ARTIFICIAL INTELLIGENCE IN CLIMATE LITIGATION: BRIDGING THE EVIDENTIARY GAP WHILE CONFRONTING TRANSNATIONAL LEGAL CHALLENGES[1]

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ABSTRACT

The entire world is facing climate crisis and there is a rise in climate litigation. The use of artificial intelligence is also growing at the same in time in the field of environmental litigation. Artificial intelligence is helpful in environmental litigation and protecting environmental rights, but also create many legal risks. Law still has gaps to treat artificial intelligence plus transnational climate harms. This paper examines the use of artificial intelligence in climate litigation. AI is playing an important role in environmental litigation by providing evidence, predicting the risks and monitoring the implementation, but it is not free from the problem of bias opacity, exclusion, and accountability. At the same time it also has the transnational challenges of jurisdiction, liability, and fragmented law. If artificial intelligence has to be used meaningfully in environmental litigation, then going forward it is important to have right-based framework, transparency, accountability, inclusion of the vulnerable community in decision making and global regulation. Technology alone cannot ensure justice and law must regulate artificial intelligence to protect rights, and use artificial intelligence in such a manner that it progresses the cause of environmental protection rather than hindering it.

Introduction

The need to protect the environment has never been as urgent as it is today.[2] The question of climate change is real and the entire world is struggling to protect the environment.[3]The countries have been trying since many years all around the globe to formulate the policies and implement it in such a manner that climate change can be reversed and environment can be protected. The question of protecting environment is not limited to one jurisdiction, but in the era of globalisation this expands transnationally. The pollution done by one country impacts other countries also. [4]The corporates doing business in their own country also create an impact on the environment in other countries. This leads to multiple questions in the international law

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[2] United Nations Environment Programme (UNEP), Global Environment Outlook 6: Healthy Planet, Healthy People (Cambridge University Press, 2019).

[3]Intergovernmental Panel on Climate Change (IPCC), Climate Change 2023: Synthesis Report (2023).

[4] Trail Smelter Arbitration (United States v. Canada), (1941) 3 R.I.A.A. 1905.

and it also exposes the vulnerability of law when the pollution caused by one country enters into another country and impact the life of the people in that country. In today's world, it is seen that climate litigations are increasing exponentially. [5] Climate right activists are suing the corporations and the state for not implementing the environmental laws properly. Artificial intelligence has entered into the arena of protecting environment in today's age. AI is used extensively in climate litigation arena. [6] AI is useful in predicting the consequences of environmental pollution and AI can model and predict the risk of flood and drought through satellite imaging, emission caused by the companies and their carbon footprint. AI is playing an important role, but there are certain mandatory questions which need to be answered. The biggest question is who regulates the AI and what will happen if AI goes wrong. Who will be liable if AI does not predict correctly.

Artificial Intelligence as an Evidentiary Tool in Environmental Litigation: Bridging the Proof Gap

Artificial intelligence has an extremely important role to play in protecting climate in today's time. In environmental litigation, the most challenging question, which comes before the court is to gather the reliable evidence, which can make the corporations liable for polluting environment.Artificial intelligence bridges this gap in a very helpful manner.AI as an evidence tool is extremely productive in environmental litigation.[7]AI helps in analysing satellite image to give reliable evidence regarding questions like illegal deforestation, methane leaking ,illegal deforestation, coastal displacement and glacier receding.[8] Artificial intelligence can help in getting the emission data by the companies .It helps in finding out that up to what extent the companies are fulfilling the obligations which they have given to the government and has been imposed upon them under the law .It helps in knowing whether the policies formulated are being followed strictly or not. This cumulative analysis helps in getting the accurate data.

The availability of the evidence created by artificial intelligence goes a long way in protecting the environment. It has been observed, frequently, that many corporations were held, not liable

[5] United Nations Environment Programme (UNEP), Global Climate Litigation Report: 2023 Status Review (2023).
[6] Organisation for Economic Co-operation and Development (OECD), Artificial Intelligence in Society (OECD Publishing, 2019).
[7] European Commission, White Paper on Artificial Intelligence: A European Approach to Excellence and Trust (2020).
[8] National Aeronautics and Space Administration (NASA), Earth Observatory: Measuring and Monitoring Deforestation.

by the courts for environmental pollution because of the unavailability of sufficient evidences.[9] Artificial intelligence becomes relevant here and bridges the gap. It provides the evidence, which is credible, reliable, and relevant. The evidence generated by artificial intelligence is scientific and links the act of the corporation with the environmental pollution. The biggest challenge in older days was to causally connect the act of the corporation with the consequences of environmental pollution, but with the advent of AI, this causal link has become easier to establish. It is more easy to connect the act of the corporate with the tangible loss of the environment. This link is important and helps in environmental litigation.

