.139.60.116:8080/jspui/bitstream/123456789/43240/1/18-Environmental-%20law%20%28521-540%29.pdf>

cool drinks, overly enthusiastic pet or bird owners polluting apartments, attempts by auto manufacturers to sell cars with outdated emission standards, and tree-cutting, among other things.

Most people and governments seem to be overlooking the need of environmental conservation in their pursuit of progress. Though they may seem reasonable at the moment, self-serving arguments such as development against environmental protection, sustainable development, compensatory afforestation, and the conflict between developed and developing countries' interests regarding climate change would undoubtedly be detrimental to life in general in the long run. The governments of the day seem to be completely disregarding the much-needed transition towards ecocentrism in favor of anthropocentrism by concentrating more on infrastructure and growth.²⁶⁴

Numerous advancements regarding India's environmental protection have occurred in the year under review, 2019. Several man-made issues have been brought up for discussion before the Supreme Court, various high courts, and the National Green Tribunal (NGT). These issues include the discharging of industrial effluents into the sea and other water bodies, illegal mining, indiscriminate use of loudspeakers, organizing mass events that affect the environment, stubble burning, residential and other constructions that violate environmental norms, felling of trees, and even manipulating vehicle emission standards. As usual, the main focus has been on the struggle between environmental preservation and government-perceived progress, as well as self-centered individuals lacking vision.²⁶⁵

Methodology of NGT

Section 19 of the National Green Tribunal Act, 2010 grants the Tribunal the authority to control its own operating procedures. Furthermore, the Tribunal is guided by natural justice principles and is not constrained by procedure under the Indian Evidence Act of 1872 or the Code of Civil Procedure, 1908. For the purpose of carrying out its duties, the Tribunal is endowed by the Code of Civil Procedure with the authority of a civil court.²⁶⁶

Letter petitions that highlight instances of significant environmental harm are considered by the Tribunal. Even in the event that the harmed party is not represented, a legitimate complaint is acknowledged, a response is requested via email, and it can be submitted without the assistance of an advocate.²⁶⁷

²⁶⁴ <http://14.139.60.116:8080/jspui/bitstream/123456789/48144/1/012-Environmental%20Law.pdf>

²⁶⁵ http://14.139.60.116:8080/jspui/bitstream/123456789/47879/1/012_Environmental%20Law.pdf

²⁶⁶ <https://greentribunal.gov.in/methodology-ngt>

²⁶⁷ Ibid

Further instructions are given to the experts and/or statutory agencies that the Tribunal deems relevant to evaluate the accusations of environmental harm, in order to provide a "factual and action taken" report. An enforceable decree is passed mandating that the relevant authorities take action, such as limiting pollution, obtaining damages, and launching legal action.

In circumstances where the Tribunal determines it suitable, selected members or committees, such as those made up of former high court judges, former chief secretaries, or subject matter experts, may be appointed to guarantee prompt execution of the orders following the adjudication of claims.

Speedy disposal and increased access to justice

Quick decision-making helps both litigants and the environment by preventing possible harm from occurring rather than making up for already-done harm. The Tribunal can make decisions quickly by using email to serve orders and request responses. This saves time. Because the regional benches of the Tribunal in Chennai, Pune, Bhopal, and Kolkata do not have enough judges or experts to handle all of the petitions that come in, the Principal Bench in New Delhi is taking applications from other jurisdictions virtually via video conference in order to accommodate the needs of the plaintiffs.²⁶⁸

According to Section 14 of the National Green Tribunal Act, 2010, the Tribunal must resolve disagreements and has jurisdiction over civil cases when there is a significant environmental question (including the enforcement of any environmental legal rights) and the question results from the implementation of enactments listed in Schedule-I.²⁶⁹ The following Acts were listed in Schedule I:

- i) The Water (Prevention & Control of Pollution) Act, 1974;
- ii) The Water (Prevention & Control of Pollution) Cess Act, 1977;
- iii) The Forest (Conservation) Act, 1980;
- iv) The Air (Prevention & Control of Pollution) Act, 1981;
- v) The Environment (Protection) Act, 1986;
- vi) The Public Liability Insurance Act, 1991 and
- vii) The Biological Diversity Act, 2002;

Role of National green Tribunal in the Protection of Environment

The National Green Tribunal's role in environmental protection under the acts listed in Schedule I of the NGT Act is now being discussed.

²⁶⁸ <https://greentribunal.gov.in/methodology-ngt>

²⁶⁹ <https://www.drishiiias.com/important-institutions/drishii-specials-important-institutions-national-institutions/national-green-tribunal-ngt>

The Water (Prevention & Control of Pollution) Act, 1974 and The Water (Prevention & Control of Pollution) Cess Act, 1977

Bengaluru Lakes Revival (2022): In order to address problems including pollution, sewage discharge, and encroachment, the NGT ordered the Karnataka government to move quickly to repair and rejuvenate Bengaluru's lakes.²⁷⁰

The Tribunal in *Jajeet Singh v. State of Punjab & Ors* ordered the Punjab Water Regulation and Development Authority to review its 2023 exemption notification, which exempted industrial units in Ludhiana from obtaining permission for ground water extraction even though the Central Ground Water Board had classified the area as "over-exploited."

The Delhi Water & Sewer (Tariff & Metering) Regulations, 2012 are violated when rainwater is wastefully discharged through metro pillars on public roads, causing water logging and traffic congestion. This is a significant problem that the Tribunal examined in *Harpal Singh Rana v. Delhi Metro Rail Corporation & Ors*. The Tribunal referred back to its previous rulings, which mandated that the DMRC create a downtake pipe with sufficient storage depth for collecting rainwater and that all schools, colleges, and buildings larger than 100 meters in area install rainwater harvesting systems. In order for states, union territories, and pollution control boards to bear these guidelines in mind when considering metro rail projects, the Tribunal also sent copies of its order to each of these entities²⁷¹.

In the 2013 Uttarakhand flood case, the NGT directly relied on the "polluter pays principle" when ordering Alaknanda Hydro Power Co. Ltd. to compensate the petitioner.²⁷² The NGT panel fined the Art of Living Festival on Yamuna Food Plain Rs. 5 crore for breaking environmental regulations in 2017.²⁷³

The Allahabad district bench ruled in *Mahant Madhu Mangal Sharan Daas Shukla v. Union of India*²⁷⁴ that rivers are considered easy targets for the draining of trade and sewage discharge. Even with STPs and ETPs established, untreated water continues to be drained and pollutes rivers. The Kanpur case, in which substantial funds were spent on the construction of ETPs and STPs yet untreated water was still entering the Ganga, was brought up by the Court during the hearing.

²⁷⁰ <https://legalvidhiya.com/the-effectiveness-of-the-new-national-green-tribunal-ngo-amendment-act-2021-in-resolving-environmental-disputes-in-india/>

²⁷¹ <https://www.barandbench.com/columns/the-national-green-tribunal-monthly-review-may-2024>

²⁷² <https://www.drishtiiias.com/important-institutions/drishti-specials-important-institutions-national-institutions/national-green-tribunal-ngo>

²⁷³ *Ibid*

²⁷⁴ 4 MANU/UP/1677/2021.

In the case of *Kartik Sharma v. State of Uttarakhand*²⁷⁵, directives were given to the state's authorities to monitor and restrict construction and commercial operations, including the unlawful removal of potable water and waste management in Mussoorie, in order to safeguard Mussoorie Lake.

As *Suo Moto*, NGT is taking the case Regarding: News article "More river sections are now dangerously polluted: An article by Shri Jacob Koshy published in "The Hindu"²⁷⁶ the Central pollution control board (CPCB) guidelines for creating action plans for each dirty river stretch that has been evaluated by the CPCB in accordance with the model plan, with the goal of restoring water quality by stopping the discharge of sewage and other garbage and taking the required steps to carry out the integrated river rejuvenation plan. Chief secretaries in each state, the CPCB, NMCG, and the Ministry of Jalshakti at the federal level will oversee execution.²⁷⁷

In the case of *Union of India & Ors. v. Nizamuddin West Association*.²⁷⁸ Keeping an eye on adherence to the guidelines for the revitalization of the Yamuna River, which are being overseen by a high-level committee led by LG Delhi and consisting of all relevant agencies and regulators.

In the case of *Union of India & Ors. v. M.C. Mehta*.²⁷⁹ Keeping an eye on whether the Ganga rejuvenation instructions are being followed and issuing new instructions in light of periodic reviews

*Union of India & Ors. vs. Mrs. Sunita Pandey & Anr.*²⁸⁰ guidelines for taking corrective action to prevent groundwater contamination from arsenic and to ensure that all districts in Uttar Pradesh have access to clean drinking water.²⁸¹

The Forest (Conservation) Act, 1980

The Kerala High Court ruled in *Velu v. State of Kerala*,²⁸² a case involving the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, that the Act only permits the right to occupy forest land for self-cultivation and the planting of trees for livelihood; it does not, however, permit the forest dwellers or occupants who are granted this right to fell trees from the land. Even the government is

²⁷⁵ OA No. 353/2022, Order dated 21.04.2023

²⁷⁶ OA No. 673/2018, order dated 22.02.2021

²⁷⁷ https://www.greentribunal.gov.in/sites/default/files/important_orders/NGT_Initiatives%20final-1.pdf

²⁷⁸ OA No. 6/2012 orders dated 27.1.2021 and 16.02.2023,

²⁷⁹ OA No. 200/2014, order dated 22.07.2022

²⁸⁰ OA No. 384/2019, order dated 1.2.2021

²⁸¹ https://www.greentribunal.gov.in/sites/default/files/important_orders/NGT_Initiatives%20final-1.pdf

²⁸² 2018 (8) FLT 403 (Ker. HC) decided on Dec. 21, 2017; See also *Pramod v. State of Kerala* 2018 (8) FLT 610 (Ker. HC) decided on Dec 21, 2017.

unable to issue an order without first receiving Central Government permission.

The Supreme Court addressed two issues in *T.N. Godavarman Thirumulkpad v. Union of India*²⁸³ the State of Himachal Pradesh's appeal for permission to carry out silviculture felling, including thinning and other operations, and the prohibition on tree felling imposed by the highest court. The Central Empowered Committee (CEC) recommended that the state government petition the Supreme Court to have the previous stay order modified. In light of tree regeneration, the court allowed silviculture felling under specific criteria after taking the factual circumstances into consideration.

The high court acknowledged the ongoing complaints from the public over the pollution that the ACC Cement Factory in Salapur Village, Mandi District, Himachal Pradesh, was causing, in *Court on its Own Motion v. State of H.P.*²⁸⁴ The industrial unit was found to have negatively impacted the local flora and fauna as well as human health, leading to unusual issues and diseases like tuberculosis, asthma, malaria, and sound pollution, despite having obtained mandatory consent to operate under the provisions of the Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981, and authorization under the Hazardous (Waste Management and Handling) Rules, 2008. Given the aforementioned details, the court ordered the formation of a committee to investigate the complaints of the impacted villages, to be established by the Chief Secretary to the Government of Himachal Pradesh.

Regarding the news article "Over 6,000 trees illegally cut for tiger safari project in Corbett Reserve, says FSI report"²⁸⁵ that appeared in *The Hindu* on October 2, 2022, the NGT halted the project due to the illegal cutting of 6000 trees for the tiger safari project and instructed steps for restoration as well as action against violators.

The Air (Prevention & Control of Pollution) Act, 1981

Vardhaman Kaushik v. Union of India, the first law suit under the previously described category 1, was filed in 2014 and concerned harmful air quality in the National Capital Region. The NGT issued numerous directives over the course of four years through judgments and verdicts, including prohibiting polluting companies, controlling traffic, requesting action plans

²⁸³ 2018 (8) FLT 445 (S.C.); AIR 2018 SC (Supp) 242 SC, decided on Feb.16, 2018

²⁸⁴ 2018 (8) FLT 541 (HP. HC) decided on Mar. 20, 2018

²⁸⁵ OA No. 748/2022, order dated 21.10.2022, https://www.greentribunal.gov.in/sites/default/files/important_orders/NGT_Initiatives%20final-1.pdf

from the government, and demanding certain measures for waste disposal and dust management, among other things. Ultimately, in 2018, the Tribunal closed the case and instructed the Central Pollution Control Board to form a two-person committee to investigate any orders that had been broken in the case.

A *Suo Moto* case was filed in 2018 in response to the nation's declining urban air quality, based on a Times of India newspaper piece that examined the National Clean Air Programme's timeframes. The NCAP case required 102 "Non-Attainment Cities," or those that had average annual concentration levels of specified criteria, such as PM_{2.5}, surpassing certain thresholds for five years in a row, to take corrective action regarding air pollution. In an effort to address the problem of urban air pollution nationwide, this case demanded that each state and local government prepare action plans under the NCAP, address vehicle pollution, and conduct thorough carrying capacity studies for each city.

In both instances, the Tribunal criticized the federal and state administrations and demanded more vigorous action to reduce air pollution by using Article 21 (Right to Life) and the three guiding principles of environmental jurisprudence. As a result, the two cases have emerged as the centrepiece of the Tribunal's urban air pollution intervention. Since then, any cases pertaining to urban air quality that are brought before the Tribunal are handled by subsequent benches utilizing the rulings in the two instances as well as the several directions rendered by the Supreme Court in *MC Mehta v. Union of India*.

For example, as evidenced in the NCAP Case, the South Zone bench directed the State Government to comply with action plans developed under the National Clean Air Plan (NCAP). In a related case, *LG Sahadevan v. Union of India*, for Chennai, the Bench requested that an action plan be created taking into account the directives from the NGT regarding the Vardhaman Kaushik issue.²⁸⁶

*Central Pollution Control Board & Ors. v. Utkarsh Panwar*²⁸⁷ supervised the NCR's brick kiln regulations to control air pollution. *State of Haryana v. Vinod Kumar Jangra*²⁸⁸ supervised the control of stone crushers at Charkhi Dadri, Haryana, in order to preserve the purity of the air.

²⁸⁶ <https://thebastion.co.in/legal-policy-analysis/trails-of-environmental-jurisprudence-in-india-national-green-tribunal-versus-urban-air-pollution/>

²⁸⁷ OA No. 1016/2019 order dated 17.02.2021
https://www.greentribunal.gov.in/sites/default/files/important_orders/NGT_Initiatives%20final-1.pdf

²⁸⁸ OA No. 607/2018 order dated 26.10.2021

Ministry of Environment, Forests, and Climate Change & Ors. v. Tribunal²⁸⁹ on its own Motion banned the usage and sale of fire crackers throughout India when the level of air quality exceeded a predetermined limit.²⁹⁰

Guidelines for preventing pollution during the loading and unloading of cement and other materials at and near Railway Godowns in Faizabad, Uttar Pradesh, were addressed in Shivansh Pandey v. State of Uttar Pradesh²⁹¹. In the case of Gaurav Sharma v. Delhi, NCT, and Ors. Guidelines for mitigating air pollution within and surrounding AIIMS to safeguard the well-being of patients, physicians, and staff in indoor and outdoor patient areas. Additional guidance for creating SOPs for pollution management both inside and outdoors of all government hospitals that are district-level and above²⁹².

Union of India & Ors. v. Shantanu Sharma.²⁹³ The NGT has issued guidelines for taking corrective action against pollution caused by thermal power projects. It has also instructed the creation of a fly ash management and utilization mission to keep an eye on fly ash-related concerns.²⁹⁴

The NGT ordered the regulation of brick kilns in the NCR to control air pollution in the case of Utkarsh Panwar vs. Central Pollution Control Board & Ors.²⁹⁵

The Environment (Protection) Act, 1986

An article from "The Asian Age" Writer: Sanjay Kaw Titled "CPCB to rank industrial units on pollution levels"²⁹⁶. Taking this Suo Moto, in order to restore the quality of the environment in 100 industrial clusters that had been contaminated, NGT provided guidelines for action plans that included compensation based on the polluter pays concept and closure of polluted activities until compliance.

Virender Singh v. National Green Tribunal Bar Association (State of Gujarat)²⁹⁷ guidelines for corrective action to prevent environmental standards from being broken when mining sand.

²⁸⁹ OA No. 607/2018 order dated 26.10.2021

²⁹⁰ https://www.greentribunal.gov.in/sites/default/files/important_orders/NGT_Initiatives%20final-1.pdf

²⁹¹ OA No. 989/2018, Order dated 16.03.2021

²⁹² OA No. 202/2023, Order dated 03.07.2023

²⁹³ OA No. 117/2014, order dated 18.01.2022

²⁹⁴ https://www.greentribunal.gov.in/sites/default/files/important_orders/NGT_Initiatives%20final-1.pdf

²⁹⁵ OA No. 1016/2019, order dated 17.02.2021

²⁹⁶ OA No. 1038/2018, judgment dated 29.08.2022

²⁹⁷ OA No. 360/2015, order dated 26.2.2021

Union of India & Ors. v. D. V. Girish,²⁹⁸ order dated 17.03.2021 guidelines for conducting ESZ carrying capacity studies in each State and Union and for taking the appropriate regulatory action in light of the results.

Directions for an efficient monitoring system for compliance with the terms of Environmental Clearance (EC) as per Notification dated 14.09.2006 under the Environment (Protection) Act, 1986 are at issue in Sandeep Mittal v. Ministry of Environment, Forests & Climate Change & Ors.²⁹⁹

M/s Kasauli Glaxie Resorts vs. Society for Preservation of Kasauli and its Environs (SPOKE)³⁰⁰ Guidelines for preserving the delicate ecosystem of Kasauli, Himachal Pradesh, in light of a carrying capacity study, include limiting the size of new construction and resolving difficulties with groundwater harvesting, clean fuel, trash disposal, and water valleys.

Ministry of Environment, Forests, and Climate Change and Others v. Dr. Arun Kumar Sharma.³⁰¹ guidelines for safeguarding Rajasthan's ESZ Mount Abu by halting soil erosion, reducing air and water pollution, and regulating construction in accordance with the Expert Committee recommendations.

United States of America v. Urvashi Shobhna Kachari & Ors.³⁰² Guidelines for addressing uncontrolled environmental standards violations near the pilgrimage routes of Kedarnath, Hemkund Sahib, Yamunotri, and Gomukh in Uttarakhand, in accordance with the action plan addressing the problem of waste management and vehicle movement, among other things.

Directions for putting restaurants, hotels, motels, and banquets under the consent regime for effective compliance of environmental standards³⁰³, such as waste management, rainwater harvesting, noise control, parking control, energy conservation, etc., are outlined in Westend Green Farms Society v. Union of India & Ors.³⁰⁴

The Public Liability Insurance Act, 1991

Article titled "Another Gas Leakage at Vizag Factory kills two, critically injures four..."³⁰⁵ appeared in the local daily "Economic Times" on June 30, 2020. Within a year of beginning employment, company owners are

²⁹⁸ OA No. 462/2018, No. 462/2018,

https://www.greentribunal.gov.in/sites/default/files/important_orders/NGT_Initiatives%20final-1.pdf

²⁹⁹ OA No. 837/2018, order dated 01.02.2021

³⁰⁰ OA No. 218/2017, Order dated 05.10.2018

³⁰¹ OA No. 312/2016

³⁰² OA No. 561/2022, Order dated 08.02.2023

³⁰³ https://www.greentribunal.gov.in/sites/default/files/important_orders/NGT_Initiatives%20final-1.pdf

³⁰⁴ OA No. 400/2017, Order dated 04.02.2021

³⁰⁵ OA No. 106/2020 decided on 22.12.2020

required by the Public Liability Insurance Act to get an insurance coverage covering hazardous substances. LG Polymers possesses two policies: an industrial PLI insurance with a cap of Rs. 5 crore and a Public Liability Act policy, which is mandated by the Act-AOA (Any One Accident) of Rs. 5 crore. Both policies are from New India Assurance.

If the company has an AOA of Rs 5 crore, it will be responsible for paying up to Rs 5 crore (total, for all victims) for each accident. Additionally, the federal government may create an environmental support fund to help accident victims in hazardous industries with legal representation.³⁰⁶

In accordance with NGT Act of 2010 Sections 14 and 15, the NGT issued the orders. In relation to the gas leak incident, the NGT imposed a temporary penalty of Rs 50 crore on LG Polymers India and demanded an answer from the central government on Friday, Andhra Pradesh, stating that "it appears that the instructions and other statutory provisions are not being followed correctly."³⁰⁷

The Biological Diversity Act, 2002

In *Chandra Bhal Singh v. Union of India & Ors.*,³⁰⁸ the court ordered that BMCs and PBRs be kept in order to comply with the Biological Diversity Act's regulations.

Union of India v. Goa Foundation & ors.,³⁰⁹ This case set a precedent for the NGT's jurisdiction over any civil matter involving a significant environmental question. One of Goa's environmental advocacy organizations, the Goa Foundation, is well-known for having filed almost 80 PILs pertaining to environmental issues. In a petition submitted to the NGT, it requested that the respondents use the authority granted to them by the provisions listed in Schedule I of the NGT Act, 2010 to preserve and safeguard the Western Ghats within the parameters set forth by the Western Ghats Ecology Expert Panel. The Ministry of Environment and Forests (MoEF) was given a four-week deadline by the Tribunal to submit its response to the report. All unlawful methods of mining sand from river and ocean beds were outlawed by the tribunal.

Conclusion

The NGT is a statutory tribunal tasked with making important legal decisions on the environment and issuing orders for both environmental protection and compensation to impacted parties.

³⁰⁶ <https://blog.ipleaders.in/overview-public-liability-insurance-act/>

³⁰⁷ Ibid

³⁰⁸ OA No. 347/2016, order dated 16.12.2020

³⁰⁹ Application No. 26 of 2012 dated July 18, 2013

Among other things, the idea of sustainable development serves as a guidance. Enforceability remains a major obstacle notwithstanding the passage of significant legislation and significant court rulings. Achieving ultimate compliance necessitates awareness, initiatives, and coordinated state and citizen efforts—a continuous process. The legal system must always work to close the gap between the rule of law and its application³¹⁰.

In light of the findings of this investigation, the following recommendations are possible: It is important to make the public aware of the role of NGT in order to allow the appropriate authorities to take up many situations that frequently go unreported. The polluter pays principle should be re-examined in the current context because, in many cases, the fines levied by the tribunal are insufficient to deter similar issues in the future. The NGT should enlist the assistance of senior and retired environmentalists to assess the environmental harm caused by industrial activity.

The following suggestions could be made in light of the investigation's findings: It's critical to raise public awareness of NGT's role so that the proper authorities can handle a number of cases that usually get undetected. The NGT should enlist the help of senior and retired environmentalists to assess the environmental harm caused by industrial activity. Often, the fines levied by the tribunal are insufficient to deter similar issues in the future. Therefore, the polluter pays principle should be re-examined in the current context.

³¹⁰ https://greentribunal.gov.in/sites/default/files/important_orders/Message_0.pdf

Indian legislation on Pollution Control: A Critical Analysis

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Abstract

India's rapid industrialization and urbanization have led to significant economic growth, but they have also resulted in severe environmental challenges. The country faces critical issues with air and water pollution, which threaten public health, quality of life, and ecosystems. In response, the Indian government enacted important legislation to address these problems, such as the Water (Prevention and Control of Pollution) Act of 1974 and the Air (Prevention and Control of Pollution) Act of 1981. These laws aim to conserve natural resources, control pollution, and hold businesses accountable for their environmental impact. Despite these legislative efforts, the effectiveness of these laws in addressing the rising levels of pollution remains a concern. Research conducted by the International Institute for Population Sciences in Mumbai highlights the gravity of the situation. The study found that in districts where air pollution exceeds national standards, the risk of death increases significantly: by 86% for newborns, 100–120% for children under five, and 13% for adults. Fine particulate matter (PM_{2.5}) is a major contributor to these heightened risks. The current pollution control laws, may not be stringent enough to effectively combat the escalating levels of air and water pollution caused by industrial activities. This necessitates a thorough evaluation of their efficacy and potential improvements to better protect public health and the environment.

Keywords: Environment pollution, Eco-crime, Industrial development, prevention better.

Introduction

Our social lives are now closely entwined with our surroundings. The greatest resource on earth is life. And the atmosphere is needed for this life. Even though there could be potentially fatal situations, it is impossible for there to be a place devoid of life. Furthermore, the environment is simply necessary for life. Environments without life are feasible, but life cannot exist in a dead world. The word for environment in Sanskrit is Paryāvarana. This term is made up of the prefixes as-pari + ā + vṛ-anaṭ, where the first means “fully,” the second means “completely,” and the root means “covering.” As a result, it refers to the environment that completely envelops all living things, including humans, whose survival depends on it. Surrounding the environment are humans, trees, creepers, animals, insects, and soil.

The harmony of the several components of the environment is crucial to an organism's ability to survive. However, as of right now, an unrestrained way of living has upset the equilibrium of many environmental components. Primarily increased poverty, agriculture, and industrialization are to be blamed³¹¹.

The Stockholm Conference in 1972 was the first attempt at a worldwide level to protect the environment. The conferences that were held in Johannesburg in 2005 and Rio de Janeiro in 1992 and 1993, respectively, marked a major advancement in the preservation of the global environment. There is broad agreement at these environmental conferences to protect the environment and harness natural forces for growth.

The 42nd amendment of the Indian Constitution were enclosed in Article 48 (a) of the Constitution and Article 51 (a) of the fundamental duty of the constitution. Article 48 (a) of the Constitution says that 'the Protection and improvement of environment and safeguarding of forests and wild life. The State shall endeavour to protect and improve the environment and to safeguard the forests and wild life of the country'.

The concept of environmental protection and awareness has also been published in Article 51 A(g) of the Indian Constitution. It states that it shall be the duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wild life, and to have compassion for living creatures.

In addition, Central government exercising its power under Article 253 of Indian constitution enacted acts such as Water Pollution Prevention and Control Act 1974, Air Pollution Prevention and Control Act 1981 and Environment Protection Act 1986.

However, the air quality index of million plus cities of India showed that more than 50 percent of cities have moderate to poor air quality. Ever-increasing population along with swift industrialisation, urbanisation, and agricultural growth has caused water quality deterioration in India. Major cities in India are facing issue of deterioration of water and air quality³¹².

The MoEF announced the Comprehensive Environmental Pollution Index (CEPI), a new composite measure of pollution from clusters that accounts for air, water, and land pollution. CEPI was applied to 88 industrial clusters, and those clusters with a CEPI of more than 70 (out of 100) were categorized as

³¹¹ Roy, A. and Roy, A., 2017. Environmental conservation in ancient India. *International Journal of Sanskrit Research*, 3(4), pp.139-142.

³¹² Shrivastava, M., Ghosh, A., Bhattacharyya, R. and Singh, S.D., 2018. Urban pollution in India. *Urban pollution: Science and management*, pp.341-356.

“critically polluted” and those scoring between 60 and 70 as “severely polluted.” The survey detected 43 critically contaminated hotspots throughout the country. As a result, the federal government prohibited the creation of new companies in these clusters until they submitted an acceptable action plan to reduce pollution and forced the SPCBs to conduct additional ambient monitoring using continuous monitoring equipment. Eight clusters remained under the ban due to their failure to execute effective pollution control measures until the ban was lifted in June 2014 by the new government. Thus, the regulatory enforcement in India is complicated by the presence of a large number of MSMEs, and this will continue to pose a challenge for environmental regulations³¹³.

The frequent news on water pollution is the evidence for the same. The government is concerned about the sudden rise in pollution level in rivers and has put in “urgent measures” to control the situation. With such background it becomes necessary to discuss the laws in India that relates to protection of environment.

Researcher primarily focuses upon Environment Protection Act, 1986, Air (Prevention and Control of Pollution) Act, 1981, Water (Prevention and Control of Pollution) Act, 1974 and National Green Tribunal Act, 2010 as they are frequently used in industrial pollution cases.

Important statues for environment protection

Environment Protection Act, 1986

The Environment Protection Act, 1986, is a pivotal legislative measure in India aimed at tackling environmental challenges and maintaining ecological balance. Established to address the urgent need for a cohesive framework to combat environmental degradation, this Act offers a strong legal foundation for the conservation and enhancement of the environment.

In Section 5, Authority to Issue Directives outlines the Central Government's authority to issue directives for the cessation or control of any industry, operation, or procedure, as well as for the ban or control of the delivery of water, power, or other services.

In Section 10, “Powers of Entry and Inspection,” it is permissible for any individual designated by the Central Government to enter any location to examine adherence to environmental regulations and collect samples for examination.

³¹³ Turaga, R.M.R. and Sugathan, A., 2020. Environmental regulations in India. In *Oxford Research Encyclopedia of Environmental Science* (p. 417). Oxford: Oxford University Press.

The processes for collecting samples of soil, water, air, or other substances from any location for analysis to ascertain conformity with the Act are outlined in Section 11, which is titled “Power to Take Samples.”

Penalties for breaking the Act's provisions are outlined in Section 15. Furthermore, Section 19 grants authorities the power to search premises and seize property if there is reasonable suspicion of ongoing violations. This provision ensures that illegal environmental practices are promptly addressed.

Air (Prevention and Control of Pollution) Act, 1981

The Central Pollution Control Board (CPCB) and State Pollution Control Boards (SPCBs) are given the authority to gather information on emissions and pollutants from any company or business under Section 24.

Power to Take Samples is covered in Section 25, which outlines how to collect emissions or air samples and how to transfer them for examination.

Reports of Analysis are covered under Section 26, which stipulates that any analysis performed on samples obtained by the Act must be provided in reports.

The authority of the CPCB and SPCBs to give directives, such as orders to shut down, forbid, or control any industry, operation, or process, is covered in Section 31A of the Act.

A punishment of Rs. 5000 and a sentence of three months are imposed for disregarding the State Board's directives regarding the pollution of water or the discharge of sewage or industrial effluents under Sections 20(2) and (3). If the offence persists, there could be a fine of Rs. 1000 each day. Failing to comply with the guidelines established by the Board regarding the disposal of pollutants and effluents, as well as the terms outlined in the consent application, may result in a prison sentence ranging from six months to six years as well as an indefinite fine. An additional sentence of up to seven years in prison with a minimum of one year in jail is stipulated.

Water (Prevention and Control of Pollution) Act, 1974

Regarding the Power to Obtain Information, Section 20 permits the CPCB and SPCBs to request data regarding water pollution from any business, industry, or local government.

The Power to Take Samples section of Section 21 permits the collection of water, wastewater, and other material samples for examination to assess compliance with water pollution standards.

Reports of Analysis, included in Section 22, mandate that water samples and effluents be analysed and that reports detailing the results be submitted.

The Power to Give Directions Section 33A gives CPCBs and SPCBs the authority to issue directives for the cessation or control of any industry, activity, or process, as well as for the ban or control of the delivery of water, electricity, or other services.

The major penalty for failure to comply with an order or direction given by the Board is imprisonment up to three months or a Rs. 5000 fine. In case of continuing offense, a fine of one hundred rupees per day. Under the provisions of the Act, a court shall take no cognizance of an offense except on a complaint made by the Board or with the permission of the State Board. A member of the public who is adversely affected by air pollution can approach the court only after obtaining the prior permission of the Board.

The enforcement of the Environment protection Act, Air Act, Water Act is primarily administrative, with Pollution Control Boards responsible for monitoring and compliance. The appeal from these acts can be referred to National Green Tribunal which exclusively deals with environmental rights.

These mechanism under the act comes into action once when the breach of regulation is done.

National Green Tribunal Act, 2010

The National Green Tribunal (NGT) plays a pivotal role in safeguarding and conserving the environment in India by adjudicating disputes, enforcing environmental legislation, and ensuring adherence to regulations. Its authority and functions are tailored to deliver effective remedies for environmental concerns and foster sustainable practices. However, its success hinges on the judicious exercise of its powers, adequate resource allocation, and active involvement of stakeholders in environmental conservation efforts.

Some of the powers of NGT includes, Procedural Powers-The NGT possesses civil court powers under the Code of Civil Procedure, 1908, enabling it to conduct investigations, summon witnesses, and gather evidence for its cases.

Power of Enforcement of Orders-It is empowered to enforce its rulings and decisions, including executing them in a manner equivalent to a civil court decree.

Punitive Powers- Penalties and Fines: The NGT has the authority to impose penalties and fines for non-compliance with its directives. Additionally, it can mandate compensation payments to individuals or communities impacted by environmental damage.

Appellate jurisdiction of NGT- The Tribunal is the appellate authority competent to decide questions of law and fact against orders and decisions passed by authorities under the enactments specified in Schedule I.³¹⁴ The power is of a wide and overriding nature and may be exercised *ex debito justitiae* (that is, in the interests of justice)³¹⁵

However, the limited power of tribunal makes it difficult to tackle environmental challenges. Key challenges include the availability and independence of specialized scientific knowledge, the exercise of its jurisdictional powers, and the controversial self-expansionist powers of the Tribunal³¹⁶.

The evolving demands of society necessitate a shift from civil to criminal enforcement of environmental laws, as rising pollution levels are shortening individual lifespans. This urgency is highlighted by reports such as one from the Energy Policy Institute at the University of Chicago (EPIC), which states that “Over 480 million people in central, eastern, and northern India, including the capital, New Delhi, are exposed to dangerously high levels of pollution.” It also states that “Air quality has significantly worsened in the western state of Maharashtra and the central state of Madhya Pradesh”³¹⁷.

In *Rural Litigation and Entitlement Kendra v. State of Uttar Pradesh*³¹⁸ 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 globe.³¹⁹

Transitioning these environmental pollution incidents as criminal offences in nature and forcing us to label it as eco crime and acting accordingly.

Eco crime/Ecocide

Eco crime is 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;

³¹⁴ he enactments in Sch. I include the following: Water (Prevention and Control of Pollution) Act 1974; Water (Prevention and Control of Pollution) Cess Act 1977; Forests (Conservation) Act 1980; Air (Prevention and Control of Pollution) Act 1981; Environment (Protection) Act 1986; Public Liability Insurance Act 1981; and Biological Diversity Act 2002.

³¹⁵ Gill, G.N. (2016) ‘Environmental Justice in India: The National Green Tribunal and Expert Members’, *Transnational Environmental Law*, 5(1), pp. 175–205. doi:10.1017/S2047102515000278.

³¹⁶ Gita, Gill. (2024). National Green Tribunal and the Environment. 805-822. Available from: 10.1093/oxfordhb/9780198884682.013.45

³¹⁷ World Economic Forum (2021) ‘Air pollution reducing life expectancy in India and Bangladesh’, *Agenda*. Available at: <https://www.weforum.org/agenda/2021/09/air-pollution-life-expectancy-india-bangladesh-environment/> (Accessed: 13 September 2024).

³¹⁸ 1985

³¹⁹ Liao, I. and Pranav, T., 2022. The Criminalisation of Ecocide-An Indian Perspective. *NUJS J. Regul. Stud.*, 7, p.52.

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.³²⁰

Cambridge dictionary defines it as ‘destruction of the natural environment of an area, or very great damage to it’.³²¹

Conclusion and Suggestions

The precautionary principle is a cornerstone of environmental jurisprudence that mandates the implementation of preventive measures in situations of uncertainty. It posits that when an action, policy, or process harbors the potential to inflict harm upon public health or the environment, and in the absence of definitive scientific evidence, the onus of proof should rest with those proposing the action rather than those contesting it. Essentially, this principle underscores the importance of preemptive action to avert potential harm before it materializes.

The application of bonds is congruent with this principle, as it integrates financial assurances and precautionary measures into the framework of environmental regulation. Under Cr.P.C (Criminal Procedure Code,1973) a person can be made to execute bond by magistrate for keeping good behaviour so that a crime is prevented, same analogy can be adopted under environmental laws. If a person exhibits good behaviour, the court may ask them to sign a bond, particularly if public safety or order is at risk. The bond guarantees that the person won't commit any crimes.

Goal is to avert possible disruptions and guarantee that those who endanger public order are watched over and held responsible. The well-known saying “Prevention is better than cure” is often used in this conversation. “Preventive justice is preferable in all respects to punishing justice,” according to Sir William Blackstone. This proverb is not just a well-known saying; it is also strongly ingrained in a number of legal systems. The jurisprudential standard of preventive justice is not wholly ignored by Indian criminal law. Procedural law offers a means of preventing crime, but substantive law declares that it must be avoided.

By considering discharge of pollutants by industries as act decreasing the life expectancy of humans the bond can be executed by them in order for to make them act in their good behaviour. “Executing a bond is the prescribed mode of

³²⁰ Supra

³²¹ Cambridge University Press, 2024. Ecocide. Cambridge Dictionary. Available at: <https://dictionary.cambridge.org/dictionary/english/ecocide> [Accessed 13 September 2024].

creating the security that is required in order to ensure peace and good behaviour. The bond therein can be executed with or without sureties”.

This step will ensure the proper following of regulations given under various environmental acts. Further, keeping the amount of bond higher will result in lesser environmental regulation breach as company /Industries bond money will be forfeiture if they act contrary to the bond.

Further, **Enhanced Regulatory Framework** can help inculcation of these bonds. To bolster environmental protection, it is imperative to incorporate specific provisions within environmental legislation that facilitate the execution of environmental bonds by industries and individuals engaged in activities with considerable environmental impact. Such bonds would serve as financial assurances for adherence to environmental standards and regulations. Integrating these provisions into existing environmental statutes is essential to ensure that these financial instruments are both legally enforceable and harmoniously integrated into the regulatory framework.

Determination of Bond Amounts

The process of determining bond amounts should be predicated on a risk-based assessment, wherein the financial guarantees are calibrated according to the environmental risks posed by different industries or activities. Higher-risk operations should necessitate larger bonds, reflecting the potential costs associated with environmental damage and remediation. Furthermore, it is crucial to implement periodic reviews of bond amounts to ensure they remain appropriate, accounting for evolving environmental regulations, technological advancements, and the scale of industrial activities.

Incentives for Compliance

To encourage adherence to environmental standards, it is beneficial to introduce incentives for industries that consistently meet or surpass regulatory expectations. These incentives could include reduced bond amounts for exemplary performance or tax benefits. Recognition programs, such as awards or certifications for outstanding environmental stewardship, would further promote a culture of voluntary compliance and best practices.

Flexibility and Adaptation

Bond conditions should be adaptable to accommodate changes in environmental regulations and operational practices. This flexibility will ensure that bonds remain effective and relevant over time. Additionally, allowing industries to negotiate bond terms and conditions with regulatory authorities could foster cooperative relationships and tailor solutions to specific environmental challenges. By inculcating these changes in current legislation we hope for the improvement of environment.

The Health Costs of Climate Change in India: Legal Exploration on Right to Climate as a Fundamental Human Right

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Abstract

Climate change is emerging as a critical public health concern, particularly in countries like India, where its impact is increasingly severe. This paper examines the intersection of climate change and public health in India, framing the issue within the context of fundamental human rights. It argues that the right to a healthy environment, which encompasses the right to climate, should be recognized as a fundamental human right to address the health impacts of climate change. The study reviews the current health consequences of climate change in India, including increased incidence of vector-borne diseases, heat-related illnesses, and respiratory issues exacerbated by air pollution. It explores the legal and policy frameworks in place and assesses their adequacy in protecting public health in the face of climate change. By analysing international human rights instruments and India's constitutional provisions, the paper advocates for the formal recognition of the right to a healthy environment as a fundamental right to strengthen legal protections and policy responses. The research highlights the need for integrated approaches that combine health and environmental policies to mitigate climate impacts and safeguard public health.

Keywords: Climate Change, Health Costs, India, Right to Climate, Fundamental Human Rights, Public Health, Environmental Law, Human Rights Law, Climate Policy and Health Impacts

Introduction

Climate change is not merely an environmental or economic issue, it is fundamentally a human rights issue with profound implications for public health, particularly in countries like India, where vulnerable populations bear the brunt of climate-induced impacts. The right to a healthy environment is increasingly being recognized as integral to the realization of other human rights, including the right to life, health, and dignity. In this context, the concept of the "Right to Climate" emerges as a crucial area of legal inquiry. This research seeks to explore the intersection of climate change, public health, and human rights within the Indian legal framework, arguing for the recognition of the Right to Climate as a fundamental human right.

India, with its diverse climate zones and large population, is exceptionally vulnerable to the impacts of climate change. Rising temperatures, increased frequency of extreme weather events, and shifting monsoon patterns are already having significant health consequences, including heat-related illnesses, vector-borne diseases, and malnutrition. According to the Lancet Countdown 2023 report, India recorded a 54% increase in heat-related deaths over the past decade, with vulnerable groups such as the elderly, children, and those with pre-existing health conditions being disproportionately affected³²². In 2023, India experienced its second-warmest year on record, with an annual mean land surface air temperature 0.65°C above the long-term average for 1981-2010. This rise was largely attributed to the El Niño effect, which also contributed to global temperature increases. IMD's analysis showed that temperature anomalies were particularly pronounced during the post-monsoon and winter seasons. Despite normal monsoon rainfall, India saw a high number of extreme weather events, including cyclones, heavy rainfall, and heatwaves, leading to significant fatalities. IMD projects milder winter conditions for early 2024, with above-normal rainfall expected in many regions³²³. Additionally, climate-induced migration has put further strain on urban health infrastructure, leading to a rise in infectious diseases and mental health issues among displaced populations.

Despite these alarming trends, India's legal framework has yet to fully integrate climate change into its human rights discourse. The Indian Constitution, under Article 21, guarantees the right to life, which the Supreme Court of India has interpreted to include the right to a healthy environment. However, there is a pressing need to expand this interpretation to explicitly recognize the Right to Climate as a fundamental human right, ensuring legal accountability for climate-related health impacts and protecting the most vulnerable populations.

Overview of Climate Change and Health Impacts in India

Climate change is one of the most significant global challenges, and its effects are becoming increasingly evident in India. The country is particularly vulnerable due to its vast population, diverse ecosystems, and socio-economic disparities. The health impacts of climate change are multifaceted, affecting physical, mental, and social well-being³²⁴. This overview examines the various ways climate change impacts health in India, providing essential data

³²² Marina Romanello et al., *The 2023 Report of the Lancet Countdown on Health and Climate Change: The Imperative for a Health-Centred Response in a World Facing Irreversible Harms*, 402 *Lancet* 2346, 2346-94 (2023).

³²³ <https://www.hindustantimes.com/india-news/2023-was-india-s-second-warmest-year-in-india-on-record-101704134250732.html>

³²⁴ K.F. Bush et al., *Impacts of Climate Change on Public Health in India: Future Research Directions*, 119 *Environmental Health Perspective*. 765 (2011).

and context to support legal arguments for recognizing the right to a healthy climate as a fundamental human right.

1. Heat-Related Illnesses and Mortality

India has experienced a marked increase in average temperatures, with 2023 being one of the hottest years on record. Heatwaves have become more frequent and intense, leading to thousands of deaths annually. A prolonged heatwave across large regions of India has resulted in over 100 deaths and more than 40,000 suspected cases of heat stroke over the past three and a half months, according to a Health Ministry official³²⁵. Projections indicate that by 2050, heat-related deaths could increase by 200-300% if current trends continue. Heat stress can lead to dehydration, heatstroke, and exacerbation of cardiovascular and respiratory diseases, especially in vulnerable populations such as the elderly, children, and outdoor workers.

2. Vector-Borne Diseases

Warmer temperatures and altered rainfall patterns have expanded the range of vector-borne diseases such as malaria, dengue, and chikungunya. Over the past decade, dengue cases in India have steadily increased, influenced by the intricate interplay between host, vector, and virus, all of which are affected by climatic factors and examined the extrinsic incubation period (EIP) across different climatic zones in India, using temperature data from Punjab, Haryana, Gujarat, Rajasthan, and Kerala³²⁶. Malaria-endemic areas have shifted, exposing new regions to the disease. The spread of these diseases leads to higher morbidity and mortality rates, placing additional strain on India's already overburdened healthcare system.

3. Water-Borne Diseases

Changes in precipitation patterns and increased flooding have compromised water quality, leading to the spread of water-borne diseases such as cholera, diarrhea, and typhoid. The study reveals that waterborne diseases are more prevalent among the elderly in rural areas (22.5%) compared to urban areas (12.2%), primarily due to the use of unimproved water sources. Central Indian states, such as Chhattisgarh and Madhya Pradesh, have the highest percentages of elderly individuals affected, followed by northern states³²⁷. Flooding events, particularly in coastal regions, have led to spikes in cases.

³²⁵ <https://www.thehindu.com/sci-tech/energy-and-environment/india-is-likely-undercounting-heat-deaths-affecting-its-response-to-increasingly-harsh-heat-waves/article68366495.ece>

³²⁶ S.R. Mutheneni, A.P. Morse, C. Caminade & S.M. Upadhyayula, *Dengue Burden in India: Recent Trends and Importance of Climatic Parameters*, 6 *Emerg. Microbes Infect.* 70 (2017).

³²⁷ Kumar P, Srivastava S, Banerjee A & Banerjee S, *Prevalence and Predictors of Water-Borne Diseases Among Elderly People in India: Evidence from Longitudinal Ageing Study in India, 2017-18*, 22 *BMC Pub. Health* 993 (2022), <https://doi.org/10.1186/s12889-022-13376-6>.

These diseases disproportionately affect children and economically disadvantaged communities, contributing to high mortality rates and chronic health issues.

4. Air Quality and Respiratory Illnesses

Climate change exacerbates air pollution, a critical environmental issue linked to approximately 11.8% of global deaths, resulting in 6.7 million premature fatalities annually (WHO, 2022). Additionally, individuals with respiratory conditions are particularly vulnerable to the adverse effects of extreme weather events intensified by climate change³²⁸. This leads to higher concentrations of particulate matter (PM2.5), ozone, and other pollutants. The worsening air quality in major cities like Delhi and Mumbai is directly linked to climate change. Poor air quality contributes to a rise in respiratory illnesses such as asthma, chronic obstructive pulmonary disease (COPD), and lung cancer, significantly reducing life expectancy.

5. Food Security and Nutrition

Climate change has disrupted agricultural production due to altered monsoon patterns, droughts, and floods, leading to food insecurity and malnutrition. Climate change affects agriculture by 4-9 percent annually. Since agriculture makes up 15 percent of India's GDP, this likely results in an approximate 1.5 percent loss in GDP due to climate change³²⁹. Malnutrition, particularly in children, leads to stunted growth, weakened immune systems, and increased vulnerability to diseases, perpetuating cycles of poverty and poor health.

6. Mental Health

The psychological impacts of climate change, including anxiety, depression, and post-traumatic stress disorder (PTSD), are becoming more recognized, particularly following extreme weather events. However, existing evidence indicates that traumatic experiences from extreme weather events heighten the risk of affective and anxiety disorders, particularly post-traumatic stress disorder. Heat notably raises the morbidity and mortality associated with mental illness and the frequency of psychiatric emergencies. Ongoing stressors like drought, food insecurity, and climate-induced migration also pose significant risks for mental health³³⁰. Mental health is often overlooked

³²⁸ Huan Minh Tran et al., *The Impact of Air Pollution on Respiratory Diseases in an Era of Climate Change: A Review of the Current Evidence*, 898 *Sci. Total Environment* 166340 (2023), <https://doi.org/10.1016/j.scitotenv.2023.166340>.

³²⁹ <https://www.downtoearth.org.in/agriculture/climate-change-causes-about-1-5-per-cent-loss-in-india-s-gdp-57883>

³³⁰ Walinski, A., Sander, J., Gerlinger, G., Clemens, V., Meyer-Lindenberg, A., & Heinz, A., *The Effects of Climate Change on Mental Health*, 120 *Dtsch. Arztebl. Int.* 117 (2023).

in climate discussions, but it is a critical component of overall well-being. The stress associated with displacement, loss of livelihood, and environmental degradation has profound implications for individual and community resilience.

The health impacts of climate change in India underscore the need for robust legal frameworks that recognize the right to a healthy environment as a fundamental human right. The intersection of climate change and public health presents a compelling case for legal interventions aimed at mitigating climate impacts, protecting vulnerable populations, and ensuring that all citizens have access to a safe and sustainable environment. Given India's commitments under international agreements like the Paris Agreement and its constitutional provisions, there is a strong legal basis to argue for the right to climate as part of the right to life under Article 21 of the Indian Constitution. This right could serve as a powerful tool for holding governments and corporations accountable for actions that contribute to climate change and harm public health.

Right to Healthy Environment – An International Perspective:

A healthy environment is one that provides clean air, safe drinking water, nutritious food, and safe housing for people to live in while promoting and maintaining the wellbeing of entire communities. It encompasses a variety of aspects that have an impact on human health, including chemical, biological, social, and psychosocial components. The right to a healthy environment is now widely recognized as a fundamental human right, integral to overall well-being.

Stockholm Declaration

The recognition of environmental rights as human rights began with significant international milestones, such as the Stockholm Declaration of 1972. Adopted during the United Nations Conference on the Human Environment in Stockholm, this document was groundbreaking in environmental law. It recognized that all individuals possess a fundamental right to freedom, equality, and conditions that support a life of dignity and well-being in a healthy environment.³³¹ Moreover, the declaration underscored the responsibility of nations to protect and improve the environment, not only for the present generation but also for future generations.³³²

Rio Declaration

³³¹ *Stockholm Declaration (1972), principle 1*

³³² *Stockholm Declaration (1972), principle 2*

The Rio Declaration, adopted in 1992 at the Earth Summit in Rio de Janeiro, expanded upon the principles set forth in Stockholm. It introduced the concept of sustainable development, stating that environmental protection must be integrated into the development process and not treated as an isolated issue. Humans occupy a central position in the discourse on sustainable development, with the right to lead healthy and productive lives in alignment with the natural environment³³³. Key provisions of the Rio Declaration include the precautionary principle, which encourages taking preventative measures in the face of environmental threats, and the polluter pays principle, which holds those responsible for pollution accountable for its costs. Nations are expected to collaborate in a spirit of global partnership to conserve, protect, and restore the Earth's ecosystem's health and integrity. Recognizing the varying degrees of contribution to global environmental degradation, states share common but differentiated responsibilities.

United Nations Framework Convention on Climate Change (UNFCCC)

Also emerging from the Rio Earth Summit was the United Nations Framework Convention on Climate Change (UNFCCC), an international treaty designed to address the growing challenge of climate change. The UNFCCC aims to stabilize greenhouse gas concentrations in the atmosphere to avoid dangerous human interference with the climate system³³⁴.

This framework sets the stage for future negotiations of specific treaties, such as the Kyoto Protocol and the Paris Agreement, that establish binding targets for reducing greenhouse gas emissions. Importantly, the UNFCCC highlights the connection between climate change and public health, as climate change adversely affects key social and environmental determinants of health, such as air quality, access to clean water, food security, and shelter. The Parties are obligated to safeguard the climate system for the well-being of both current and future generations, guided by principles of equity and in line with their common but differentiated responsibilities and respective capacities.³³⁵

Paris Agreement

The Paris Agreement, adopted at the 21st Conference of the Parties (COP21) in 2015, is an extension of the UNFCCC. Paris Agreement acknowledges that climate change is a problem that affects all of humanity. It states that Parties have a responsibility to protect, advance, and take into account their commitments under international law, including the right to health, in their

³³³ *Rio Declaration (1992), principle 1*

³³⁴ *United Nations Framework Convention on Climate Change (UNFCCC) (1992), Article 2*

³³⁵ *United Nations Framework Convention on Climate Change (UNFCCC) (1992), Article 3*

efforts to combat climate change³³⁶. Its primary goal is to limit global warming to well below 2°C above pre-industrial levels, with an aspirational target of limiting the increase to 1.5°C³³⁷. The agreement requires all participating nations to submit their nationally determined contributions (NDCs)³³⁸, outlining their best efforts to reduce greenhouse gas emissions, with the expectation that these contributions will become more ambitious over time. In addition to mitigating climate change, reducing greenhouse gas emissions directly contributes to improving air quality, which in turn reduces the incidence of respiratory and cardiovascular diseases.

It is also important it is to stop, lessen, and deal with loss and damage brought on by the negative effects of climate change, including non-economic costs like health problems.³³⁹ It highlights the necessity of strengthening developing nations' ability to carry out climate initiatives, especially those related to health. The objective is to enhance these nations' capacity to handle the health effects of climate change by means of better planning and execution techniques³⁴⁰.

According to the WHO air pollution is responsible for approximately 7 million deaths annually. The WHO has framed the Paris Agreement as a public health agreement, emphasizing that addressing climate change can lead to significant improvements in air quality, reduce health risks from extreme weather events, and enhance food and water security.

Legal Frameworks Addressing Climate and Health

(i) Overview of National laws

Environmental Protection Act of 1986

This Act serves as a cornerstone of environmental regulation in India, designed to safeguard and enhance the environment. This legislation grants the central government extensive authority to implement measures aimed at environmental protection and improvement.³⁴¹ It also empowers the government to make rules for controlling environmental pollution including setting standards for air water and soil.³⁴² Specifically, it empowers the government to control and mitigate pollution, establish standards for pollutant emissions and discharges³⁴³, and regulate the handling of hazardous

³³⁶ *Paris Agreement (2015), Preamble*

³³⁷ *Paris Agreement (2015), Article 2*

³³⁸ *Paris Agreement (2015), Article 4*

³³⁹ *Paris Agreement (2015), Article 8*

³⁴⁰ *Paris Agreement (2015), Article 11*

³⁴¹ *Environmental Protection Act 1986, s 3*

³⁴² *Environmental Protection Act 1986, s 6*

³⁴³ *Environmental Protection Act 1986, s 7*

substances³⁴⁴. Through these provisions, the act lays the foundation for comprehensive environmental governance, ensuring the prevention of risks to human health, other living organisms, plant life, and property.

Air (Prevention and Control of Pollution) Act of 1981

It is dedicated to the control of air pollution and the maintenance of air quality. This act mandates the establishment of Central and State Pollution Control Boards, which are tasked with setting air quality standards and regulating emissions from industrial plants and vehicles³⁴⁵. It also outlines various measures to prevent and control air pollution, with a direct focus on public health implications.

National Green Tribunal Act of 2010

This Act led to NGT; a specialized judicial body designed to handle environmental disputes. The NGT provides a forum for the swift resolution of cases related to environmental protection and conservation. The tribunal is authorized to grant relief and compensation for damages to individuals and property, including health-related impacts resulting from environmental concerns.³⁴⁶

The National Action Plan on Climate Change

NAPCC, introduced by the Indian Prime Minister on June 30, 2008, outlines India's strategic response to the significant challenges of climate change. The plan emphasizes the importance of maintaining a high economic growth rate to elevate living standards and reduce vulnerability to climate-related impacts. At the core of the NAPCC are eight National Missions:

- (i) National Solar Mission,
- (ii) National Mission for Enhanced Energy Efficiency,
- (iii) National Mission on Sustainable Habitat,
- (iv) National Water Mission,
- (v) National Mission for Sustaining the Himalayan Ecosystem,
- (vi) National Mission for a Green India,
- (vii) National Mission for Sustainable Agriculture, and
- (viii) National Mission on Strategic Knowledge for Climate Change.

These missions are designed to foster a comprehensive understanding of climate change and to drive adaptation and mitigation efforts, while promoting energy efficiency and conserving natural resources. Each mission has specific goals, One of these missions focuses on health, addressing the

³⁴⁴ *Environmental Protection Act 1986, s 8*

³⁴⁵ *Air (Prevention and Control of Pollution) Act 1981, s 16*

³⁴⁶ *National Green Tribunal Act 2010, s 15*

health-related aspects of climate change through a multi-pronged approach. By involving multiple stakeholders and leveraging public-private partnerships, the NAPCC aims to ensure India's sustainable and resilient development in the face of climate change.

(ii) ***Integration of climate change into health policies:***

➤ **National Action Plan for Climate Change and Human Health (NAPCCHH)**

India's National Action Plan for Climate Change and Human Health (NAPCCHH) is a comprehensive framework designed to mitigate the health impacts of climate change through a multifaceted approach. The plan acknowledges the rise of climate-sensitive illnesses caused by extreme weather events and aligns with international frameworks such as the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol.

The NAPCCHH focuses on key components, including awareness and capacity building, aimed at educating the public, healthcare providers, and policymakers about the health consequences of climate change. It also emphasizes the need to strengthen the healthcare system to reduce diseases driven by climate variability. A situational analysis at various administrative levels is integral to enhancing health preparedness, alongside the development of region-specific action plans to tackle localized climate-health challenges.

Strategically, the plan highlights the importance of research and evidence generation, calling for an increased capacity to fill gaps in understanding the health impacts of climate change. Policies and interventions will be developed based on robust evidence. Furthermore, cross-sectoral collaboration is essential, fostering partnerships with other missions and stakeholders, including government agencies, NGOs, and international organizations.

The National Centre for Disease Control (NCDC) serves as the primary agency responsible for implementing and monitoring the plan, supported by technical guidelines and advisories. By integrating climate considerations into health policy, the NAPCCHH aims to build a climate-resilient healthcare system in India.³⁴⁷

➤ **WHO Global Action Plan on Climate Change and Health**

The World Health Organization (WHO) has developed a comprehensive action plan that emphasizes the integration of climate change considerations into health policies. This plan is results-based, needs-oriented, and

³⁴⁷ Ministry of Health & Family Welfare Government of India: *National Action Plan for Climate Change and Human Health*

capabilities-driven, aligning with the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement¹. It promotes cross-sectoral cooperation and aims to foster integrated actions at national and global levels. The WHO Global Action Plan on Climate Change and Health is a comprehensive strategy aimed at addressing the health impacts of climate change. Here are some key aspects of the plan:

The plan acknowledges climate change as a significant health crisis, with the potential to breach the 1.5°C threshold established by the Paris Agreement as early as the 2030s. This concern is further highlighted in Resolution WHA77.14, adopted during the 77th World Health Assembly in May 2024, which calls for a strengthened global response to climate change, underscoring the necessity of a comprehensive global action plan.

Right to Climate – A Fundamental Right

The Supreme Court has evolved its interpretation of Article 21 to encompass the right to a healthy environment, acknowledging the fundamental connection between human well-being and environmental conditions. Additionally, the Court has underscored the principle of intergenerational equity, advocating for the protection of future generations' rights through the preservation of a healthy environment.

The Supreme Court of India ruled in a historic ruling that the right to a healthy environment free from the adverse effects of climate change is guaranteed under Article 21³⁴⁸. The case highlighted the effects of climate change on biodiversity by focusing on the protection of two highly endangered bird species: the Lesser Florican and the Great Indian Bustard. The Court upheld that one of the fundamental components of the right to life as protected by Article 21 is the right to a healthy environment. Additionally, it emphasized India's responsibilities to fight climate change and promote sustainable development under international agreements like the Paris Agreement.

The case dealt with the Tata Iron and Steel Company's (TISCO) industrial effluents contaminating the Bokaro River. The petitioner argued that the local community's health and way of life were negatively impacted by the trash dumping into the river, which made the water unfit for irrigation and drinking. The Court set a precedent for upcoming environmental challenges when it decided that the right to clean air and water is inalienable to the right to life.

³⁴⁸ *M.K. Ranjitsinh & Ors vs Union of India & Ors [2024] Writ Petition (Civil) No. 838 of 2019 with Civil Appeal No. 3570 of 2022*

This decision brought to light the vital link between public health and environmental preservation.³⁴⁹

The Supreme Court held that the right to life includes the right to enjoy pollution-free water and air for the full enjoyment of life. This case laid the foundation for recognizing environmental rights as part of the right to life under Article 21.³⁵⁰

Challenges in Implementing Climate Rights in India

Legal Recognition and Framework

- ***Absence of Explicit Legal Recognition***: India's Constitution does not explicitly recognize a right to climate or environmental protection as a fundamental right. The judiciary has read environmental rights into the right to life under Article 21, but there is no clear legal framework defining climate rights, making it challenging to enforce them effectively.
- ***Fragmented Legal Regime***: Environmental laws in India are scattered across various statutes like the Environment Protection Act, 1986, and the Air and Water Acts. The absence of a unified legal framework on climate rights leads to inconsistencies in enforcement and interpretation.

Enforcement and Accountability

- ***Weak Enforcement Mechanisms***: Regulatory bodies like the Central Pollution Control Board (CPCB) and the National Green Tribunal (NGT) often face challenges in enforcing environmental regulations due to resource constraints, bureaucratic delays, and political interference.
- ***Corporate Influence and Lobbying***: Industrial and corporate lobbying can impede the strict enforcement of environmental regulations, often leading to diluted laws or non-compliance with existing norms.

Socioeconomic and Political Barriers

- ***Economic Priorities Over Environmental Concerns***: India's rapid economic growth and development agenda often prioritize industrialization and infrastructure development over environmental protection, leading to compromises on climate rights.

³⁴⁹ *Subhash Kumar vs State of Bihar & Ors., Writ Petition (Civil) No. 381 of 1988*, 1991 AIR 420, 1991 SCR (1) 5

³⁵⁰ *M.C. Mehta vs Union of India* 1987 AIR 1086, 1987 SCR (1) 819.

- ***Vulnerable Populations:*** Marginalized communities, particularly in rural areas, face disproportionate impacts from climate change. However, their voices are often underrepresented in policymaking, limiting the equitable implementation of climate rights.
- ***Political Will:*** There is often a lack of political will to prioritize climate action, especially in the face of immediate economic or electoral pressures. This undermines long-term commitments to climate rights and environmental justice.

Judicial Challenges

- ***Judicial Overreach and Limitations:*** While the judiciary has played an active role in expanding environmental rights, there are concerns about judicial overreach and the courts' capacity to address complex scientific and technical issues related to climate change.
- ***Access to Justice:*** For many marginalized communities, accessing the legal system to enforce climate rights is challenging due to factors like lack of legal awareness, financial constraints, and the slow pace of judicial proceedings.

International Commitments and Domestic Implementation:

- ***Inadequate Implementation of International Agreements:*** India is a signatory to international agreements like the Paris Agreement, but the translation of these commitments into domestic law and policy is often slow and inconsistent.
- ***Climate Finance and Technology Transfer:*** The lack of adequate climate finance and access to clean technology hampers India's ability to fully implement climate rights, particularly in vulnerable regions.

Opportunities in Implementing Climate Rights in India

Judicial Activism:

- Expanding interpretation of Article 21, the Indian judiciary has the opportunity to further expand the interpretation of the right to life under Article 21 to explicitly include the right to a healthy climate. This can create a stronger legal basis for enforcing climate rights.
- The tool of PIL allows citizens and NGOs to approach courts to seek redressal for climate-related issues, fostering greater public participation in climate governance.

Strengthening Environmental Laws

- ***Unified Climate Legislation:*** Developing a comprehensive climate change law that integrates various environmental statutes and explicitly recognizes climate rights can provide a stronger legal framework for implementation.
- Strengthening institutions like the CPCB and NGT with more resources and autonomy can improve the enforcement of environmental regulations.

Community-Based Approaches

- Decentralized Climate Action by empowering local communities through decentralized governance models can lead to more effective climate action tailored to local needs, especially in rural and vulnerable regions.
- Nature-Based Solutions by promoting nature-based solutions, such as community-driven afforestation and sustainable agriculture practices, can enhance resilience to climate impacts while supporting the right to a healthy environment.

Policy and Institutional Reforms

- Strengthening and expanding national action plans on climate change, such as the National Action Plan on Climate Change (NAPCC), to explicitly include health impacts and climate rights can enhance policy coherence and implementation.
- Intersectoral Coordination by improving coordination between different government ministries and departments can lead to more integrated and effective climate policies that address health, environment, and human rights simultaneously.

Raising Public Awareness:

- Raising public awareness about climate rights through education, advocacy, and media campaigns can empower citizens to demand better implementation of these rights and hold authorities accountable.
- Encouraging greater citizen participation in environmental decision-making can lead to more inclusive and effective climate governance.

Recommendations and Future Directions

- Codify Climate Rights and advocate for the explicit recognition of the right to a healthy environment, including climate stability, within the Indian Constitution.
- Integrate Health into Climate Policies and mandate that all climate-related legislation includes health impact assessments to safeguard public health.
- Strengthen Environmental Courts and enhance the jurisdiction and capacity of India's environmental courts to address climate-related health grievances effectively.
- Enforce stringent Polluter Liability and develop stricter liability frameworks for industries contributing to climate change, linking emissions directly to health impacts.
- Promote Climate-Resilient Healthcare and establish legal mandates for climate-resilient infrastructure in the healthcare sector, ensuring continuous service during climate events.
- Expand Access to Justice by simplifying the legal processes and reduce costs for vulnerable communities to claim their right to a healthy climate and seek redress.
- Incorporate Indigenous Knowledge by legally recognizing and integrating the indigenous and local knowledge systems in climate adaptation strategies, enhancing community resilience.
- Strengthen International Cooperation a push for India's leadership in international forums to recognize climate change as a global human rights issue.
- Implement Public Climate Literacy by introducing the legal requirements for climate education programs to empower citizens with knowledge about their environmental rights.
- Develop Climate-Health Action Plans and mandate state governments to create and implement localized action plans addressing the health impacts of climate change.

Conclusion

The intersection of climate change, public health, and human rights presents a compelling case for the recognition of the Right to Climate as a fundamental human right, particularly in a country as vulnerable as India. This research underscores the profound impact of climate change on human health, manifesting through increased heat-related illnesses, expanded vector-borne and water-borne diseases, and deteriorating air quality. The evidence demonstrates that climate-induced health issues are disproportionately affecting India's most vulnerable populations, exacerbating existing socio-economic disparities and straining public health systems.

Despite existing national and international legal frameworks that address environmental and health concerns, the lack of explicit legal recognition of the Right to Climate within India's Constitution and fragmented environmental laws pose significant challenges. The Indian judiciary's evolving interpretation of Article 21 offers a potential pathway for expanding environmental protections to include climate stability explicitly. However, the effective implementation of climate rights requires overcoming enforcement challenges, addressing socio-economic and political barriers, and leveraging judicial activism.

In conclusion, acknowledging and safeguarding the Right to Climate is not only a legal imperative but also a moral obligation to protect public health and uphold human dignity in the face of escalating climate challenges.

DATA

- In 2021, air pollution was a significant global killer, responsible for 8.1 million deaths worldwide, with India and China being the most affected. In India alone, air pollution claimed 2.1 million lives, including 1.69 lakh children under five. The report highlights that nearly 50% of ozone-related COPD deaths occurred in India. Air pollution was the second leading cause of death globally and the primary risk factor in South Asia. The report underscores the urgent need for governments to address air pollution to protect vulnerable populations, especially children, from its devastating health impacts. [https://www.newindianexpress.com/nation/2024/Jun/19/air-pollution-killed-21-million-in-india-in-2021-including-over-16-million-children-under-five-report#:~:text=Nation-Air%20pollution%20killed%202.1%20million%20in%20India%20in%202021%2C%20including%20and%20Bangladesh%20\(15%2C000\).](https://www.newindianexpress.com/nation/2024/Jun/19/air-pollution-killed-21-million-in-india-in-2021-including-over-16-million-children-under-five-report#:~:text=Nation-Air%20pollution%20killed%202.1%20million%20in%20India%20in%202021%2C%20including%20and%20Bangladesh%20(15%2C000).)
- A 2020 study by the Asian Development Bank (ADB) estimated that climate change could reduce India's GDP by up to 2.8% annually by 2050, with significant implications for public health and poverty alleviation. <https://www.adb.org/sites/default/files/publication/876891/ado-2023-thematic-report.pdf>
- Over 80% of India's population resides in districts highly vulnerable to extreme hydro-met disasters, with the southern zone being the most affected. The eastern and western zones are particularly susceptible to extreme cyclones, while northeastern states are prone to floods, and southern and central states face extreme droughts. Five out of six Indian zones have low adaptive capacity to these disasters, with only the eastern zone showing medium-range adaptability. Assam, Andhra Pradesh, Maharashtra, Karnataka, and Bihar are identified as highly vulnerable due to factors like unsustainable landscapes, poor infrastructure planning, and human-induced microclimate changes. <https://www.ceew.in/publications/mapping-climate-change-vulnerability-index-of-india-a-district-level-assessment>
- A 2023 Lancet Countdown report noted that India's health infrastructure is inadequately prepared to handle the projected increase in climate-related diseases, such as heat-related illnesses, vector-borne diseases, and malnutrition. [https://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736\(23\)01859-7.pdf](https://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(23)01859-7.pdf)

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The Imperative Role of the Public in Banning Single-used Plastic Bags for Environmental Sustainability

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Abstract

The environment where we live has enough for whatever we need and enough capacity to sustain itself. However, the use of chemical products and plastic bags for managing our daily needs, in addition to humankind's indiscriminate use of its resources without thinking about the needs of future generations, creates a big menace and is hazardous to the environment. In the 21st century, the use of plastic bags is one of the big issues that the environment is facing today. Be it air or water pollution, soil erosion, or extinction of animals, the plastic bag causes a serious threat to our environment. The general public should actively participate in modifying how we use and manage resources for future generations to prevent further loss of ecological balance. The public must be encouraged to actively participate in banning single-use plastic bags in our daily lives to maintain environmental sustainability. Article 51A (g) of the Indian Constitution prescribes the duty of every citizen of India, which says "to protect and improve the natural environment including forests, lakes, rivers and wildlife, and to have compassion for living creatures." It's the people that make the difference! It's people who have made the situation with plastic bags, and it's people who will change it.

Keywords: Plastic bags ban, the role of the Public, Article 21, 51A(g) of Indian Constitution, Plastic waste management rules 2016, Extended producer responsibility, Environmental sustainability.

Introduction

The word 'Environment' according to the definition, is "the aggregate of social and cultural conditions that influence the life of an individual or community."³⁵¹ Whereas the definition given under the Act³⁵² Says "environment" includes water, air, and land and the inter-relationship that exists among and between water, air, and land, and human beings, other living creatures, plants, micro-organisms, and property. So, the environment can be conceptualized as anything that surrounds us. The relationship between human life and the environment is interconnected. The amicable relationship between the environment and the ecosystem needs to be maintained for the existence of life on earth. Environmental Sustainability is one of the main

³⁵¹ <https://www.merriam-webster.com/dictionary/environment>. Accessed on 07 August. 2024.

³⁵² The Environment (Protection) Act, 1986, Section 2(a).

concerns for the life of humans, and it is necessary that human beings live joyful and healthy lives in a balanced environment. In this digital age of the universe, with the highly skill and fast advancement of skills and technology, it has reached the stage when we human beings have attained the power and capability to manage the environment in various ways and an uncommon manner. Humankind's ability to use the sources of environment, if utilized carefully and respectfully, can give all living beings a chance to improve their standard of living. However, if it is used unwisely or indiscreetly, mankind's will and power can lead to irreparable mischief to the lives of the people and their environment. It has been witnessed that human activities caused mischief in several parts of the earth, the increasing hazardous pollution in air, water, earth, and living beings. It is necessary that one recognize the importance of the resources taken from the environment in our lives. The resources we depend on, like air, water, and land, are indispensable for our lives: they are more valuable than anything else; they are the blood of our survival.

Plastic Bags and its Environmental Impacts:

Plastic bags are undoubtedly cheap and convenient for managing our daily life. However, its long-term impact on the environment cannot be taken for granted. Plastic bags are made up of fossil fuels and water. Every year, billions of tons of solid waste and millions of tons of Carbon dioxide (Co2) are released from the manufacturing unit of Plastic³⁵³.

Plastic bags' adverse impact on the environment is more than one; they not only consume natural resources but also increase the risk of air pollution, water pollution, soil erosions, landslide, and flooding as plastic bags are not biodegradable and take many years to break down. Plastic bags that are not recycled and do not go into landfills litter our landscapes and pollute our rivers and lakes. Eventually, the bags make their way to the ocean via the wind or rivers, and they remain open-endedly there. Plastic bags are killing our marine life and sea birds by polluting our oceans and killing land animals which mistake plastic bags for food. Paper and reusable bags do not do this.³⁵⁴

According to UNEP, not less than 8 million tons of plastic annually reaches oceans. Causing disaster on fisheries, tourism, and Marine wildlife and destroying the marine ecosystem, which cost roughly 8 billion dollars. According to UNEP, not less than 80 per cent of ocean pollution is made of plastic. This clearly shows that whether you are living in a landlocked place or nearby ocean, indiscriminate disposed of waste plastic bags will ultimately

³⁵³ <https://www.reusethisbag.com/articles/plastic-shopping-bags-environmental-impact/> accessed on 07 August 2024

³⁵⁴ Ted Duboise, *Initiate A Plastic Bag Ban*.

end up in the ocean via rivers and by riding through the wind³⁵⁵. The serious concern is that based on the paper published by the Federation of Indian Chambers of Commerce and Industry in February 2017³⁵⁶ every year, each Indian consumption of plastic products is among the lowest countries in the world, which is less than 11kg. This means India consumes much less than half of the world's average; it is almost a 10th of the American average plastic consumption annually, equal to one-third of Chinese plastic consumption in a year. But still, our country, India, is listed among the world's top 12 Plastic polluters. Higher per capita Consumers of Plastic products in countries like the United States of America and China are listed among the least plastic polluters, many ways below India. The main reasons for this shameful condition of India's position are negligence, mishandling, and mismanagement of plastic waste. As responsible citizens, the public also has a massive role in managing plastic waste for environmental sustainability.

Constitutional provisions relating to Public Participation in the protection of the environment

A country like India is one of the few in the world that specifically incorporates provisions for the protection of the environment. Part IV – directive principle of state policy and Part IVA – fundamental duties are the chapters in the Indian Constitution that expressly articulate the commitment of the State and citizens to protecting and improving the environment. Although not enforceable in a court of law, it is the guiding principle in interpreting any other provisions of the Constitution to balance the conflicting provisions under the Constitution. And by the various pronouncements of judicial decisions reinforced this constitutional mandate³⁵⁷.

In the Indian Constitution, the responsibility to preserve and protect our environment lies on each and every citizen, including the State. “Justice Krishna Iyer calls it ‘*a remedial weapon of versatile use*’ which must be made available to citizens in their struggle to achieve social justice (Krishna Iyer, 2011)”. Initially, the protection of the environment was not specifically mentioned in the Constitution of India 1950. But the dream of development was more concerned. "According to Professor Upendra Baxi, *If the provisions relating to the environment had been incorporated in the Constitution, then India would have set a very worthwhile model of environment protection not*

³⁵⁵ <https://www.unenvironment.org/news-and-stories/press-release/un-declares-war-ocean-plastic-0>. Accessed on 08. August 2024

³⁵⁶ Knowledge Paper on Plastic Industry for Infrastructure published by the Federation of Indian Chambers of Commerce and Industry in February 2017; Plastic waste inputs from land into the ocean, a study paper published in *Science* in February 2015.

³⁵⁷ Shyam Divan, Armin Rosencranz: *Environmental Law and Policy in India*, Second edition. Page.41

just for herself but for the many decolonized third world nations which modeled their Constitutions on the Indian Constitution' (Baxi, 1990)"

Post Conference of Stockholm Declaration 1972, the importance of the overall protection of the environment was increased, and more concern was felt, and in order to include environmental aspects, the provisions of the Constitution were amended. The Directive principle of State Policy(DPSP) was incorporated under Article 48A in Part IV of the Constitution³⁵⁸. which said, "*The State shall endeavour to protect and improve the environment and to safeguard the forest and the wildlife of the country.*" In the year 1976, an amendment was also made, which gives a new Article 51-A(Part IVA) of the Constitution³⁵⁹ in the name of Fundamental duties. Although it is not justifiable, it is one of the most essential Articles or duties for achieving the aim and target of the constitutional basic spirit of the nation. These duties should be understood as obligations upon the nation, the surroundings, and one another. "Article 51-A (g) stipulates that it is the duty of every citizen '*to protect and improve the natural environment including forests, lakes, rivers, and wildlife and to have compassion for living creatures*'." In order to develop and enhance the power, by the same year of Amendment Act 1976," '*forests and wildlife*' were kept in the Concurrent list³⁶⁰". Thus, the state and its citizens are obliged by the Indian Constitution to not only protect but also preserve and improve "the natural environment including forests, lakes, rivers, and wildlife and to have compassion for living creatures." The environmental aspect has been established with the incorporation of Article 48A and 51-A(g) by the 42nd Amendment Act 1976³⁶¹.

The Universal Declaration of Human Rights also incorporates matters relating to fundamental duties. The Constitution of India, Article 51-A, complies with Article 29(1) of the UDHR, which states that "*Everyone has duties to the community in which alone the free and full development of the personality is possible.*"

In "*LK Koolwal v. State of Rajasthan*"³⁶², the High Court of Rajasthan discussed the idea behind Article 51-A(g). The petitioner approached and presented before the Rajasthan High Court and alleged that the authority had been neglected in its responsibility, which created a problem of hygiene in the city of Jaipur and threatened the lives of the people. The High Court clarified the real aim and purpose of Article 51-A of the Constitution:

³⁵⁸ The 42nd Amendment Act 1976 of the Indian Constitution.

³⁵⁹ *ibid*

³⁶⁰ Entries - 17A and 17B

³⁶¹ Leelakrishnan p, Environmental Law Case Book, 2010

³⁶² AIR 1988 Raj 2, 1987 (1) WLN 134

“We can call Article 51-A ordinarily as the duty of the citizens, but in fact, it is the right of the citizens as it creates the right in favour of citizens to move the Court to see the State performs the duties faithfully and the obligatory and primary duties are performed in consonance with the law of the land. Omissions or commissions are brought to the notice of the Court by the citizens. Thus, Article 51-A gives the right citizens to move the Court for the enforcement of the duty cast on State instrumentalities, agencies, departments, local bodies, and statutory authorities created under the particular law of the State”.

In this case, the Court clarified that "right and duty co-exist; without duty, there cannot be any right, and there cannot be any duty without any right." The unhygienic surroundings can harm and be dangerous to the live of human beings and ultimately become one of the safeguards provided under Article 21 of the Indian Constitution. Accordingly, each and every citizen must maintain the duty provided by the Constitution of India.

In one of the landmark cases *“Subhash Kumar v State of Bihar³⁶³”* the Supreme Court gave direction that every individual of citizens must maintain their responsibility of fundamental duties incorporated under the Constitution of India: "Protection of the environment and keeping the ecological balance unaffected is a duty which not only Governments but also every citizen must undertake. It is a social obligation and we need to remind ourselves that every Indian citizen is his fundamental duty as enshrined in Art 51-A (g) of the Constitution."

Along these lines, the Apex Court not only warned the government for failing to discharge its duty in maintaining environmental pollution but also called upon the citizens to perform their duty in protecting and improving the balance of the environment. It shows that citizens have not only the right but also an obligation and duty to improve and protect the natural environment to maintain future generations' environmental sustainability.

Public Participation and Banning of Plastic bags

Plastic products are undoubtedly a useful and essential part of our daily life. But this product, which is a necessary and integral part of our modern life, creates serious problems after it has been used. In today's world, plastic products are used in various fields like food packaging, window frames, paints, etc. Though it provides numerous benefits in our daily lives, the non-biodegradable nature of this product poses a grave threat to our environment. The world has been facing a plastic problem for the last 4 or 5 decades. Most

³⁶³ AIR 1991 SC 420, 424

of the plastic products are littered in landfills or oceans, where they stay for an indefinite period. It is not only because of the non-degradable nature but also because of the Smells and toxins released while burning or decomposing plastic products that adulterate water and soil. And Honorable Prime Minister Narendra Modi, on 05 June 2018, on the day of Environmental Day, declared to phase out single-use plastic from the country by 2022. He pledged again on several occasions later when he was re-elected in May 2019. In order to accomplish its goal, an amendment of Hazardous and Other Wastes (Management and Transboundary movement) rules, 2016 was made on 06 March 2019 to plug the ambiguities which the previous rules permitted overseas throwing away of plastic waste in the country through Plastic scrap importers operating in Special Economic Zones (SEZs) and Export Oriented Units (EOUS). After this amendment, now Plastic scrap importers are not permitted to cross India's boundary³⁶⁴.

Plastic bags are fundamental in managing our day-to-day lives, and it is difficult to manage our lives without these products. However, other alternatives, like eco-friendly materials, are being considered to replace conventional plastic products. The central and State government governments also take serious note of these matters and have now started measures to reduce the use of single-use plastic bags in various fields. Also, different non-governmental organizations and institutions are taking steps to raise awareness of the negative effects of plastic bags on the environment.

Although most Acts and rules vest responsibility on authorities, mere action of authority cannot achieve its goal. Every person and public has a role in confronting the plastic pollution crisis, without which the initiative taken by the authority cannot accomplish its target. Undeniably, as Tearfund has perceived: "When extraordinary things are achieved against apparently impossible odds, it's often because of a shift in values and a civil society movement that pushes for change."³⁶⁵

Individuals and the public must participate in combating the plastic pollution crisis. They can join by minimizing the quantity of plastic products in the household and organizing group activities as part of cleanliness. Non-governmental organizations and civil society can play a pivotal role by conducting awareness campaigns on the impact of plastic bags on the natural environment. In a democratic country like India, the voice and action of the public is more powerful than the authority. It's the people that make the

³⁶⁴ Rashmi Shrivastava "A tide in waiting" P.49 (SOE, Delhi, 2020)

³⁶⁵ Evans A and Gower R (2015) *The restorative economy – completing our unfinished millennium jubilee*, Tearfund, p19

difference! It's people who have made the situation with plastic bags, and it's people who will change it.

Rules³⁶⁶ under Plastic Waste Management, from 5 to 9, the responsibility of various local bodies at different levels in managing plastic waste is prescribed. In which, local bodies are assigned to create awareness among stakeholders about their responsibility to minimize plastic waste pollution. The responsibility of various local bodies cannot achieve its target without public intervention. For that reason, it is the duty of not only the authorities but also the public as stakeholders to participate in managing plastic waste to curtail plastic pollution. Therefore, public participation has an immense role on banning plastic products for environmental sustainability.

Article 21³⁶⁷ says “Right to life and personal liberty: ‘No person shall be deprived of his life or personal liberty except according to a procedure established by law’.” One can say this Article is one of the most important provisions under the Constitution because it guarantees life and liberty, and it is being placed under Part III of the Constitution, which is Fundamental Rights. So, if any authority does not comply with the banning of single-use plastic bags rules or act made by the State and if any person suffers his life out of it, he/she can move the Court for enforcement of his/her fundamental right, which can be justiciable in the court of law. Plastic bags pose a serious threat to the environment, and consequently, they are hazardous to a person's life, which is a constitutionally guaranteed fundamental right to life. So, it is the duty and right of the public to maintain a healthy environment by participating in banning single-use plastic bags for environmental sustainability.