The environmental law jurisprudence has shifted from reactive justice towards preventive justice and artificial intelligence helps in this call. [10] Artificial intelligence is very able in prediction .It can predict the chances of drought, flood, and other environmental disasters. It can predict on the basis of past many years data and the present analysis of the data .This prediction helps in taking proactive majors rather than just reacting.The traditional environmental or jurisprudence was more reactive than preventive, but that approach has changed significantly in last few decades and artificial intelligence helps in this preventive justice as it is able to predict the future environmental harms accurately.

The integration of AI in environmental protection litigation has huge potential.As AI is growing significantly throughout the world, it has potential to change the future of environmental litigation.The better appreciation of evidence through the use of artificial intelligence and the prediction of environmental risks through the model developed by artificial intelligence goes at the root of environmental litigation, where the courts will not have much difficulty in finding the evidences for environmental pollution and at the same time, the credible data will be in the hands of the policy makers to determine the possible risk.It helps the government to relocate the vulnerable sections of the society and provide better amenities to them.

Risks and Limitations of Artificial Intelligence in Environmental Jurisprudence: Bias, Opacity and Accountability

The use of artificial intelligence in environmental litigation is not free from risks and certain steps are required to ensure that artificial intelligence is used responsibly in the field of environmental litigation. The biggest problem is that AI is not neutral.The problem of bias is

[9] M.C. Mehta v. Union of India, (1987) 1 SCC 395.
[10] A.P. Pollution Control Board v. Prof. M.V. Nayudu, (1999) 2 SCC 718.

present in the decision making[11].It has often been understood in the environmental litigation that global south lacks good climate data and representation, which increases the risk of under reporting of risk and favouring rich states and corporations in decision making. If artificial intelligence has to be used efficiently in environmental jurisprudence, then the element of bias must be removed because any presence of bias in decision making is fatal for environmental jurisprudence. The lack of transparency in the decision making of AI is another serious threat of using AI in environmental jurisprudence. [12] The decisions which are taken by artificial intelligence are based on the data and learning, which is fed to it. How these decisions are taken by the artificial intelligence and what is the basis of these decisions must be open. The due process requires that decision taken must have appropriate reasons and logic.Another important question which comes is what happens if artificial intelligence fails in reporting the data accurately as the consequences of wrong analysis has extremely disastrous consequences for the environmental jurisprudence. AI has to be used in the environmental jurisprudence, but the caution has to be present. The full control in the hands of AI without legitimate check has the potential to undermine the whole purpose of incorporating AI in environmental protection scheme.

The development of artificial intelligence is still not democratised, and it is essentially in the hands of the rich corporations in developed nations, and that is why the fear of bias in favour of rich countries become more real as the chances of these models favouring the corporations and rich countries is more however, if AI has to successfully contribute in protecting environment, then such bias has to be removed and artificial intelligence should be democratic enough in ascertaining the real cause behind the environmental degradation and the potential solution for the same. In this entire process, there should be transparency in the decision making of AI so that people can have more trust on the use of AI in environmental jurisprudence.

Right to a Clean Environment as a Fundamental and Human Right: Expanding the Scope of Environmental Justice

Right to clean environment is essentially one of the most important fundamental and human rights.[13] It has been recognised by all the important human right instruments, as well as the constitution of India, that right to clean environment is the basic human right, which must be

[11] United Nations Educational, Scientific and Cultural Organization (UNESCO), Recommendation on the Ethics of Artificial Intelligence (2021).
[12] European Union, General Data Protection Regulation (Regulation (EU) 2016/679).
[13] Subhash Kumar v. State of Bihar, (1991) 1 SCC 598.