One should remember that it is the duty of every citizen under Article 51A(g) of the Constitution to protect and improve the environment, including participating in the banning of single-use plastic bags for our environmental sustainability. In *LK Koolwal v State of Rajasthan*³⁶⁸ High Court of Rajasthan elucidated the true meaning and purpose of Article 51A(g) of the Indian Constitution: *"We can call Article 51-A ordinarily as the duty of the citizens, but in fact, it is the right of the citizens as it creates the right in favor of citizens to move the Court to see the State performs the duties faithfully and the obligatory and primary duties are performed in accordance with the law of the land. Omissions or commissions are brought to the notice of the Court by the citizens. Thus, Article 51-A gives the right the citizens to move the Court for the enforcement of the duty cast on State instrumentalities,*

³⁶⁶ Plastic Waste Management Rules, 2016

³⁶⁷ Indian Constitution, 1950

³⁶⁸ AIR 1988 Raj 2, 1987 (1) WLN 134

agencies, departments, local bodies, and statutory authorities created under the particular law of the State".

We, the citizens, must play a key role in changing our lifestyle to curb plastic pollution by minimizing the use of single-use plastic products so that, as informed citizens, we live the change we want to see. This lifestyle will also have a positive impact on the streets and marine resources and ultimately lead to environmental sustainability. By adopting all these lifestyles and spreading the word, we can create a society in which we want to live. This will give an excellent example of where one can live without the need for single-use plastic bags.

Conclusion:

As mentioned above Plastic products do not biodegrade easily, it takes many years. All the Stakeholders, including e-commerce and food delivery agents, are directed under the Plastic Waste Management Rules to abide by Extended Producer Responsibility (EPR). After this, all importers, producers, and owners of any brand are made liable if any plastic waste is introduced into the market at any cost.³⁶⁹ However, minimizing its usage will have little effect in curbing pollution. The Federation of Indian Chambers of Commerce and Industry (FICCI) released its report in 2013 that the country consumes 43 percent of single-use plastic for packaging, while the global average consumption of single-use plastic is 35 percent³⁷⁰. This is a grave concern for our environment. And Single-use plastic does not have any value after being used so it should be banned³⁷¹. Unfortunately, there is no clear definition of single-use plastic. Which creates problems in regulating plastic waste management in our country. It is high time that the government introduced stringent laws, particularly for plastic products, with a clear definition of single-use plastic. Which debar manufacturers and retailers from producing single-use plastic bags.

Banning single-use plastic altogether at once may not be feasible at this stage. But by categorizing its effect and taking into consideration the availability of alternatives, we can take measures to phase out this menace of plastic pollution. Besides this, while framing policy, there should be cooperation among different departments, institutions, and non-government organizations. Proper guidelines should be set for consumers and rag pickers for the appropriate disposal of plastic waste. The government can make laws and rules for banning single-use plastic bags, yet the government alone cannot achieve its desired target. One should not expect everything from them. We as

³⁶⁹ Dinesh Raj Bandela "*Make them liable*" p.60 (SOE, Delhi, 2020)

³⁷⁰ Swati Singh Sambyal "*Not easy to bin*" p. 54 (SOE, Delhi, 2020)

³⁷¹ Ibid p.58

a responsible citizen must change our behavior and attitude in getting rid of the drastic plastic pollution³⁷². Without public participation and cooperation, making a law will not be able to tackle this menace of single-use plastic bags. Therefore, a combination of authority action and community participation can solve this plastic pollution hazard, ultimately leading to environmental sustainability.

³⁷² <https://www.downtoearth.org.in/blog/environment/what-are-we-doing-to-stop-plastic-menace--60678> accessed on 22 August 2024.

A Study on Deep Seabed Mining and its Economical Perspective with the Role of UNCLOS on Exploitation of Seabed Minerals

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Abstract

This study explored various aspects that leads to deep seabed mining and the economical development arises out of one country with the help of these seabed minerals that are extracted through this seabed mining , But indeed a country's economical need is satisfied by the profits arising out of these minerals But this is coming at the cost of various harm to our natural resources like emission of toxic substances into water and also smothern of the Benthic community by a meeting to find particles. The objective of the study is to dissect the contribution of seabed Mining to the world's economy; to study is detail the legal aspect and regulations involved in seabed mining; to discuss various ways of exploitation of seabed through mining for exotic mineral resources; to provide with available remedies to protect our water bodies from further exploitation; to discuss the role of UNCLOS in providing regulations and promote sustainable development. An Empirical study is carried out in order to study in detail about the people's perspective on sustainable development. Soil based metal mining provides the rudiments required for the provision of energy and more but the demand for the metals have never seen a fall has always been a constant increase in the statistical report. However, the production lifespan of an average mine is far shorter than the timescales of mineral deposit formation, suggesting that metal mining is unsustainable on human timescales. Research suggests that primary metal supplies will be exhausted within about 50 years.

"We're only beginning to scratch what's down there. The loss of biodiversity will be inevitable as nodules take millions of years to form,"

-Matthew Gianni

Key Words: Deep Seabed Mining, Polymetallic Nodules, Exotic Minerals, Sustainable Development, Economical Need

Introduction

1.1. Economical perspective of Deep seabed mining

A recent evaluation of 12 risks related to 308 undeveloped copper projects noted that 96% of the potential future supply from these projects involve risks predominantly classified as ESG³⁷³. An expansion to iron, bauxite and copper projects with established resources and reserves suggested that 47% of the

³⁷³ ESG stands for Environmental, Social, and Governance. Investors are increasingly applying these non-financial factors as part of their analysis process to identify material risks and growth opportunities.

iron projects, 88% of the bauxite projects and 63% of the copper projects considered by this study face four or more medium to high ESG risks that may limit or prohibit production and future supply. All these aspects are in respect to soil-based minerals but this is explode in this research because the decreasing mineral deposit formation in land is ultimately leading to increase in mining in the sea bed in search of exotic mineral resources which is again causing an imbalance in the ecosystem which also comes with emission of toxic substances into the ocean and also an increased exploitation of seabed minerals. As simple as that, rising demand for minerals and metals, in presence with the depletion of soil-based resources, has led to an increase of interest in marine based mineral resources. There is no commercial scale to determine this factor but since many countries worldwide are using these methods on seabed to gain resources. The countries who have been popular for seabed mining for resources include China, the United Kingdom, Belgium, Germany, France and Japan.

In this paper we will discuss the major reason that all these countries are interested in seabed minerals and they satisfy their economical needs. Furthermore, we will discuss how these minerals are helping a country to satisfy their economical needs. A recent study on deep sea mineral projections has stated different technological developments that are bringing consistent progress in the field of minerals one such that is an alternative source for minerals like cobalt, copper, nickel and much more which also includes manganese to be specific in an area of 75,000 km² around 200 million tonnes of nodule is found in an estimated time period of within 20 years of mining we can get a profit of 54 million tonnes of metals which is worth of about 21 to 42 billion United States dollar (USD). To avail all these benefits the mining on the deep sea should be practically legal and which is possible when a country gets legal permissions from national and international organizations like International Seabed Authority (ISA). But this seabed area globally is beyond any national jurisdiction but only ISA regulates the mining process. So in order to carry this missions a state must avail an ISA license which is exclusively granted to to provide access to seabed areas of up to 150,000 km².

1.2. Increasing interest in deep seabed mining

Currently there have been around 30 licenses issued by ISA to states , among them China holds the highest licenses of about five. Initially the economical and environmental aspects of this deep sea mining may look independent but they are closely related to each other when it comes to extraction of manganese nodules which is further discussed. The interest in deep sea mining has been constantly increasing adding with an interesting fact is the deep sea manganese oxide ore is higher in minerals than those in the territorial

deposits. Compared to average metal prices from the year 2010 the production value was estimated to be 1.04 billion USD but it reached 137 billion USD in 2020. From 2000 to 2020 a single mine site gains a profit of around 20.85 billion USD with a mining rate of 1.5 million tonnes per year. But it's also not that easy to extract this deep sea minerals as around an estimated amount of 11 .90 billion USD costs to undertake a mining in deep sea which may also result in failures or unknown risks but since the economical aspect in here is huge where in the terms of availability of those minerals are also high the demand and interest is keep on increasing.

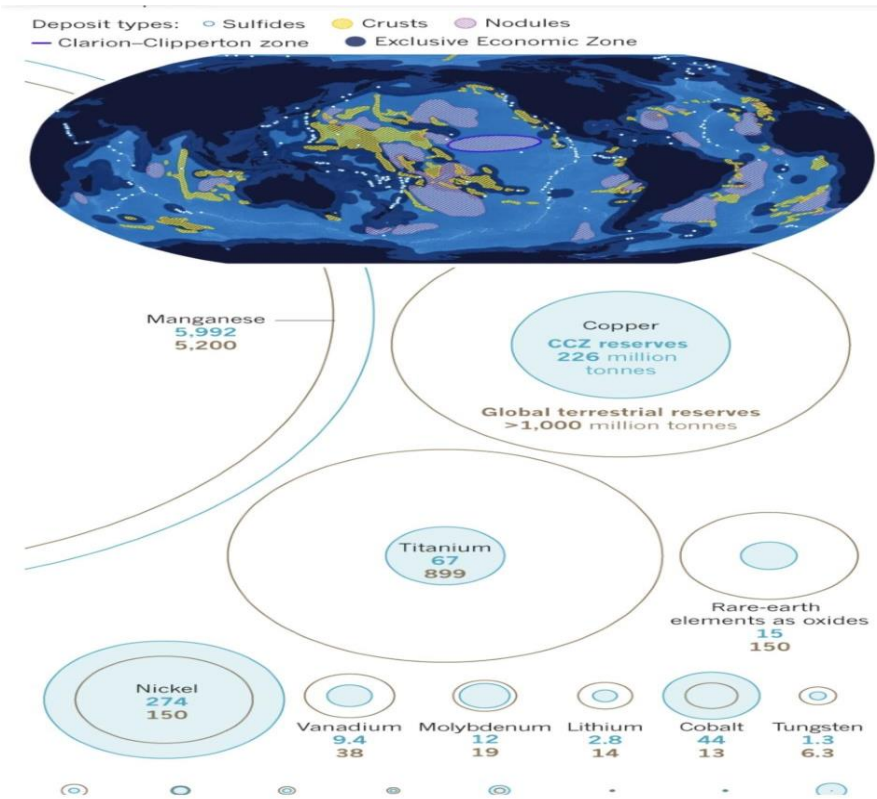
1.3. Exotic Minerals and their locations

This deep sea minerals mostly includes SMS³⁷⁴, ferromanganese crusts and polymetallic nodules. The commercial interest of marine mineral deposits currently falls upon three major minerals: they are polymetallic nodules, polymetallic sulfides, and cobalt crust. The availability of this polymetallic nodules are right beneath the sea surface from around 3500 to 5500 m and these nodules and they contain a wide variety of metals such as iron, manganese, copper, cobalt, nickel, zinc, with minor availability of molybdenum, titanium, lithium and niobium. The Clarion-Clipperton Zone (CCZ)³⁷⁵ in the eastern Pacific, the Central Indian Ocean basin consists of enormous amounts of Nickel, Manganese and Cobalt. The next one in the list is polymetallic sulfides; they are found around 2000 m beneath the sea surface and in the depth of tectonic plate boundaries and even in the active volcanic arcs they are rich in copper, zinc, silver, iron and gold. Only when thousands of years of hydrothermal activity will lead to the formation of such deposits. Cobalt crust is mainly seen in the east of Japan and in the Mariana Islands and contains iron, manganese, cobalt, nickel, copper in addition to rare earth elements. It is found right beneath the sea surface between 4,000 and 7,000 meters. Manganese nodules are composed of manganese, iron and other metals in a potato-like shape having 4 to 10 cm in diameter. It takes millions of years for the formation of manganese nodules from manganese oxidation by bacteria in seawater. These nodules primarily contain 28% Manganese, 1.3% Nickel 1.1% Copper, 0.2% Cobalt, 0.059% Molybdenum, 0.081% rare earth metals and traces of platinum and tellurium. The United States is not eligible for licenses, as it is not an ISA member state, but U.S. defense firm Lockheed Martin has a license through its U.K. subsidiary. There are around 13 nations that have got license from the international seabed authority and

³⁷⁴ Sea-floor massive sulphides (SMS) are deposits of metal-bearing minerals that form on and below the seabed as a consequence of the interaction of seawater with a heat source (magma) in the sub-sea-floor region.

³⁷⁵ Known for their biodiversity, hosting deep-water corals, sponges, and fish. inhabit the CCZ live more than 5,000 meters (3.1 miles) beneath the ocean's surface.

the one Africa has been most vulnerable to additional metal suppliers entering the market each identified currently generates at least 10% of its export earnings from the deep sea mining which are cobalt, copper , nickel and manganese. One of the sure market influx of corpus Apples are Mongolia and Peru and also the Democratic Republic of Congo Zambia and Chile.



1.4. Environmental effects of mining

The deep sea mining of manganese nodules have adverse effects on the environmental impacts that can be due to many reasons like the exploration activities and dumping and underwater noise of acoustic waves adding to this the atmospheric ozone depletion and ocean acidification are some serious issues that are accompanied through through this, still the noise that is emitted out of this marine mining systems are huge and unknown. Also every act will be accompanied with a waste disposal and when it comes to this mining systems the waste disposal will be no way other than be disposed into the deep sea itself and it will be stored in there for a prolonged period of time until the state try to recover it and this aquatic habitats are dependent on a clear current nutrient supply when this mining activities will collapse the

whole ecosystem. Deep-sea mining will potentially affect extensive areas of seabed and will likely produce near-bottom, mid-water or near-surface sediment plumes. Seabed mining at sea may result in the emission of toxic materials³⁷⁶ into the ocean, or the discharge of fine particulate material that can smother benthic communities³⁷⁷. Some species, including sponges and anemones, attach themselves to the nodules for feeding. Other species rely on the nodules indirectly, such as the recently discovered octopus nicknamed “Casper” that attaches its eggs to the stalks of dead sponges. The environmental risks are too high given that the deep sea ecosystems are among the most undiscovered places on earth and mining is something which is inevitable and it also affects the sustainability of the deep sea and further affects the ecosystem which is more precious when it comes to the deep sea. Many deep-sea habitats extend over large areas, but the extent of individual species and habitat ranges are largely unknown. This research has pressing importance as commercial, political and public interest in the extraction of metals from the deep sea increases. Very few studies have investigated nodule fauna because of their inaccessibility on the abyssal plains. Certain sponges and molluscs are unique to the surfaces of nodules, and nematode worms and crustacean larvae have been found within crevices report higher densities of both sessile and mobile fauna living on or near manganese nodules than in nodule-free areas of the abyssal plains in nodule-rich areas. The need of this study is mainly to focus on protecting natural resources and sustainable development if this kind of exploitation for prominent minerals like polymetallic sulfides, manganese nodules and cobalt-rich ferromanganese crusts continues then it will result in adverse effects on our future generations as well as disturbing the biodiversity and balance of nature.

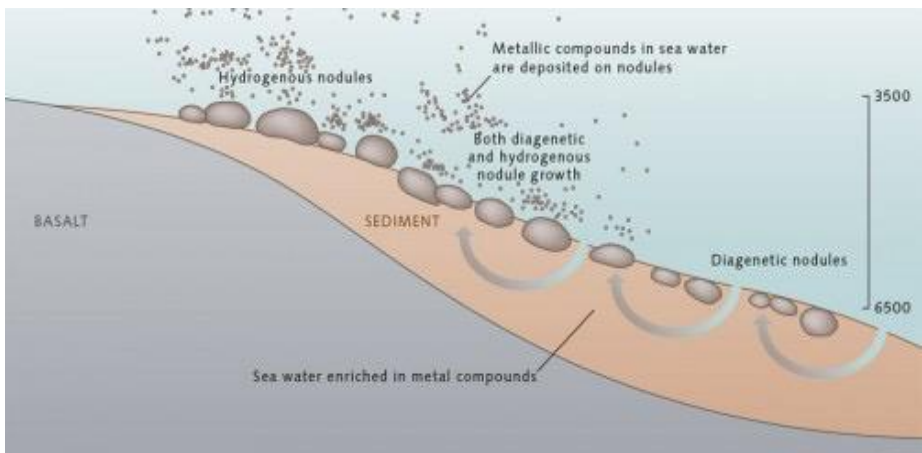
Role of UNCLOS:

The requirement for an economical support through Deep seabed mining is linked with the United Nations convention on Law of the Sea (UNCLOS) which became effective in 1994 and if the nation should be compensated with this deep seabed mining profits the report will be predicted to come across the year of 2027. Bramley Murton, who leads the marine mineral research team at the National Oceanography Centre in the United Kingdom. He argues that deep-sea mining will be viable only if the commodity price is high enough as a result of increasing demand. One of the greatest ecological threat when it comes to deep sea but mining are sediment plumes and they are appearing to cost lasting damage to microbial life if this mining activities continues to proceed and the noise could increasingly affect the lifespan of Wales and

³⁷⁶ Cadmium. Cadmium is one of the most toxic HM to most organisms.

³⁷⁷ Benthic communities are largely composed of macroinvertebrates, such as annelids, mollusks, and crustaceans.

other animals that rely on echolocation when the light pollution could affect animals that use bioluminescence and also this will cause increasingly effect on the effects caused by sediment plumes. When it comes to the effects there are two types which is short and long-term effects and which are mainly on specific organisms and this effect are majorly unknown , more than of the current licenses of deep sea mining related to Clarion-Clipperton Zone (CCZ) in the Pacific the ocean region covering 4.5 million km² roughly half the size of the continental United States is the greatest commercial interest is polymetallic nodules, compacted mineral-rich cements resembling blackened cauliflower florets.



Conclusion:

The need of this study is mainly to focus on protecting natural resources and sustainable development if this kind of exploitation for prominent minerals like polymetallic sulfides, manganese nodules and cobalt-rich ferromanganese crusts continues then it will result in adverse effects on our future generations as well as disturbing the biodiversity and balance of nature. Proper provisions should be implemented to control the amount of minerals that should be extracted by a country from its exclusive economic zone and also the idea of benefit sharing should be implemented widespread which will avoid numerous mines in the sea bed when two or more countries join hands and do research in a particular region As because there are so much damage cost due to the noise and acoustic waves which clearly affects the whales that uses echolocation and organisms that uses bioluminescence , Considering all these facts and how this fine particles that are scattered affect the benthic community and smother them and also how the part of sustainable development is affected when we commit mining activities on deep sea and extract all the exotic minerals which almost take another eternity to form again.

***"Humanitarian response, sustainable development, and sustaining peace
are three sides of the same triangle."***

-Antonio Guterres

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Health Security of Industrial Workers amidst Industrial Pollution in India: An Analysis of Government Policies

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Abstract

In a developing country like India, a large section of the workforce is employed in the industrial sector and industrial workers immensely contribute to the nation's economic progress. However, the disheartening reality remains that workers are grappling with health issues due to exposure to industrial contaminants. Innumerable cases highlight that industrial workers suffer from occupational health diseases threatening their very existence. The problem is further compounded by the weak fulfillment of health security measures for workers despite prevailing policies. Apart from various policies, the enactment of the Occupational Safety, Health, and Working Conditions (OSH) in September 2020 was seen as a ray of hope to improve the plight of workers. Conversely, to date, most workers are still functioning in a pernicious environment devoid of sound health security measures. The realization of universal access to health care for workers which is the need of the hour calls upon both the public and private sectors to address the issue earnestly. The onus falls more so on the three major pillars of democracy i.e., the Legislature, Executive, and Judiciary as policies need to be framed, executed, and judiciously implemented to ensure health justice for workers who constitute the country's backbone. A forceful and futuristic policy is a sine qua non to achieve the long-overdue desired change. This paper attempts to analyze the role of government policies in providing health security to industrial workers in the country and the way forward.

Keywords: *Health security, Industrial workers, Industrial Pollution, Policies.*

Introduction

The industrial sector constitutes an important element of a nation's economy and the economic progress of any country can be gleaned from the performance of the industrial sector. Alongside the role of industrialists is the crucial part of industrial workers in facilitating the production process. Significantly, the onset of the industrial age emphasized the significance of industrial plants that accords more comprehension of the term 'industrial worker'.³⁷⁸

³⁷⁸ Barbara B Mellinger., 'Definition of Industrial Workplace' (2020). <
<https://smallbusiness.chron.com/tertiary-productivity-37551> > accessed 6 August 2024

In a developing country like India, a large section of the population is employed in the industrial sector, particularly in small-scale industries which are growth drivers supplementing the large-scale industries in the country's journey of economic progress. However, amid the vital contribution of industrial workers to the production process, they have to correspondingly grapple with health issues as a result of exposure to industrial contaminants. Various studies suggest that industrial workers are suffering from diseases such as asthma, allergies, insomnia, headaches, respiratory problems, cancer, stomach ailments, etc. The sad reality that prevails in India as elsewhere is that despite workers comprehending the reality that industrial works are accompanied by health issues; however, sheer hardship compels them to seek employment in industries. Every year not only do many workers encounter health problems but a sizeable number die as a result of occupational diseases. The plight of workers has brought to the fore the significance of the concept of 'occupational health' which emphasises the health and safety of workers to provide them with appropriate health care measures. Occupational safety and health have been for long overlooked. Most injuries and sickness of workers go unreported. Besides, workers are ignorant about safety concerns. This constitutes one of the reasons for the partial realization of the goal of ensuring occupational health and safety. The sad reality also prevails that occupational health services are not a part of the unorganized sector covering small units.

28 April every year marks the International Workers' Memorial Day (IWMD) a day of remembrance of workers who have died due to work related ill health or diseases and accidents. The Health and Safety Executive (HSE) annual statistics indicate that annually around 13,000 deaths take place among workers. This can be attributed to lung disease and cancer resulting from exposure to chemicals and dust at the place of work. Contrary to these statistics, safety campaigners evaluated the figure to be closer to 50,000 annually.³⁷⁹

Policies for Health Security of Workers in India- The Journey

The founding fathers of the Indian Constitution have provided for the Directive Principles of State Policy which among other provisions have also emphasized the obligation of both the Central and State governments to work towards securing the health and strength of workers, men, and women and the essential existence of just and humane conditions of work. In giving teeth to the articulation of the importance of health for its citizens, Article 21 of the Indian Constitution lays down that no person shall be deprived of his/her life or personal liberty except according to the procedure established by law. It

³⁷⁹ Unison, 'International Workers' Memorial Day' (2024) < <https://www.unison.org.uk/events/international-workers-memorial-day/2024> > accessed 30 August 2024

affirms the well-accepted notion that the right to life does not denote merely the ability to breathe but also to live with human dignity, the right to a decent environment including pollution-free water and air, and the right to health, etc. With health issues confronting industrial workers, a proper realization of Article 21 has become imperative in this regard to accord a decent healthy life to industrial workers.

In India, occupational health comes under the purview of two ministries- a) Labour and b) Health and Family Welfare. The responsibility for ensuring the health and safety of workers has been assigned to the Ministry of Labour and the Labour departments of the states and union territories alongside the role of the Ministry of Health and Family Welfare in ensuring medical health care to workers. The ministry is supported by the Directorate General-Factory Advisory Services and Labour Institutes as regards technical aspects concerning occupational health and safety in factories.³⁸⁰

In consonance with the aspirations of the founding fathers, some laws have been incorporated into the Constitution for the safety of workers. During the initial years of the post-independence period, the notable acts for the health protection and safety of workers are the Factories Act (1948) and the Mines Act (1952). The Factories Act 1948 was amended in 1987.

The Factories Act, enacted in 1948 has as one of its objectives the provision of healthy and sanitary conditions for workers as well as taking precautionary measures for their safety. In ensuring the protection of the health of workers, Chapter IX exclusively provided the details about welfare measures, and health and safety provisions, particularly sanitation, deviation of fumes and dust, cleanliness, etc.³⁸¹

The Factories Act, 1948 also enjoins on employers to conduct an Annual Medical Checkup for employees with an emphasis being placed on medical tests. These tests will serve as a precautionary measure for preventing diseases and injuries.³⁸²

The provisions laid down in the Factories Act bear testimony to the government's commitment toward securing the workers' health and safety particularly those engaged in industrial works. Industries handling hazardous

³⁸⁰ Rajat Kumar Saha, 'Occupational health in India' (2018) < <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6748231/> > accessed 1 August 2024

³⁸¹ Seetha Sriraman, 'Occupational Health Laws in India How operational are they' < <https://www.legalserviceindia.com/articles/occ.htm> > accessed 3 August 2024

³⁸² Ministry of Labour & Employment, 'The Factories Act 1948' < <https://labour.gov.in> > accessed 6 August 2024

substances or functions could have supplementary guidelines for monitoring and catering to the health of their workers.³⁸³

Besides the Factories Act, the Workmen's Compensation Act of 1923, was enacted for occupational health and safety. As per the act, employers are required to pay compensation to any employee if the employee suffers from occupational diseases or injuries after due verification of the liability.³⁸⁴

The Employees' State Insurance Act 1948 makes provision for financial benefits and/or medical services to insured employees in the event of sickness, maternity, impairment, and death due to occupational injury.³⁸⁵

The National Health Policy 1983 and National Health Policy 2002 included occupational health as one of their elements. A scheme entitled "National Programme for Control & Treatment of Occupational Diseases" was initiated by the Ministry of Health & Family Welfare, Government of India in 1998-99. The National Institute of Occupational Health, Ahmedabad (ICMR) was the nodal agency for the scheme. The kinds of major occupational diseases in the country are Occupational injuries, Occupational lung diseases, Occupational cancers, Occupational dermatoses, Occupational Infections, Occupational toxicology, and Occupational mental disorders.³⁸⁶

According to the National Health Policy (2002), workers' occupational conditions were poor making them prone to job related illnesses. Besides, the policy contemplates the regular health examination of workers, especially for job-related threatening health ailments.³⁸⁷

A silver lining in the direction of improving the health and safety of workers is the promulgation of the National Policy on Safety, Health and Environment at the Workplace (NPSHEW) by the Ministry of Labour and Employment, Government of India in February 2009. The National Policy aims at establishing and maintaining a safety and health culture for workers at their workplace. The policy encompasses certain goals aimed at bettering health, safety, and the environment at the workplace. The historic policy of the Government of India emphasizes certain specific areas for action such as occupational safety, data collection, promoting research and development, development of national standards, and health skills development.³⁸⁸

³⁸³ Ibid

³⁸⁴ Ministry of Labour and Employment., 'Workmen's Compensation Act, 1923' < <https://labour.gov.in> > accessed 7 August 2024

³⁸⁵ India Code, 'The Employees' State Insurance Act 1948' (2021) < <https://www.indiacode.nic.in/handle/123456789/1441>> accessed 4 August 2024

³⁸⁶ Vikaspedia, 'National Programme for Control and Treatment of Occupational Diseases' (2024) < <https://vikaspedia.in/health/nrhm/national-health-programmes> > accessed 13 August 2024

³⁸⁷ National Health Mission, 'National Health Policy 2002' < <https://nhm.gov.in/> > accessed 16 August 2024

³⁸⁸ Rajat Saha Kumar. *Ibid*

The National Policy on Safety, Health and Environment at Work Place was adopted by the Ministry of Labour and Employment, Government of India in February 2009. It also focuses on eight functional areas viz., awareness, compliance, data collection, enforcement, national standards, occupational safety and health, research and development, and skill development.³⁸⁹

The government recognizes that workers' health and safety are crucial for enhancing productivity as well as bringing economic and social development. It equates high safety and health with successful business outcomes.³⁹⁰

The Occupational Safety, Health, and Working Conditions (OSH) was enacted in September 2020 substituting the 2019 version which stresses Health, safety, welfare, and better working conditions of workers. The Code encompasses 633 provisions of 13 major labor laws inclusive of the Factories Act, of 1948 into one single code with 143 provisions. The Central Government may specify health, safety, and working conditions for workers that are to be maintained by the employer. The following constitute the major obligations entrusted to the employers-

1. Workplace should be cleared of hazards that can potentially afflict injury or cause any disease to the employees.
2. Particular groups of employees are to be supported with free annual health examinations.
3. As far as feasible the employees should be able to work in a safe environment free of health risks.
4. Medical examinations and investigations to detect occupational diseases should be conducted without workers being made to pay for them.

An essential component of the OSH is that apart from the responsibilities mentioned above of employers, employees enjoy certain rights one very important of which is the right to acquire information from the employer on workers' health and safety at work. Besides, they also can convey to the employer any inadequacy in safeguarding the health and safety in the workplace and in case of dissatisfaction to the inspector-cum-facilitator.³⁹¹

Some articles of the Indian Constitution are reflective of the provisions laid down in the OSH. They are as under:

³⁸⁹ International Labour Organisation, 'National Policy on Safety, Health and Environment at Workplace' (2013) < <https://www.ilo.org/resource/policy/national-policy-safety-health-and-environment-workplace> > accessed 18 August 2024

³⁹⁰ Ministry of Labour and Employment, 'Safety, Health and Environment at Work Place' (April 2023) < <https://labour.gov.in> > accessed 15 August 2024

³⁹¹ Naina Bhardwaj, 'The OSH Code, 2020: A Primer' (2024) India Briefing < <https://www.india-briefing.com/> > accessed 25 August 2024

Article 21 specifies that no person shall be deprived of his life or personal liberty except according to the process of law. 'Life' in Article 21 of the Constitution is not merely the physical act of breathing but it also includes the Right to live with human dignity, the Right to health, the Right to pollution-free air, etc.

Article 24 prohibits the employment of children in factories, etc, and children below the age of 14 years will not be engaged in work in any factory or mine or any other hazardous employment.

Article 39 (e) provides that the health and strength of workers, men, and women, and the early years of children are not abused.

Article 39 (f) makes a provision for the Right to equal opportunities and facilities to develop in a healthy manner and in conditions of freedom and dignity and guaranteed protection of childhood and youth against exploitation and moral and material abandonment.

Article 47 articulates that the State will look upon the improvement of public health as one of its essential duties.³⁹²

Health Security Policies for Workers in India- An Assessment

Policymaking is the most crucial aspect of a country's administrative process. Concerning the policy process in India, the first and foremost step is policy-making, with the cabinet assuming the most vital role in determining government policies. Policy implementation is the next pivotal stage in the policy process as the true success of any policy can be discovered only through its effective implementation. Policy implementation in the country sees the direct or indirect involvement of institutions such as the legislature, executive, judiciary, civil service, and NGO's. Most profoundly, members of the Parliament and various committees assess the choices and orders of the government. Any policy being passed in the country must be scrutinized by the judiciary and any policy that is inconsistent with the laws of the country will be prevented from being implemented. Of great significance is the part being played by the civil servants who with their insight and expertise can bring the policy to fruition.³⁹³

Any thoughtfully designed policy requires to be well implemented and implementation can be bettered only if the fundamental flaws at seamless execution are detected and policymakers steer clear of them. What is very

³⁹² Lt Col L Shri Harsha, 'Legal Framework for Occupational Safety & Health in India' < <https://academia.edu/5954165> > accessed 3 September 2024

³⁹³ Bidyut Chakrabarty and Prakash Chand, *Public Policy Concept, Theory, and Practice* (Sage Publications India Pvt Ltd 2016)

much required is that policymakers should make themselves aware of the ongoing transformation happening every day. Adjusting not only to the present situation but also keeping in mind the future scenario is proof of a potent policymaking system. Particularly with environmental issues and climate change assuming significance, environmental policy has acquired centre stage in the current public policy discourses.³⁹⁴

India has all along in right earnest been working towards setting the pace for augmenting health care policies for the general populace however, efforts at minimizing health issues of industrial workers are not satisfactory. There is a broad consensus that industrial workers throughout the country are functioning in an unwholesome and contaminated atmosphere and the situation is likely to aggravate with more industries coming up as a direct outcome of globalization. The stark reality prevails that implementation of health measures for sustainable health protection of workers is always scanty and the demands and requirements of workers have always fallen on deaf ears.

The efforts of the Government of India in coming up with different policies for occupational health and safety through various research works are highly commendable. However, with time new developments have taken place in various workplaces, particularly industries. New challenges accompany new developments demanding better solutions to problems. This also applies to workers' health-related issues in industries. Changing realities require the need to amend the existing policies. This would be a game changer as far as the health and safety of workers is concerned.

What seems to be missing in India at present is that the Right to Health is not yet included in the list of fundamental rights. This has led to a lackluster commitment on the part of the state to ensure public health for its citizens.³⁹⁵ Though the situation appears fragile, however, the judiciary has spectacularly and dynamically interpreted the right to life to connote the right to a healthy and dignified life much to the relief of the inhabitants of the country.³⁹⁶

Perhaps to bring about a desirable environment focusing on health justice for industrial workers, hope is now pinned that as was with the right to education which was initially included in the Directive Principles of State Policy and later incorporated into the list of fundamental rights through

³⁹⁴ Rajesh Chakrabarti and Kaushiki Sanyal, *Public Policy in India* (Oxford University Press 2017)

³⁹⁵ CJP Team, 'Right to Health: The Forgotten Constitutional Mandate. What is expected of the government, and how this mandate has been repeatedly violated' (2021) < cjp.org.in > accessed 7 August 2024

³⁹⁶ *Ibid*

continuous judicial interpretation of Article 21 as also to include Right to education, the right to healthcare will also be made a legal right.³⁹⁷

The Factories Act of 1948, the Workers' Compensation Act of 1923, the Employees' State Insurance Act of 1948, the National Health Policy of 1983, the National Health Policy of 2002, the National Policy on Safety, Health, and Environment at Workplace- 2009 and Occupational Safety and Health (OSH) Code 2020 were milestones in India's commitment to secure the health and safety of workers. To date, however, workers are exposed to industrial contaminants detrimental to their health and have inadequate access to clean sanitation. Insufficient training of the workers on health issues associated with pollution and health protection particularly for those working in the informal sector poses a challenge to achieving the goal of realizing the health potential for workers.

To reassert, the issue of health justice for industrial workers looms large in the country and urgently needs a panacea. Lamentably, however, as a majority of industrial workers are illiterate, there also prevails profound ignorance on their part regarding the disastrous effect of industrial contaminants on them. Despite laws concerning occupational health protection of workers in existence in the country, however, what cannot be denied is that a health crisis is gripping the workers who are most vulnerable to the harmful industrial pollutants. This severe issue calls for serious steps to be taken to ensure justice for industrial workers. However, it seems the system of justice in the country has failed to come up to the expectations of the industrial workers in terms of ensuring their health safety, and security.

No doubt the role of the judiciary to alleviate the sufferings meted out to people is highly commendable, however industrial workers whose plight remains no better, look up to the Judiciary as their saviour. The health threat to industrial workers very much demands an integrated endeavour of the Legislature, the executive, and the Judiciary. In India, although policies are in place, however, poor implementation on the part of enforcers is one of the contributing factors to the unsatisfactory health position of workers in the country. There is no dearth of policies in the country dealing with workplace occupational health and safety. However, the lack of productive implementation stands as a stumbling block in addressing the issue of workers' health security.

Recommendations: The Way Forward

³⁹⁷ Shivkrit Rai, 'Establishing a legal right to healthcare in India' (2020) < <https://www.eastasiaforum.org/2020/06/26/establishing-a-legal-right-to-healthcare-in-india/> > accessed 10 August 2024

To realize the objective of securing health security for workers, certain measures need to be undertaken and imbibed in future policies designed in this direction.

1. The government should make it mandatory to establish a Health Monitoring Committee in every industry equipped with all the requirements of handling their responsibilities.
2. The government should appoint an inspection team to assess the health hazards associated with different kinds of industries and accordingly give instructions. Active intervention on the part of the government is the most pressing need of the hour.
3. The success of any business demands a healthy workplace for workers. A paradigm shift is essential for acquiring a workplace atmosphere where workers' health is secured and protected.
4. Efforts to remove all loopholes should be enhanced by the government and existing laws and policies should be examined thoroughly to bring the necessary reforms to fruition.
5. The government should ensure that all manufacturing units provide protective devices, particularly in industries where workers are more prone to respiratory diseases and other diseases associated with industrial pollution.
6. The unorganized sector should be brought under the supervision of the government so that this sector also can be included in the purview of the government policies on the health protection of workers.
7. Depending on the availability of manpower, government doctors and health workers can make periodic visits to industries to assess workers' health status and accordingly provide health treatment to ailing workers. Besides they also can conduct valuable health training sensitization programmes.
8. The onus falls more so on the three major pillars of democracy i.e., the Legislature, executive, and judiciary as policies need to be framed, executed, and judiciously implemented to ensure health justice for workers who constitute the country's backbone.
9. Government sponsored research in assessing the health implications of industrial contaminants and associated remedies will make a substantial contribution towards the promotion of health security for workers.
10. India being the largest parliamentary democracy in the world, the representatives of the people have a major role in advocating for a strong policy that will make a difference in the lives of workers. Without a strong political will the desired goal cannot be obtained.
11. The working together of the four ministries of the Government of India viz., the Ministry of Health, the Ministry of Labour, the Ministry of Finance, and the Ministry of Forest, Environment and Climate Change is vital to accomplish the desired outcome.

12. It is very much essential that the required data be collected and accordingly policy framework should be directed to enhance workers' health protection. This coupled with a robust process of inspection should be in place.

13. Sensitisation programmes on health and safety should be held on a periodical basis for both employees and employers who majority have inadequate knowledge of health and safety problems. These programmes for stakeholders will help to attain the much-required goal of protecting and enhancing workers' overall wellness.

14. India can also incorporate safety standards and practices as followed in other countries that have successfully been able to achieve the target.

Protecting workers' health amid pollution from industries is the need of the hour to save the human assets of the country. Stringent implementation of policies requires that the corporate sector is sincere enough to assist the government in realizing this goal. This will not only be good for the health status of workers but also will be beneficial to the firms as well because healthy workers will contribute towards making the firm more successful. Understanding should prevail that protecting workers' health is never a burden.

Sustainable Development in India-Measures Needed to Balance

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Abstract

Sustainable Development is not a static state of harmony which is a process of change in which resource exploitation; investment direction, technological development, and institutional change are formulated accordant with both current and upcoming needs. As a result, it entails and necessitates transforming the whole paradigm of governance, both domestically and internationally. There are a number of non-renewable natural resources in this globe, including minerals, oil and gas. When a certain amount of these resources is depleted, the overall amount is permanently diminished. All that required for sustainable development is for individuals to utilize these resources rather sparingly while preserving the interests of offspring. All countries, no matter how large or small, wealthy or poor, must participate in order to achieve sustainable development in terms of population, guarantee of food, fall short of genetic resources and species, power, industry, and human settlements. These issues are all connected to sustainable development, and cannot be addressed separately. In this background, this paper focuses on the notion of sustainable development, attempts to give a brief of legal framework for sustainable development, concentrates on judicial perspective on sustainable development, aims to analyze the measures to be needed for balancing sustainable development and discusses the suggestions that must be kept in mind to maintain sustainable development.

Key words: Technological development, Wealthy or poor, Fall short of genetic resources, Internationally.

Introduction

Sustainable Development is the most important and universal idea. It can only be attained when progress overtakes expansion and the size of the human economy is limited to what the ecosystem as a whole can support. Sustainable growth seems nonsensical when we recognize that our earth is finite. Numerous local, National, and International efforts have been launched in an effort to tackle various facets of the environmental problems. Several positive local results have ensued from these attempts. However, in comparison to the magnitude of the world's environmental problems, their influence on "our common future" in a more sustainable manner appears to be negligible. This has caused a growing degree of disappointment and

dissatisfaction even among the various organisations which are advocating sustainable development.³⁹⁸

For the sake of future generations, the theoretical framework of sustainable development promotes maintaining the same level of natural capital. Sustainable development is generally seen to be an issue of distributional equality, or the sharing of the potential for well-being between present and future human generations. The integration of environmental, social, and economic considerations in the design and implementation of strategies for sustainable development is seen vital by the sustainability theoretical society. It is thought that integrative and comprehensive management strategies are necessary to attain ecological integrity, or to protect the natural capital stock.³⁹⁹

Objectives of the Study

Below mentioned objectives are taken into consideration for this study:

1. To identify the notion of sustainable development.
2. To know the legal framework for sustainable development.
3. To analyse the measures to be needed for balancing sustainable development in India.

Notion of sustainable development

Considering the rate at which natural resources are being depleted on a daily basis, the global and continuous use of them is deemed unsustainable. The environment is under a lot of stress due to population growth, industrialization, and accelerated development. Thus, the greatest challenge facing humanity today is how to make this consumption of natural resources sustainable. The concept of "sustainable development" refers to the capacity to use resources for an extended length of time without fully depleting them. According to the concept of sustainable development, natural resources should be used in a way that has the least negative effects on the environment.

It is the total consumption of all products and services that meet everyone's basic needs and are both commercially and socially feasible. The term "sustainable development," which was defined as "the needs of the present without compromising the ability of future generations to meet their own needs" by the Bruntland Commission Report, is where the concept of "sustainable development" originated.⁴⁰⁰

This Bruntland Commission Report further defines "sustainable development" as "the utilization of goods and services that react to fundamental needs and bring about a better quality of life, while limiting the

³⁹⁸ Dr. Huma B.Khan, "Sustainable Development; A historical and conceptual review", (2013), Vol.32, Delhi Law Review , 217.