protected at any cost. Gone are those days when there used to be discussion regarding development versus environment At one point of time there used to be discussion whether environment has to be protected or development has to be prioritised and there used to be creation of balance between the both, however, in today's day and age, the judiciary as well as policymakers have come to consensus that sustainable development is the only way to go forward. [14]Once right to pollution free environment is violated, then it has direct consequences on the right to life of a person,[15] which is the core of a person's life. Right to health is damaged badly once the environment is polluted. It is well known in medicine now that polluted environment leads to multiple disastrous health consequences and have short as well as long-term impact on the health as it not only reduces the life expectancy, but also impacts the quality of the life itself , the protection of environment is not a choice, but a compulsion in today's age. Indian Supreme Court has recognised right to pollution-free environment as a basic fundamental right in multiple landmark judgements. Various principles have been given by the judiciary to protect the environment and ensure sustainable development. Any development done ignoring the environment is bound to have counterproductive results and is not sustainable.

Sustainable development goals accepted by the nations throughout the world concretes this conviction. Along with right to life and health right to pollution-free environment also incorporates right to information.[16] It is the right of the community to know the dangers of environmental pollution and how to counter it.It is their right to know who is causing the pollution and how it has to be reduced. It also includes the basic right of participation of the local community. Any decision taken without consulting the indigenous communities will not have a very positive impact in longer run as the local communities understand the situation of the place better and have better idea about the surroundings .There traditional knowledge and wisdom must be respected in modern environmental jurisprudence. Artificial intelligence has to ensure that decision making is transparent and vulnerable sections of the society are not excluded from the participation. If decision-making by Artificial Intelligence is hidden and

[14] United Nations Human Rights Council, Report of the Special Rapporteur on Human Rights and the Environment (A/HRC/37/59, 2018).
[15] M.C Mehta V Kamal Nath, (1997) 1 SCC 388.
[16] Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (Aarhus Convention), 1998.

vulnerable section of the society are excluded , then it has direct impact on the procedural rights of the people as well as on their right of due process.

Transnational Challenges in Climate Litigation: Jurisdiction, Applicable Law and Liability in the Age of AI

It is well understood in modern climate jurisprudence that climate harm does not stay within one country.[17]The people who are affected by population , the polluters, and the people who provided the technology can well be from different jurisdictions. AI systems also are transnational, AI systems are built in one country, trained in another country and can be used across borders. Climate harms, as well as artificial intelligence are cross borders .The traditional concept of jurisdiction faces a challenge in today's modern world. Traditionally, the jurisdiction was based on place of harm, place of act, or where defendant resides , but the same is not feasible anymore as AI is decentralised, cloud -based and is diffused so the first question which comes is of determining the valid jurisdiction. Once the jurisdiction has been determined, then the second question comes is of applicable law. Once the court has determined that it has the jurisdiction, then it has to find the answer to the question of applicable law as different laws are involved in such disputes. Another pertinent question comes of liability. Who will be liable if an AI model fails in determining the correct outcome of environmental pollution , whether AI will be responsible or its developer will be responsible or the state actor, which relied upon the model and acted will be responsible. These are the big questions being faced up by the environmental lawyers across the world. The enforcement of the laws becomes very important at this stage . The states across the world have to ensure that the basic principles of environmental law accepted by the nations after much deliberation must be accepted . No harm principle, due diligence principle, precautionary principle, and intergenerational equity must be kept in mind before taking any decision on environment.[18]

Towards a Regulatory Framework for AI in Environmental Protection: Transparency, Accountability and Public Participation

The first requirement which must be mandated is of mandatory explanation. The outcomes predicted by artificial intelligence model are often opaque, which is well known as black box

[17] United Nations Framework Convention on Climate Change (UNFCCC), 1992.
[18] Stockholm Declaration on the Human Environment, 1972, Principle 21.

problem .[19] It is difficult to challenge and the courts, as well as the parties to the litigation are not able to understand the reasons behind reaching such outcome. When such problems happens, then it violates the well- safeguarded principles of law like natural justice, right to fair hearing , and the need for evidentiary transparency. [20]If AI has to be used in protecting the environment in an efficient manner, then the disclosure of data source, methodology, and assumptions adopted by the artificial intelligence while predicting the outcome must be mandated so that courts can trust on it in a better manner.

Along with the requirement of mandatory explanation, the another need is to introduce human oversight .[21]The courts and government, relying excessively on AI outputs and treating them as objective truth have the potential to cause automation bias ,reduced judicial reasoning and unjust decision making. At this juncture, it becomes important that human review of AI should happen and independent evaluation of evidence should be done by the courts to ascertain the truth of the outcomes predicted by the AI model.