³⁹⁹ Ibid. P 224-225

⁴⁰⁰ Rattan Singh & Shikha Dhiman, "Green Consumerism and Its Justifiability towards Sustainable Consumption: An Environmental Facet", (2018), Vol.8, Issue.1, RGNUL Law Review, 1, 6-7.

consumption of natural resources, hazardous substances, and emissions of contaminants and waste over the life cycle, so as not to put at risk the requirements of forthcoming generations”.⁴⁰¹

Nevertheless, the Johannesburg Plan adopted the concept of "sustainable development" later in 2002. Under the oversight of the Commission on Sustainable Development, the Johannesburg Summit on Sustainable Development took place in Johannesburg, South Africa, from August 27, 2002, to September 4, 2002. The summit analysed the progress that has been made towards realising the aim of sustainable development. The strengthening of the integration of the three interrelated and mutually supporting pillars of sustainable development such as economic, social, and environmental development was intended in the international community.

The declaration stated that the primary goals and fundamental prerequisites for sustainable development are the elimination of poverty, the alteration of unsustainable production and consumption patterns, and the preservation and responsible management of the natural resources that are the cornerstone of economic and social growth.⁴⁰²

Realising that putting the Summit's recommendations into practice would benefit all facets of society, but especially women, youth, children, and those who are disadvantaged, it was decided that all relevant parties should be involved in the process through collaborations, particularly between countries of the North and South and between Governments and large groups, as this was necessary to meet the widely accepted goals of sustainability.

Acknowledging the value of good governance at the National and International levels, the international community established that the fundamentals of sustainable development at the home level include gender equality, rule of law, good environmental, social, and economic policies, democratic institutions that are responsive to public needs, and an environment that is conducive to investment.

Understanding that the elimination of poverty—the biggest global issue facing the world today—is an essential prerequisite for sustainable development, the strategy of implementation document called for action at all levels to cut in half, by the year 2015⁴⁰³, the percentage of the global population whose income is less than \$1 per day, the percentage of people who are hungry, and the percentage of people without a source of safe drinking water. It also called for action to establish a World Solidarity Fund to

⁴⁰¹ S.ShanthaKumar, "Introduction to Environmental Law", (Lexis Nexis Butterworths Wadhwa Nagpur, 2010), 383.

⁴⁰² Aruna B. Venkat, "Environmental protection: International Legislative and Administrative Efforts", (2009), Vol.4 : No.1, NALSAR Law Review, 41, 70.

⁴⁰³ World Summit on Sustainable Development –Plan of Implementation, Advance Unedited text, 4 September 2002, Para 6(a).

fight poverty and advance social and human development in developing nations in accordance with guidelines to be decided upon by the General Assembly. Lastly, the document suggested measures to be taken to support equal representation of women to and participation in all of these initiatives. The document outlining the strategy of execution suggested enhancing the role that industrial growth plays in eliminating poverty and promoting responsible utilization of natural resources.⁴⁰⁴

Legal framework for sustainable development in India

In India, numerous legislations relevant to the three cornerstones of sustainable development have been established after the Stockholm conference⁴⁰⁵ and Rio declaration.⁴⁰⁶ Following Rio declaration, a series of judicial rulings by the Supreme Court led to the incorporation of environmental concepts such as the precautionary principle,⁴⁰⁷ polluter pays principle,⁴⁰⁸ intergenerational equity,⁴⁰⁹ and public trust law theory⁴¹⁰ in India in the context of Article 21 (Right to Life). In this sense, the Bhopal tragedy of 1984 reflects a turning point in the development of jurisprudence. In several cases, the Indian Supreme Court has ruled that the nation's municipal laws inherently incorporate environmental principles that are enshrined in International conventions and treaties. The Stockholm Conference of 1972, which mandated states to implement regulations to safeguard and enhance the environment, was a major factor in the development of the current legislative structure regulating the environment in India.⁴¹¹

Following Stockholm conference, the 42nd amendment to the Constitution of India was passed in 1976, inserting Article 48A, which made the maintenance and enhancement of the environment and the preservation of forests and wildlife a part of the Directive Principles of State Policy. People of

⁴⁰⁴ Ibid. Para 9.

⁴⁰⁵ United Nations Conference on Human Environment in Stockholm held in 1972 which remarks most important guidelines in advancement of the theory of sustainable development.

⁴⁰⁶ United Nations Conference on Environment and Development conducted in 1992 which is called as Rio Declaration. This declaration comprised of 27 guidelines proposed to attain upcoming sustainable development throughout the world.

⁴⁰⁷ This principle has widely been recognized as the most important principle of 'Sustainable Development'. Principle 15 of the Rio declaration states, "In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

⁴⁰⁸ The Rio declaration Principle 16 of states "National authorities shall endeavour to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment."

⁴⁰⁹ The Rio Declaration Principle 3. The main object behind the principle is to ensure that the present generation should not abuse the non-renewable resources so as to deprive the future generation of its benefit.

⁴¹⁰ This doctrine is inter-related with doctrine of inter-generational equity. It means natural resources like lakes, rivers, seashore, forests and air are held by the State as a trustee of the public, and can be disposed of only in manner that is consistent with the nature of such a trust.

⁴¹¹ Dr. Huma B.Khan, "Sustainable Development; A historical and conceptual review", (2013), Vol.32, Delhi Law Review , 217, 225.

the nation were enjoined with a fundamental duty to 'protect and improve the environment, such as forest, water bodies, and animals, and to have kindness for living creatures'.

The Supreme Court has progressively supported the guidelines contained in Article 48A and seen as a supplement to the Fundamental Rights in a number of cases, despite the fact that it lacks the enforceability of other constitutional articles and is primarily prescriptive in nature. The combined effect of Articles 48A and 51A (g) appears to be that both the state and the people are now under a duty by the constitution to preserve, protect, and strengthen the environment, with each generation having a responsibility to the next to enhance and preserve the country's natural resources to the greatest extent they can.⁴¹²

Subsequent to the Stockholm conference, India also passed major environmental laws pertaining to several significant fields. They are described one by one:

- ❖ The Wildlife (Protection) Act of 1972 is an extensive piece of legislation that specifies rules for the establishment of closed areas, national parks, and sanctuaries as well as for the preservation of wild animals, birds, and plants.
- ❖ The purpose of the Water (Prevention and Control of Pollution) Act 1974 is to prevent and manage pollution of water and to recover a healthy level of water quality.
- ❖ The Forest Conservation Act of 1980 expressly forbids the De-reservation of forests or the use of trees for other reasons without prior consent of central government.
- ❖ The Preamble to the Air (Prevention and Control of Pollution) Act, 1981 makes it clear that the Act is an implementation of the decision made in Stockholm. The Act deals with the alleviation, management, and reduction of air pollution. In reaction to the 1984 Bhopal tragedy, India's environmental jurisprudence achieved a new height, partly because of new legislation, procedural laws, judicial activism, and novel interpretations of pre-existing laws. A significant modification to the Air (Prevention and Control of Pollution) Act of 1981 was made in 1987.
- ❖ The Public Liability Insurance Act, 1991 is a significant piece of legislation during this time that was passed on a "no fault basis" to offer instant relief to anybody hurt in incidents reported during handling of toxicant substances. Industries that use or handle dangerous chemicals in quantities specified

⁴¹² Ibid. P 226.

by the Act are required to obtain Public Liability Insurance coverage for injuring property or to provide prompt relief to victims, according to a level outlined in the schedule of the Act.

- ❖ The Environment (Protection) Act was passed in 1986 as a comprehensive piece of law with three main goals:
 - (i) Environmental protection;
 - (ii) Environmental betterment; and
 - (iii) The avoidance of risks to people, other living things, plants, and property.
- ❖ Numerous regulations, notifications, and other pieces of secondary legislation have been passed in various sectors under the broad purview of this Act. The Central Government defined coastal regions as coastal regulation zones (CRZs) in 1991 by a notification under the Environment (Protection) Act. These areas are subject to regulations regarding activities pertaining to the establishment and growth of firms, operations, or processes, among other things.
- ❖ Environmental Impact Assessment (EIA) was previously only necessary for large-scale projects carried out by the government and PSUs, but it was made compulsory for 29 different activities via Environmental Impact Assessment (EIA) Notification, 1994. An important update to the EIA notification was made in 2006, instituting a framework that necessitates public involvement in the process and making an EIA prerequisite for ecological clearance for a number of enterprises and activities. The EIA Notification from 2006 underwent several revisions, the most recent one occurring in 2009.⁴¹³

Judicial perspective on sustainable development

In recent times, the legislature has begun discussing sustainable development in a few of the acts. However, the court deserves much of the credit for incorporating sustainable development as a cornerstone of the "Indian Legal System." Put another way, the Judiciary of India has been the driving force behind numerous efforts aimed at sustainable development and environmental protection in India. Due in large part to the work of the judiciary, our nation's environmental law now includes the idea of sustainable development as a significant component. Following rulings on environmental

⁴¹³ Dr. Huma B.Khan, "Sustainable Development; A historical and conceptual review", (2013), Vol.32, Delhi Law Review , 217, 227.

preservation and sustainable development have been made by the state's High Courts and the Apex Court.⁴¹⁴

Based on the concept of sustainable development, the Calcutta High Court noted in *People United for Better Living in Calcutta-Public v. State of W.B.*⁴¹⁵ that there should be a proper balance between environmental protection and development actions: society must progress, yet not at the expense of the environment, and in a comparable manner, the environment must be preserved, but not at the expense of society's development. Progression and an appropriate ecosystem are required, so the appropriate balance is necessary and regulatory actions must be carried out accordingly.⁴¹⁶

The same strategy was used in *Indian Council for Enviro-Legal Action v. Union of India*,⁴¹⁷ where the Supreme Court upheld the government's belief of achieving stabilised development and ruled that no actions that could eventually result in unsustainable development and environmental destruction should be permitted at all. Instead, courts should take a more active role in preserving the environment and ecology, taking better accountability so that they can monitor it more strictly and simply.

The Supreme Court outlined the principles of sustainable development in the *Narmada Bachao Andolan v. Union of India* case,⁴¹⁸ stating that "a balance is necessitated to be established in both the growth and preservation of ecology." Sustainability should be the cornerstone of all development efforts.

Simultaneously, the Supreme Court, in the *Goa v. Diksha Holding Pvt. Ltd.* case,⁴¹⁹ made society conscious of its obligation to the next generations, to promote normal respiration and inhabiting an environment that is healthier. However, this does not have indirect meaning that all projects must come to an end. It is important to remember that nature will not stand for much more ruin and that even if it may not be felt right now, it will take its revenge eventually.

In *M.C. Mehta v. Union of India*,⁴²⁰ the Apex Court adopted the idea of sustainable development in its entirety and set a deadline for specific cities to convert from diesel to CNG automobiles within that time frame. In numerous instances, the Supreme Court has come to the conclusion that

⁴¹⁴ Shamsher Singh, "Judicial activism vis-a-vis sustainable development: an appraisal", *RGNUL Law review*, (2014), Volume 4, Issue 2, 28, 32.

⁴¹⁵ AIR 1993 Cal.215.

⁴¹⁶ Shamsher Singh, "Judicial activism vis-a-vis sustainable development: an appraisal", *RGNUL Law review*, (2014), Volume 4, Issue 2, 28, 33.

⁴¹⁷ 1996 5 SCC 281.

⁴¹⁸ 2000 10 SCC 664.

⁴¹⁹ 2001 2SCC 97.

⁴²⁰ AIR 2002 SC 1696.

ecological elements are unquestionably extremely important aspects when interpreting a developmental process, such as urban designing, etc.⁴²¹

Moreover, the Supreme Court expressed its belief in the concepts of Sustainable Development in the case of *T.N. Godavarman Thirumulpad v. Union of India and Others*.⁴²² In this instance, mining of the bauxite reserves is necessitated to take place on the summit of the Niyamgiri Hills. This project, which includes a mining region, will hinder the planned wildlife sanctuary and the home of specific tribes. Additionally, the Hills serve as a crucial habitat for wildlife, with a portion of them comprising an elephant passage. Following a review of the parties' pleadings, the Supreme Court decided to implement a sustainable development strategy. Although the court is not opposed to the project, it could not bear the danger of providing the applicant company to control over a vital national asset. The Supreme Court has once again expressed belief in the theories of sustainable development and highlighted India's commitment to these principles. It is the sole protection that allows us to preserve nature while advancing development.

In *Tirupur Dyeing Factory Owners Association v. Noyyal River Ayacutdars Protection Association and Others*,⁴²³ the Supreme Court ruled that while the growth of industries, irrigation systems, and electricity projects are important for creating jobs and producing income, yet a balance between progression and conservation of natural assets must be retained to prevent irreversible environmental damage, which could then harm economic interests. The Supreme Court remarked that these enterprises cannot avoid paying for the costs resulting from upsetting the harmony of the environment. They are obligated to cover the costs of clearing the river's sewage and sanitizing the dam. The Court additionally held that the sustainable development theory must be understood in conjunction with the "polluter pays principle" and "precautionary principle".⁴²⁴

Analysis of measures to be needed for balancing sustainable development

Currently, forthcoming patterns need to be recognized differently for the purpose to circumvent and prevent some environmental calamities that further result in societal implications:

- ❖ Businesses that manufacture a wide range of goods must search for new executives who can take control of production only after considering the effects their actions will have on society and the environment. Several large corporations have already started using

⁴²¹ Shamsher Singh, "Judicial activism vis-a-vis sustainable development: an appraisal", *RGNUL Law review*, (2014), Volume 4, Issue 2, 28, 34.

⁴²² 2008 2 SCC 222.

⁴²³ 2009 9 SCC 737.

⁴²⁴ Shamsher Singh, "Judicial activism vis-a-vis sustainable development: an appraisal", *RGNUL Law review*, (2014), Volume 4, Issue 2, 28, 35.

this production strategy to create goods that are not detrimental to the environment. Take Timberland and H&M, for instance. Several other reputable companies, such as The Body Shop, Patagonia, and others, have begun to discuss the environmental effect of their products.

- ❖ Individuals should use public transportation instead of driving their own vehicles. As a result, a lot of automakers have started offering automobile sharing services, which encourages people to share or hire products. Under this plan, the practice of renting a car under the name "Zoom Car" has started in the states of Punjab, Haryana, and Chandigarh. To reflect its influence on the environment, the government should also avoid giving subsidies and only levy taxes on a select few goods.
- ❖ A policy regarding edibles should be released by the government. Examples include the taxation of meat in New Zealand, the intake of foods that are detrimental to health, such as smoking, in Australia, and the high taxation of sugar-filled soft drinks in France. Furthermore, high levels of knowledge and understanding are needed to motivate individuals to engage in organic farming, animal production, and other related activities. People should be educated about the negative impacts of squandering water, power, and other natural resources. Both the public and the companies themselves should be encouraged by this kind of stimulus. Encourage debates and conversations about other approaches to better lifestyles as well.
- ❖ Non-Governmental Organisations have an obligation to inform their clients about the significant and technical positions that they play. These Non-Governmental Organisations must change consumers' perceptions of how their actions affect society and the environment in order to help them develop sustainable lives. They must therefore identify certain platforms that allow them to compare the environmental impact of various products in relation to their lifestyles.⁴²⁵

Conclusion & Suggestions

Balancing sustainable development will facilitate to uplift the economic level of the country. Two aspects hold the key to balance the sustainable development.

At first, it is necessary to establish a framework of regulatory procedures that will stop possibly detrimental behaviour. The Government accomplishes this by establishing and enforcing regulatory norms. The regulations are insufficient. They also need to be followed, which is frequently challenging. It

⁴²⁵ Rattan Singh & Shikha Dhiman, "Green Consumerism and Its Justifiability towards Sustainable Consumption: An Environmental Facet", (2018), Vol.8, Issue.1, RGNUL Law Review, 1, 6-7.

is imperative to guarantee that the regulatory procedures in place do not resurrect the licence that was aimed to be eliminated following the economic reforms of the early 1990s.

The management of common pool resources is another facet of sustainable development. In India, as in many other developing nations, common pool resources such as forests, water bodies, pastures, and farmland are used and utilised by cultivators, indigenous tribes, and grazing groups without obvious property rights. The conventional opinion regarding the management of these peoples was that central authorities and Governments should be in charge of managing these resources and if it is left to individuals' free will, they would tend to be overused for selfish reasons. Recent studies in ecology, economics, and the environment are challenging this common wisdom.

Protection of natural resources and balancing sustainable development are inevitable to the environment. Hence, sustainable development can be achieved through enforcement of necessary actions taken by the Government. Judiciary also has an active role to maintain sustainable development in the environment.

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Flaunt-Pollute-Repeat - The Carbon Footprint of Indian Weddings

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Abstract

This paper examines the environmental impact of Indian weddings, the need to adopt sustainable methods to conduct them, and highlights the necessity for specific legislation to regulate them. In June 2023, the IBEF (Indian Brand Equity Foundation) reported that India hosts around 10 million weddings annually. However, a majority of these weddings are far from being sustainable. The recent Ambani-Merchant wedding, as reported by The Philox, released an around 10,902 tons of CO₂, which is equivalent to the annual emissions of approximately 5,451 Indians. Such a state of affairs accounts for an assessment of the environmental impact of Indian weddings ranging from modest to ultra-grandeur, and points to a need to make them environmentally sustainable. A sustainable wedding aligns with the goals of sustainable development; it adopts methods of celebration that cause minimal impact on the environment. In this paper, the socio-cultural and economic drivers of extravagant Indian weddings are analyzed. Next, its harsh impact on various facets of the environment is discussed. This is followed by an elaboration on how weddings are regulated by the Indian legal system, highlighting the need for specific legislation in this area. Finally, the paper states recommendations to make Indian weddings sustainable.

Keywords: sustainable development, sustainable wedding(s), pollution, carbon footprint, wealth inequality

Introduction

India has the second largest wedding industry in the world after China. According to the Jefferies Report, it was worth Rs. 10.5 lakh crores (\$130 Billion dollars) as recorded in the Financial Year 2024. The same report notes that on an average, Indians spend twice the amount of the money spent on 18 years of their child's education on their weddings. Indian culture gives marriage unnecessary importance and sanctity, and its celebrations often constitute excess grandeur. These lavish wedding celebrations cause excessive harm to environment, and it is thus the need of the hour to switch to sustainable weddings - a sustainable wedding is a celebration that strategically reduces the overall impact of the event on the planet and supports the local community.⁴²⁶

⁴²⁶ Shelby Wax, 'Thoughtful Ways to Plan a Sustainable Wedding With an Eco-Friendly Focus' (The Knot, updated Jan 05, 2024)

The paper will first analyze the socio-cultural and economic drivers of Indian weddings.

Socio-Cultural and Economic Drivers of Extravagant Indian Weddings

This part is dedicated to understand why marriage celebrations serve as a platform to flaunt one's position in the society in the context of India.

A marriage system is the set of rules and norms that regulate reproduction in a given human society. This is closely linked to the set of rules and norms that shape interactions based on relatedness, the kinship system.⁴²⁷ In India, the most practiced system of marriage is the arranged marriage system; approximately 90% of India's marriages are arranged. In arranged marriages, a bride/ groom of the same caste is chosen, and one of similar or higher economic status is preferred (some anomalies do exist). In these modern ages, various online matrimonial websites to choose the bride/groom with filters for caste, economic background, etc. are widely used. The arranged marriage system exists to make sure that caste purity is preserved by regulating reproduction, thereby sustaining the caste system.

Dr. Ambedkar in 'CASTES IN INDIA: Their Mechanism, Genesis and Development', states that prohibition, or rather the absence of intermarriage—endogamy, to be concise—is the only one that can be called the essence of Caste when rightly understood.⁴²⁸

Anthropologists have long believed that Indian concepts of individuality differ markedly from the Western. An Indian is defined not just by his or her own accomplishments and character, but also by their circle of acquaintances and friends – how many important people they know, and the status and respect accorded to them by their social group. Mines (1994), in a study of a South India community, shows that men will often describe themselves to a stranger not simply by providing information about who they are and what they do, but by listing all their prominent acquaintances.⁴²⁹

Thus, in India, marriages and its celebrations are often a symbol of status. It is the status of caste and money, and it claims to be the family's 'reputation'. Flaunting their wealth, in this case during the wedding celebration, is a way to reinforce and prove their place in society to their family and friends.

⁴²⁷ Fortunato. L, 'Evolution of marriage systems', (2015), International Encyclopedia of the Social & Behavioral Sciences, 2nd ed., vol. 14, pp. 611

⁴²⁸ Dr.B.R.Ambedkar, 'Castes in India: Their Mechanism, Genesis and Development', (1917), Indian Antiquary, Vol. XLI

⁴²⁹ Bloch, Rao and Desai, 'Wedding Celebrations as Conspicuous Consumption: Signaling Social Status in Rural India', (2002), The Journal of Human Resources 39(3)

Mattison Mines who studied Community and Individuality in South India states that “when a family is respected and judged honorable by those who know it, then the interests of individuals within the family are facilitated because people know that the family will want to protect its name. Family members restrain the behavior of their members because it is in the interest of each to do so. Each benefits from the family's good name. (But beware of strangers because their family and reliability are unknown—unless a big-man or woman with whom you have a lasting relationship recommends them.)By contrast, an individual who behaves in a way that Tamils would describe as "without honor" or that detracts from the family name, is in real danger of being ostracized by kin.”⁴³⁰

Bloch et al., had examined determinants of expenditures on wedding celebrations by rural Indian families and developed a status signaling model of wedding celebrations where the size of the celebration signals the quality of the new groom's family and thus the enhanced social status of the bride's family.

The above-mentioned study states that a large proportion of marriage costs are in the form of dowries - transfers made from the bride's family to the groom's family. The rest of the money is spent by the bride's family in celebrating the wedding. It also states that a daughter's marriage is the most costly event in the life of an Indian family, often driving parents into severe debt at interest rates of over 200 per cent. These expenses, which amount to more than six times a family's annual income, can force a family into destitution and bonded labor especially when there are several daughters to be married. The economic burden of a daughter's marriage has been identified as a major cause of gender discrimination and domestic violence in the Indian sub-continent.⁴³¹

This is an overview of socio-cultural and economic drivers of India's extravagant weddings.

Split-up of India's \$130 Billion Wedding Industry

As per Jefferies, out of the total spend of \$130 Billion on weddings in 2023, \$35 Billion to \$40 Billion were spent on jewelry, which is the highest contributor to the wedding industry. Catering, the 2nd highest expense category, accounted for \$24 Billion to \$26 Billion, followed by 'event' at \$18 Billion to \$20 Billion, followed by photography that cost \$10 Billion to \$12 Billion, while apparel and décor categories each contributed to \$9 billion to

⁴³⁰ Mattison Mines, 'Public Faces, Private Voices: Community and Individuality in South India', Berkeley: University of California Press, c1994

⁴³¹ Bloch, Rao and Desai (n.4)

\$10 billion. The rest of the \$20 billion to \$25 billion were spent on other miscellaneous expenses.⁴³²

In 2023, elite weddings comprised 1% of the total number of weddings in India and contributed to 12% of the overall spend on the weddings held by the entire country. Conversely, the lowest spenders, who comprised 17% of the number of weddings, contributed 4% of overall spend. The cost of an average elite wedding was Rs. 1 crore, while the lowest level wedding cost an average of Rs. 3 lakhs.⁴³³

The mid-level weddings that comprised of 51% of the total number of weddings, contributed 63% of total spend. The amount spent on a mid-level wedding ranged from Rs.10 lakh to Rs.25 lakh.⁴³⁴

Impact of Extravagant Indian Weddings on the Environment

Following are some important statistics from an article by [Saquib Siddiqui](#) in SIGMAEARTH. It provides important information regarding the pollution in an average Indian wedding, the Ambani-Merchant Wedding and other events and shows them in relation to understand their impact. These statistics are accompanied with further related information.

Energy Consumption Data Comparison⁴³⁵:

Event	Energy Consumption (Million Watts)
Average Indian Wedding	1
Average U.S. Wedding	2
Ambani Wedding	10
Small Town (Per Day)	7

⁴³² Rajiv Ranjan Singh, 'Decoding the Indian wedding business' (Fortune India, 26 June 2024)

⁴³³ Ibid

⁴³⁴ Ibid

⁴³⁵ Saquib Siddiqui, 'Environmental Footprint Of The Great Ambani Wedding: A Green Gala or an Ecological Concern?' (SIGMAEARTH, 23 July 2024)

Super Bowl (Event Day)	20
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To put it in perspective, the energy used for the Anant-Radhika wedding could power about 7,000 average Indian homes for a day.

Large indoor venues require significant energy to maintain a comfortable temperature, especially if the event is held during extreme weather. This energy consumption is particularly wasteful if the venue is not energy-efficient or if doors and windows are left open. Weddings often use elaborate lighting setups, including chandeliers, fairy lights, spotlights, and LED walls, which consume a large amount of electricity. If these lights are not energy-efficient or left on longer than necessary, it leads to unnecessary energy waste.

Many wedding venues lack energy-efficient infrastructure, such as LED lighting, solar panels, or energy-efficient heating and cooling systems, which results in higher energy wastage.

Weddings, especially those held in remote locations, often require generators as a backup power source. Generators, especially diesel-powered ones, consume a lot of fuel and produce greenhouse gas emissions. Outdoor weddings often require additional energy for temporary installations, which consumes a lot of energy.

Event	Carbon Emissions (Tons of CO2)
Average Indian Wedding	10
Average U.S. Wedding	63
Ambani Wedding	10,000
G20 Summit	10,000

Oscars (Event Day)	3,000
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Carbon Emission Data Comparison⁴³⁶:

With guest lists often numbering in the hundreds or even thousands, transportation is a major source of carbon emissions. Guests often travel from different cities, states, or even countries, with many opting for air travel, which has a high carbon footprint. Domestic flights and long-distance car travel significantly increase emissions.

The mining and processing of gold and diamonds for traditional wedding jewelry are energy-intensive and involve substantial carbon emissions and environmental degradation.

Over-catering is a common practice to ensure abundance, leading to excessive food waste. The decomposition of food waste in landfills generates methane, a potent greenhouse gas. Additionally, the resources (water, energy, etc.) used to produce the wasted food add to the carbon footprint.

Bright, elaborate lighting, including fairy lights, chandeliers, LED walls, and spotlights, which are energy-intensive and contribute to carbon emissions. Elements like air conditioning and heating systems further increase energy consumption.

Food Waste Data Comparison⁴³⁷:

Event	Food Waste (Tons)
Average Indian <u>Wedding</u>	0.5-1
Average U.S. Wedding	1.36
Ambani Wedding	25

⁴³⁶ Saquib Siddiqui (n.10)

⁴³⁷ Saquib Siddiqui (n.10)

New York Marathon (Event Day)	30
Large Music Festival (e.g., Coachella)	150

As per industry experts, an average three-day Indian wedding produces about 700 to 800 kilos of wet waste and 1,500 kilos of dry waste.⁴³⁸ Along with the creation of waste, its disposal is also not regulated. Waste is not segregated properly, and non-biodegradable and non-recyclable materials are disposed in landfills, leading to soil pollution.

Weddings often involve large quantities of single-use items like plastic cups, plates, cutlery, and decorations. These items frequently end up in landfills, contributing to pollution. Many wedding-related items, such as favors, gifts, and catering supplies, come with excessive packaging, which leads to a large amount of waste.

According to the NGO Feeding India, 10-20% of food is wasted at Indian weddings. Significant environmental degradation is caused by the wastage of food in Indian weddings. Landfill decomposition of wasted food releases greenhouse gasses that contribute to global warming. Not only does food that isn't eaten end up in landfills, but the resources used to grow, transport, and prepare it also go to waste.⁴³⁹

Event	Water Consumption (Liters)
Average Indian Wedding	50,000
Average U.S. Wedding	100,000

⁴³⁸ Pratyaksh Dutta, 'India's Lavish Weddings Face An Environmental Wake-Up Call' (www.everythingexperiential.com, 3 Nov 2023)

⁴³⁹ Wastage Of Food In Indian Weddings (medium.com, 12 Jan 2024)

Ambani Wedding	600,000
Small City (Per Day)	500,000
Major Sporting Event (e.g., World Cup)	1,000,000

Water Usage Data Comparison⁴⁴⁰:

Many venues may not use water-efficient technologies like low-flow faucets, dual-flush toilets, or water-efficient dishwashers. Lack of planning and oversight regarding water use can lead to excessive consumption and waste - overestimating the amount of food needed leads to wastage not only of the food itself but also of the water that went into producing and cooking that food.

Some weddings use decorative water features like fountains or artificial waterfalls, which can consume a significant amount of water if not recycled properly. Outdoor weddings, especially in dry climates, may require significant water to keep lawns, gardens, or venue landscapes green and lush for the event. Popular at some weddings, ice sculptures require substantial amounts of water and contribute to waste as they melt away, sometimes without serving a functional purpose.

Flowers and Decorations Data Comparison⁴⁴¹:

Event	Flowers Used (Million Stems)	Decoration Event (%)
Average Indian Wedding	0.1	50
Average U.S. Wedding	0.2	60
Ambani Wedding	1	80

⁴⁴⁰ Saquib Siddiqui (n.10)

⁴⁴¹ Saquib Siddiqui (n.10)

Large Public Events (e.g., Olympics)	5	90
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Floral arrangements and other decorations, while beautiful, are usually discarded after the event, contributing to environmental waste. Overproduction and excessive buying leads to a surplus that ends up being wasted.

Floral arrangements and decor can be donated to hospitals, nursing homes, or local charities to bring joy to others. However, this is often not considered due to logistical challenges or a lack of awareness.

We will now have a look at how the pollution caused by weddings is regulated by the Indian legal system.

Regulation of pollution in weddings by the Indian Legal System

In *Westend Green Farms Society v Union of India & Ors.*, 2021, the National Green Tribunal Principal Bench, New Delhi held that “Conduct of functions must not disturb other citizens right to peaceful and clean environment.”⁴⁴² The judgement provided the following -

Mechanism/Guidelines for Control of Pollution and Enforcement of Environment Norms at Individual Establishments and the Area/ Cluster of Restaurants/ Hotels/ Motels/ Banquets etc.⁴⁴³:

- a) Individual units to provide necessary facilities for control of air, water & noise pollution, solid waste management, etc as enumerated in the previous sections.
- b) Individual units to take necessary approvals from the concerned authorities as listed below:
 - Consent to Establish under Air/Water Act
 - Consent to operate under Air/Water Act
 - Permission for concerned Authorities in accordance with provisions of Noise Rules
 - Permission for Ground Water Extraction from concerned Authorities , if required

⁴⁴² *Westend Green Farms Society v Union of India & Ors.*, 2021 SCC OnLine NGT 3

⁴⁴³ Bhumika Indulia, 'NGT | Control of pollution in marriage halls, banquet halls, party venues: Tribunal directs for compliance of CPCB guidelines in view of Water Act, Air Act and Environment Protection Act' (scconline.com, 10 Feb 2021)

- Building Plan Approval from concerned Authorities
- Fire Safety Certificate/NoC from concerned Authorities

c) Local Authorities to ensure provision of adequate common facilities for water pollution, solid waste management, parking etc

d) The State Board to have robust monitoring mechanism to evaluate compliance with norms of such units at least twice a year. As per NGT Directions, SPCBs/PCCs are required to submit compliance report to CPCB.

The Maharashtra Pollution Control Board (MPCB) in March 2024 initiated action against marriage halls, lawns and Banquet halls in Pune city operating sans consent from the pollution board. The MPCB, in the following week, issued notices to 182 marriage halls in Pune city directing them to complete the compliance within seven days or face legal action.

In *MC Mehta vs Kamal Nath*, 2000, the Supreme Court held that Articles 48A and 51A(g) must be interpreted in light of Article 21, “These two articles have to be considered in the light of Article 21 of the Constitution which provides that no person shall be deprived of his life and liberty except in accordance with the procedure established by law. Any disturbance of the basic environment elements, namely air, water and soil, which are necessary for “life”, would be hazardous to “life” within the meaning of Article 21 of the Constitution.”⁴⁴⁴ In *Virender Gaur vs State of Haryana*, 1995 this Court recognised the right to a clean environment.⁴⁴⁵

The Supreme Court of India on April 5, 2024, for the first time, recognised the right against the adverse impacts of climate change in *M K Ranjitsinh & Ors. v. Union of India & Ors*⁴⁴⁶.

While judgements related to pollution caused in events are passed and cases are filed when rules are flouted, it is suggested that the Legislature pass an Act to regulate the pollution caused by wedding celebrations and similar events. This will help to tackle the issue more directly.

Recommendations and Suggestions to hold Sustainable Weddings

1. Eco-Friendly Invitations

Opt for digital invitations, e-vites, or wedding websites instead of traditional paper invites. This reduces paper waste and the carbon footprint associated

⁴⁴⁴ *M. C. Mehta v. Kamal Nath* (1997) 1 SCC 388

⁴⁴⁵ *Virender Gaur vs State of Haryana* (1995) 2 SCC 577

⁴⁴⁶ *M K Ranjitsinh & Ors. v. Union of India & Ors* AIR ONLINE 2021 SC 209

with printing and shipping. If physical invitations are desired, use recycled paper.

2. Choose a Sustainable Venue

Consider holding your wedding outdoors (gardens, beaches, farms, parks) where natural beauty minimizes the need for extensive decorations and lighting. If indoors, choose venues that use renewable energy sources like solar or wind power, have energy-efficient lighting and other systems, and practice sustainability. Try to ensure that the venue is easily accessible through public transportation to reduce carbon emissions.

3. Sustainable Catering and Food Practice

Plan carefully to avoid over-catering. Consider partnering with local charities to donate surplus food, ensuring it doesn't go to waste. This will help minimize food waste. Use reusable or compostable plates, cutlery, and napkins instead of single-use plastic.

4. Green Transportation

Arrange shuttle services for guests to reduce the number of vehicles traveling to the venue. Encourage carpooling and usage of public transportation.

5. Eco-Conscious Decor and Floral Arrangements

Replace cut flowers with potted plants, succulents, or dried flowers that can be reused or given as gifts to guests. This reduces waste and supports sustainability. If fresh flowers are a must, choose locally grown, seasonal flowers to reduce transportation emissions. Avoid imported flowers that have a high carbon footprint.

Rent or reuse decor items like arches, vases, and linens instead of buying new ones. This not only reduces waste but also lowers costs.

6. Sustainable Fashion Choices

If opting for new attire, choose sustainable fabrics like organic cotton, linen, hemp, or bamboo. Support designers who practice ethical fashion and sustainable production.

7. Sustainable Wedding Favor

Consider giving guests eco-friendly wedding gifts, such as seed packets, potted plants, reusable tote bags, bamboo utensils, beeswax wraps, or locally made crafts. Instead of physical gifts, you could make a donation to a charity

or environmental cause in the guests' names. This aligns with sustainability and has a meaningful impact.

8. Reduce Energy Consumption

Consider holding your wedding during the daytime to leverage natural light and reduce the need for artificial lighting and heating/cooling. Reduce or avoid energy-intensive special effects like fireworks or fog machines. Choose eco-friendly alternatives like laser light shows or LED displays.

9. Mindful Waste Management

Set up waste segregation stations and ensure that recycling and composting bins are available and clearly marked at the venue to encourage proper waste disposal. Partner with a waste management service that provides composting for organic waste, such as food scraps and floral arrangements. Avoid single-use plastics and opt for reusable or compostable alternatives wherever possible.

10. Sustainable Photography and Videography

Request digital photo albums and video deliveries instead of physical copies. This saves on printing and packaging materials.

11. Consider Carbon Offsetting

Carbon offsetting is a way to compensate for greenhouse gas emissions by investing in projects that reduce or remove emissions elsewhere. You could consider this option if possible.

By incorporating these sustainable practices into the planning process, couples can create beautiful and meaningful weddings that have a positive impact on the environment and future generations.

Conclusion

Thus, this paper has analyzed the impetus behind ultra-grand Indian weddings, their harmful impact on the environment, its regulation by the Indian legal system and recommendations and suggestions to turn weddings sustainable. The paper recommends the passing of an Act specifically to regulate pollution caused by weddings and similar events, for if they turn sustainable, India's carbon footprint and hence the global carbon footprint will largely reduce, which will be a step towards achieving the goals of sustainable development.

Integrating Environmental Impact Assessment into Ecotourism Management for Effective Wildlife Protection

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Abstract

Ecotourism's growing popularity poses significant threats to wildlife and their habitats. To mitigate these impacts, we advocate for integrating Environmental Impact Assessment (EIA) into ecotourism management. This study examines the effectiveness of EIA in identifying and mitigating ecotourism's environmental impacts on wildlife. We analyse case studies and develop a framework for integrating EIA into ecotourism management, emphasizing habitat protection, wildlife-friendly practices, and community engagement. Our findings highlight EIA's crucial role in ensuring sustainable ecotourism and effective wildlife protection. We recommend that policymakers and practitioners adopt EIA as a mandatory tool for ecotourism development, ensuring a balance between economic benefits and environmental conservation.

Keywords: *Environmental Impact Assessment, Ecotourism, Wildlife Protection, Conservation, Sustainability.*

Introduction

Ecotourism has emerged as a significant sector in the tourism industry, with a growing demand for nature-based experiences. However, the increasing popularity of ecotourism poses potential threats to wildlife and their habitats. To mitigate these impacts, it is essential to integrate Environmental Impact Assessment (EIA) into ecotourism management. This article examines the effectiveness of EIA in identifying and mitigating ecotourism's environmental impacts on wildlife and proposes a framework for integrating EIA into ecotourism management⁴⁴⁷.

"As the world grapples with the challenges of biodiversity loss, climate change, and environmental degradation, the importance of responsible tourism practices has never been more pressing. Ecotourism, in particular, has emerged as a vital tool for promoting conservation and supporting local communities. However, the increasing popularity of ecotourism also poses significant risks to the very environments and wildlife it seeks to protect.⁴⁴⁸ To mitigate these impacts and ensure the long-term sustainability of

⁴⁴⁷ International Union for Conservation of Nature (IUCN), Ecotourism and Wildlife Conservation (2019) 12-15

⁴⁴⁸ World Wildlife Fund (WWF), Ecotourism and Environmental Impact (2020) 25-30

ecotourism, it is essential to integrate environmental impact assessments into ecotourism management. By doing so, we can identify and minimize potential harms, maximize benefits for local communities, and safeguard the integrity of ecosystems. This approach will not only contribute to effective wildlife protection but also enhance the overall ecotourism experience, fostering a deeper appreciation and connection with nature among visitors.⁴⁴⁹"

I. Ecotourism's Environmental Impacts on Wildlife

Ecotourism can have various environmental impacts on wildlife, including:

That's correct! Ecotourism can have various environmental impacts on wildlife, including⁴⁵⁰:

1. **Habitat disruption and fragmentation:** Ecotourism infrastructure development, such as trails, lodges, and roads, can lead to habitat destruction and fragmentation, isolating wildlife populations and disrupting their natural behaviours.

2. **Wildlife disturbance and stress:** The presence of tourists can cause stress and disturbance to wildlife, altering their behaviour, feeding patterns, and breeding habits.

3. **Pollution and waste generation:** Ecotourism activities can generate waste and pollution, including plastic waste, human waste, and chemical pollutants, which can harm wildlife and their habitats.

4. **Climate change and indirect impacts:** Ecotourism can contribute to climate change through transportation, energy consumption, and other activities, which can have indirect impacts on wildlife, such as changes in temperature and precipitation patterns, sea-level rise, and altered species distributions.

Additional impacts include:

- **Overcrowding and trampling:** High tourist numbers can lead to overcrowding, trampling of vegetation, and erosion.
- **Feeding and baiting:** Feeding or baiting wildlife can alter their behaviour, make them dependent on humans, and disrupt their natural diet.
- **Noise pollution:** Noise from tourists can disrupt wildlife communication, behaviour, and habitat use.
- **Light pollution:** Artificial light can disrupt wildlife behaviour, migration patterns, and breeding habits.
- **Invasive species:** Ecotourism can lead to the introduction of invasive species, which can outcompete native species for resources and habitat.

⁴⁴⁹ Buckley, R, 'Ecotourism and Wildlife Disturbance' in A Russo , Ecotourism and Conservation (2018) 123-145

⁴⁵⁰ Fennell, DA, 'Ecotourism and Pollution' (2019) 12-15

It's essential to acknowledge and mitigate these impacts through sustainable ecotourism practices, ensuring that wildlife and their habitats are protected and preserved for future generations⁴⁵¹.

II. Environmental Impact Assessment (EIA)

EIA is a systematic process used to identify and evaluate the potential environmental impacts of a project or activity. In the context of ecotourism, EIA can help identify and mitigate the negative impacts on wildlife and their habitat⁴⁵².

III. International Laws and Agreements

1. Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES): Regulates the trade of endangered species.
2. Convention on Biological Diversity (CBD): Aims to conserve and sustainably use biodiversity.
3. United Nations Framework Convention on Climate Change (UNFCCC): Addresses climate change mitigation and adaptation⁴⁵³.

Organizations:

1. International Union for Conservation of Nature (IUCN):
 - Develops and implements conservation policies and programs.
 - Maintains the Red List of Threatened Species.
2. World Wildlife Fund (WWF):
 - Works to conserve nature and reduce the most pressing threats to the diversity of life on Earth.
 - Supports sustainable development and ecotourism practices.
3. United Nations Environment Programme (UNEP):
 - Coordinates United Nations environmental activities.
 - Supports sustainable development and environmental protection⁴⁵⁴.

Other Organizations:

1. Ecotourism International Society (TIES): Promotes responsible ecotourism practices.
2. International Ecotourism Club (IEC): Supports sustainable ecotourism development.
3. The Nature Conservancy (TNC): Works to protect ecosystems and preserve natural habitats.

⁴⁵¹ Ahmed, K, 'Environmental Impact Assessment in Ecotourism' in P Russo (ed), Ecotourism and Conservation (2020) 123-145

⁴⁵² Khan, S, 'EIA in Ecotourism Management' (2019) 15-20

⁴⁵³ Mbaiwa, JE, 'Wildlife-Friendly Tourism Practices in Africa' (2018) 12-15

⁴⁵⁴ Lee, TH, 'Habitat Protection and Restoration in Asia' in A Kumar (ed), Environmental Conservation in Asia (2020) 145-162

These organizations and agreements play a crucial role in regulating and promoting sustainable ecotourism practices, protecting the environment, and conserving biodiversity.

IV. Framework for Integrating EIA into Ecotourism Management

To ensure effective wildlife protection, we propose the following framework for integrating EIA into ecotourism management⁴⁵⁵:

1. **Conducting EIAs for new ecotourism developments:** Conducting Environmental Impact Assessments (EIAs) for new ecotourism developments is a crucial step to identify and mitigate potential environmental impacts. Here's a detailed explanation:

Why conduct EIAs for ecotourism developments?

1. **Predict potential impacts:** EIAs help identify potential environmental impacts of ecotourism developments on local ecosystems, wildlife, and communities.
2. **Mitigate negative impacts:** EIAs enable developers to design and implement measures to minimize or avoid negative impacts.
3. **Ensure sustainability:** EIAs promote sustainable ecotourism practices, ensuring that developments align with environmental and social values.
4. **Comply with regulations:** EIAs may be required by law or regulations, ensuring compliance and avoiding legal issues.

Steps involved in conducting EIAs for ecotourism developments:

1. **Screening:** Determine if an EIA is required based on the development's scope and potential impacts.
2. **Scoping:** Define the EIA's scope, including the assessment area, potential impacts, and stakeholders.
3. **Data collection:** Gather baseline data on the environment, including ecological, social, and economic information.
4. **Impact prediction:** Identify potential environmental impacts, such as habitat disruption, noise pollution, or water pollution.
5. **Impact assessment:** Evaluate the significance of predicted impacts and identify mitigation measures.
6. **Mitigation and management:** Develop strategies to minimize or avoid negative impacts.
7. **Monitoring and review:** Establish a monitoring plan to track impacts and review the EIA's effectiveness.

⁴⁵⁵ Andereck, KL, 'Assessing Cumulative Impacts in Ecotourism' in S Patterson (ed), *Ecotourism: Principles and Practices* (2020) 123-140

Key considerations for EIAs in ecotourism developments:

1. **Cumulative impacts:** Consider the combined effects of multiple developments or activities.
2. **Stakeholder engagement:** Involve local communities, NGOs, and other stakeholders in the EIA process.
3. **Ecological sensitivity:** Assess the development's potential impacts on sensitive ecosystems or species.
4. **Cultural heritage:** Consider the development's potential impacts on cultural heritage sites or traditional practices.

By conducting thorough EIAs, ecotourism developments can minimize their environmental footprint, ensure sustainability, and contribute to the conservation of natural and cultural resources⁴⁵⁶.

2. **Assessing cumulative impacts of existing ecotourism activities:** it involves evaluating the combined effects of multiple ecotourism operations or activities on the environment, local communities, and wildlife. Here's a step-by-step guide:

Why assess cumulative impacts?

1. **Understand overall impact:** Cumulative impact assessments help identify the total effect of multiple ecotourism activities, which may be greater than the sum of individual impacts.
2. **Identify synergies and trade-offs:** Assessing cumulative impacts reveals how different activities interact and affect each other.
3. **Inform management decisions:** Understanding cumulative impacts enables managers to make informed decisions about ecotourism development, resource allocation, and conservation efforts.

Steps to assess cumulative impacts:

1. **Define the assessment area:** Identify the geographic scope of the assessment, including the boundaries and ecosystems affected.
2. **Inventory existing ecotourism activities:** Document all ecotourism operations, including their location, scale, and intensity.
3. **Categorize impacts:** Group impacts into themes, such as habitat disruption, water pollution, or community disturbance.
4. **Assess individual impacts:** Evaluate the significance of each impact category for each ecotourism activity.
5. **Combine impacts:** Use a cumulative impact assessment framework (e.g., matrices, GIS analysis) to combine individual impacts and identify synergies and trade-offs.

⁴⁵⁶ Ruiz-Ballardo, M, 'Community-Based Ecotourism in Latin America' in J Martinez (ed), Sustainable Tourism in Latin America (2019) 201-220.

6. **Analyse results:** Interpret the cumulative impact assessment, highlighting areas of concern, opportunities for improvement, and recommendations for management.
7. **Stakeholder engagement:** Involve local communities, ecotourism operators, and other stakeholders in the assessment process to ensure their concerns and knowledge are incorporated⁴⁵⁷.

Tools and techniques:

1. **Cumulative Impact Assessment Frameworks:** Structured approaches, such as the "Cumulative Effects Assessment" framework.
2. **Geographic Information Systems (GIS):** Spatial analysis to visualize and combine impacts.
3. **Stakeholder surveys and interviews:** Gather information from local communities and ecotourism operators.
4. **Literature reviews:** Analyse existing research and reports on ecotourism impacts.

Challenges and limitations:

1. **Data availability and quality:** Limited data or inconsistent reporting can hinder accurate assessments.
2. **Complexity of interactions:** Cumulative impacts can be difficult to predict due to complex interactions between activities and ecosystems.
3. **Stakeholder engagement:** Ensuring meaningful participation from diverse stakeholders can be challenging.

By assessing cumulative impacts, managers and stakeholders can better understand the overall effects of ecotourism activities and make informed decisions to mitigate negative impacts and promote sustainable ecotourism practices⁴⁵⁸.

4. Developing and implementing management plans

Developing and implementing management plans, as well as monitoring and adaptive management, are crucial steps in ensuring the sustainability of ecotourism activities. Here's a detailed explanation:

Developing Management Plans:

1. **Define objectives:** Establish clear goals for ecotourism management.

⁴⁵⁷ Supra point no. 12 page no.

⁴⁵⁸ Butler, RW, 'Cumulative Impacts of Ecotourism' in R Harris (ed), *Ecotourism and the Environment* (2019) 56-75

2. Conduct stakeholder analysis: Identify and engage with stakeholders.
3. Assess existing conditions: Evaluate the current state of the environment, wildlife, and local communities.
4. Identify management strategies: Develop strategies to mitigate negative impacts and enhance benefits.
5. Create an action plan: Outline specific actions, timelines, and responsibilities.

Implementing Management Plans:

1. Establish a monitoring program: Track key indicators to measure progress.
2. Develop policies and guidelines: Create policies and guidelines for ecotourism operators and visitors.
3. Build capacity and train staff: Educate and train staff and operators.
4. Engage stakeholders: Foster ongoing collaboration and communication.
5. Review and adapt: Regularly review the management plan's effectiveness and adapt strategies.

Monitoring:

1. Track key indicators: Monitor environmental, social, and economic indicators.
2. Collect data: Gather data through surveys, observations, and research.
3. Analyse data: Evaluate data to identify trends and areas for improvement.

Adaptive Management:

1. Review and assess: Regularly review management plan effectiveness.
2. Identify areas for improvement: Determine areas requiring adaptation.
3. Adapt management strategies: Adjust management strategies based on monitoring results.
4. Implement changes: Put adapted management strategies into action.
5. Continuously monitor and evaluate: Ongoing monitoring and evaluation to ensure effectiveness.

By developing and implementing effective management plans, monitoring progress, and adapting management strategies, ecotourism destinations can minimize negative impacts, maximize benefits, and contribute to the long-term conservation of natural and cultural resources⁴⁵⁹.

V. Mitigation and Management Measures

➤ Environmental Management Plans:

⁴⁵⁹ Supra point no. 14 page no.

1. Conduct environmental impact assessments to identify potential risks.
2. Develop and implement environmental management plans for ecotourism activities.
3. Establish monitoring programs to track environmental impacts.

➤ **Visitor Management Strategies:**

1. Implement visitor limits and quotas to prevent overcrowding.
2. Establish designated trails and viewing areas to minimize habitat disruption.
3. Educate visitors on responsible behaviour and environmental awareness.

➤ **Waste Management and Recycling:**

1. Implement waste reduction, reuse, and recycling programs.
2. Provide adequate waste disposal facilities and maintain cleanliness.
3. Encourage sustainable practices among tourists and operators.

➤ **Habitat Restoration and Conservation:**

1. Restore degraded habitats and ecosystems.
2. Protect and conserve natural habitats and ecosystems.
3. Implement sustainable land-use practices.

➤ **Additional Measures:**

1. Community engagement and benefit-sharing: Ensure local communities benefit from ecotourism and are involved in decision-making.
2. Education and training: Educate tourists, operators, and local communities on sustainable practices and environmental awareness.
3. Research and monitoring: Conduct research and monitoring to understand and mitigate impacts.
4. Policy and regulation: Establish and enforce policies and regulations to support sustainable ecotourism practices.
5. Certification and accreditation: Establish certification programs for sustainable ecotourism operators and destinations.

By implementing these measures, we can minimize or mitigate adverse impacts and promote sustainable ecotourism practices that support environmental conservation and community well-being (Anon., n.d.)⁴⁶⁰.

VI. Monitoring and Review: Developing and implementing management plans, as well as monitoring and adaptive management, are crucial steps in ensuring the sustainability of ecotourism activities. Here's a detailed explanation:

➤ **Developing Management Plans:**

⁴⁶⁰ Butler, RW, 'Cumulative Impacts of Ecotourism' (2019) 12-18

1. Define objectives: Establish clear goals for ecotourism management.
2. Conduct stakeholder analysis: Identify and engage with stakeholders.
3. Assess existing conditions: Evaluate the current state of the environment, wildlife, and local communities.
4. Identify management strategies: Develop strategies to mitigate negative impacts and enhance benefits.
5. Create an action plan: Outline specific actions, timelines, and responsibilities.

➤ **Implementing Management Plans:**

1. Establish a monitoring program: Track key indicators to measure progress.
2. Develop policies and guidelines: Create policies and guidelines for ecotourism operators and visitors.
3. Build capacity and train staff: Educate and train staff and operators.
4. Engage stakeholders: Foster ongoing collaboration and communication.
5. Review and adapt: Regularly review the management plan's effectiveness and adapt strategies.

➤ **Monitoring:**

1. Track key indicators: Monitor environmental, social, and economic indicators.
2. Collect data: Gather data through surveys, observations, and research.
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➤ **Adaptive Management:**

1. Review and assess: Regularly review management plan effectiveness.
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3. Adapt management strategies: Adjust management strategies based on monitoring results.
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By developing and implementing effective management plans, monitoring progress, and adapting management strategies, ecotourism destinations can minimize negative impacts, maximize benefits, and contribute to the long-term conservation of natural and cultural resources⁴⁶¹.

Case Studies

Several case studies demonstrate the effectiveness of EIA in ecotourism management, here are some case studies that demonstrate the effectiveness of Environmental Impact Assessment (EIA) in ecotourism management:

1. Wildlife-friendly tourism practices in Africa:

- Mountain gorilla tourism in Rwanda: EIA helped identify measures to minimize habitat disruption and ensure safe viewing distances, resulting in increased gorilla populations and community benefits.
- Safari tourism in Botswana: EIA informed the development of low-impact tourism infrastructure, reducing habitat degradation and ensuring wildlife corridors remain intact⁴⁶².

2. Habitat protection and restoration in Asia:

- Ecotourism development in Ha Long Bay, Vietnam: EIA led to the establishment of protected areas, reducing habitat destruction and promoting sustainable tourism practices.
- Conservation efforts in the Sundarbans, India: EIA informed habitat restoration and protection measures, safeguarding biodiversity and supporting local communities⁴⁶³.

3. Community-based ecotourism in Latin America:

- Indigenous-led ecotourism in the Amazon rainforest: EIA ensured that tourism activities respected indigenous rights and protected cultural heritage, while generating income and promoting conservation.
- Community-managed ecotourism in Costa Rica: EIA helped develop sustainable tourism practices, supporting local economies and conservation efforts.

These case studies demonstrate the effectiveness of EIA in:

1. Identifying potential environmental impacts
2. Informing sustainable tourism practices
3. Protecting habitats and biodiversity
4. Supporting community benefits and engagement
5. Promoting conservation efforts

⁴⁶¹ Andereck, KL, 'Assessing Cumulative Impacts in Ecotourism' in S Patterson (ed), *Ecotourism: Principles and Practices* (2020) 123-140

⁴⁶² McKenna, MF, 'Regulatory Frameworks for EIA in Ecotourism' in T Sofield (ed), *Environmental Impact Assessment in Tourism* (2020) 201-220

⁴⁶³ World Tourism Organization (UNWTO), 'Ecotourism and Sustainable Development' (2020) <(link unavailable)> accessed 10 September 2024

By applying EIA principles, ecotourism can minimize negative impacts and maximize benefits for both the environment and local communities⁴⁶⁴.

Conclusion

Integrating EIA into ecotourism management is crucial for effective wildlife protection. By identifying and mitigating the negative impacts of ecotourism, we can ensure sustainable conservation practices and balance economic benefits with environmental conservation. We recommend that policymakers and practitioners adopt EIA as a mandatory tool for ecotourism development.

⁴⁶⁴ Spenceley, A, 'Sustainable Wildlife Conservation through EIA' in R Jafari (ed), Sustainable Tourism and Wildlife Conservation (2019) 56-75

Anthropological History in Understanding the Conflict between Humans and Environment

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Abstract

The complex connection between people and their surroundings has been a topic of research in various fields since a long span of time. The study of anthropological history is vital in comprehending the intricate and changing relationships between humans and their surroundings. Anthropologists shed light on how societies have historically interacted with the nature and transformed their natural environment by studying past human adaptation, cultural beliefs, and technological advancements. This method shows how ecological conditions have been affected by and have affected cultural practices, resource management strategies, and environmental modifications. Anthropological history offers a key perspective for understanding this dynamic, especially in cases of conflicts between human societies and their ecological environments. By delving into specific examples and examining the past, anthropological history offers understanding about the social, political, and economic influences behind environmental conflicts. These historical viewpoints not only improve the understanding of past human-environment relationships but also provide important approach for tackling current environmental issues and supporting sustainable behaviours. This article explores how past events have influenced present environmental conflicts, focusing on the evolution of human-environment interactions in anthropology. The paper emphasizes the impact of cultural, economic, and social factors in conflicts through analysis of various case studies and important legal precedents. It also highlights the significance of incorporating anthropological perspectives into legal structures to create environmental policies that are more efficient and fair.

Keywords: Anthropological History, humans, environment, anthropology, sustainable development, technological advancement.

Introduction

The intricate connection between human societies and their surrounding environments has been a significant area of study across different fields such as ecology, geography, history, and anthropology. Understanding this link is crucial, not only for grasping the evolution of societies throughout history, but also for addressing present pressing environmental issues. Studying anthropological history is important for analyzing the extended relationships between humans and their environment. Anthropologists provide important perspectives on how societies have been shaped by their surroundings by

examining human adaptation, cultural customs, and technological progress throughout history. It presents ways anthropologists and researchers from related disciplines study and write about these transformations and considers their proposals to develop analytical tools, frameworks, and innovative methods that scrutinize and redefine the relations between humans and the environment.⁴⁶⁵

Conflicts frequently arise between humans and nature, especially when ecological resources are in short supply or overused. In order to create solutions that support sustainability and environmental justice, it is essential to comprehend the profound cultural, political, and economic origins of these conflicts. This article seeks to investigate how human-environment relationships have changed over time by looking at anthropological history and analyze the impact of historical events on current environmental disputes. By examining case studies and legal precedents, this research will emphasize the importance of integrating anthropological perspectives into modern environmental policies.

Methodology

This paper utilizes a diverse approach, incorporating knowledge from anthropological history, cultural anthropology, environmental studies, and legal analysis. The paper explores how human societies have dealt with their environments by studying case studies from different historical and geographic settings, and how these actions have resulted in conflicts. Moreover, legal precedents and policy frameworks are examined to assess the potential for anthropological perspectives to enhance current practices in environmental management.

The Role of Anthropological History in Understanding Human-Environment Relationships

Anthropological history studies the enduring relationships between human societies and their environment, with a focus on cultural, technological, and ecological adjustments. This area offers important information on how societies have historically dealt with natural resources, altered landscapes, and adapted to environmental shifts. Anthropology, known as "the science of humanity," delves into the study of human beings in various aspects such as the biology and evolutionary past of *Homo sapiens*, as well as the characteristics of society and culture that set humans apart from other animals. The emergence of modern anthropology was solidified in the 1860s, driven by

⁴⁶⁵ Guzmán-Gallegos, M.A., Leisen, E. 'Anthropology, the Environment, and Environmental Crisis' (2022) THE PALGRAVE HANDBOOK OF THE HISTORY OF HUMAN SCIENCES <https://doi.org/10.1007/978-981-16-7255-2_18> accessed 10 September 2024

progress in biology, philology, and prehistoric archaeology. In his 1859 book 'The Origin of Species', Charles Darwin stated that all living organisms are descended from a single common ancestor.⁴⁶⁶

Human Adaptation to the Environment

One of the main interests in anthropological history is examining how early human societies adjusted to their surroundings. For instance, hunter-gatherer societies created advanced knowledge systems to sustainably manage natural resources. Their methods of obtaining food were impacted by the abundance of resources, changing seasons, and environmental factors. Numerous native communities that continue to depend on traditional means of living possess a profound knowledge of their surrounding ecosystems, underscoring the enduring bond between culture and the environment.

On the flip side, agricultural societies demonstrate an alternative form of interaction between humans and the environment. The shift from hunting and gathering to farming is seen as a pivotal moment in human history, as the taming of plants and animals enabled communities to sustain more people and generate extra goods. Nevertheless, this transition also resulted in notable environmental impacts, including deforestation, soil erosion, and difficulties in managing water resources. These changes paved the way for upcoming disputes regarding the utilization of resources, due to the rising human needs on the environment. In the year 2004, article "Environmental and climatic considerations: a hypothesis for conflict and the emergence of social complexity in Fijian prehistory" published in the Journal of Anthropological Archaeology by Julie Field. She analysed climate variables like droughts and floods related to the El Niño Southern Oscillation (ENSO). She combines this data with information on soils and topography to investigate how changes in social patterns are related to climate and environmental changes.⁴⁶⁷

Technological Advancements and Environmental Modifications

Technology's progression has significantly influenced the environment over the course of human history. Technological progress has enabled societies to alter their natural environments in ways that were once inconceivable. The development of irrigation systems in ancient Mesopotamia allowed for

⁴⁶⁶ Esterik, P. Van, Horowitz, Michael M, Ghannam, Farha, Spencer, Jonathan Robert, Smith, Eric A., Nicholas, Ralph W., Lomnitz, Claudio, Paul, Robert Allen, Hannerz, Ulf, Kuper, Adam J. Tuttle, Russell Howard, Jeganathan, Pradeep, Leslie, Charles Miller, Hanchett., Suzanne L., Aronoff, Myron J., Keyes, Charles F., Hill, Jane H., Robotham, Donald Keith, Fernandez, James W., Feeley-Harnik, Gillian, Hopkins, Nicholas S., Kolata, Alan L., Seeger, Anthony, Delaney, Carol L., Varenne., Hervé, Östör, Ákos and Schildkrout, 'anthropology' (2024) ENCYCLOPEDIA BRITANNICA <<https://www.britannica.com/science/anthropology>> accessed 10 September

⁴⁶⁷ Isabel Rivera-Collazo, 'Environment, climate and people: Exploring human responses to climate change' (2022) 68 JOURNAL OF ANTHROPOLOGICAL ARCHAEOLOGY <<https://doi.org/10.1016/j.jaa.2022.101460>> accessed 09 September 2024

extensive farming in dry areas, while the building of roads and bridges improved trade and communication over long distances. Nonetheless, these technological advancements also resulted in ecological impacts, like soil salinization and disruption of natural ecosystems. The Industrial Revolution represents another crucial moment in the relationship between humans and the environment. With the introduction of automated manufacturing, mining of fossil fuels, and growth of cities, human civilizations started to change the environment in a way never seen before. Industrialization result in the loss of forests, contamination of air and water, and exhaustion of natural resources. These alterations have caused lasting ecological effects, leading to global warming, depletion of biodiversity, and deterioration of the environment. Recent advancements in technology and new areas of research are allowing modern anthropologists to discover and analyse increasingly intricate details about various societies and traditions. CT scanners are utilized by archaeologists and biological anthropologists to create cross-sectional images of bones and soft tissues in human remains by merging various X-ray views from different angles. Zahi Hawass, a former National Geographic Explorer-in-Residence, utilized CT scans on ancient Egyptian mummies in order to gain insight into disease, health, and mortality trends in ancient Egypt. The imaging showed that one mummy was an overweight, 50-year-old female who had dental issues.⁴⁶⁸

Despite the many benefits technological advancements have brought to human societies, they have also introduced new challenges. The utilization of natural resources for profit has frequently resulted in environmental damage, disparities in society, and disputes. Anthropological history offers a valuable structure for comprehending these dynamics and provides insights for handling the environmental impacts of technological advancement.

Cultural Beliefs and Environmental Management

Cultural beliefs and customs greatly influence the way societies engage with their surroundings. Anthropologists have acknowledged for a long time that cultural perspectives impact how individuals view and handle natural resources. One instance is when indigenous communities see nature as a living being of inherent worth, resulting in sustainable resource management methods that focus on ecological harmony.

On the other hand, developed societies typically view nature as a means to be taken advantage of for the advantage of humans. This viewpoint has led to excessive exploitation of natural resources, degradation of the environment, and disputes over resource utilization. The cultural disputes over

⁴⁶⁸ National Geographic Society, 'History and Branches of Anthropology' (*National Geographic*, 04 April 2024) <<https://education.nationalgeographic.org/resource/history-branches-anthropology/>> accessed 09 September

environmental management play a significant role in anthropological history, emphasizing the influence of cultural values on human-environment interactions.

Resource Management Strategies and Environmental Conflicts

Across history, different methods have been devised by societies for controlling natural resources, from communal land ownership to centralized state oversight. These approaches are a reflection of the social, political, and economic circumstances of the era, along with the distinct environmental obstacles confronted by societies.

Conflicts often occur when various groups vie for limited ecological resources. These tensions are frequently worsened by social disparities, such as differences in wealth, authority, and political sway. Anthropologists have recorded many instances of conflicts related to resources in various periods of history, such as disagreements over water rights in ancient Mesopotamia and current disputes over oil, minerals, and forests.

Case Study 1: Water Management in Ancient Mesopotamia

The importance of water management for ancient societies can hardly be overstated, as many of the earliest civilizations emerged in large river valleys (Nile, Euphrates and Tigris, Indus, Yellow and Yangtze River). More importantly many of those early civilizations occupied the reach of the river, which was located in the arid/semi-arid zone, by which rivers vital sources of water, in particular for irrigation.⁴⁶⁹ One of the first instances of resource management techniques can be traced back to ancient Mesopotamia, where advanced irrigation systems were created to facilitate extensive farming in the area's dry surroundings. Coordinating and cooperating between different communities was necessary to manage the water from the Tigris and Euphrates rivers for irrigation. The building of canals, dams, and reservoirs gave farmers the ability to manage water flow, though these structures also sparked chances for disputes.

In old Mesopotamia, power and influence frequently stemmed from the management of water resources. The elites in control of the irrigation infrastructure were able to determine how water was allocated, resulting in social tensions and conflicts among various communities. The disputes were not just regarding water access, but also about land control and the economic advantages linked to farming output. Researchers in ancient Mesopotamia have highlighted the significance of comprehending the social and political aspects of water management, according to anthropologists. Anthropologists

⁴⁶⁹ Stephanie Rost, 'Navigating the ancient Tigris – insights into water management in an early state' (2019) 54 JOURNAL OF ANTHROPOLOGICAL ARCHAEOLOGY <<https://doi.org/10.1016/j.jaa.2019.01.005>> accessed 12 September 2024

have revealed the intricate relationship between human societies and their surroundings by studying how various groups vied for authority over water resources.

Case Study 2: Deforestation in Colonial India

Another instance of how resource management tactics have caused environmental disputes is seen in colonial India, where British authorities enacted policies that changed the nation's forests. The British saw forests as important assets for making money, mostly through producing timber and farming for business purposes. Consequently, they implemented measures that limited conventional methods of forest management, like shifting cultivation and communal grazing, in order to promote extensive logging and plantation agriculture. These policies resulted in noteworthy ecological and social impacts. The cutting down of trees caused soil erosion, decreased biodiversity, and disrupted local ecosystems. Furthermore, the relocation of native communities from their ancestral territories led to social unrest and disputes. Anthropologists examining colonial India observed how British policies interfered with traditional resource management methods, leading to environmental decline and social disparities. In the late 1970's local communities got together and begun protesting against the indiscriminate destruction of the forests which had been relatively intact over centuries. They launched a movement called Appiko, akin to the popular Chipko movement of the Himalayas (Hedge, 1998). Since then various local groups have become involved in forest-related research and activism. In recent years they have also protested against coastal destruction; lobbying against major aquaculture projects, a barge mounted power plant and a huge a five star tourist resort. They have also exposed some of the harsh realities of the capital intensive Overseas Development Agency (ODA) funded JFM project in the area.⁴⁷⁰ The situation of deforestation in colonial India underlines the significance of taking into account the cultural and social aspects of resource management. Introducing Western economic and environmental views to indigenous groups resulted in disputes over land usage and resource availability, along with lasting ecological impacts.

Environmental Conflicts in the Modern Era

In the contemporary age, environmental disputes still influence the way humans interact with the environment. Numerous conflicts stem from the excessive exploitation of natural resources like water, forests, minerals, and

⁴⁷⁰ Pankaj Sekhsaria, 'Deforestation in India Overview and Proposed Case Studies' FOREST CONSERVATION STRATEGIES FOR THE ASIA AND PACIFIC REGION <https://www.iges.or.jp/en/publication_documents/pub/conferenceproceedings/en/744/1ws-9-pankaji.pdf> accessed 12 September 2024

fossil fuels. The distribution of these resources is frequently unequal, causing rivalry among various groups and worsening social disparities.

Anthropological history offers valuable understanding of the origins of these conflicts, as well as possible ways to solve them. Anthropologists can provide insights on promoting sustainable and equitable resource management by studying how societies in the past have dealt with resources and conflicts.

Case Study 3: The Amazon Rainforest

The Amazon rainforest, known for its high biodiversity, is now under serious risk due to deforestation, agriculture growth, and illegal logging. The dispute concerning the Amazon involves more than just the extinction of a crucial ecosystem; it also pertains to the entitlements of native communities that have inhabited the woods for generations and depend on its resources for their sustenance. Historically, the Brazilian government has prioritized economic growth over protecting the environment, resulting in significant deforestation for purposes such as cattle ranching, soybean production, and logging. These actions have not just caused climate change, but also forced indigenous communities to move and harmed local ecosystems. The Amazon region accounts for circa 33% of the Brazilian mineral production; thus, the environmental vulnerability of this tropical forest is under pressure due to the repercussions of mining activities (Cordani and Juliani, 2019), which may lead to serious ecological imbalances.⁴⁷¹

Studies in anthropology of the Amazon emphasize the necessity of grasping the cultural and social aspects of environmental conflicts. Indigenous communities have been practicing sustainable forest management for a long time, relying on their traditional knowledge to uphold ecological equilibrium. Nevertheless, their entitlement to land and resources is frequently ignored in preference to economic benefits. Recently, there has been an increasing acknowledgment of the necessity to safeguard the Amazon and the indigenous communities residing there. Global climate stability has been stressed as crucial for preserving the Amazon in international agreements like the Paris Climate Agreement. Moreover, legal structures, like acknowledging the land rights of indigenous people, have aimed to tackle the social and environmental injustices linked to deforestation.

Case Study 4: Water Scarcity in the Middle East

⁴⁷¹ Fábio Chaddad, Fellipe A.O. Mello, Mahboobeh Tayebi, José Lucas Safanelli, Lucas Rabelo Campos, Merilyn Taynara Accorsi Amorim, Gabriel Pimenta Barbosa de Sousa, Tiago Osório Ferreira, Francisco Ruiz, Fabio Perlatti, Lucas Tadeu Greschuk, Nicolás Augusto Rosin, Jorge Tadeu Fim Rosas, José A.M. Demattê, 'Impact of mining-induced deforestation on soil surface temperature and carbon stocks: A case study using remote sensing in the Amazon rainforest' (2022) 119 JOURNAL OF SOUTH AMERICAN EARTH SCIENCES <<https://doi.org/10.1016/j.jsames.2022.103983>> accessed 11 September 2024

Scarcity of water is an increasing problem worldwide, especially in dry areas like the Middle East. The rivalry over water sources has caused disputes in the area for ages, and it still impacts the current political and social landscape. As a result, failure to improve water management and adapt to a changing climate threatens both regional and international security.⁴⁷²

Numerous ancient societies in the Middle East, like those in Mesopotamia and Persia, created advanced water management systems to deal with limited water resources. Yet, contemporary political and economic aspects such as population increase, urban development, and the building of extensive dams have worsened water scarcity and increased conflicts among bordering nations. The importance of comprehending the historical and cultural backgrounds of resource management is underscored by the water conflict in the Middle East. Anthropological viewpoints can help shape fairer and more sustainable water-sharing agreements by considering the needs and rights of all parties involved.

Legal Frameworks and Anthropological Perspectives in Environmental Conflict Resolution

Legal frameworks are crucial for resolving environmental disputes, but they are frequently influenced by the prevailing cultural and economic beliefs of the era. Throughout history, legal systems have placed more importance on economic growth than on protecting the environment, resulting in the depletion of natural resources and the exclusion of indigenous groups.

Recently, there has been an increasing acknowledgment of the importance of integrating environmental and anthropological viewpoints into legal structures. One instance is the idea of "environmental justice," which aims to tackle the unfair allocation of environmental disadvantages and advantages, especially among marginalized groups. Legal precedents, like acknowledging indigenous land rights and creating environmental courts, show how legal systems can have a greater impact in resolving environmental disputes.

Legal Precedents in Environmental Conflict Resolution

One major legal advancement in recent years has been the acknowledgment of indigenous land rights in different countries globally. Countries like Brazil, Canada, and New Zealand are starting to recognize the significance of safeguarding the land and resource rights of indigenous communities within their legal systems. These legal precedents could help to tackle some of the

⁴⁷² Natasha Hall, 'Surviving Scarcity: Water and the Future of the Middle East' (*Centre for Strategic and International Studies*, 22 March 2024) <<https://features.csis.org/surviving-scarcity-water-and-the-future-of-the-middle-east/#:~:text=By%202050%2C%20every%20single%20country,the%20end%20of%20the%20century>> accessed 10 September 2024

root causes of environmental conflicts, especially when indigenous communities have been relocated or marginalized.

Another significant advancement is the creation of environmental courts, aimed at more efficiently dealing with environmental issues compared to traditional legal systems. These courts frequently use scientific and technical knowledge to settle disagreements and guarantee that environmental conservation is given top priority in legal rulings.

The Role of Anthropological Insights in Legal Frameworks

Anthropological understandings are vital in developing fairer and more sustainable legal structures to manage environmental disputes. Legal systems can create effective solutions for environmental issues by acknowledging the cultural, social, and economic aspects and meeting the needs of marginalized communities.

Anthropological viewpoints may offer insights for creating legal structures that acknowledge the significance of traditional knowledge in managing resources. Indigenous communities frequently create sustainable practices by utilizing their extensive knowledge of local ecosystems, and integrating this knowledge into legal systems can enhance the effectiveness of environmental management techniques.

Conclusion

Studying anthropological history offers important perspectives on the intricate and changing connection between humans and their surroundings. Anthropologists can gain insights into how societies have historically influenced and been influenced by their natural environments by studying past human adaptation, cultural beliefs, and technological advancements. Understanding the historical context is crucial for comprehending the origins of current environmental conflicts and for creating sustainable and fair resource management strategies.

With the escalation of environmental challenges, incorporating anthropological viewpoints into legal and policy frameworks is becoming more crucial. By acknowledging the cultural, social, and economic aspects of environmental disputes, policymakers can create better and equitable resolutions that meet the demands of all involved parties. In the end, the teachings of anthropological history may steer societies towards a more eco-friendly and peaceful connection with the environment.

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The Emerging Need for Environmental Education in India for the Protection and Preservation of the Environment: A Critical Analysis

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Abstract

The highest education is that which does not merely give us information but makes our lives in harmony with all existence” (Rabindranath Tagore).

This perspective is evident in environmental education, which is not all about environmental information. It has a much wider mission. It aims to sensitize or connect humanity with the environment so that both can flourish harmoniously. Its main objective is to impart an understanding to mankind about their dependence on the environment and to inspire them to use the environment sustainably. The significance of environmental education has gained a lot of attention with the deterioration of environmental conditions. The frequent number of floods, landslides, melting of glaciers, cloud bursts, and climate change happening everywhere in the country is hampering the lives of individuals. At both international and national levels, policies were made to tackle environmental deterioration and to use sustainable ways to protect the environment. At the national level, emphasizing the importance of environmental education, NEP 2020 instructed the inclusion of environmental education in higher education. It aims to develop and hone the minds of the younger generations to protect and preserve the environment. In this paper, the researcher tries to explain the significance of environmental education in India. Its objective is to analyze the significance of environmental education by studying the concept itself and the related precedents, international treaties, and national policies.

Keywords: Environmental Education, Sustainable, NEP 2020, Environmental Deterioration

Introduction

There is an emerging need for a collective commitment to sustainability. In the last decades, there has been an increase in environmental disasters such as floods, landslides, avalanches, earthquakes, melting of glaciers, cloud bursts, and heat waves claiming millions of lives. All these are man-made disasters. The way they are happening frequently, and endangering life and property, demands no time to lose in taking action to stop these man-made disasters. So,

environmental education is one of the vital steps to protect the environment for the present and future.

This paper analyses the importance of environmental education in protecting the environment by studying the concept in detail and its scope in India. Its objective is to understand the importance of environment protection and thereby understanding the role of environmental education in India.

Environmental Protection: An Integral Component of Sustainable Development

Environmental protection has emerged as one of the most pressing global concerns of the 21st century. As human activities continue to exert unprecedented pressure on the Earth's ecosystems, the need for robust legal frameworks to safeguard our environment has become increasingly apparent. The urgency of environmental protection is underscored by the myriad challenges we face today like climate change, biodiversity loss, pollution, and resource depletion. These issues not only threaten the delicate balance of our planet's ecosystems but also pose significant risks to human health, economic stability, and social equity. As such, environmental protection has transcended its initial scope, evolving from a niche concern into a fundamental aspect of sustainable development and human rights.

I. Development of the Concept of Environmental Protection

The concept of environmental protection as a legal imperative has evolved significantly over the past century.⁴⁷³ Environment was not a public international concern during the beginning of the 20th century. However, at the latter end of the 20th century global concern increased.⁴⁷⁴ Initially, environmental concerns were largely addressed through property law or as matters of public health. However, with the drastic change in the human environment due to the development of Science and Technology as well as the rise in population the scale of environmental degradation became more apparent.⁴⁷⁵ As the scientific understanding of ecological systems improved, a more holistic approach to environmental protection began to appear.

II. The Historical Context

The roots of modern environmental law can be traced back to the Industrial Revolution, which brought unprecedented levels of pollution and resource exploitation. Early efforts to address these issues were primarily focused on

⁴⁷³ S. C. Shastri, *Environmental Law*, (5th ed, Eastern Book Company, 2015) 441

⁴⁷⁴ *ibid*

⁴⁷⁵ P Leelakrishnan, *Environmental Law in India* (4th ed., Lexis Nexis, 2016) 1

public health concerns, such as the British Alkali Act of 1863, which aimed to reduce air pollution from the alkali industry.⁴⁷⁶

The modern era of environmental law is often considered to have begun in the 1960s and 1970s. This period saw a surge in public awareness about environmental issues, spurred by influential works such as Rachel Carson's "Silent Spring" (1962). This book brought about a new environmental movement that highlighted the dangers of the use of pesticides.⁴⁷⁷ In response to growing public concern, many countries began to enact comprehensive environmental legislation. Over time, the concept of environmental protection has expanded to encompass a wide range of issues, including climate change mitigation and adaptation, biodiversity conservation, waste management, and the protection of natural resources. Legal systems at both international and national levels have played a crucial role in addressing the environmental challenges. Through a complex web of treaties, customary laws, constitutional provisions, legislations, and judicial decisions, the concept of environmental protection has been gradually incorporated into the legal frameworks worldwide.

International environmental law has played a crucial role in shaping global efforts to protect the environment. It consists of a complex network of customary laws, treaties, and judicial precedents that collectively form the foundation for global environmental governance.

International treaties form the most important source of global environmental governance. Some of the most significant treaties include United Nations Framework Convention on Climate Change (UNFCCC, 1992) which aims to stabilize greenhouse gas concentrations in the atmosphere to prevent dangerous anthropogenic interference with the climate system; Kyoto Protocol (1997) which is an extension of the UNFCCC, that commits its parties to reduce greenhouse gas emissions; Paris Agreement (2015) which aims to limit global warming to well below 2 degrees Celsius, preferably to 1.5 degrees Celsius, compared to pre-industrial levels; Convention on Biological Diversity (CBD, 1992) that has three main goals like the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of benefits arising from genetic resources; Ramsar Convention on Wetlands (1971) that provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources; Basel Convention (1989) that aims to reduce the movements of hazardous waste between nations, particularly to

⁴⁷⁶ Gibson John 'The Integration of Pollution Control,' (1991) 18 Journal of Law and Society 18

⁴⁷⁷ S. C. Shastri, *Environmental Law*, (5th ed, Eastern Book Company, 2015) 441

prevent transfer from developed to less developed countries; Stockholm Convention on Persistent Organic Pollutants (POPs, 2001) that aims to eliminate or restrict the production and use of persistent organic pollutants; Vienna Convention for the Protection of the Ozone Layer (1985) that aims to protect the ozone layer by phasing out the production of numerous substances responsible for ozone depletion and so on. These treaties represent a collective effort by the international community to address various environmental challenges through cooperation and legally binding commitments.

III. Indian Approach to Environmental Protection

India's approach to environmental protection is multifaceted, encompassing constitutional provisions, legislative enactments, and judicial interventions. This comprehensive framework reflects India's commitment to addressing environmental challenges while balancing the needs of development.

The Indian Constitution provides a strong foundation for environmental protection. Article 48A under Directive Principles of State Policy mandates that the State shall endeavour to protect and improve the environment and safeguard forests and wildlife. Similarly, Article 51A(g) places a duty on every citizen to protect and improve the natural environment, including forests, lakes, rivers, and wildlife, and to have compassion for living creatures. Article 21 which encompasses the fundamental right to life, through judicial interpretation, has been expanded to include the right to a clean environment. The anxiety to save the environment manifested itself in the Constitution (Forty Second Amendment) Act 1976 by the introduction of a specific provision for the first time to 'protect and improve' the environment. Since then, several enactments have been made for the protection of the environment of the country.

The Environment (Protection) Act, 1986 (EPA) was enacted as a measure to implement the decisions made at the United Nations Conference on the Human Environment held in Stockholm in June 1972 to which India was a party. According to the Statement of Objects and Reasons of the legislation, the multiplicity of regulatory agencies engenders a need for an authority that can assume the lead role for the study, planning, and implementation of long term requirements of environmental safety, give directions, and co-ordinate a system of speedy and adequate responses to emergency situations threatening the environment.

The EPA is an umbrella legislation, under which most of the pollution control legislations were framed. Section 3 of the Act grants the Central Government power to take all such measures as it deems necessary and expedient for the

purpose of protecting and improving the quality of the environment and land, and controlling and abating environmental pollution.

Section 25 has empowered the Central Government to make rules fixing the standards of pollution. Thereafter, such rules must be placed before the Parliament. By virtue of these powers the Central Government has enacted the Environment (Protection) Rules, 1986 (EPR) which prescribes standards for controlling noise pollution, management of bio medical wastes, management of hazardous wastes, coastal area protection, environment impact assessment, and other such measures. Persons carrying on industrial operations or processing have been restrained from discharging any polluting substances in excess of the standards prescribed by law.⁴⁷⁸

Persons handling hazardous substances are bound by the prescribed procedural safeguards. The industries have to furnish information required by the authorities and allow entry into the industrial unit so as to carry out inspection. Every person carrying on an industry, operation, or process requiring consent under the Water (Prevention and Control of Pollution) Act, 1974; and/or Air (Prevention and Control of Pollution) Act, 1984, or an authorization under the Hazardous Wastes (Management and Handling) Rules, 1989, had to submit an environmental statement in the prescribed form to the concerned State Pollution Control Board.⁴⁷⁹

The Central Government has been empowered to prohibit and restrict the location of industries and the carrying on of processes and operations in different areas.⁴⁸⁰

Under Section 24, the provisions of the EPA and the Rules or Orders made there under have been given overriding effect over any other enactment.