Climate algorithm audit is another requirement going ahead. AI systems may be biased and can exclude vulnerable groups and areas from their analysis and can produce inaccurate prediction. It can also consume high energy, which has environmental cost. In the light of the same it becomes important to test the model for bias, accuracy verification, environmental impact assessment and compliance with the legal and regulating norms. Such audits should be conducted by independent regulatory bodies, Court appointed experts and international organisations.

Artificial intelligence systems are often trained on western data set and incomplete global data, which leads to misrepresentation of local ecosystem and indigenous knowledge. It also fails to include those who are more vulnerable. Such problems leads to violation of equality and it becomes imperative to include local data, consultations with the local community and recognition of indigenous knowledge.

It is well understood that environmental harms are cross border as well as artificial intelligence is cross border. It becomes imperative to have transnational liability framework. The responsibility of the actors must be legally fixed, depending upon the circumstances of the case

[19] Organisation for Economic Co-operation and Development (OECD), OECD Principles on Artificial Intelligence (2019).
[20] European Union, General Data Protection Regulation (Regulation (EU) 2016/679), Art. 22.
[21] European Union, Artificial Intelligence Act (2024).

, if we look at the emerging trends, then artificial intelligence developer can be made liable if the model itself is defective whereas deployer, which can be a state actor or corporations can be made liable for misuse of the model or blindly relying upon that. It is also required to shift the burden of proof in favour of the victim.

Public participation is a key to protect the environment. Artificial intelligence can exclude public participation and can limit the access of the data to the common people, which in turn reduces the transparency and participation. To counter this problem, it is important to give right to access to AI generated data regarding environment. It is also required to give right to challenge algorithmic decision making and mandatory requirement of public participation in environmental decision making.

Conclusion

The need to protect the environment has never been as urgent as it is today and the question of climate change is real, where the entire world is struggling to protect the environment and the question of protecting environment is not limited to one jurisdiction, but in the era of globalisation this expands transnationally. The pollution done by one country impacts other countries also and corporates doing business in their own country also create an impact on the environment in other countries, which exposes the vulnerability of law and increases climate litigations where climate right activists are suing the corporations and the state for not implementing the environmental laws properly. In environmental litigation, the most challenging question, which comes before the court is to gather the reliable evidence, which can make the corporations liable for polluting environment, and it has been observed frequently that many corporations were held not liable because of the unavailability of sufficient evidences. Artificial intelligence bridges this gap in a very helpful manner and provides the evidence which is credible, reliable, and relevant and links the act of the corporation with the environmental pollution, making it more easy to connect the act of the corporate with the tangible loss of the environment. The environmental law jurisprudence has shifted from reactive justice towards preventive justice and artificial intelligence helps in this call as it can predict the chances of drought, flood, and other environmental disasters and this prediction helps in taking proactive measures rather than just reacting. The integration of AI in environmental protection litigation has huge potential and has potential to change the future of environmental litigation. However, the use of artificial intelligence is not free from

risks and the biggest problem is that AI is not neutral and the problem of bias is present in the decision making, especially where global south lacks good climate data and representation, and the lack of transparency in the decision making of AI is another serious threat. The decisions which are taken by artificial intelligence must have appropriate reasons and logic and if artificial intelligence fails in reporting the data accurately, the consequences are extremely disastrous for the environmental jurisprudence. Right to clean environment is essentially one of the most important fundamental and human rights and once right to pollution free environment is violated, then it has direct consequences on the right to life and right to health, and sustainable development is the only way to go forward. It also includes the right of participation of the local community and their traditional knowledge and wisdom must be respected and artificial intelligence has to ensure that decision making is transparent and vulnerable sections of the society are not excluded. It is well understood that environmental harms are cross border as well as artificial intelligence is cross border and the traditional concept of jurisdiction faces a challenge, giving rise to questions of applicable law and liability. It becomes imperative to have mandatory explanation, disclosure of data source, methodology, and assumptions, along with human oversight and climate algorithm audit and it is also required to include local data, recognition of indigenous knowledge, shift the burden of proof in favour of the victim and ensure public participation and right to challenge algorithmic decision making so that artificial intelligence can be used in protecting the environment in an efficient manner.