Anyone who fails to comply with or contravenes the provisions of EPA or EPR is punishable for a term of up to 5 years with a fine that may extend to 1 lakh rupees. If the offence is being continued, the industrialist has to pay an additional fine that may extend to five thousand rupees for each day.⁴⁸¹

India has enacted several other legislations to address environmental concerns like the Water (Prevention and Control of Pollution) Act, 1974; The Air (Prevention and Control of Pollution) Act, 1981, The National Green Tribunal Act, 2010, etc.

The Decisions by the Supreme Court of India have been relied upon in several instances in the neighboring countries in Asia, e.g., by the Supreme Court of

⁴⁷⁸ Section 7, Environment Protection Act, 1986

⁴⁷⁹ Schedule I, Environment Protection Rules, 1986

⁴⁸⁰ Section 14, Environment Protection Rules, 1986

⁴⁸¹ *Bihar State Pollution Control Board v Hiranand Stone Works*, (2005) AIR Patna 62

Pakistan in solving its own environmental problems and providing justice to those whose rights have been infringed.⁴⁸² The Human Development Report, 2002, states that the Indian supreme court has been ‘the cornerstone of India’s democracy since independence’ and ‘a renewed judicial activism can be seen in the vigorous decisions of the court defending citizens’ fundamental rights and safeguarding environmental and other public goods’. These cases have also led to protection of public goods such as clean air and water and uncontaminated blood supplies.

Most of cases recognizing the human right a ‘wholesome environment’⁴⁸³ have been accepted by the Supreme Court and various high courts as a writ petition under Article 32 and 226 of the constitution. It was after the Bhopal gas disaster that the court was swamped with petitions related to environmental harms and consequent deprivations of fundamental rights of an individual.

Judicial recognition of environmental rights was achieved in India starting from the Supreme Court’s decision in *Rural Litigation and Entitlement Kendra v. State of Uttar Pradesh* or the *Doon Valley Quarrying* case.⁴⁸⁴ The court gave five orders in this case based on its understanding that environmental rights were to be implied into the scope of the fundamental right to life and personal liberty guaranteed under Article 21 of the Constitution. In *M.C Mehta v. Union of India*⁴⁸⁵ (the *Shriram gas leak* or the *Oleum gas leak* case) the Supreme Court ordered the closure of an industrial plant in Delhi. The court introduced an important legal rule of ‘strict liability’ and ‘polluter pays’. The defendant was allowed to reopen the factory only after agreeing to ‘prudent ownership and management of its facilities and accepting to be personally responsible for compensation for any injuries or deaths caused by the escaping chlorine gases, and after having accepted to establish a compensation fund for any victims of future gas emissions’. *MC Mehta v. Union of India (Ganga pollution and tanneries cases)*⁴⁸⁶ and the Taj trapezium case, the Supreme Court took pioneering measures to prevent pollution of the river Ganga, and the Taj Mahal and ordered the closing down of several industries which caused pollution in Kanpur and Agra. Obviously, in so doing, the court would have realized that many industry and factory owners would be forced to close down their factories and /or incur unwanted costs to install pollution control equipment. One can see that in these cases environmental protection took priority over the right to trade and business.

⁴⁸² *Ms Shehla Zia v. WAPDA*

⁴⁸³ *Rural Litigation and Entitlement Kendra v. State of Uttar Pradesh*, (1985) AIR SC 2187
⁴⁸⁴ (1988) AIR SC 2187

⁴⁸⁵ (1987) AIR SC 1086

⁴⁸⁶ (1987) AIR SC 965

The Concept of Environmental Education: An Emerging Need

Environmental education for sustainable development is an effective approach to encourage the younger generation to protect and conserve the natural environment. The concept of environmental education has gained a lot of popularity in recent years because of the deteriorating environmental conditions. There are many definitions provided for environmental education but the significant ones are:

W.B Stapp (1969), “*Environmental education is aimed at producing a citizenry that is knowledgeable concerning the biophysical environment and its associated problems, aware of how to help solve these problems, and motivated to work toward their solution.*”⁴⁸⁷

According to the Tbilisi Declaration, 1978, “*Environmental education is a learning process that increases people’s knowledge and awareness about the environment and associated challenges, develops the necessary skills and expertise to address the challenges, and fosters attitudes, motivations, and commitments to make informed decisions and take responsible action*”.⁴⁸⁸

According to UNESCO, “*Environmental education is a way of implementing the goals of environmental protection. It is not a separate branch of science but lifelong interdisciplinary field of study. It means education towards protection and enhancement of the environment and education as an instrument of development for improving the quality of life of human communities.*”⁴⁸⁹

These definitions imply that environmental education is an overall effort to teach the public about the natural environment and how humans can harmoniously cohabit in it and use it sustainably. It uses education as a tool to protect and conserve the environment. Its primary aim is to make the public aware of environmental challenges and encourage their participation in tackling them. Most of the environment-related challenges are the result of anthropogenic activities. Hence, to resolve them, the participation of human beings is necessary. Therefore, environmental education plays a poignant role as it allows individuals to explore environmental issues, engage in problem-solving, and take action to improve the environment⁴⁹⁰. Consequently,

⁴⁸⁷ ‘Defining environmental education’, (Environmental Education) < [⁴⁸⁸ Ashutosh Jaiswal, ‘Environmental Education’ \(Inflibnet\) <<https://ebooks.inflibnet.ac.in/geop08/chapter/environmental-education/>> accessed on 11 September 2024](https://www.gdrc.org/uem/ee/1-1.html#:~:text=Environmental%20education%20is%20aimed%20at,(1969).> _accessed on 11 September 2024</p></div><div data-bbox=)

⁴⁸⁹ *ibid*

⁴⁹⁰ ‘What is Environmental Education’ (United States Environment Protection Agency) < <https://www.epa.gov/education/what-environmental-education>> accessed on 11 September 2024

individuals develop a deeper understanding of environmental issues and have the skills to make informed and responsible decisions.⁴⁹¹

The origin of environmental education can be traced back to the period-18th century. It was when Jean-Jacques Rousseau, a Swiss philosopher, stressed the importance of an education that focuses on the environment in *Emile; or, On Education*. Later, two types of environmental education emerged: Nature study and conservation education. Louis Agassiz, a Swiss-born naturalist, followed Rousseau's philosophy and prompted students to "Study nature, not books." This led to the foundation for a concrete environmental education program, known as nature study, in the late 19th century and early 20th century. The nature study movement used fables and moral lessons to help students develop an appreciation of nature and embrace the natural world⁴⁹². Conservation Education dealt with the natural world in a drastically different way from Nature Study because it focused on rigorous scientific training rather than natural history⁴⁹³. It emerged as the consequence of the Great Depression and Dust Bowl during the 1920s and 1930s. It was based on scientific management and planning tools that helped solve social, economic, and environmental problems during this period⁴⁹⁴. The modern environmental education movement stemmed from Nature Study and Conservation Education. It was the realization that "solving complex local and global problems cannot be accomplished by politicians and experts alone, but requires the support and active participation of an informed public in their various roles as consumers, voters, employers, and business and community leaders."⁴⁹⁵ In 1972, at the international level, it gained recognition when The Declaration of the United Nations Conference on the Human Environment (Stockholm Convention) declared environmental education must be used as a tool to address global environmental problems. Thereafter in 1975, The Belgrade Charter came which was the outcome of the International Workshop on Environmental Education. The Belgrade Charter was based on the Stockholm Declaration and consists of goals, objectives, and guiding principles of environmental education programs. In simple words, it aims to aware the public about environmental issues and to build within them the attitude, knowledge, etc to solve these problems individually or collectively

⁴⁹¹ ibid

⁴⁹²History of Environmental Education' (Kuvempu University) http://www.mhnlakgilnojmhinhkckjncpbhabphi/pages/pdf/web/viewer.html?file=http%3A%2F%2Fkuvempu.ac.in%2Feng%2Fstudymetrial%2FLogin%2FAdmin%2Fstudy_material%2F511722-04-2020History%2520of%2520ES.pdf accessed on 11 September 2024

⁴⁹³ ibid

⁴⁹⁴ ibid

⁴⁹⁵History of Environmental Education' (Kuvempu University) http://www.mhnlakgilnojmhinhkckjncpbhabphi/pages/pdf/web/viewer.html?file=http%3A%2F%2Fkuvempu.ac.in%2Feng%2Fstudymetrial%2FLogin%2FAdmin%2Fstudy_material%2F511722-04-2020History%2520of%2520ES.pdf accessed on 11 September 2024

and to use the environmental resources sustainably to prevent further issues. In 1977, the Tbilisi Declaration noted the unanimous accord on the important role of environmental education in the preservation and improvement of the world's environment, as well as in the sound and balanced development of the world's communities.⁴⁹⁶ The Declaration updated the previous declaration: the Stockholm Declaration and The Belgrade Charter by including new goals, objectives, and guiding principles of environmental education.⁴⁹⁷

The components of environmental education⁴⁹⁸:

- **Awareness and sensitivity** - public awareness about the natural environment and environmental challenges. Sensitizing the public about the importance of the natural environment so that they become motivated to protect the environment.
- **Knowledge and understanding** – to make the public gain knowledge about the environment and environmental challenges. It develops their understanding of the challenges to the environment. Without understanding the environment and its issues, they will not be able to protect and conserve it.
- **Attitudes**- to foster in public the concern for the environment and motivation to improve or maintain environmental quality. By developing the attitude of the public toward environmental protection, the conservation of environment be achieved.
- **Skills**- to develop and identify skills that will help to protect the environment and also to resolve environmental challenges.
- **Participation**- to encourage active participation of the public with the intent to resolve environmental challenges. The urgency of environmental conservation must be taught to the public and promote their participation in resolving the challenges to the environment.
- **Evaluation ability**- to develop the evaluation ability of the public so that they can assess the schemes and laws made for the preservation and conservation of the environment. Such assessment can be made from a social, political, economic, etc. perspective.

⁴⁹⁶ *ibid*

⁴⁹⁷ New objectives included- i.) to foster clear awareness of, and concern about, economic, social, political, and ecological interdependence in urban and rural areas; ii.) to provide every person with opportunities to acquire the knowledge, values, attitudes, commitment, and skills needed to protect and improve the environment; and iii). to create new patterns of behaviour of individuals, groups, and society as a whole towards the environment.

⁴⁹⁸ *ibid*

The other two types are based on the way environmental education is imparted: formal and non-formal environmental education. 1) Formal education deals with education in schools and colleges. It can be divided into primary, secondary, and tertiary education. The formal education sector plays a monumental role in imparting environmental education and in spreading awareness by exposing the younger generation to the information, challenges, and interpretations of environment and development. Objectives of environmental education at primary and secondary levels include emphasizing the relevance of environmental knowledge to daily life, developing an attitude to preserve the environment in students, creating an environment conducive to greater reliance on the use of eco-friendly practices, acquainting the students with various natural phenomena, etc. 2) Non-formal environmental educational activities work alongside the formal educational systems, at curricular and extra-curricular levels, in occupational training, and through wide public awareness activities through non-formal channels such as mass media, and voluntary organizations.⁴⁹⁹ Education either formally or informally helps to educate young minds along with adults and the community to protect the environment. Formal education develops the minds of the young generation in a way that develops their thinking ability and they understand the importance of the environment. This leads them to conserve and protect the environment. It is good because such a feeling of conserving the environment is not forceful but comes from their understanding of the environment and the challenges to it and how they impact them and the future. Along with engaging in actions related to environment conservation, they can harmonize with the natural environment. There are challenges to its implementation. 1. Rigid Specialization. 2. Complexity of inter-disciplinary value of Environmental education. 3. High pupil-teacher ratio for organizing pupil participation programs. 4. Paucity of qualified trained environmental educators. 5. Lack of proper resources in terms of equipment, supplementary materials, and reference materials. 6. Tendency to resist changes.⁵⁰⁰ So, environmental education is education to inspire environmental stewardship and responsible citizenship and protect today's "de-natured" and increasingly unhealthy society.⁵⁰¹

The importance of Environmental Education in India has been recognized lately as it plays a significant role in achieving sustainable development. Many reforms have been made in school education to introduce

⁴⁹⁹ Ashutosh Jaiswal, 'Environmental Education' (Inflibnet)

<<https://ebooks.inflibnet.ac.in/geop08/chapter/environmental-education/> > accessed on 13 September 2024

⁵⁰⁰ Ashutosh Jaiswal, 'Environmental Education' (Inflibnet)

<<https://ebooks.inflibnet.ac.in/geop08/chapter/environmental-education/> > accessed on 13 September 2024

⁵⁰¹ Ms. Gunjan Verma and Dr. Poonam Dhull, 'Environmental Education as a subject in schools' (2017) 5(8) Int. J. Adv. Res. <https://www.journalijar.com/uploads/873_IJAR-19385.pdf > accessed on 10 Sept 2024

environmental education. National Education Policy (NEP) 2020 promotes environmental education at primary and secondary levels of education. It stresses integrating environmental awareness and sensitivity in young minds for environment conservation and sustainable development by including environmental education in school curricula. It is made a compulsory subject for all the students of Arts, Science, and Commerce at the undergraduate level by the University Grants Commission (UGC), at the school level by the National Council of Education Research and Training (NCERT), and State Education Councils of almost all the states of India.⁵⁰² Some of the vital recommendations of NEP 2020 are: i) to make environmental education an integral part of school curricula, ii) inclusion of environmental awareness including water and resource conservation iii) introduce environmental education as a contemporary subject at relevant stages, iv) incorporation traditional Indian knowledge systems and India's future aspirations concerning the environment, teaching to respect the environment and using its resources sustainably.⁵⁰³

Conclusion

“Education is the light that drives away the darkness of ignorance.”

It can be concluded that environmental education is indispensable in the contemporary era where environmental hazards are frequent. They are severely impacting the peaceful sustenance of humankind. The major reason behind them is the human activities. The need to protect the environment becomes more urgent as millions of human lives are endangered due to environmental disasters. Humans should live in harmony with the natural environment to live peacefully. For that, it is necessary to understand the environment and its challenges, the way it impacts our lives and its importance for the future. So, environmental education at schools and colleges and in the community is integral to encourage environmental protection which is the duty of every individual.

⁵⁰² ibid

⁵⁰³ 'Government promotes environment protection and nature education through curricula on conservation of forest, water and soil' (Press Information of India) <<https://pib.gov.in/PressReleaseframePage.aspx?PRID=1907255>> accessed on 13th September 2024

CAMPA and Environmental Law: Driving India's Forest Conservation Efforts

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Abstract

Environment is an essential element in the lives of humans. And destruction of environment will lead to many climatic changes and drastically effect the livelihood of the people. The main Environment issues faced in India are pollution namely Air pollution, Water Pollution, noise pollution disposing chemical waste and leakage of harmful gases in atmosphere etc are just few among the problems. Environmental law helps to protect the environment from all these kinds of exploitation and mam made activities. The relation between law and the environment is crucial for the protection of natural resources and sustainable development. This paper explores the evolution of environmental law globally, with a focus on India's legislative framework, which has been significant growth in recent decades. One of the key initiatives taken up by our government is CAMPA (Compensatory Afforestation Fund Management and planning Authority). It was established on 2004 where it ensures that funds collected as Compensation for forest land diverted for non-forest purposes are used effectively for afforestation and regeneration activities. This paper examines CAMPA's role in forest management, the legal framework that governs it and its impact on forest conservation in India. By analysing case studies and data, the paper highlights both successes and challenges in the implementation of CAMPA.

Key Words: Environment, Climate change, CAMPA, Forest management Environmental protection.

Introduction

Some of the world's most significant and diversified forest ecosystems, which offer vital environmental services including carbon sequestration, water control, and wildlife habitats, are found in India. However, urbanization, land degradation, and deforestation have long posed challenges to these woods. The Indian government has put in place a number of legislative frameworks targeted at sustainable development and forest conservation in order to solve these issues. One of the most important tools for maintaining and increasing India's forest cover is the Compensatory Afforestation Management and Planning Authority (CAMPA).

CAMPA was created to control how money obtained from businesses and developers in exchange for using forest land for uses other than forest is used.

The money is utilized for conservation-related projects like afforestation, which helps to restore the natural equilibrium that deforestation upsets. This program creates a strong legal basis for forest governance in India, together with the Forest Conservation Act of 1980 and the Environment Protection Act of 1986. In addition to controlling how forest land is used, these rules support sustainable management techniques that put environmental preservation and economic growth first.

A vital part of resolving India's environmental issues in the face of the nation's growing industrialization and urbanization is the country's environmental legislation framework, which has been reinforced by CAMPA. With thorough monitoring of forest resources and efficient use of afforestation money, CAMPA backs India's efforts to mitigate climate change and promote sustainable development. The role of CAMPA and other environmental laws will be crucial in preserving India's forest ecosystems for future generations and ensuring that economic progress does not come at the expense of environmental degradation as the nation works to meet its international environmental commitments, such as those under the Paris Agreement.

Growth of Environmental law in India:

Prior to the arrival of the British, Adivasis and villagers lived close to the forest, where they could gather resources for daily needs such as fruits, tubers, and herbs.⁵⁰⁴ In certain areas, trees were felled to make way for agriculture, and the woods were used to construct homes while shifting cultivation—also referred to as *jhum* cultivation—was practiced. Next came the British era, when India saw the introduction of railroads and the government's installation of railway tracks to increase connectivity. At the same time, mines were excavated, necessitating the use of a lot of wood for these developmental objectives. In order to build the 8000 km of railway tracks that were constructed by 1879 and the 50,000 km of lines that were established by 1910, wood was mostly taken from the Terai and Himalayan regions. Large quantities of wood were exchanged for the building of structures, mines, and ships; contractors put up bids to obtain the contract for tree cutting; and the British government received a one-time payment.

The English government unveiled its first forest strategy on October 19, 1894, with the goals of meeting people's needs, preserving enough forest cover to allow the country to flourish unrestrained, and generating the most money possible. Massive deforestation occurred as a result of the Second World War's massive wood harvest. This policy classified forests roughly into four

⁵⁰⁴IASLEARNING.IN, <https://iaslearning.in/environmental-laws-and-policies/>, [(last visited, Sep 09, 2024)]

categories: forests that are extremely important for preserving the balance of climate change, lands that are only designated as forests for aesthetic purposes, forests that produce large amounts of high-quality timber, and forests that produce low-quality timber.

The 1894 policy was put into effect by the **Indian Forest Act of 1927**. The purpose of the legislation was the consolidation of the forest law's transit of forest produce and the duty leviable on timber and forest produce. Here, securing exclusive government rights over forests to meet their desire for lumber was more important than actual forest protection. 13 chapters and 86 parts made up the act, which defined state ownership, controlled usage, and gave the government the authority to abolish or replace customary rights. The forest was divided into three distinct classifications under this act: reserve forest, village forest, and protected forest. Any form of activity in the reserve forest without authorization from the government was subject to fines or jail. No rights were provided in the reserve forest other than those granted by the government or when the government is a party to the contract.

The Indian Forest Policy, 1952, was the first law passed in India following independence. It established a comprehensive plan for the preservation and management of the country's forest cover and wildlife, and it recommended that at least 33% of the country's land area be covered by forests at all times (according to the Indian State of Forest Report of 2021, the country's total forest cover is 21.71% of its geographical area). Forests were divided into four groups under this policy: national forests, village forests, protection forests, and tree land. Under no circumstances could the "national interest" be compromised by communities using woods for their own purposes.

The aim of the ⁵⁰⁵**Forest Policy of 1980** is to prevent more deforestation and preserve forests. The act's key provisions prohibit the felling of trees, regulate forest land by monitoring leases granted to private companies and individuals, limit the use of the forest for uses other than forests, and establish an advisory committee tasked with approving any of the aforementioned activities and advising the central government on matters pertaining to forest conservation. All the topics that the preceding acts did not address are covered by this act.

The Indian Forest Policy, 1988 When joint forest management (JFM) was introduced in 1990, the forest act underwent a significant transformation that set it apart from all other acts and policies. The policy's main focus is on the rights of those who live in and around forested areas. It also makes the suggestion that those who do so should be motivated to preserve and enhance

⁵⁰⁵ IASLEARNING.IN, <https://iaslearning.in/environmental-laws-and-policies/>, [(last visited, Sep 09, 2024)]

these areas so they can continue to benefit from them. The NFP goes on to say that any modifications to forest property for the purpose of building or for any other commercial endeavour may only be performed following a thorough examination by experts who have examined the project's social and environmental implications.

The **National Environmental Tribunal Act of 1997** was a significant piece of legislation in India's environmental law landscape. It was primarily designed to provide a specialized judicial venue for the adjudication of environmental disputes pertaining to environmental harm, with the aim of guaranteeing the efficient and effective resolution of environmental concerns. Managing Compensation Allegations: Provide a way for those who have been harmed by pollution or other environmental problems to get compensation. To guarantee environmental justice: Boost the legal system's accessibility for people and communities impacted by environmental degradation.

The **Biological Diversity Act of 2002** is another legislation in India designed to address issues related to the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of benefits arising from the use of biological resources. The Act was enacted to- Conserve Biological Diversity, Protect the variety of life forms on earth, including ecosystems, species, and genetic resources. Promote Sustainable Use, ensure that biological resources are used in a manner that does not lead to their depletion or degradation. Ensure Fair Benefit Sharing: Guarantee that benefits arising from the use of biological resources and associated traditional knowledge are shared equitably with the local communities and indigenous peoples who contribute to their conservation and sustainable use.

Environment (Protection) Amendment Act,2021, This Act amends the original Environment (Protection) Act of 1986, which provides a framework for environmental protection and conservation in India. The amendment introduces higher penalties and fines for violations of environmental regulations. This is intended to deter non-compliance and improve enforcement. It establishes a framework for imposing environmental compensation on industries or entities that cause pollution or environmental damage. It expands the powers of regulatory authorities to better monitor and control environmental practices. This includes increased authority to issue directions and enforce compliance.

Overview of CAMPA:

One of the most important projects in India's attempts to save its forests is the Compensatory Afforestation Management and Planning Authority (CAMPA), which was created to control how money made from afforestation and other

forestry-related activities is used. It is essential to controlling the ecological effects of development initiatives including the relocation of forest land.⁵⁰⁶ The CAMPA mechanism contributes to India's overall environmental sustainability goals by ensuring that forest loss resulting from development activities is offset by afforestation and associated measures.

The foundation of CAMPA is the idea of "compensatory afforestation," which mandates that developers who remove forest property for commercial or industrial uses provide financial assistance for the regeneration of degraded forest land or the establishment of new forests on non-forest land. In addition to afforestation, the money raised under CAMPA is put toward a number of initiatives that enhance and restore forest ecosystems. This entails planting new trees, safeguarding the habitats of species, preserving soil and water resources, and putting policies in place to improve biodiversity.

A vital tool for guaranteeing that forest loss is fairly compensated is CAMPA, which controls developers' financial contributions. To make sure that money is appropriately raised, distributed, and used toward ecological restoration, it operates under a strong legislative framework that is mainly comprised of the Forest Conservation Act (1980) and the Compensatory Afforestation Fund Act (2016). This structure makes guarantee that the money is spent effectively and openly to repair the ecological balance that deforestation has upset.

Historical Background of CAMPA:

Witnessed the unauthorized growth of forests and the unauthorized destruction of forest trees, and made the decision to actively participate in the administration of forests. It started by redefining what the FCA, 1980's usage of the term "forest" meant. Before then, it was thought that the FCA only applied to "reserve forests" that had been properly designated. As previously said, the Supreme Court ruled that this presumption was false and that the FCA, 1980 extended to all forests, independent of their ownership or legal status. Additionally, it expanded the definition of "non-forest purposes" to encompass sawmill operations in addition to mining.

In addition, the Supreme Court mandated that any non-forestry operations in the nation that lacked central government authority be discontinued. The Supreme Court assumed control over India's forests with this ruling.⁵⁰⁷ In accordance with Section 3(3) of the Environment (Protection) Act, 1986, the Supreme Court mandated on May 9, 2002, that the CEC be established in

⁵⁰⁶ CIVILS360.COM, <https://civils360.com/2019/09/02/compensatory-afforestation-fund-management-and-planning-authority-campa/>, [(last visited, Sep 10, 2024)]

⁵⁰⁷ PIB. GOV. IN, <https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1594384>, [(last visited, Sep 10, 2024)]

order to support the Court and carry out its directives. On August 9, 2002, this CEC submitted a report on the subject of compensatory afforestation in India.

The Court noted in its ruling of November 23, 2001, that the states were failing to realize a significant portion of the money owed to the user agencies for compensatory afforestation, and that the monies deposited for this purpose were not being used effectively. According to the CEC report, the state governments had only been able to realize 83% of the necessary cash. Roughly US\$30 million, or 2 billion rupees, was the shortfall.

The Compensatory Afforestation Fund was established on October 29, 2002, by an order from the Supreme Court, where all funds collected from the user agencies were placed. The user agency was required to deposit funds (such as payments for punitive compensatory afforestation, extra compensatory afforestation, compensatory afforestation, net present value (NPV) of forest land, Catchment Area Treatment Plan Funds, etc.).^{1. 2.} Then, on April 23, 2004, the Compensatory Afforestation Fund Management and Planning Authority (CAMPA), an authority created under Section 3(3) of the Environment (Protection) Act of 1986, was formally established by the Ministry of Environment and Forests (MoEF) of India in accordance with this order. CAMPA has jurisdiction over all of India. The Supreme Court affirmed that the payments to CAMPA were lawful under the Constitution.

The Compensatory Afforestation Fund's upkeep problems remained unresolved even after the establishment of the CAMPA framework. The Compensatory Afforestation Fund Bill, 2008 was drafted by the Central Government in 2008; however, it was not enacted before the Liechtenstein Lok Sabha⁶ was dissolved. The then-finance minister of India was urged to re-examine the whole matter of keeping a fund outside of the government's accounting system in a letter dated March 4, 2013. As a result, the CAMPA legislative process was reopened. The letter also recommended asking the Supreme Court to reconsider its ruling on the ad-hoc CAMPA and to let the money to be moved into the nation's Public Account.

The Evolution of the Compensatory Afforestation Fund Act, 2016:

The Indian Parliament Passed the Compensatory Afforestation Fund Act (CAF), 2016, to establish a formal framework for the gathering and application of money from compensatory afforestation. The purpose of the Act was to guarantee that appropriate steps were taken to make up for the loss of forest cover when forest land was redirected for uses other than forests, such as infrastructure development or industrial developments. Numerous

legal, social, and environmental issues have influenced this Act's development.

The Forest (Conservation) Act of 1980 established the idea of compensatory afforestation. When forest land was exploited for non-forest activities, project developers were obligated to offer substitute land for afforestation. On the other hand, afforestation was not consistently implemented in practice. Without proper compensation, forest area was being diverted, which resulted in deforestation and ecological imbalance.

Section 3 establishes the National Compensatory Afforestation Fund to collect and manage funds collected from deforestation activities. The fund is meant for compensatory afforestation and environmental restoration activities at the national level.

Section 4: It mandates the establishment of State Compensatory Afforestation Funds in each state to manage funds locally. This ensures that compensatory afforestation projects are implemented according to state-specific needs and conditions.

Section 5: Utilization of Funds, This section specifies how the funds from both national and state-level accounts should be utilized. The money can be used for activities such as afforestation, forest regeneration, wildlife protection, and improvement of forest infrastructure.

Section 7: Composition and Functions of the National and State Authorities. It outlines the composition of the National Authority for Compensatory Afforestation and the State Authorities. These bodies are responsible for the management and utilization of the funds. They also oversee the implementation of afforestation and related projects.

Section 8: Audit and Accountability, The Act requires that the funds be audited regularly to ensure transparency and proper utilization. It emphasizes accountability in the management of the funds, including the submission of annual reports on fund utilization.

Section 10: Monitoring and Evaluation, this section mandates the monitoring and evaluation of afforestation activities funded by the CAF. It ensures that the projects are executed as planned and achieve the desired environmental outcomes.

Judicial Interpretation of CAMPA:

T.N. Godavarman Thirumulpad v. Union of India (1995)

T.N. Godavarman Thirumulpad filed the PIL due to rampant deforestation in the Nilgiris Hills, a biodiversity-rich region in Tamil Nadu. Illegal timber operations were widespread, and the forest areas in Nilgiris were being destroyed at an alarming rate. This not only led to the loss of forest cover but also affected the livelihoods of indigenous communities and threatened the region's wildlife.⁵⁰⁸ The petitioner argued that the state forest departments and government authorities were failing in their duties to protect forests and prevent illegal logging activities. He claimed that the government was not implementing the Forest (Conservation) Act, 1980 effectively, which had been enacted to regulate the diversion of forest land for non-forest purposes.⁵⁰⁹ He sought the intervention of the Supreme Court to address these failures and to enforce existing forest protection laws. One important piece of legislation that regulated the use of forest land for non-forest activities was the Forest (Conservation) Act, 1980. This law prohibited the use of forest land for purposes other than forests without first obtaining central government clearance. The petitioner claimed that by permitting the diversion of forest land for industrial, agricultural, and development uses without the necessary approval, state governments and other authorities were regularly breaking the Act.

Arguments:

Petitioner's Arguments:

Illegal Deforestation: The petitioner claimed that vast areas of forests were being illegally deforested, and the authorities had failed to curb illegal logging activities. **Need for a Broad Definition of "Forest":** The petitioner argued that forests should be broadly defined not only to include areas recorded as "forests" in government records but also areas that fit the ecological definition of forests, even if not legally classified as such. **Failure of the Government:** The petitioner contended that both state governments and the central government were failing in their duty to implement the Forest (Conservation) Act, 1980 and other environmental laws effectively. **National Concern:** The petitioner urged the court to treat the issue as a matter of national importance and issue broad guidelines for forest conservation across India.

Respondent's Arguments (Union of India):

Defensive Position: The Union of India and various state governments initially took a defensive stance, arguing that forest conservation efforts were being undertaken.

⁵⁰⁸ ECOJURISPRUDENCE.ORG, <https://ecojurisprudence.org/initiatives/t-n-godavarman-thirumulpad-vs-union-of-india-ors/>, [(last visited, Sep 10, 2024)]

⁵⁰⁹ INDIANKANOON, <https://indiankanoon.org/doc/298957/>, [(last visited, Sep 11, 2024)]

Jurisdiction Issues: Some state governments argued that forest-related matters were a state subject and that the Supreme Court should not intervene in forest management at the state level. **Steps Taken:** The government agencies provided examples of actions taken to conserve forests and argued that they were taking steps to comply with the Forest (Conservation) Act, 1980.

Judgement:

The Supreme Court's judgment in this case became a landmark ruling in forest conservation and environmental jurisprudence in India. **Widened Definition of Forest:** The Court interpreted the term "forest" not only as per the dictionary definition but also extended it to include all areas that are recognized as forest in government records, regardless of ownership, classification, or legal status. It mandated that the Forest (Conservation) Act, 1980 would apply to all forested areas, including non-governmental forests, and that no deforestation could occur without prior approval from the central government. **Ban on Non-Forest Activities:** The Court placed a ban on the use of forest land for non-forest activities without approval from the central government. It also prohibited felling of trees in forest areas unless it was approved as part of an afforestation or forest management project. **Creation of Monitoring Committees,** The Court ordered the formation of the Central Empowered Committee (CEC) to monitor forest conservation and ensure compliance with the Forest (Conservation) Act, 1980. The CEC was given the responsibility to review various state government actions related to forest conservation and submit reports to the court.

Centre for Environmental Law, WWF-I v. Union of India (2013)

The case was filed in response to the alarming decline in India's tiger population. By 2013, it was estimated that less than 1,800 tigers were left in the wild, down from around 40,000 at the beginning of the 20th century.⁵¹⁰ This steep decline was attributed to various factors, including habitat destruction, illegal poaching, and human-wildlife conflict. Poaching for the illegal wildlife trade, where tiger parts were sold on the black market, further endangered the species. The Wildlife (Protection) Act, 1972 had provisions for the creation of National Parks, Sanctuaries, and Tiger Reserves to protect wildlife. Under this Act, Project Tiger was launched, and tiger reserves were set up across the country. However, there were serious lapses in the implementation of the law. Encroachment into protected tiger habitats, lack of effective management of tiger reserves, and insufficient action against poachers were widespread.

⁵¹⁰ELAW. ORG, <https://elaw.org/resource/centre-environmental-law-v-union-india>, [(last visited, Sep 11, 2024)]

Communities who live near forests, especially indigenous people, now have rights to the land and resources that have historically been theirs according to the Forest Rights Act (FRA), passed in 2006.⁵¹¹ Conflicts with conservation efforts resulted from the implementation of this Act, especially in tiger reserves where the government attempted to uproot native communities in order to protect tiger habitats. The petitioner contended that these villages were being relocated without proper compensation or rehabilitation and that the relocation process was mishandled. The National Tiger Conservation Authority (NTCA), set up under the Act to oversee tiger conservation, was not functioning effectively due to a lack of resources, proper staffing, and enforcement mechanisms.

Judgement:

The Court ruled that core areas of tiger reserves should be kept inviolate and free from human activity. It recognized the critical importance of providing tigers with undisturbed habitats for breeding and movement. The judgment reaffirmed the need for the relocation of human settlements from core areas of tiger reserves to protect tiger populations. The Court recognized the rights of forest-dwelling communities under the Forest Rights Act, 2006, but it also stressed the importance of securing critical tiger habitats for conservation. The Court ruled that relocation of communities from core areas could take place, but it had to be conducted in accordance with the provisions of the Wildlife (Protection) Act, 1972, and in a manner that ensured fair compensation and rehabilitation for the displaced communities. The Court required that any relocation of tribal communities must be voluntary and that their rights under the Forest Rights Act must be respected. Court emphasized the need for the NTCA to play a more active and effective role in tiger conservation. It directed the NTCA to ensure better management of tiger reserves and monitor compliance with laws related to wildlife protection.

State of Himachal Pradesh v. Ganesh Wood Products (1995)

The case of State of Himachal Pradesh v. Ganesh Wood Products (1995) revolves around the diversion of forest land for non-forest purposes and the implementation of compensatory afforestation measures.⁵¹² The central issue was whether a wood-based industry could be established in an area that involved the conversion of forest land for non-forest use, and whether adequate steps had been taken to ensure ecological balance, including compensatory afforestation.

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SORTMYLAWSHCOOL, <https://sortmylawschool.com/subject/EnvironmentalLaw/66518c46002a4e20fd5b>, [(last visited, Sep 11, 2024)]

⁵¹² INDIAN KANOON, <https://indiankanoon.org/doc/1149168/>, [(last visited, Sep 12, 2024)]

Ganesh Wood Products, a private company, sought to establish a veneer and plywood manufacturing unit in the state of Himachal Pradesh.⁵¹³ The establishment of this wood-based industry required the diversion of forest land for industrial purposes. The company planned to use forest resources, particularly wood, as the primary raw material.

The diversion of forest land for non-forest purposes is regulated by the Forest (Conservation) Act, 1980. The Act requires any project that seeks to use forest land for non-forest activities to obtain prior approval from the Central Government. One of the conditions for granting approval is the implementation of compensatory afforestation to mitigate the loss of forest cover. The case was filed after concerns were raised about the potential ecological damage that could result from the establishment of the wood-based industry in a forest-rich state like Himachal Pradesh. The state government granted permission for the establishment of the industry without fully considering the long-term ecological impact and the need for compensatory afforestation. Environmentalists and local communities argued that diverting forest land and allowing industries that rely on wood could cause deforestation, affect biodiversity, and disturb the ecological balance of the region.

Violation of CAMPA Guidelines:

One of the key contentions in the case was that the state of Himachal Pradesh and Ganesh Wood Products had not adequately followed the guidelines established under the Compensatory Afforestation Fund Management and Planning Authority (CAMPA). When forest land was taken out of use for uses other than as a forest, CAMPA was created to make sure that compensatory afforestation took place. To counteract the ecological harm, new forests were to be planted using the money raised by companies that exploited forest land.

Judgement:

The Supreme Court upheld the principles of the Forest (Conservation) Act, 1980, and ruled that forest land could only be diverted for non-forest purposes with strict compliance with the Act. The Court made it clear that the diversion of forest land for setting up industries, including wood-based industries like Ganesh Wood Products, required the fulfilment of environmental safeguards, especially compensatory afforestation. The Court recognized the significance of maintaining an ecological balance. It emphasized that forests play a crucial role in sustaining biodiversity, regulating the climate, and supporting livelihoods. This judgment highlighted that while economic development and

⁵¹³ LEAP. UNEP. ORG, <https://leap.unep.org/en/countries/in/national-case-law/state-himachal-pradesh-and-others-appellants-v-ganesh-wood-products>, [last visited, Sep 12, 2024]

industrialization are important, they cannot come at the cost of environmental degradation. The Court emphasized the need for sustainable development, where environmental protection and industrial progress must go hand in hand.

The Court also discussed the role of CAMPA in managing funds for afforestation. It noted that funds collected from industries diverting forest land must be used transparently and effectively for afforestation projects.

Conclusion:

India's dedication to striking a balance between development and ecological sustainability is demonstrated by the creation of environmental laws and the founding of organizations such as CAMPA, which emphasize the country's journey towards forest conservation. A significant step toward institutionalizing the process of compensatory afforestation and efficiently allocating funding for forest regeneration and biodiversity protection has been taken by the historical evolution of environmental governance, which culminated in the Compensatory Afforestation Fund Act, 2016. An organized, legal framework for compensating afforestation has developed as CAMPA's key tool for ensuring that the diversion of forest area for development purposes is balanced.

This framework offers an accountable and transparent method to replenish depleted forest cover and bring the ecosystem back into balance. However, ongoing supervision, efficient monitoring, and modification are required for the application of these legislative obligations. The evolution of environmental law in India, particularly through the lens of the Forest (Conservation) Act, 1980 and the Compensatory Afforestation Fund Act, reflects a progressive shift towards sustainable development. By securing funds for afforestation and forest management, CAMPA plays a vital role in protecting India's ecological wealth. Moving forward, the success of these efforts will depend not only on the enforcement of laws but also on the active participation of local communities, the efficient use of resources, and the prioritization of long-term environmental benefits over short-term economic gains.

Thus, CAMPA, alongside India's growing body of environmental law, remains central to the nation's forest conservation strategy, ensuring that future generations inherit a more balanced, resilient, and sustainable natural environment.

The Role of Judiciary in Corporate Environmental Responsibility - An Overview

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Abstract

Corporate Environmental Responsibility (CER) extends the principles of Corporate Social Responsibility (CSR), which traditionally includes philanthropic, ethical, legal and economic responsibilities. As environmental issues such as pollution and climate change have become more prominent, CSR has increasingly integrated environmental stewardship into its framework. In India, the Companies Act 2013 formalizes CSR activities, with Schedule VII dealing several environmental responsibilities. These include ensuring environmental sustainability, maintaining ecological balance, protecting flora and fauna, promoting animal welfare, supporting agroforestry, conserving natural resources, and preserving the quality of soil, air, and water. This paper examines how judicial interventions have influenced the enforcement of CER by analysing landmark legal cases and judicial pronouncements. It demonstrates how these judicial actions have established and reinforced environmental regulations, ensuring corporate compliance and fostering sustainable practices. The findings underscore the Judiciary's crucial role in enhancing corporate accountability in environmental protection.

Keywords: *Corporate Environmental Responsibility, Corporate Social Responsibility, Sustainable development.*

Introduction

Corporate Environmental Responsibility (CER) is an important component of Corporate Social Responsibility (CSR). It requires firms to positively affect economic, social, environmental growth, so benefitting society as a whole. The environment, which includes vital components such as water, air, and soil, is critical for maintaining life and human activity. While companies are important for economic development, they also contribute significantly to environmental degradation and pollution. Historical events such as the Minamata illness in Japan (1956), the Bhopal gas catastrophe (1984), and the USSR's Chernobyl nuclear accident (1986) demonstrate how industrial operations may damage human health, animals, aquatic life, and plant ecosystems. These incidents sparked a global uproar and heightened calls for firms to improve their environmental policies. The notion of environmental responsibility has deep historical roots, with ancient texts emphasizing citizens responsibility to maintain natural resources. Despite this longstanding knowledge, many current business operations exacerbate environmental

damage. This emphasizes the essential need for comprehensive corporate environmental responsibility measures. In India, the judiciary playing an increasingly active role in enforcing corporate environmental responsibility. Although these legal decisions are vital, meaningful improvement will need widespread understanding of the necessity of environmental protection, as well as proactive participation from individual and corporations.

Corporate Social Responsibility: -

The Companies Act 2013 and the Companies (Corporate Social Responsibility Policy) Rules of 2014, effective April 1, 2014, have turned CSR from charitable initiative to mandatory requirement. Furthermore, the CSR mandate is governed by a number of announcements, circulars, guidelines, and reports released by the Ministry of Corporate Affairs (MCA) and the Government of India on a regular basis. At the same time, the Companies act 2013 established an obligation on every firm's director to execute bona fide efforts for environmental responsibility⁵¹⁴ notably in the context of CSR, and even mandated penalties for noncompliance⁵¹⁵.

Section 135 of the Indian Companies Act 2013 established the framework for CSR for certain companies. It applies to companies with net worth of ₹500 crore or more, a turn over ₹1000 crore or more, or a net profit of ₹5 crore or more. These companies are required to constitute a CSR committee with at least three directors, including one independent director⁵¹⁶, and develop a CSR policy⁵¹⁷. They must spend at least 2% of their average net profits from the last three years on CSR activities as outlined in Schedule VII of the Companies Act 2013⁵¹⁸. Key amendments include the 2019 update, which mandates that unspent CSR funds be transferred by the company to an Unspent CSR account⁵¹⁹ and introduces penalties such as fines or imprisonment for non-compliance⁵²⁰. The 2021 amendment requires an impact assessment for CSR obligations of ₹10 crore or more and the impact assessment reports shall be annexed to the annual report on CSR⁵²¹ and the company mandatorily disclosure of CSR policies and the project approved by the board on the company's website.⁵²² Section 135 is followed by Schedule VII, which lists activities that firms can incorporate in their CSR policy. Aside from several social issues, the appropriate environmental problems listed under item 4 of Scheule VII are ensuing environmental sustainability,

⁵¹⁴ The Companies Act, 2013, Section 166(2): a director of a company shall act in good faith in order to promote the objects of the company for the benefit of its members as a whole, and in the best interests of the company, its employees, the shareholders, the community and for the protection of environment.

⁵¹⁵ Section 166(7): Monetary punishment as fine of minimum Rs.1 lakh to maximum of Rs.25 lakh.

⁵¹⁶ Section 135(1) of Companies act 2013.

⁵¹⁷ Section 135(3).

⁵¹⁸ Section 135(5).

⁵¹⁹ Section 135(6).

⁵²⁰ Section 135(7).

⁵²¹ Companies (CSR Policy) Amendment Rules dt.22.01.2021, Rule 8

⁵²² Supra note.8, Rule.9

ecological balance, flora and fauna protection, animal welfare, agroforestry, natural resource protection, and maintaining soil, air, and water quality, among others. The MCA stated in its Circular No.21/2014, dt.18.06.2014, that items under Schedule VII should be liberally interpreted in order to achieve its goals. Renewable energy projects will be classified as environmental sustainability, which includes ecological balance and preservation of natural resources.

Corporate Environmental Responsibility:-

The Corporate Environmental Responsibility (CER) is a contemporary term that encompasses concepts, activities, and values. It emphasizes the important role firm play in tackling today's environmental issues. Further CER focuses on firms that take ecologically beneficial steps to reduce society's impact on our ecosystem and promote environmental sustainability.⁵²³ The environment which is the significant problem facing by the world in the present scenario. Webster's Dictionary defines the environment as "the complex of physical, chemical, and biotic factors (such as climate, soil and living things) that act upon an organism or an ecological community and ultimately determine its form and survival."⁵²⁴

The CER entails the creation of infrastructure for the provision of portable water, hygiene facilities, healthcare, educational resources, reducing pollution, increasing renewable resources, vocational training, network drainage systems and electricity supply, including integration of solar energy. It also involves developing waste disposal systems, delivering technical help, encouraging agricultural training to increase crop and fodder yields, implementing rainwater collection, protecting soil moisture, greening roadsides and community forestation, and so on.⁵²⁵ Neil Gunningham (2009) outlines how the CER movement is affecting corporate conduct and creating concerns that extend beyond industry leaders. He believes that examining the differential adoption of CER efforts among enterprises in the same industry can shed light on these concerns.

Similarly, CER became mandatory just like CSR, In 2018, the Ministry of Environment, Forests and Climate Change MoEF&CC), the nodal agency for climate change cooperation and global negotiations, announced a mandatory fund allocation for CER for obtaining Environmental Clearance (EC). The allocation is limited to up to 2% of capital investment in green field projects, and 1% of additional capital investment in brown field projects is confined to

⁵²³ Corporations & Environmental Responsibility, A Weekend of lectures, Analysis and Discussion, <https://www.andrew.cmu.edu/course/99-522/ejbackground.html>.

⁵²⁴ <https://www.merriam-webster.com/dictionary/environment>.

⁵²⁵ Holmon, Sandra. "Environmental Corporate Social Responsibility." Eastern and Central European Journal on Environmental Law, vol. 30, no. 1, 2022, pp. 5-86. HeinOnline.

the surrounding region⁵²⁶. The Expert Appraisal Committee (EAC) can adjust the declared CER percentage. It is important to remember that the specified CER actions are not confined to the area of environmental concern.

Role of Judiciary in CER:-

The judiciary, as the guardian of the rule of law, plays an important and strong position in carrying out and upholding essential international and national laws. In terms of protecting the environment and sustainable growth, such judicial actions will assist in reducing environmental pollution. The 2002 Johannesburg Principles on the Role of Law and Sustainable Development underlined this proof, stating that:-

“An independent Judiciary and judicial process is the vital for the implementation, development and enforcement of the environmental law, and that members of the Judiciary, as well as those contributing to the judicial process at the national, regional and global levels, are crucial partners for promoting compliance with, and the implementation and enforcement of, international and national environmental law.”⁵²⁷

Since the 1950s, the Indian judiciary has been recognized for its contributions to the environmental protection. The Supreme Court (SC) ruled that the Principle of Sustainable Development would be breached if industry had a significant negative environmental impact⁵²⁸. Thus, while using numerous concepts and jurisprudential features, the judiciary plays an important role in regulating corporate behaviour at the expense of the environment. **In M.C. Mehta v. Union of India**⁵²⁹, Chief Justice Bhagwati emphasized the need for new concepts and standards to address the challenges of a highly industrialized economy and mentioned that, "We no longer require the crutches of a foreign legal order." The Indian Judiciary has proposed the following principles and doctrines⁵³⁰:

- Principle of Absolute Liability
- Polluter Pays Principle
- Precautionary Principle
- Public Trust Doctrine
- Sustainable development

Principle of Absolute Liability:

⁵²⁶ Ministry of Environment, Forest and Climate Change, Government of India, vide. Office Memo No. F No.22-65/2017-IA.III, (May 1, 2018) para 6(II-IV).

⁵²⁷ WSSD: Johannesburg Principles on the Role of Law and Sustainable Development, DEPARTMENT OF FOREIGN AFFAIRS , REPUBLIC OF SOUTH AFRICA (2002), <https://www.eufje.org/images/DocDivers/Johannesburg%20Principles.pdf>.

⁵²⁸ Indian Council for Enviro-Legal Action v. Union of India, (1996) 5 SCC 281

⁵²⁹ AIR 1987 SC 1086, PP.1089

⁵³⁰ Tiwari, Sanjeev Kumar. "Sustainable Development and Protection of Environment in India: Judicial Perspective." Indian Journal of Law and Justice, 2013, vol. 4, no. 2, pp. 91-110. HeinOnline.

In **M. C. Mehta v. Union of India**, the Supreme Court established the idea of absolute liability for industries that handle dangerous chemicals⁵³¹. The firm dealing with hazardous or inherently dangerous industries, which constitute a possible threat to health or safety, bears an unequivocal and non-delegatable obligation to the community to guarantee that no harm is caused to anybody as a consequence of toxic or inherently dangerous operations. Corporations that participate in intrinsically harmful operations are obligated to reimburse all persons harmed by an accident, and the premise is absolute liability. The Supreme Court established absolute liability norms for corporations, dismissing exemptions such as an act of God⁵³².

The SC justified absolute liability by citing the following reasons:

- Enterprises that engage in hazardous activities for private profit have a social responsibility to reimburse people who suffer as a result of their actions.
- Enterprises have the resources to identify and protect against potential hazards and risks.
- If a company is allowed to engage in hazardous or intrinsically risky activities for profit, the law assumes that approval is contingent on the enterprise covering the expenses of any accidents that occur as a result of such activities.
- Enterprises that engage in hazardous or inherently dangerous activities must indemnify those who suffer as a result of their actions, regardless of how carefully they were carried out.

Polluter Pays Principle :-

According to this theory, polluting industries must compensate for the adverse effects created by their activities. According to the SC, every individual or company that causes environmental damages has total culpability. They must not only pay victims but also bear the costs of correcting the environment damage caused by their reckless acts. In **Vellore Citizens Welfare Forum v. Union of India and Others**⁵³³ the Supreme Court examined the concept of sustainable development, emphasizing both the polluter pays principle and the precautionary principle. The petitioner, Vellore Citizens Welfare Forum, filed a public interest writ petition highlighting pollution caused by untreated wastewater discharged by tanneries and other industries in Tamil Nadu. The Court addressed how tanneries discharged untreated sewage into agricultural lands, contaminating rivers, lakes, and waterways, rendering the river water undrinkable and affecting the subsoil water and soil, thus making it unsuitable for agriculture. Justice Kuldip Singh, delivering the ruling, acknowledged that

⁵³¹ M.C.Metha V UOI AIR 1987 SC 982

⁵³² Indian Council for Enviro Legal Action V UOI AIR 1999 SC 1502.

⁵³³ (1996) 5 SCC 959,

while such enterprises are vital for the country's prosperity by generating foreign revenue and employment opportunities, the principle of sustainable development must balance ecological preservation with development.

Doctrine of Public Trust: -

The public trust theory states that some resources, such as air, sea, water, and forests, are so important to society that private ownership would be wrong. Natural resources are a gift from nature and should be accessible to everybody, regardless of socioeconomic condition. The theory requires the government to preserve assets that are in private ownership or commercial use for the benefit of the public. The public trust theory was invoked in the **Span Motel case**⁵³⁴. Span Motels established a resort on the banks of the Beas River in Himachal Pradesh. Span Motels dredged and built concrete barriers, wire crates, and other structures to redirect river flow. The court ruled against the motel's lease, citing the state's responsibility to manage natural resources. The court overturned the motel's lease, stating that "the state is the guardian of all natural resources that are by nature intended for public use and enjoyment." Natural resources benefit society as a whole. As a trustee, the state is legally required to safeguard natural resources. These resources are intended for use by the public and cannot be transferred to private ownership." The court ordered the hotel to compensate for environmental and ecological damage in the region.

Precautionary Principle :

This notion, embedded in the concept of sustainable development, is widely recognized as essential for both sustainable development and environmental conservation. Principle 15 of the Rio Declaration asserts that governments should take preventive measures to protect the environment according to their capacities. It specifies that a lack of scientific certainty should not be used to delay cost-effective measures to prevent significant or irreparable environmental harm. This cautious approach is believed to promote the development of clean technologies. In **M.C. Mehta v. Union of India**⁵³⁵, the court adopted the principle of sustainable development and applied the precautionary principle, mandating environmental measures. The court ruled that state and municipal governments must anticipate, prevent, and address the underlying causes of environmental degradation. The Petitioner filed a public interest litigation to highlight the destruction of the Taj Mahal caused by air pollution from neighbouring foundries and hazardous businesses. He asked the court to make orders requiring prompt measures to reduce air pollution in

⁵³⁴ AIR 1999 SC 2468

⁵³⁵ AIR 1997 SC 734.

the Taj Trapezium zone. Justice Kuldip Singh, known for his environmental decisions, gave the decision, identifying the 292 polluting companies in the region as the principal causes of pollution. The court ordered certain industries to transition to natural gas as an industrial fuel within a certain timeframe. Industries unable to secure natural gas connections were instructed to cease operations and comply with the court's directives. In the **Andhra Pradesh Pollution Control Board case**⁵³⁶, the court referenced the Vellore case⁵³⁷ to explore various aspects of the precautionary principle. This principle involves anticipating and avoiding environmental damage or opting for the least damaging behaviour, especially in the face of scientific uncertainties. Environmental protection should balance well-being, property, and economic interests while also preserving the environment for its own sake. Precautionary obligations arise not only from physical dangers but also from concerns about potential risks. According to the precautionary principle, when there is a clear risk of significant or permanent harm—such as species extinction or widespread harmful exposure—those proposing potentially hazardous activities may need to bear the burden of proof. This precautionary approach aims to protect the environment by prioritizing preventive measures. According to **Vellore Citizens Welfare Forum v. Union of India and Others**⁵³⁸,

- the precautionary principle requires state and municipal governments to anticipate, prevent, and address environmental deterioration.
- When there is substantial and irreparable harm, scientific uncertainty should not be exploited to delay environmental protection efforts.
- The actor or developer is responsible for proving that their actions are ecologically friendly.

Sustainable development :

The Stockholm Declaration of 1972 was the first worldwide discussion on the idea of sustainable development. In a paper titled 'our shared future', the World Commission on Environment provided a clear definition of the idea. Sustainable development prioritizes meeting current needs without sacrificing future generations' ability to fulfill their own needs. The notion was further considered under Agenda 21 of the UN Conference on Environment and Development. The court in **Rural Litigation and Entitlement Kendra, Dehradun v. State of Uttar Pradesh**⁵³⁹ (Doon Valley Case) created the concept of sustainable development and ordered the closure of mining in the surrounding region to safeguard the environment. Furthermore, resources obtained in the environment should be used with extraordinary prudence and

⁵³⁶ AIR 1999 SC 812, p.820

⁵³⁷ AIR 1996 SC 2715.

⁵³⁸ (1996) 5 SCC 659,212,268

⁵³⁹ AIR 1989 SC 594

care, and mankind's permanent assets should not be exhausted in a single generation.

The judiciary applies the Brundtland report's main principles of sustainable development, including intergenerational fairness, intragenerational equity, the precautionary principle, and the polluter pays concept. The judiciary has implemented these principles whenever it comes across instances involving environmental crises caused by indiscriminate activities like mining, extraction of minerals, stone-crushing, tree-falling, urbanization, industrialization, and ecological instability.

A few key judicial rulings in this area are listed below.

In the case of **Indian Council for Enviro -Legal Action V UOI**⁵⁴⁰, the SC ordered the shutdown of all plants, factories, and industries that produced 'H' acid and released hazardous waste from sulfuric acid. The court also ordered them to make a compensation for environmental restoration. Furthermore, the SC highlighted the need for stronger monitoring and scrutinizing over the formation and operation of every chemical sector, regardless of size, and to assure their compliance with environmental protection regulations before their real beginning.

M C Mehta V. Union of India⁵⁴¹ (Ganga Water Pollution case) involved tanneries near Kanpur that discharged effluents into the Ganga despite installing primary treatment plants. The Supreme Court ruled that the economic ability of the tanneries should not be considered when requiring them to establish primary treatment plants. The tanneries were ordered to stop operations and not discharge effluents. The court further stated that "we are aware that the closure of tanneries may result in unemployment and revenue loss, but life, health, and ecology are more important to the people." The aforementioned observations demonstrate the court's concern for people's lives and health, as well as the ecosystem.

Coca Cola Groundwater exploitation case

The case of **Perumatty Grama Panchayat vs. State of Kerala**⁵⁴² is a classic example of the issues and implications of Corporate Environmental Governance, where the village panchayat granted Hindustan Coca-Cola Beverages Private Ltd. a license to produce its beverages in Plachimada, a small settlement in Palakkad District known as the 'rice bowl of Kerala,' predominantly inhabited by Adivasis with agriculture as the main occupation. The company's chemical waste caused severe water pollution, leading the village to refuse license renewal and protest the environmental damage. Public health officials deemed some wells unsafe, and a report from the

⁵⁴⁰ AIR 1996 SC 1446.

⁵⁴¹ AIR 1988, SC 1037

⁵⁴² 2004 (1) KLT731

Indian NGO Centre for Science and Environment confirmed contamination. The government formed a Joint Committee, and the report drew widespread attention. In the legal battle, Coca-Cola failed to renew its license, and although the Kerala government initially banned its beverages in 2006 due to pesticide levels, the High Court later overturned the ban.

The legal battle not only cost the company considerable time and years of effort but also resulted in several major losses. The company suffered a significant loss of goodwill both nationally and globally, losing customer trust and damaging its reputation. In India, Coca-Cola's sales plummeted by forty percent within two weeks following the release of the 2003 CSE report. Overall sales fell by fifteen percent, starkly contrasting with the previous annual growth rate of twenty-five to thirty percent. The company faced global criticism and massive protests in the USA, with ten universities banning its beverages from their campuses. Since then, Coca-Cola has implemented substantial changes and improved its Corporate Social Responsibility and Corporate Environmental Responsibility policies.

The Supreme Court in **M. C. Mehta v. Union of India**⁵⁴³, also known as the **Shriram Food and Fertilizer Case**, ordered an enterprise that manufactures hazardous chemicals and gases to take every precaution required before reopening the plant to protect workers and residents. In this decision, the Supreme Court recognized the right to a healthy environment as part of the right to life. The release of chlorine gas from the factory killed one person and caused difficulty for workers and neighbours. The company's caustic chlorine facility was not properly maintained and operated by management, leading to this issue. The case was presented before the Court as a public interest action. The management must deposit Rs 20 lacs as security for compensation claims from victims of the Oleum gas leak with the Registrar of Court. A bank guarantee of Rs 15 lacs would be placed and encashed if chlorine gas escapes within three years of the verdict, causing death or harm to workers or nearby residents. The court approved a partial reopening of the factory, subject to specific conditions.

In **M.C.Mehta V Kamal Nath**⁵⁴⁴, the SC emphasized that if a hotel dumps untreated sewage into the Beas River, it destroy aquatic life and pollutes the water, hence, it cannot be permitted to function. Any disruption of important environmental components, including air, water, and soil, poses a risk to life. In **T.N.Godavarman V UOI**⁵⁴⁵ a Public Interest Litigation (PIL) was filed by the concerned citizen resulting in an order prohibiting the leasing of forest land for non-forest activities. The government was also directed to allocate funds for the conservation of forest land. Further the Justice Y.K.Sabharwal

⁵⁴³ 1986) 2 SCC 176

⁵⁴⁴ AIR 2000 SC 1977

⁵⁴⁵ (2006) 5, SCC 28

stated that, legislative actions have moved responsibilities from states to the central government due to state compulsions and forest decline. Furthermore, any damage to the environment may violate the right to enjoy a healthy life granted by Article 21, which must be preserved. The Constitution imposes on this Court a duty to safeguard the environment. According to the well-known case of **Shri Rafique Ansari V Damodar Valley Corporation**⁵⁴⁶ the Central Information Commission held, in order to fulfil Corporate Social Responsibility and Corporate Environmental Responsibility, every corporation must devise socio economic strategies and programmes that empower people in its area. The examples give insight into how CER rules are handled in our system and their significance. In the case of **Abhilash Textiles Vs. Rajkot Municipal Corporation**⁵⁴⁷, the Gujarat High Court rules that profits should not come at the expense of public health. This is the primary objective of the law. “ No one has the right to conduct business in such a way that it disrupts society. One cannot run a business in such a way that it becomes a health threat for the entire society.

Environment vis-a-vis Constitution: -

After the 1972 Stockholm Conference heightened environmental awareness, the Indian constitution was updated in 1976 to include environmental protection. The 42nd Constitutional Amendment Act of 1976 established environmental protection provisions in the Directive Principles of State Policy (DPSP) and Fundamental Duties. According to Article 48A, ‘the state shall strive to protect and improve the environment and safeguard the forests and wildlife of the nation’. Article 51A(g) requires ‘citizens to protect and improve the natural environment, including forests, lakes, rivers, wildlife, and to show compassion towards living creatures. In various cases, the SC has held that, “the right to life under Article 21 includes the right to pollution free water and air, which is necessary for full enjoyment of life. It further claims that “if anything affects or weakens the standard of life in contradiction of laws citizens have the ability to seek remedy under Article 32 to deal with polluting of air or water, which might harm their standard of life. In the case of **Subash Kumar Vs State of Bihar**⁵⁴⁸ the petitioner requested an injunction against west Bokaro Collieries and temporary remedies, including the ability to recover slurry allegedly spilled into the river by the respondent company. The Sc dismissed the case, However, the court stated that Article 21 guarantees access to clean water and air for a fulfilling existence. Individuals have the right to a remedy for environmental pollution, including eliminating sources and contaminating water or air that might impair their quality of life.

National Green Tribunal :-

⁵⁴⁶ <https://indiankanoon.org/doc/249492/>

⁵⁴⁷ AIR 1988 Guj 57

⁵⁴⁸ AIR 1991 SC 420

National Green Tribunal has been established under National Green Tribunal Act 2010, the NGT addresses issues related to environmental protection and conservation. It aims to provide prompt and effective resolutions for cases involving environmental safeguarding, forest conservation, and the management of natural resources, enforcement of environmental rights, offering relief and compensation for harm to individuals and property, as well as handling related matters. In recent years, the National Green Tribunal has made substantial contributions to the legal aspects of environmental preservation. In the case of **Samir Mehta V Union of India**,⁵⁴⁹ in which as a result of an oil spill from a sinking ship named M.V.Rak, thick film of oil was deposited on the sea's surface, causing significant damage to marine life. In this case, the Green Tribunal maintains the polluter-pays principle concept and orders the corporation liable to pay Rs.100 crore in compensation. There have been numerous more cases in which the Green Tribunal has sought to defend people's human rights against company trade related activity.

Conclusion:-

India's goal of establishing a welfare state has had a profound impact on the formation of social law. Traditional judicial techniques are insufficient to solve current concerns; thus, judges have taken on increasingly activist duties. The Indian court has taken a proactive approach to protecting rights regarding the environment through judicial activism and public interest lawsuits. Despite the judiciary's significant efforts, difficulties remain. Some businesses treat corporate social responsibility (CSR) as a simple formality while disregarding their corporate environmental responsibility (CER). They openly promote CSR initiatives without appropriately addressing their environmental impact. This gap underscores the need for a genuine commitment to Corporate Environmental Responsibility (CER), where companies implement meaningful environmental policies rather than just superficial CSR compliance. The judiciary's strong enforcement of environmental laws reinforces this need, ensuring that CER commitments are upheld sincerely.

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⁵⁴⁹ Original application no.24 of 2021 and (M.A.no.129 of 2012 , M.A.Nos.557&737 of 2016.

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Green Finance as a Catalyst: Enhancing Corporate Sustainability through Financial Innovation

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Abstract

With the changing trajectory in global finance, green finance has emerged as a transformative force in promoting corporate sustainability, offering innovative financial solutions that align economic growth with environmental stewardship. Green finance encompasses a wide range of financial activities and instruments which are specially designed to support sustainable environmental outcomes, mitigate climate change, and foster a transition towards a low-carbon economy. This paper focuses on the multifaceted impact of green finance on corporate sustainability and examines how financial instruments and strategies contribute to the broader goal of environmental responsibility and sustainable development. Green finance encompasses a range of practices, including green bonds, sustainable investment funds, and environmental risk management, all designed to support projects and initiatives that address climate change and resource depletion. This paper underscores the critical role of green finance in fostering a sustainable corporate practice. The paper examines the challenges and opportunities associated with green finance, including regulatory frameworks, market dynamics and the need for a standardized reporting with metrics and argues that while green finance has the potential to advance corporate sustainability significantly, its effectiveness depends on robust implementation, transparent practices and an active stakeholder engagement. By harnessing the power of green finance, corporations can not only enhance their sustainability performance but also bring positive impact across industries and economies.

Keywords: sustainability, green finance, green bonds, environment, corporations.

Introduction

In an era where environmental challenges are concerns that are on rise. The paradigm shift towards environmentally responsible practices is no longer just an ethical choice but a necessity to address the urgent global crisis which is poised by climate change, resource depletion and environmental degradation. Central to this change is green finance, a financial model which not only funds environmental projects but also aims to insert a sense of sustainability in the heart of corporate governance and operations. With a potential to bridge the gap between financial markets and sustainability goals, making it act as a

catalyst for corporate sustainability through mechanisms of innovative finance systems. As we enter a phase of high quality growth, sustainable economic and environmental development is increasingly becoming a focus as we enter a phase of high-quality growth. Green finance deals with any financial action or decision-making process that links economic activities with environmental considerations. While allocating capital, companies often put an emphasis on environmental cost-benefit analysis and risk factors and encourage a balanced progress between the economy and the environment.⁵⁵⁰ In recent times, green finance has gained significant attention.

The United States introduced a Comprehensive Environmental Response, Compensation, and Liability Act in 1980, which was followed by the growth in financial support to businesses that work in green industries. This led to the development of a green finance system where the creation of green finance laws, and the establishment of national environmental finance centers, advisory committees and environmental finance center networks. Further in June 2019, the EU launched the EU Classification Scheme for Sustainable Finance and the EU Green Bonds Standard, with the former providing a foundation for the growth of sustainable finance in the region.⁵⁵¹ Grounded on the principle of green credit, green finance encompasses a range of administrative measures which would require commercial banks and other financial institutions to research and develop pollution control technologies, engage in ecological protection and restoration and create and utilize new energy resources. This approach focuses on economic production, green product manufacturing, and environmentally friendly agricultural practices. It involves providing loans to support relevant projects and institutions with favorable low interest rates while restricting investments in polluting enterprises and imposing higher interest rates on such ventures.⁵⁵²

Sustainable corporate governance means that the day to day activities of the company are conducted in a way that considers economic development, society and the environment in an equitable manner. It includes a company's endeavors to reduce negative externalities, enhance society and achieve growth in market share profitability. There is increasing recognition of the role of financial innovation in advancing the cause of corporate sustainability

⁵⁵⁰LEE JW, 'Green Finance and Sustainable Development Goals: The Case of China' (2020) 7 *The Journal of Asian Finance, Economics and Business* 577 <<https://doi.org/10.13106/JAFEB.2020.VOL7.NO7.577>> accessed 11 September 2024

⁵⁵¹Li X and Yang Y, 'Does Green Finance Contribute to Corporate Technological Innovation? The Moderating Role of Corporate Social Responsibility' (2022) 14 *Sustainability* 5648 <<https://www.mdpi.com/2071-1050/14/9/5648>> accessed 11 September 2024

⁵⁵² Xu L, 'On the Evaluation of Performance System Incorporating "Green Credit" Policies in China's Financial Industry' (2013) 2 *Journal of Financial Risk Management* 33 <<https://www.scirp.org/journal/paperinformation?paperid=32636>> accessed 11 September 2024

through the creation of new instruments that combat environmental issues. These days, green bonds, sustainability-linked loans and other such product-based innovative financing instruments are essential in fostering businesses to fulfill climate projects and their profitability in one. For one, such green performance-linked loans are also provided to the firms which help in achieving certain green performance metrics worked out in advance, for instance carbon footprint reductions or resource savings. In case of meeting those requirements, they will also receive lower interests from the loans or some bonuses, causing intersection of profits and pollution reversesable. Financial innovation is also critical in solving the issues related to environmental management.

Financial Instruments and Mechanisms in Green Finance

Green finance has emerged as a major mechanism that propels corporate sustainability, with new financial instruments emerging incessantly to support environmentally friendly initiatives. These instruments are meant for enabling investments in projects that are sustainable, reducing carbon footprints towards a low-carbon economy. Some of the most notable tools in green finance include green bonds, sustainable investment funds, green loans, carbon credits, and offsets.

Green Bonds: Structure and Impact

Green works the same as typical bonds, but usually, the capital raised through green bonds is used only for environmentally friendly projects. These bonds have a 'use of proceeds' clause that will assure money goes to projects such as renewable energy development, energy-efficient buildings, and pollution reduction. This clause makes the green bond different from the traditional bonds which may finance corporate activities.

The demand for green bonds has been one of the growing global needs from corporations and governments in their attempt to appear green. Green bonds are not only enablers of companies to finance eco-friendly projects but also act as a signal to investors and other stakeholders that genuinely care about environmental stewardship which would improve their reputation. Large-scale public sustainability initiatives that involve infrastructure development and renewable energy programs have increasingly begun to be issued by governments through the issuance of green bonds.

The green bonds are among the most exciting growth areas in the world market today as companies and governments compete in proving their commitment to sustainability. A firm would not only use the issuance of green bonds to finance its environmentally friendly projects but also give assurance

of a genuine intention for environmental stewardship that has increased the organization's reputation amongst stakeholders and investors. More and more, governments all over the world issue green bonds that finance major public sustainability initiatives in infrastructural development and renewable energy-related programs.

Sustainable Investment Funds

Sustainability investment funds are one of the various financial tools in the green finance ecosystem. Green funds are those that give capital to firms and projects that meet specific environmental, social, and governance (ESG) criteria. Because these funds choose sustainable companies, the money raised from the market allows green businesses to continue participating in environmental sustainability, corporate social responsibility, and effective corporate governance.

Sustainable investment funds can be tailored into a lot of sectors and investment strategies. With a special focus on industries such as renewable energy, clean technology or waste management with others taking an approach to invest in companies across multiple sectors which demonstrate strong ESG performance. These funds encourage organizations to move ahead with a more sustainable practice in order to attract investment. With the growth of ESG rating systems there has been a rise in the instances of sustainable investment funds which assess the performance of sustainable investment funds which assess the company's performance in environmental sustainability, social impact and corporate governance. These ratings allow investors to make informed decisions with respect to capital allocated on a company who has commitment towards sustainability.

Green Loans and Credit Facilities

Green loans and credit facilities are designed to support projects that are beneficial environmentally through offering favorable loan terms to companies that commit to sustainability. These tools provide businesses with the necessary capital to implement green projects such as waste reduction initiatives, energy efficient technologies and sustainable resource management. It typically offers more attractive interest rates and repayment issues that are compared to conventional loans as they are designed to incentivize companies to adopt a sustainable practice.

Carbon Credits and Offsets

Carbon Credits are marketable permits that each reflect one metric ton of carbon dioxide (CO₂) emissions or other such greenhouse gases that a business is allowed to emit. Carbon credits are predominantly used in the

context of emissions trading in which companies are given a fixed amount of credits which depends on their emissions and further are allowed to purchase more credits or sell the extra ones. Carbon offsets are typically created when companies or individuals finance projects which reduce the greenhouse gas emissions elsewhere. Either mechanical projects or natural projects are used to reduce carbon. Reforestation and wetland restoration activities are examples of solutions that “naturally” collect carbon in the environment. Whereas investment in new technologies that result in higher efficiency or lower emissions like renewable energy projects or direct carbon capture.⁵⁵³

The Role of Green Finance in Corporate Sustainability

Green finance lacks a standardized definition but refers to financial practices and decisions that support environmentally sustainable development through significant reduction of greenhouse gas (GHG) emissions and air pollutants. It focuses on harmonizing economic growth with environmental stewardship. Green finance addresses critical global issues such as climate change, energy constraints and financial crises, posing challenges to traditional financial frameworks. In the 1990s, considerations with respect to the environment began influencing investment decisions, shaping organizational policies related to lending. Green finance encompasses areas such as air and water pollution control, waste management, deforestation and loss in biodiversity with a focus on eco-friendly practices and poverty alleviation. It is a key transition to a low-carbon and resource-efficient economies and adapting to climate change.⁵⁵⁴ Green finance includes not only climate finance but also a broader range of environmental goals, such as pollution control, water sanitation, and biodiversity protection. With an involvement in financial activities that either reduce GHG emissions or adapt to the impacts of climate change.⁵⁵⁵ The historical development of green finance began with the United Nations Environment Program Finance Initiative (UNEP FI) in 1992, which marked the beginning of integrating environmental concerns into the financial sector. This initiative has grown to include over 190 financial institutions across more than 40 countries which promote sustainable economic development and environmental protection.⁵⁵⁶

The integration of sustainable development into business practices is a long-standing tradition in India. The concept of ‘Sarva loka hitam’ reflects the

⁵⁵³ ‘Understanding Carbon Credits and Offsets’ <<https://extension.psu.edu/understanding-carbon-credits-and-offsets>> accessed 13 September 2024

⁵⁵⁴ Chaudhury, R. & Bhattacharya, V.B.. (2007). Clean development mechanism: Strategy for sustainability and economic growth. 27. 919-922.

⁵⁵⁵ Höhne, N., Khosla, S., Fekete, H. & Gilbert, A. (2012). Mapping of green finance delivered by IDFC members in 2011. Retrieved from <https://www.ecofys.com/de>.

⁵⁵⁶ UNEP FI. (2011). UNEP statement by financial institutions on the environment & sustainable development. Retrieved from www.unepfi.org

belief in contributing to a positive society. The ratification of the Kyoto Protocol after the London Amendment in 2002, highlighted the commitment of India to address climate change. The Companies Act of 2013 mandates that large corporations are required to invest at least 2% of their average net profits annually into Corporate Social Responsibility (CSR) activities.⁵⁵⁷

Through integration of environmental, social and governance (ESG) criteria into the day-to-day business operations, the impact on the environment can be decreased. To balance economic growth with ecological and social responsibilities primarily is what corporate sustainability deals with. It focuses on efficient use of resources, reduced emissions and a positive community engagement. With practices such as renewable energy adoption, improving energy efficiency, waste reduction and fair labor practices across industry. Through alignment of their strategies with sustainability goals, companies can enhance their reputation, meet regulatory requirements and drive long term financial performance.

By providing targeted funding and financial incentives for projects and operations, green finance plays a vital role in supporting sustainable business practices that directly benefit the environment. One of the important mechanisms in green finance are green bonds. Green Bonds are debt instruments which are designed to raise capital with respect to projects with environmental benefits, such as renewable energy installation and energy-efficient building initiatives, This bond allows businesses to secure funding for a huge scale sustainable initiatives which meet their environmental obligations. Green bonds are predominantly structured similarly to traditional investment grade bonds but with the exception that green bonds include a 'use of proceeds' clause. This clause specifies that the funds that have been or will be raised will be allocated exclusively for investments which are environment friendly. In contrast to 'vanilla' bonds which finance the general working capital of the issuer, green bonds are designated for the funding or refinancing of green projects or assets only.⁵⁵⁸ Another vital tool are **green loans** which offer businesses favorable terms when they undertake projects that are environmentally sustainable. These loans encourage the adoption of energy-efficient technologies, sustainable production methods and waste reduction practices. In addition to this **sustainable investment funds** play a critical role in matters of corporate responsibility. These funds invest in companies that meet the stringent ESG criteria, driving more businesses to adopt responsible

⁵⁵⁷ Mohd S and Kaushal VK, 'Green Finance: A Step towards Sustainable Development' (2018) 5 MUDRA: Journal of Finance and Accounting <<https://www.journalpressindia.com/mudra-journal-of-finance-and-accounting/doi/10.17492/mudra.v5i01.13036>> accessed 11 September 2024

⁵⁵⁸ Maltais, A., & Nykvist, B. (2020). Understanding the role of green bonds in advancing sustainability. *Journal of sustainable finance & investment*, 1-20.

and sustainable practices to undertake responsible and sustainable practices to attract capital. Further supporting the movement towards sustainability are **carbon credits and offsets**, which are financial mechanisms that allow the companies to invest in projects that are aimed at reducing or offsetting their carbon emissions.

Case Studies of Successful Integration of Green Finance in Corporate Sustainability Models

In the year 2016, **Apple Inc.** issued its inaugural green bond which marked a significant step in its commitment to environmental sustainability. The bond amounted to \$1.5 billion and was allocated specifically to fund renewable energy projects and energy efficiency improvements across Apple's global operations. The proceeds from the bond supported the development of clean energy infrastructure including solar and wind farms which played a vital role in Apple's achievement of running its facilities on 100% renewable energy. This issuance not only determined Apple's dedication to reducing the carbon footprints but also a benchmark was set for other corporations considering similar sustainable financial instruments. Apple announced in 2022 that investments from its 4.7 billion USD in Green Bonds have helped accelerate the advancement of new low-carbon manufacturing and recycling technologies. Since 2016, the company has issued three Green Bonds, with projects demonstrating how these investments can lower emissions globally and deliver clean energy to communities worldwide.⁵⁵⁹

Tesla, Inc. has leveraged green finance extensively to support its ambitious environmental goals. The company's investments in electric vehicle (EV) technology and advanced battery storage solutions are largely financed through a combination of equity and debt offerings that emphasize benefits related to the environment. The focus of Tesla is on development of EVs and energy storage systems which have significant contributions towards reduction in greenhouse gas emissions globally. By prioritizing sustainable technology in the financial strategies, Tesla has accelerated the transition to a low-carbon economy and reinforced its position as a leader in clean energy innovation.⁵⁶⁰

The green bond program of the **World Bank**, initiated to address climate change and environmental challenges, represents an approach to sustainable

⁵⁵⁹ 'Apple's \$4.7B in Green Bonds Support Innovative Green Technology' (Apple Newsroom (India)) <<https://www.apple.com/in/newsroom/2022/03/apples-four-point-seven-billion-in-green-bonds-support-innovative-green-technology/>> accessed 12 September 2024

⁵⁶⁰ University of Rijeka, Faculty of Economics and Business, Ivana Filipovića 4, 51000 Rijeka, Croatia, and others, 'Sustainable and Clean Energy: The Case of Tesla Company' (2022) 05 JOURNAL OF ECONOMICS, FINANCE AND MANAGEMENT STUDIES <<https://ijefm.co.in/v5i12/10.php>> accessed 12 September 2024

finance. This program by the World Bank has raised substantial funds for projects which are aimed at enhancing renewable energy. Over the years, the program has mobilized billions of dollars, influencing global standards in environmental finance and demonstrating the efficacy of green bonds in supporting large-scale environment initiatives.⁵⁶¹ Unilever's Sustainable Living Plan brings up the integration of green finance into corporate operations. The company has brought various green financing mechanisms to advance its sustainability objectives including sustainable sourcing, energy efficiency enhancements and waste reduction strategies. Through these initiatives, Unilever has achieved notable reduction in carbon emissions and water usage, aligning with its broader goal of enhancing environmental and social impact. Through implication of green finance into its operational and strategic framework, Unilever has demonstrated how corporations can leverage financial tools to drive substantial environmental improvements.⁵⁶²

A global leader in logistics real estate, **Prologis** has successfully utilized green finance to enhance the environmental performance of the properties. The company's investments in green building practices includes installation of energy-efficient lighting, solar panels and other sustainable features. These investments have not only reduced operational costs but also has significantly improved the sustainability credentials of Prologis' portfolio. Through the integration of green finance into the development and retrofit projects, Prologis has set an example of how real estate firms can contribute to environmental sustainability while achieving the growth of business.⁵⁶³

The rapid evolution of green finance has significantly been impacted by innovations across technology, data analytics and financial instruments.

To promote sustainable investments, optimize the allocation of capital and bring transparency in projects that are environmentally sustainable in nature. With businesses and investors who seek to contribute to global sustainability goals, technological advancements such as blockchain, artificial intelligence (AI) and data analytics have paved a path for a critical progress in the domain of green finance.

Challenges in Implementing Green Finance

⁵⁶¹ 'Green Bonds' (World Bank) <<https://treasury.worldbank.org/en/about/unit/treasury/ibrd/ibrd-green-bonds>> accessed 12 September 2024

⁵⁶² Arya M, 'Case Study: Unilever's Sustainable Living Plan' (Medium, 22 February 2024) <<https://medium.com/@thisismayank/case-study-unilevers-sustainable-living-plan-2226b2e5d5f5>> accessed 12 September 2024.

⁵⁶³ 'Prologis China Core Logistics Fund - Article 10 (SFDR) | Prologis' (29 December 2022) <<https://www.prologis.com/eu-sustainable-finance-disclosure-regulation-PCCLF>> accessed 12 September 2024

- *Lack of Standardization:* Huge variability in the definition of green finance and the criteria across different regions and sectors has led to a decreased regulatory compliances.
- *High Cost and Risk Perception:* A huge cost and operational risks associated with green investments and perceived higher costs.
- *Limited Awareness and Expertise:* Since Green Finance is a relatively lower concept, there is a lack of understanding and expertise among corporate managers regarding green finance.
- *Regulatory and Reporting Issues:* An inadequate regulatory frameworks and reporting standard makes the mass use of green finance a complex issue.

Recommendations for Enhancing Green Finance Integration

- *Developing Standardized Frameworks:* With an establishment of clear and consistent definitions and standards for green finance the use of standardized frameworks would increase the use of green finance.
- *Incentivizing Green Investments:* Financial incentives and subsidies to reduce the cost burden on corporations would help in raising investment in enhancing corporate sustainability through green innovation.
- *Strengthening Regulatory and Reporting Mechanisms:* Implement robust regulations and transparent reporting practices in ensuring accountability and effectiveness would lead to an ecosystem where green finance would be an alternative like other banking services.
- *Long-term Impact Assessment:* The importance of ongoing evaluation and adaptation to measure the effectiveness of green finance in achieving sustainability objectives.
- *Collaborative Efforts:* Through partnerships between corporations, governments and financial institutions, there can be a collaborative effort between organizations to help green finance act as a catalyst and further enhance corporate sustainability.

Conclusion

Green finance stands at the forefront of the global effort to align economic growth with environmental stewardship which offers a dynamic framework that would fasten the process of corporate sustainability. Through integration of financial innovation with sustainability principles, green finance enables businesses to mitigate climate risks, reduce their environmental impact and contribute to the transition towards a low-carbon economy. Financial

instruments such as green bonds, sustainability-linked loans, carbon credits and sustainable investment funds are tools that provide businesses with capital being necessary to implement projects which are eco-friendly. These tools not only support the development of renewable energy, energy-efficient technologies and waste reduction strategies which would offer companies significant reputational benefits which makes them more attractive to investors which focuses on ESG environmental, social and governance (ESG) criteria. The full potential of green finance can only be realized through robust implementation, transparent practices, and active stakeholder initiatives. If there is the risk of greenwashing in essence, instances where companies tend to claim to be environmentally sustainable which further provides tools and incentives needed for businesses to adopt sustainable practices. Consequently, green finance offers a pathway to a sustainable future as climate change and depletion of resources continue to pose significant global challenges. With green finance, corporations can achieve their sustainability objectives while being part of something much larger that will remodel society towards environmental protection and sustainable development. Innovation, partnership, and a lead by example mindset in the efforts to transition toward a greener economy are what the future of corporate sustainability portends, and it is through the mechanism of green finance that this change happens generally.

Environmental Impact Assessment: A key tool for Sustainable Development

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Abstract

This empirical study examines the historical background of Environmental Impact Assessment in India. Environmental Impact Assessment is the study to predict the effect of an activity on the environment. The genesis of Environmental Impact Assessment can be dated back to 1969 when the USA brought its first National Environment Policy Act, 1969 which was followed by many other countries that had industries. EIA guidelines became more formalised and the developing nations started introducing it. In 1989, the World Bank adopted EIA as the major development project. In the 1990s India adopted EIA formally and had rapid growth in EIA training. This study employs a mixed-methods approach, combining quantitative data analysis with qualitative insights from historical documents, legislative texts, and interviews with experts. Additionally, the study explores the EIA process and its components and the EIA notification 2006 which decentralized the project clearances and amended the stages of the EIA cycle. The recent amendments have also exempted certain projects such as highway projects of defence importance which are 100 km from the line of control, toll plazas width extension, fish handling ports and biomass-based power plants. This study evaluates the drawbacks and also suggests recommendations for addressing the issues related to EIA.

Keywords: Drawbacks, EIA, Environment, Study, Sustainable Development

Introduction

Environmental Impact Assessment is the study to predict the effect of an activity or project on the environment. Project here refers to any construction works or schemes for installation or destruction. The objective of EIA is to identify and assess the environmental impacts of the proposed development, and to provide recommendations and mitigation measures to reduce those impacts. EIA has become a critical tool for protecting the environment and promoting sustainable development in various sectors, including energy, transportation, mining, agriculture, and urban development. An EIA concentrates on problems, conflicts and natural resource constraints that might affect the viability of a project. It also predicts how the project could harm people, their homeland, their livelihoods, and other nearby developmental

activities. After predicting potential impacts, the EIA identifies measures to minimize the impacts and suggests ways to improve the project viability.⁵⁶⁴

Environmental Impact Assessment in India

EIA in India was first started in 1977-78 with an evaluation of river valley projects. This was later extended to mining, Industries, thermal power, ports and harbours, atomic power, rail and road highways, bridges airports and communications, etc. In January 1994, the Ministry of Environment & Forests (hereinafter referred to as MoEF) issued a Notification on EIA⁵⁶⁵ of Development Projects. This Notification listed 30 projects that required environmental clearance from the Central Government. It also included - for the first time – A public hearing as a pre-requisite for clearing large projects⁵⁶⁶. The notification made it obligatory to prepare and submit an EIA, an Environment Management Plan (EMP), and a project report to MoEF which had the option to consult a multidisciplinary committee of experts. In India, many of the developmental projects till as recently as the 1980s were implemented with very little or no environmental concerns. The environmental issues began receiving attention when a national committee on environmental planning and coordination was set up under the 4th five-year plan (1969- 1978). Till 1980, the subjects of environment and forests were the concern of the Dept of Science and Technology and the Ministry of Agriculture respectively⁵⁶⁷.

Stages/Process of EIA

⇒ Screening

The screening process is the first step in the environmental impact assessment process and is used to determine if a full EIA is required for a project. It entails doing a brief assessment of the project to evaluate whether its effects on the environment and society are serious enough to merit a full EIA.

⇒ Scoping

Scoping is a methodical procedure for defining the parameters of an EIA as well as the information required to assess a development's possible environmental consequences. Scoping ensures that the EIA covers all relevant

⁵⁶⁴ Aruna Murthy, Himansu Sekhar Patra. Environment Impact Assessment Process in India And The Drawbacks, Environment Conservation Team (Vasundhara), Bhubaneswar, 2005.

⁵⁶⁵ Under section 3 and rule 5 of the Environment Protection Act, called the Environment impact Assessment Notification, 1986-1994

⁵⁶⁶ United Nations Environment Programme (UNEP) Annual Evaluation Report, 2003.

⁵⁶⁷ Supra note 2

problems and concerns while reducing the possibility of omitting or incorporating unsuitable components.

⇒ **Assessment and Evaluation**

This procedure is crucial for assessing the environmental effect of a project. A draft Terms of Reference can be made available for public review and discussion, ensuring that the EIA is correctly framed and addresses community concerns.

⇒ **EIA Report**

An Environmental Impact Assessment (EIA) report is a document that examines the possible environmental and social implications of a project and offers solutions to manage and mitigate such effects.

⇒ **Review of Environmental Impact Statement (EIS)**

An EIS is a government document that describes a proposed project's possible environmental effect.

⇒ **Decision Making**

Environmental Impact Assessment is a data collection procedure designed to aid in ecologically sound decision-making.

⇒ **Monitoring, Compliance and Auditing**

- A continuous process of gathering data and comparing it to projections, norms, and expectations. It is necessary to monitor changes in the environment and communities as a result of the project. Monitoring is classified into three types: impact/effect monitoring, baseline monitoring, and mitigation monitoring.
- The process of determining if anticipated values are consistent with actual values. Compliance reports might be generated daily, weekly, monthly, or after a phase. These reports can employ a flagging system to show compliance status, with green representing full compliance, orange indicating ongoing compliance activities, and red indicating non-compliance.
- Environmental audits are classified into three types: compliance, management, and functional. A compliance audit examines a firm's or site's legal compliance status, whereas a management audit assists a corporation in determining how well it is meeting its environmental performance targets. A functional audit assesses the impact of a particular activity or issue, such as air quality, materials management, or wastewater management.

Strategic Environment Assessment (SEA)

Strategic Environmental Assessment (SEA) is a process that ensures environmental factors are considered while developing plans and programs. The purpose of SEA is to conserve the environment while also promoting sustainable development.

Ministry of Environment & Forests (MoEF) and Climate Change

The Ministry of Environment, Forest, and Climate Change (MoEFCC) is the central government body in charge of planning, promoting, coordinating, and monitoring the implementation of India's environmental and forestry policies and projects.

The broad objectives of the Ministry are:

- Conservation and survey of flora, fauna, forests and wildlife
- Prevention and control of pollution
- Afforestation and regeneration of degraded areas
- Protection of the environment and
- Ensuring the welfare of animals⁵⁶⁸

Central Pollution Control Board (CPCB)

The Central Pollution Control Board was constituted in the year 1974 and its primary function is to provide technical services to the Ministry of Environment, Forests and Climate Change. Its function is to promote the cleanliness of streams and other water bodies in different areas of the state by prevention, control and abatement of water pollution as well as air pollution.

State Pollution Control Board (SPCB)

They supplement the functions of CPCB but within the jurisdiction of the state. They are statutory organization entrusted with Environmental laws.

Pollution Control Committees(PCB)

The Pollution Control Committees are similar to state pollution control boards but the only difference is that they are applicable in the union territories.

2006 Amendments to EIA Notifications

The Environmental Impact Assessment (EIA) Notification of 2006 has been updated several times since its inception to accommodate new features and solve specific issues:

⁵⁶⁸ <https://ntps.nic.in/Public/AboutMoEFCC.aspx#>

- Building permissions

The notification was revised to incorporate environmental criteria with building permits. This includes the need that Qualified construction Environment Auditors to examine and certify construction projects.

- Decentralization of power

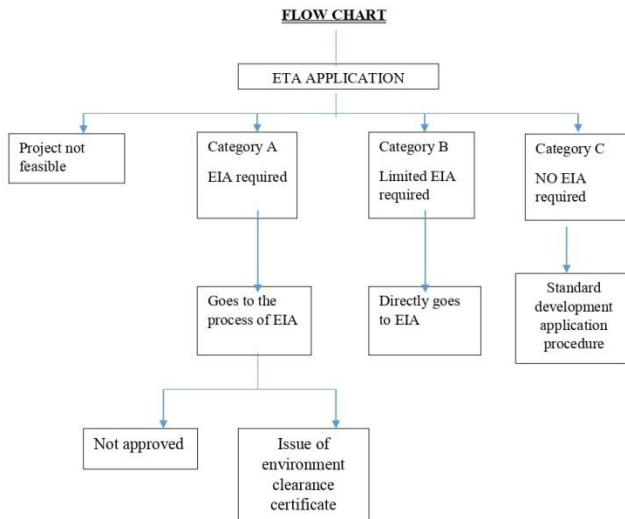
The notice was changed to delegate power to the state government. Previously, all projects under Schedule 1 were submitted to the central government for environmental approval.

- Bulk Medication Manufacture

The notice was updated to move bulk medication and intermediate projects from Category A to Category B2. This reclassification exempts some projects from collecting baseline data, conducting EIA studies, and consulting with the public. The idea was to decentralise evaluation to the state level and speed up the process.

- No increase in pollution load

The notification was revised to include "no increase in pollution load" as a requirement for obtaining exemption from environmental clearance for modifications to existing projects.



Judicial Review of EIA in India

In *Gram Panchayat Navlakh Umbre v. Union of India and Ors*⁵⁶⁹, the Court held that the “decision making process of those authorities besides being transparent must result in a reasoned conclusion which is reflective of a due application of mind to the diverse concerns arising from a project such as the

⁵⁶⁹ Public Interest Litigation No. 115 of 2010. Judgment of Bombay High Court, 2012.

present. The mere fact that a body is comprised of experts is not sufficient a safeguard to ensure that the conclusion of its deliberations is just and proper.” *Samata and Forum of Sustainable Development v. Union of India & Ors*⁵⁷⁰ the NGT held that “In order to demonstrate [the] threadbare nature of discussions while considering a project for giving its recommendation, it is essential that the views, opinions, comments and suggestions made by each and every member of the committee are recorded in a structured manifest/format.” *In Deepak Kumar v. State of Haryana and Ors*⁵⁷¹, referring to the recommendations of the Committee on Minor Minerals⁵⁷², the court underlined that, state governments should be discouraged from granting a mining license/lease to plots less than five hectares so as to reduce circumvention and ensure sustainable mining. Further, where land is broken up into smaller parcels, prior environmental approvals should be sought from the MoEF.

In *Sterlite Industries (India) Ltd. v. Union of India*⁵⁷³ the Supreme Court discussed the specific grounds on which administrative action involving the grant of environmental approval could be challenged. The grounds for judicial review were illegality, irrationality and procedural impropriety. Thus the granting of environmental approval by the competent authority outside the powers given to the authority by law would be grounds for illegality. If the decision were to suffer from *Wednesbury* unreasonableness, the Court could interfere on grounds of irrationality. Last, approval can be challenged on the grounds that it has been granted in breach of proper procedure.

Drawbacks of EIA

Environmental Impact Assessment (EIA) is an important technique for determining the possible environmental consequences of a project before it begins. In India, while the EIA process has significant benefits, there are also noteworthy downsides and obstacles.

1. Inadequate Public Participation

- **Limited Engagement:** Public participation is often minimal or tokenistic. Community consultations are sometimes held without providing sufficient time for meaningful input or without effectively reaching out to all stakeholders, especially marginalized groups.
- **Access Barriers:** Affected communities, particularly those in remote or rural areas, may lack access to information or the means to engage

⁵⁷⁰ Appeal No. 9 of 2011. Judgment of NGT Southern Zone, Chennai, 2013

⁵⁷¹ Special Leave Petition (Civil) No. 19628-19629 of, 2009

⁵⁷² Environmental Aspects of Quarrying of Minor Minerals, Report of the Group, MOEF. Report available at, http://www.indiaenvironmentportal.org.in/files/file/min_ing_minor%20minerals_sand_India_moef.pdf

⁵⁷³ AIR SCW, 2013, 3231

in the process. This can lead to a lack of awareness about the potential impacts of projects and how to voice concerns.

- **Feedback Mechanism Issues:** Even when public comments are solicited, there may be inadequate mechanisms for addressing and integrating this feedback into the final EIA report.

2. Data and Expertise Limitations

- **Quality of Data:** Data used in EIAs may be outdated or insufficient. Inaccurate or incomplete data can lead to an inadequate assessment of potential environmental impacts.
- **Lack of Expertise:** There may be a shortage of skilled professionals or consultants with the expertise required to conduct thorough and accurate EIAs.
- **Training and Capacity Building:** There is often a lack of ongoing training and capacity-building for those involved in the EIA process, which can hinder the effectiveness of the assessments.

3. Weak Enforcement and Compliance

- **Monitoring Challenges:** Even when EIAs include mitigation measures, there is often weak monitoring of compliance. Agencies may lack the resources or authority to effectively oversee and enforce adherence to these measures.
- **Regulatory Gaps:** There may be gaps in regulatory frameworks or overlapping responsibilities between different agencies, leading to inefficiencies in enforcement.
- **Non-compliance Issues:** Instances of projects proceeding without full adherence to EIA recommendations can undermine the effectiveness of the EIA process.

4. Corruption and Manipulation

- **Influence of Vested Interests:** There are cases where EIA reports are influenced by powerful stakeholders or developers who may seek to skew the findings in their favor.
- **Consultant Manipulation:** Consultants hired for EIAs might prioritize pleasing clients over providing unbiased assessments, leading to compromised reports.
- **Regulatory Capture:** Instances of regulatory capture, where regulatory agencies are influenced by the very industries they are supposed to regulate, can also affect the integrity of the EIA process.

5. Shortcomings in Scoping and Screening

- **Inadequate Scoping:** Scoping, which determines the extent of the EIA, can be inadequately performed. This may result in important environmental aspects being overlooked or not given sufficient attention.
- **Limited Alternatives Analysis:** The process might not adequately explore all feasible alternatives to the proposed project or consider alternative locations, which can lead to suboptimal environmental outcomes.
- **Focus on Immediate Impacts:** The initial screening might focus on immediate or obvious impacts without considering long-term or cumulative effects.

6. Lack of Integration with Planning

- **Formality Rather Than Substance:** Sometimes, the EIA is treated as a procedural requirement rather than being integrated into the broader planning and decision-making processes. This can lead to a lack of genuine consideration of environmental factors.
- **Separate Processes:** EIA might be conducted separately from other planning processes, leading to a disconnect between the environmental assessment and the actual project design and implementation.

7. Resource and Capacity Constraints

- **Funding Issues:** Smaller projects or organizations might struggle to allocate sufficient resources for a comprehensive EIA, leading to subpar assessments.
- **Institutional Capacity:** There may be a lack of institutional capacity or resources among regulatory bodies responsible for overseeing and reviewing EIAs, affecting the thoroughness and effectiveness of the process.
- **Technical Capacity:** Limited technical capacity to address complex environmental issues or emerging challenges can affect the quality of EIAs.

8. Overemphasis on Legal Compliance

- **Tick-Box Approach:** There is often an emphasis on meeting legal requirements rather than genuinely assessing and addressing environmental impacts. This "tick-box" mentality can lead to superficial assessments.
- **Regulatory Focus:** Regulatory agencies might focus more on ensuring that the procedural requirements are met rather than evaluating the substantive quality of the EIA report.

9. Fragmented Implementation

- **Multiple Agencies:** The involvement of multiple agencies with overlapping or conflicting responsibilities can lead to fragmented implementation of EIA requirements.
- **Coordination Issues:** Poor coordination among various regulatory bodies and departments can lead to inefficiencies and inconsistencies in the EIA process.
- **Policy Conflicts:** Conflicting policies or regulations across different levels of government (central, state, and local) can complicate the EIA process.

Suggestions/Improvements

A comprehensive methodology is required to improve Environmental Impact Assessments (EIAs). First, it is critical to incorporate climate change concerns; projects should be examined for their potential contributions to and effects of climate change, including resistance to extreme weather events and changes in climatic patterns. Improving public engagement is also critical, since involving local communities and stakeholders in the early phases through consultations and feedback systems ensures that varied viewpoints are addressed and local expertise is integrated. Improving data quality and accessibility entails providing stakeholders with current, high-quality data in order to promote transparency and accuracy in the assessment. Baseline investigations must be strengthened in order to determine current environmental, social, and economic circumstances, which will serve as a firm foundation for project effect prediction. Adopting a holistic approach that takes into account cumulative impacts allows you to examine the total impact of a project in relation to other existing or prospective projects, avoiding any oversights. Promoting interdisciplinary collaboration enables a thorough examination by bringing together specialists from many disciplines, including ecology, economics, and engineering. Using sophisticated technology like as Geographic Information Systems (GIS) and remote sensing improves the accuracy and efficiency of impact assessments. Enhancing monitoring and follow-up with strong systems ensures that real impacts are monitored, while adaptive management approaches allow for project alterations in response to new information or unexpected outcomes. Clear and standardised reporting formats increase the uniformity and comprehension of EIA findings. Promoting capacity building for EIA experts ensures that they are properly trained and up to date on best practices. Strengthening legal and administrative frameworks establishes a solid foundation for enforcing stringent and current environmental regulations. The incorporation of ecosystem services valuation aids in assessing the trade-offs between

development and environmental advantages. Finally, sharing best practices and lessons learnt from prior EIAs allows for continuing development in the evaluation process. Addressing these issues in depth can greatly enhance EIAs to promote sustainable development and environmental preservation.

Conclusion

EIA plays a significant role in resolving environmental concerns throughout project development, particularly for power projects. Integrating environmental considerations into development planning is crucial for attaining sustainable development goals. Environmental protection and economic growth must be interwoven. The EIA procedure is crucial for anticipating and protecting environmental impacts throughout development. EIA ensures that projects and plans do not negatively affect the environment. EIA is widely used globally and has several uses. The premise of this research project, namely that the implementation of environmental impact assessments is flawed and has to be reconsidered in order to achieve greater environmental protection, has been thoroughly proven. To fulfil the goal of environmental preservation and sustainable development outlined in Agenda 21, the Rio Declaration, and several environmental laws in India, it is necessary to execute a redesigned EIA system. The findings/suggestions presented in this study are significant in this regard.

Reference

- 1 Aruna Murthy, Himansu Sekhar Patra. Environment Impact Assessment Process in India And The Drawbacks, Environment Conservation Team (Vasundhara), Bhubaneswar, 2005.
- 2 Under section 3 and rule 5 of the Environment Protection Act, called the Environment impact Assessment Notification, 1986-1994
- 3 United Nations Environment Programme (UNEP) Annual Evaluation Report, 2003.
- 4 Supra note 2
- 5 <https://ntps.nic.in/Public/AboutMoEFCC.aspx#>
- 6 Public Interest Litigation No. 115 of 2010. Judgment of Bombay High Court, 2012.
- 7 Appeal No. 9 of 2011. Judgment of NGT Southern Zone, Chennai, 2013
- 8 Special Leave Petition (Civil) No. 19628-19629 of, 2009
- 9 Environmental Aspects of Quarrying of Minor Minerals, Report of the Group, MOEF. Report
- 10 AIR SCW, 2013, 3231

Global Environmental Issues and Human Rights Violations

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Abstract

As the topics says Global environmental issues and human rights violations are deeply interconnected, with the degradation of the environment often exacerbating social inequities and threatening the fundamental rights of individuals and communities. Environmental problems including climate change, deforestation, pollution, and loss of biodiversity have far-reaching impacts that disproportionately affect vulnerable populations, particularly in developing regions. Environmental rights refer to the recognition of a human right to live in an environment that meets certain quality standards, ensuring that the air, water, and land are clean and safe. When these rights are violated, it leads to harmful consequences for both people and the planet. The degradation of the environment results in poorer health outcomes, diminished quality of life, and a weakened ecosystem, highlighting the critical importance of upholding environmental rights to safeguard human well-being and the Earth's natural systems. This highlights the need for stronger legal frameworks and international cooperation to address both environmental degradation and the associated human rights abuses. In conclusion, tackling global environmental challenges is both crucial for ecological preservation and obligation to protect human rights. Sustainable development should combine environmental conservation with the safeguarding of human rights, guaranteeing that environmental policies benefit everyone fairly and that vulnerable people are protected. Achieving this requires strong governance, empowering local communities, and fostering global cooperation to promote both environmental sustainability and human rights for all.

KEYWORD: *Environmental problems, Environmental rights, legal framework, Sustainable development*

Introduction

In recent decades, environmental degradation has intensified to alarming levels, significantly impacting human rights worldwide. Climate change, deforestation, pollution, and biodiversity loss are among the major global environmental issues that have direct and indirect implications for the rights to life, health, food, water, and shelter. A healthy physical environment involves safeguarding against issues such as noise pollution, air contamination, water pollution, and the disposal of hazardous materials. The connection between environmental degradation and human rights was first

brought to the international forefront in 1972 at the UN Conference on the Human Environment. Principle 1 of the 'Stockholm Declaration on the Human Environment' laid the groundwork for linking human rights with environmental protection. It states that individuals have a "fundamental right to freedom, equality, and adequate living conditions in an environment of sufficient quality to support a life of dignity and well-being," while also bearing a profound responsibility to safeguard and enhance the environment for both present and future generations. Addressing the nexus between environmental damage and human rights violations has become a critical focus for policymakers, activists, and international bodies. This legal paper reflects on the human rights and the environment issues relating to climate change. The conclusions summarize the key messages arising from the previous sections of the paper.

Climate change and human rights:

"Climate change is the greatest human rights challenge of the twenty-first century."⁵⁷⁴

In 2008, the Human Rights Council (HRC) became the first to adopt a resolution asserting that "climate change constitutes an urgent and widespread threat to individuals and communities globally, with consequences for the full exercise of human rights."⁵⁷⁵

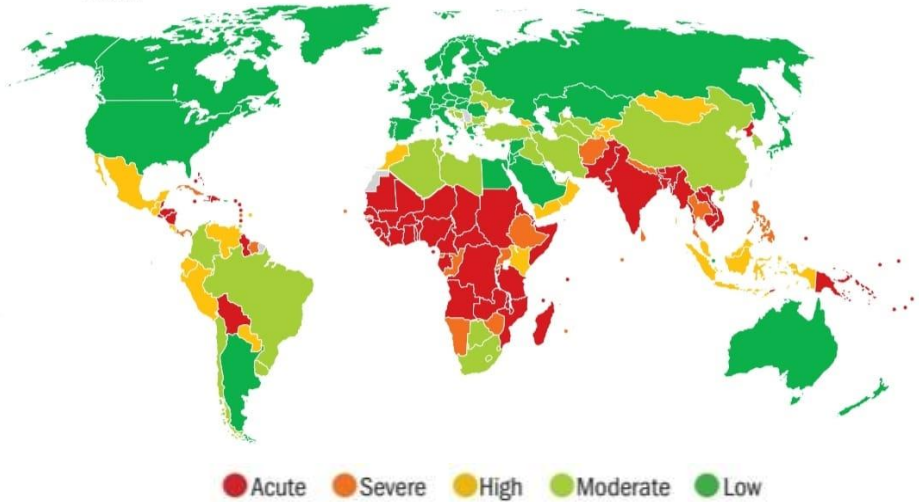
Some human rights are likely to be impacted more rapidly than others, with the right to life being among the first. It is regarded as the "supreme right, from which no derogation is allowed." This right is of immense significance not only for individuals but for society as a whole. It is valued for its intrinsic worth and also serves as a foundational right, enabling the enjoyment of all other human rights. We need a friendly environment to enjoy our life without that all other rights are meaningless. It is estimated that human-induced climate change currently causes approximately 400,000 deaths annually, a figure expected to increase to 700,000 per year by 2030.⁵⁷⁶

⁵⁷⁴ As said by Mary Robinson, the former High Commissioner for Human Rights, during a full-day panel discussion on climate change and human rights by the Human Rights Council in March 2015.

⁵⁷⁵ UNHRC, Resolution 7/23 'Human Rights and Climate Change', 28 March 2008, UN Doc. A/HRC/RES/7/23.

⁵⁷⁶ 'Climate Vulnerability Monitor: A Guide to the Cold Calculus of a Hot Planet' (2nd ed.), 2012. Retrieved 12 April 2017, <http://daraint.org/wp-content/uploads/2012/09/EXECUTIVE-AND-TECHNICAL-SUMMARY.pdf>, p. 17

CLIMATE



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The Monitor provides a fresh and original analysis, combining the latest research and scientific data on the worldwide effects of climate change. More than 98% of all deaths caused by climate change occur in developing countries.

While the primary obligation of a State regarding the right to life is typically negative, the "doctrine of positive obligations" has emerged in jurisprudence. This doctrine requires a State to take appropriate measures to protect the lives of individuals within its jurisdiction, even when the threat comes from private persons or activities not directly linked to the State. From the Court's limited case law, it is evident that positive obligations may apply in two environmental contexts: hazardous (industrial) activities and natural disasters. India's Supreme Court has declared that the right to be free from the harmful effects of climate change is a fundamental right, derived from the rights to life and equality enshrined in the Indian Constitution. The Court stated that the right to life cannot be fully realized without a clean environment that is stable and unaffected by climate change. Chief Justice Chandrachud, linking the right against climate change to Articles 21 and 14 of the Indian Constitution, emphasized that the rights to life and equality cannot be fully realized without a clean and stable environment. "If climate change and environmental degradation result in severe food and water shortages in a specific region, poorer communities will suffer disproportionately compared to wealthier ones... The inability of underserved communities to adapt to or cope with the

⁵⁷⁷ <http://daraint.org/wp-content/uploads/2012/09/EXECUTIVE-AND-TECHNICAL-SUMMARY.pdf>
p.19

effects of climate change infringes upon both the right to life and the right to equality,” said the bench, which included justices JB Pardiwala and Manoj Misra. The judgment stated, “Clean energy aligns with the human right to a healthy environment.”⁵⁷⁸

Pollution and Public Health:

Industrial activities, improper waste management, and the overuse of pesticides and chemicals have led to significant environmental pollution, impacting air, water, and soil quality worldwide. This, in turn, violates the right to a healthy environment, which is essential for the enjoyment of basic human rights. Pollutants in the environment and climate-related events can significantly impact our health. Air and noise pollution, as well as heavy metals such as mercury, are directly linked to health issues like asthma, hearing loss, dehydration, and heart disease. Heatwaves and floods affect the entire population, but they disproportionately burden vulnerable groups, including infants, the elderly, individuals in poor health, and communities residing in flood-prone areas.

Air Pollution: Air pollution is caused by the emission of harmful substances into the atmosphere, including particulate matter (PM), nitrogen oxides (NO_x), sulfur dioxide (SO₂), and volatile organic compounds (VOCs). Major sources include vehicle emissions, industrial processes, and burning fossil fuels.

Water Pollution: Water pollution results from the discharge of pollutants into water bodies, including rivers, lakes, and oceans. Contaminants such as heavy metals, pesticides, and industrial chemicals compromise water quality and can lead to health issues.

Noise Pollution: Noise pollution refers to harmful or excessive levels of noise that disrupt health and well-being. Sources include traffic, construction, and industrial activities.

Chemical Pollution: Chemical pollution involves the release of hazardous chemicals into the environment, including pesticides, heavy metals, and pharmaceuticals. These chemicals can contaminate air, water, and soil, posing health risks.

These pollution leads to various diseases which are:

- **Respiratory Issues:** Exposure to pollutants like PM_{2.5} and ozone can cause or exacerbate respiratory conditions such as asthma, bronchitis, and chronic obstructive pulmonary disease (COPD).

⁵⁷⁸ In *M.K. Ranjitsinh and Others v. Union of India and Others* on March 21, 2024(SC 838 of 2019)

- Cardiovascular Diseases: Long-term exposure to air pollution is linked to increased risks of heart attacks, strokes, and hypertension.
- Cancer: Certain air pollutants, such as benzene and formaldehyde, are classified as carcinogens and can lead to lung cancer and other types of cancer.
- Gastrointestinal Diseases: Contaminated water can lead to diseases such as cholera, dysentery, and hepatitis A.
- Neurological Effects: Heavy metals like lead and mercury can impair neurological development and function, particularly in children.
- Reproductive Health: Chemical pollutants can disrupt endocrine systems, affecting reproductive health and development.
- Hearing Loss: Prolonged exposure to high levels of noise can cause permanent hearing loss and tinnitus.
- Cardiovascular Issues: Chronic noise exposure is associated with increased risk of hypertension, heart disease, and stroke.
- Mental Health: Noise pollution can lead to stress, sleep disturbances, and reduced quality of life, affecting overall mental health and well-being.
- Low-Income Communities: These communities often reside in areas with higher pollution levels and have less access to healthcare and resources for mitigation.
- Individuals with Pre-existing Health Conditions: Those with respiratory or cardiovascular conditions are at higher risk of adverse health effects from pollution.

These diseases directly affects individual human right and fundamental right. To protect these disaster every state globally should make strict actions, make awareness, educate children, innovate some alternate technology and make people to follow them.

Right to Healthy Environment:

Every individual has the inherent right to live in a clean and healthy environment, a fundamental and inalienable right. Many constitutions globally recognize and guarantee this right, and they implement various measures to prevent environmental harm and ensure the maintenance of a healthy environment. they not only prevent but preserve the nature and natural resources. The right to a healthy environment is a crucial aspect of the right to live with human dignity. This right, as part of Article 21 of the Indian Constitution, was first recognized in the case of *Rural Litigation and Entitlement Kendra v. State of Uttar Pradesh* (commonly known as the *Dehradun Quarrying Case*)⁵⁷⁹. In *M.C. Mehta v. Union of India*⁵⁸⁰, the

⁵⁷⁹ *Rural Litigation and Entitlement Kendra v. State of Uttar Pradesh* (1985 AIR 652)

Supreme Court implicitly recognized the right to live in a pollution-free environment as part of the fundamental right to life under Article 21 of the Indian Constitution.

Later, in *Chatriya Pardushan Mukti Sangarsh Samiti v. State of Uttar Pradesh*⁵⁸¹, the Supreme Court explicitly declared that the right to a healthy environment is encompassed within Article 21 of the Constitution of India.

The right to a healthy environment has evolved gradually since its initial reference in the 1972 Stockholm Declaration. The first Principle of the Declaration states: "Human beings have a fundamental right to freedom, equality, and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being". The international recognition of the right to a healthy environment remains limited, as States have been hesitant to adopt a binding legal instrument that formally acknowledges this right. Consequently, the right to a healthy environment lacks substantial legal force in international environmental law.

In addition to the Stockholm Declaration, the Rio Declaration of 1992 reaffirmed this principle, though with a narrower scope, stating that "human beings are at the center of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature."

More than 150 countries have binding legal obligations to respect, protect, and fulfill the right to a healthy environment. Strengthening human rights obligations related to the environment empowers individuals, communities, and nations to address the triple planetary crises of climate change, biodiversity loss, and pollution. On October 8th, the United Nations Human Rights Council adopted a landmark resolution officially recognizing that a clean, healthy, and sustainable environment is a fundamental human right.

Corporate Accountability:

Every day, large corporations negatively impact people's lives and the environment globally, often through the actions of their subsidiaries, subcontractors, and suppliers. These indirect operations can lead to environmental degradation, exploitation, and violations of human rights, with limited accountability. Existing laws often fail to prevent such corporate misconduct or hold companies accountable, leaving victims without access to justice.

⁵⁸⁰ M.C. Mehta v. Union of India (1987 AIR 1086)

⁵⁸¹ *Chatriya Pardushan Mukti Sangarsh Samiti v. State of Uttar Pradesh*(1990 AIR 2060)

In many cases, those affected may face threats, intimidation, or oppression, further hindering their ability to seek redress or hold corporations responsible for their harmful actions. Large corporations, particularly in the extractive industries (oil, gas, mining), are often responsible for environmental damage, which can lead to significant human rights abuses. These companies may:

- **Exploit Natural Resources:** Extract resources at unsustainable rates, depleting ecosystems and threatening biodiversity.
- **Cause Pollution:** Release toxic substances, often in violation of environmental laws or through poorly regulated operations.
- **Engage in Illegal Practices:** Contribute to illegal deforestation, mining, or waste dumping through subsidiaries or subcontractors.

While corporate headquarters may be based in one country, their operations and supply chains often extend across multiple regions, frequently resulting in environmental degradation in countries with weaker regulatory frameworks. This global reach allows corporations to exploit differences in environmental regulations, making it more difficult to hold them accountable for the harm caused in vulnerable regions.

Several challenges hinder effective corporate accountability for environmental crimes. Many countries lack stringent environmental laws or fail to enforce existing regulations, allowing corporations to operate with impunity, particularly in developing nations. Additionally, while global frameworks such as the Paris Agreement address climate change, there is no binding international treaty holding corporations accountable for environmental crimes. The complexity of corporate supply chains, where activities are often outsourced to subsidiaries, contractors, or suppliers, makes it difficult to trace responsibility for environmental harm. Victims, especially in marginalized communities, often face significant barriers to accessing justice, including financial, legal, and political obstacles. Furthermore, in some regions, corruption undermines the ability of regulatory agencies to effectively monitor or punish corporate activities, enabling harmful practices to persist unchecked. We must hold major corporate producers and users of climate pollutants accountable for reducing emissions and adopting sustainable alternatives.

By enforcing stricter regulations, ensuring transparency, and promoting the adoption of cleaner technologies, corporations can be pressured to take responsibility for their environmental impact and contribute to global efforts to combat climate change. Super pollutant greenhouse gases and toxic chemicals pose a significant threat to both the environment and public health, a challenge that cannot be resolved without decisive action from the private sector. Corporations must play a critical role in reducing emissions, adopting

cleaner practices, and developing sustainable alternatives to mitigate the harmful effects of these pollutants.

Many corporations promote Corporate Social Responsibility (CSR) programs aimed at minimizing environmental harm and contributing to sustainable development. However, these initiatives are voluntary and often lack rigorous enforcement mechanisms. Critics argue that without legal binding commitments, CSR efforts are insufficient to prevent environmental crimes. To ensure corporations are held accountable for environmental crimes, stronger regulatory and legal frameworks are needed. Such as Binding International Regulations, Stronger National Laws, Mandatory Due Diligence, Speedy Justice, Corporate Liability for Supply Chains.

Indigenous Knowledge:

Indigenous knowledge offers invaluable insights into sustainable practices crucial for effective environmental conservation. Globally, traditional systems have demonstrated their capacity to manage resources responsibly, preserve biodiversity, and enhance community resilience. This rich knowledge base, developed over centuries, provides essential strategies for addressing contemporary environmental challenges and fostering sustainable development. Forests are often home to indigenous communities whose cultures, livelihoods, and identities are deeply intertwined with the natural environment. By documenting and preserving indigenous knowledge, involving communities in policymaking, and fostering collaborative research, we can create more inclusive and effective conservation strategies. This integration addresses environmental challenges while simultaneously preserving cultural heritage. It promotes sustainable development and respects the valuable wisdom of indigenous communities, ensuring that their insights contribute meaningfully to global environmental efforts.⁵⁸² Indigenous peoples have repeatedly demonstrated the immense value of their knowledge and the effectiveness of their management practices in socio-ecological systems. Their deep understanding of local environments and sustainable resource management has proven successful in preserving biodiversity, maintaining ecological balance, and enhancing community resilience. So it is possible when we all join our hands together to preserve those knowledge and use them wisely. The use of pesticides, illegal hunting of animals, chemical fertilizer, usage of chemical in animal husbandry (hormonal injections, antibiotics) etc.. is harming environment and yes human are victims in it.

⁵⁸² <https://olamidefrancis.medium.com/the-role-of-indigenous-knowledge-in-environmental-conservation-f16db06e5a83#:~:text=Indigenous%20knowledge%20provides%20sustainable%20practices,biodiversity%2C%20and%20boost%20community%20resilience.>

I like to share my experience here I am from a small village where some of the industrial and food crops are grown. But nowadays most of the farmers never plant those crops instead they grow fodder crops to feed their animals and other part of the land are kept still only for grassing purpose. This is because over population of peafowl and water scarcity, we know the reason for water scarcity that is because of climate change and pollution. But why did this peafowl populated hugely? It is because of slaughtering of foxes. People used to kill fox to protect their livestock but that made fox an endangered animal. They used to hunt peafowl and their eggs for their food which made food cycle positive but when we humans took an animal from a food chain that muddled everything. And another certain think is most of the farming land are fenced with iron(iron fence) but they forgot an indigenous method of fencing which is live fencing. Our ancestors used plants like Carissa Carandas, Lawsonia inermis, Vitex negundo, Jatropha curcas, Caesalpinia Bonducella which can be used as fodder crops. In this method lot of micro-organisms and medicinal plants are grown naturally and lots of birds got food to eat. However people disregarded the truth.

Environmental Racism:

Environmental racism refers to the systemic discrimination faced by marginalized communities, particularly people of color, in relation to environmental policies and practices. This phenomenon manifests through the disproportionate exposure of these communities to environmental hazards, inadequate access to environmental resources, and lack of representation in environmental decision-making processes. Communities of color often live in areas with higher levels of air and water pollution due to the placement of industrial facilities, waste sites, and other environmental hazards near their neighborhoods. These communities frequently have less access to clean water, green spaces, and other vital environmental resources compared to more affluent or predominantly white areas.

The term "environmental racism" was coined by African American civil rights leader Benjamin Chavis in 1982. He defined it as "racial discrimination in environmental policy-making, the enforcement of regulations and laws, the deliberate targeting of communities of color for toxic waste facilities, the official sanctioning of the life-threatening presence of poisons and pollutants in our communities, and the history of excluding people of color from leadership of the ecology movements."⁵⁸³

In 2014, Flint, Michigan, switched its water source to the Flint River without proper treatment, causing lead to leach from old pipes into the drinking water. This led to severe lead contamination, health issues, and an outbreak of Legionnaires' disease. Government negligence and failure to address the

⁵⁸³ <https://www.weforum.org/agenda/2020/07/what-is-environmental-racism-pollution-covid-systemic/>

problem exacerbated the crisis. Public outrage and legal actions followed, highlighting issues of environmental racism and systemic failure. Efforts to replace lead pipes and improve water infrastructure continue, while long-term health impacts are still being addressed.⁵⁸⁴

The Etalin Dam in Arunachal Pradesh is set to submerge over 300,000 trees and displace several thousand Mishmi people, an indigenous group of 13,000 in the Dibang Valley district. In Tawang, Buddhist monks are protesting against large hydroelectric projects planned for the ecologically sensitive and seismic foothills of the region. Additionally, gas leaks from factories in remote areas, such as the Bhopal gas tragedy and the Vizag gas leak, have had severe impacts on surrounding villages.⁵⁸⁵ These are some example of environmental racism in India.

Climate Refugee:

The term “climate refugees” was first used to describe the significant migration and cross-border movements of people caused by weather-related disasters and environmental changes. It highlights the growing phenomenon of individuals and communities displaced from their homes due to the adverse effects of climate change, such as extreme weather events, rising sea levels, and prolonged droughts. The refugees are people who move from one country to another when they can’t survive in that climatic condition.⁵⁸⁶ We can see some live example in India places like wayanad, munar and some other parts of kerala faced severe landslides and many people were dead. Another example, citizens from the Marshall Islands have migrated to the United States due to the imminent threat of sea level rise, alongside increasing pressures from floods and droughts that jeopardize their homes and livelihoods.

Frequent flooding and severe cyclones have led to the displacement of many people in Bangladesh. The country's vulnerability to sea level rise and extreme weather events has forced residents to move to other parts of the country or abroad. Prolonged droughts and the resulting food and water shortages have displaced many people in Somalia. The country faces frequent climate-induced emergencies that exacerbate humanitarian crises and contribute to migration. These are examples illustrate the diverse ways in which climate change impacts human migration and how it affects people individual rights.

Conclusion:

Global environmental issues such as climate change, deforestation, pollution, and biodiversity loss are not just ecological concerns; they are deeply

⁵⁸⁴ “17-10164” *Walters v. Flint (In re Flint Water Cases)*, 482 F. Supp. 3d 601, (E.D. Mich. 2020)

⁵⁸⁵ *Union Carbide Corporation vs Union Of India Etc*(1990 AIR 273, 1989 SCC (2) 540)

⁵⁸⁶ <https://www.weforum.org/agenda/2021/06/climate-refugees-the-world-s-forgotten-victims/>

connected to human rights. The degradation of the environment disproportionately affects the most vulnerable populations, exacerbating inequalities and leading to violations of fundamental human rights. Urgent and coordinated action is needed at both local and global levels to address these challenges, ensure environmental justice, and protect the rights of current and future generations. Promoting a sustainable and just world requires the integration of environmental protection into human rights frameworks, emphasizing that a healthy environment is essential for the realization of human dignity and well-being. We have seen about global environment and how it affects human rights, to prevent this from happening state should take strict actions and should protect various rights like right to life, right to equality, right to healthy environment etc.